

VIRTUAL LIFE PLATFORM MEETING 2-4 MARCH 2021

Lessons from LIFE on ecological connectivity

towards a coherent, functional and resilient network of protected areas

SUMMARY REPORT

Photo: Fundación Oso Pardo, LIFE12 NAT/ES/000192



The Platform meeting was coordinated by the NEEMO external monitoring team on behalf of the European Commission Directorate General for Environment and the European Climate, Infrastructure and Environment Executive Agency

Contents

1.	Introduction	4
2.	Background	6
	2.1 The EU Biodiversity Strategy for 2030	7
	2.2 The LIFE programme	7
з.	Objectives and structure of the meeting	8
	3.1 Objectives of the meeting	8
	3.2 Structure of the meeting	9
4.	Summary of the meeting	10
	4.1 Day 1: Identification and prioritisation of ecological corridors	10
	4.1.1 Plenary synopsis	10
	4.1.2 Working Groups	13
	4.2 Day 2: Effective governance for the long-term management	
	and protection of ecological corridors	14
	4.21 Plenary synopsis	16
	4.2.2 Working Groups	18
	4.3 Day 3: Ensuring funding for connectivity conservation	21
	4.3.1 Plenary synopsis	21
	4.3.2 Panel session 1: Public funding instruments	
	for connectivity conservation	23
	4.3.3 Panel session 2: "Blended" and private financing	
	for connectivity conservation	26
	4.4 Knowledge Market	30
	4.5 Survey polls	33
5.	Organisational and communication aspects	34
	5.1 Connectivity conservation project mapping	34
	5.2 Registration and participants	36
	5.3 Online format: Zoom and Sli.do applications	38
	5.4 Publications and videos	38
	5.6 Feedback from the participants	41
6.	Conclusions and recommendations	43
	6.1 Conclusions and recommendations for policy makers	43
	6.2 Recommendations and proposals for the LIFE programme	43
7. A	nnexes	45
	Annex 1: Background paper	47
	Annex 2: Platform meeting agenda	63
	Annex 3: Plenary presentations	69
	Annex 4: Working Group presentations and reports	. 227
	Annex 5: Sources and links	.629
	Annex 6: Presentations of the Knowledge Market	.633
	Annex 7: Project mapping	715
	Annex 8: List of participating LIFE projects	.725
	Annex 9: List of participants	.729
	Annex 10: Sli.do analytics report	741
	Annex 11: Summary for policy makers	.749

TABLES

- Table 2List of Knowledge Market presentations
- Table 3
 Number of participants at the Platform meeting
- Table 4
 Number of participants and viewers of Day 3 of the meeting
- Table 5Number of presentations
- Table 6Sli.do statistics

FIGURES

- Figure 1Sli.do survey poll results for Day 1
- Figure 2 Sli.do survey poll results for Day 3
- Figure 3 LIFE connectivity projects by habitat
- Figure 4 LIFE connectivity projects by species
- Figure 5 Average time spent per participant on each day of the event
- Figure 6 Connectivity social infographic metrics
- Figure 7 Infographic on Twitter
- Figure 8 Bear corridor social infographic metrics
- Figure 9 Video Twitter analytics
- Figure 10 Feedback on overall satisfaction with the Platform meeting
- Figure 11 Appraisal of the online format
- Figure 12 Feedback on the registration process
- Figure 13 Feedback on assistance received prior to the event

ACRONYMS AND ABBREVIATIONS

API	Areas of Priority Intervention
CAP	Common Agricultural Policy
CINEA	European Climate, Infrastructure and Environment Executive Agency
ComEvenT	Communication & Events Team
DG AGRI	Directorate General for Agriculture and Rural Development
DG ENV	Directorate General for Environment
DG RTD	Directorate General for Research and Innovation
EAFRD	European Agricultural Fund for Rural Development
EC	European Commission
ERDF	European Regional Development Fund
EU	European Union
IUCN	International Union for Conservation of Nature
LIFE CCA	LIFE Climate Change Adaptation
LIFE CCM	LIFE Climate Change Mitigation
LIFE GIE	LIFE Environmental Governance and Information
LIFE ENV	LIFE Environment
LIFE NAT	LIFE Nature
LIFE PRE	LIFE preparatory project
NCFF	Natural Capital Financing Facility
OECM	Other Effective Area-based Conservation Measures
PAF	Priority Action Framework
RDP	Rural Development Programme
SNaPs	Strategic Nature Projects
WCPA	World Commission on Protected Areas

4

1 Introduction

With the recently adopted EU Biodiversity Strategy for 2030¹, the European Union (EU) intends to build a "truly coherent and resilient Trans-European Nature Network", by enlarging the network of protected areas with an ambitious target of 30% of EU land and 30% of EU seas to be legally protected by 2030, and by developing an ambitious EU Nature Restoration Plan. At least one third of protected areas – representing 10% of EU land and 10% of EU sea – should be strictly protected. The Strategy acknowledges the importance of setting up ecological corridors to achieve these targets.

Considering the current momentum created by the release of the EU Biodiversity Strategy for 2030, the increasing recognition of the crucial role of ecological connectivity for achieving global biodiversity objectives, and the important legacy of the LIFE programme on ecological connectivity, it seemed a timely occasion to organise a LIFE Platform meeting focusing on connectivity conservation.

The meeting, held over three consecutive days in March 2021, gathered more than 200 participants, including the representatives of more than 70 LIFE projects. Moreover, as part of the meeting was streamed live, it attracted about 600 additional viewers to join the selected sessions. The Platform meeting was a valuable opportunity to learn and exchange knowledge and opinion about pressing issues regarding connectivity conservation in the EU.



Photo: LIFE Green-go! Carpathians (LIFE16 GIE/PL/000648) Promoting geoinformation tools for green infrastructure mapping

¹ EU Biodiversity Strategy for 2030 | European Commission (europa.eu)



Photo: LIFE BIORGEST (LIFE17 NAT/ES/000568) Innovative forest management strategies to enhance biodiversity in Mediterranean forests

6

2 Background

Landscape fragmentation is one of the key drivers of biodiversity loss, mainly resulting from transport infrastructure, urbanisation, and intensification of agricultural and livestock practices. These threats are currently exacerbated by the increasing effects of climate change on the ecosystems. This highlights the importance of both structural and functional connectivity to ensure biodiversity conservation objectives and the delivery of ecosystem services in the long-term (for key definitions related to connectivity conservation, please see *Annex 1*). In addition, connectivity conservation is becoming highly important to support efficient nature networks.

Although the Natura 2000 network is the world's largest multinational coordinated network of protected areas in the world, the objective of an effectively managed, fully functional and coherent network of areas of high biodiversity value is still to be achieved, according to the fitness check of the EU Nature Directives². More ambitious and large-scale action is needed to ensure the ecological coherence of this nature network. In order to achieve a coherent and resilient Trans-European Nature Network it is essential to create and maintain ecological corridors that ensure an appropriate permeability of the matrix within and between protected areas, and to secure adequate systems of governance, management and funding for these corridors.

Increasing functional and ecological connectivity among and within Natura 2000 sites can be achieved by restoring and conserving patches and corridors of natural or semi-natural habitats, including agricultural land, and by implementing other kinds of measures to improve migration opportunities, species dispersal and landscape permeability (e.g., constructing wildlife passes over roads and railways, creating biodiversity-friendly landscape elements across rural and peri-urban landscapes, etc.).

In some cases, the conservation of patches and corridors requires their declaration as protected area. However, in many cases connectivity conservation is implemented in non-legally protected land, often described as 'Other Effective Area-based Conservation Measures' (OECM; see *Annex 1* for definition by the International Union for Conservation of Nature (IUCN)).

About 60% of the Natura 2000 network and an important part of the EU rural areas are on privately owned land. These include areas with high potential for delivering ecosystem services and ecological connectivity. Private land conservation has, therefore, a crucial role to ensure a functional and coherent Natura 2000 network. Since the deployment of ecological corridors will mostly take place on non-protected areas and privately owned lands, it becomes essential to explore effective governance schemes to ensure the adequate long-term management of these connecting areas.

The provisions in the EU Habitats Directive regarding ecological connectivity leave a considerable amount of discretion to the Member States, which are expected to address them in their land-use planning policies. The EU has no jurisdictional remit in spatial planning, but can apply a wide range of instruments that can influence the spatial development of the Member States, including regulations and financial incentives. In this context, Green Infrastructure³ is recognized as an essential approach to improve connectivity both within and outside the Natura 2000 network. If properly managed, it has the potential to deliver a plethora of economic and social benefits and services.

² https://ec.europa.eu/environment/nature/legislation/fitness_check/docs/nature_fitness_check.pdf

³ The European Strategy on Green Infrastructure establishes the wider framework for the development of the Natura 2000 connectivity: https://eur-lex.europa.eu/resource.html?uri=cellar:d41348f2-01d5-4abe-b817-4c73e6f1b2df.0014.03/DOC_1&format=PDF

7

Detailed background information important for the Platform meeting themes and structure is available in the Background paper (*Annex 1*) developed by the technical team.

2.1 THE EU BIODIVERSITY STRATEGY FOR 2030

The EU Biodiversity Strategy for 2030 is an ambitious strategic document that calls for the enlargement of the protected area network through the selection of additional protected areas and the setting up of a functional and coherent network of ecological corridors and areas of high biodiversity value. The Strategy also includes a target to bring at least 10% of agricultural area under high-diversity landscape features.

Recent studies⁴ have shown that even if the targeted designation of protected areas based on their intrinsic biodiversity values is still necessary in Europe, stronger emphasis should be put on improving the permeability of unprotected lands and the coordinated management of adjacent protected and non-protected areas. The selection of additional protected areas to achieve the 30% objective should therefore take into consideration those areas identified as key for ensuring landscape permeability and ecological connectivity in the long-term.

In addition, the EU Biodiversity Strategy for 2030 sets the basis for an ambitious European Restoration Plan aimed at improving the health of existing and new protected areas and at bringing diverse and resilient nature back to all landscapes and ecosystems. The investments in green and blue infrastructure and cooperation across borders among Member States are also encouraged in the EU Biodiversity Strategy.

Achieving these targets will require making the most of all relevant EU programmes and financing instruments, and to explore other public and private funding formulas for nature conservation both inside and outside protected areas.

2.2 THE LIFE PROGRAMME

The LIFE Nature and Biodiversity programme has directly contributed to the establishment of the Natura 2000 network and to the restoration and management of Natura 2000 sites and other areas important for biodiversity. The Environment and Climate sub-programmes of LIFE have also been supporting a wide range of projects seeking to improve the functionality of ecosystems outside the Natura 2000 network through a focus on Green Infrastructure, climate change adaptation, nature-based solutions, etc. As such, the LIFE programme has relevant practical experience to share on how to select priority areas to improve ecological connectivity towards a coherent, functional, and resilient Trans-European Nature network, while ensuring the delivery of multiple benefits for nature, climate and people. The LIFE programme has also demonstrated different schemes to govern and manage these corridors, while also exploring different sources of funding, all topics that were discussed in-depth during the Platform meeting.



Photo: LIFE GREEN4GREY (LIFE13 ENV/BE/000212) Green and blue infrastructure for grey peri-urban landscapes

⁴ https://europepmc.org/article/pmc/5825384; https://www.sciencedirect.com/science/article/pii/S0006320719308225; http://publications.jrc.ec.europa.eu/repository/handle/JRC113815

Objectives and structure 3 of the meeting

3.1 OBJECTIVES OF THE MEETING

The Platform meeting aimed at exploring how LIFE projects can advance knowledge about connectivity conservation in Europe and how they can contribute to the development of EU policy and the implementation of the new EU Biodiversity Strategy.

Three main themes were selected, in consultation with the European Climate, Infrastructure and Environment Executive Agency (CINEA) and the Nature Unit of the European Commission's (EC) Directorate General for Environment (DG ENV). The main themes and their objectives are the following:

Theme 1: Identification and prioritisation of ecological corridors

The aim of Theme 1 was to contribute to definition of clear objectives and selection criteria for identification and prioritization of ecological corridors, based on existing mapping and decision-making tools, as to ensure landscape multi-functionality including the delivery of connectivity goals, nature conservation and multiple ecosystem services in the context of climate change.

Theme 2: Effective governance for the long-term management and protection of ecological corridors

The aim of Theme 2 was to share successful examples of governance models and land-tenure schemes from LIFE that ensure appropriate long-term management and conservation of ecological corridors and stepping stones and that might be on protected or non-legally protected areas.

Theme 3: Ensuring funding for connectivity conservation

The aim of Theme 3 was to present an overview of the existing funding programmes and mechanisms for connectivity conservation and provide guidance for future opportunities on the existing and innovative financial instruments. These thematic areas were carefully selected based on the current challenges in connectivity conservation, identified through scientific bibliography and experience from LIFE projects, as well as the present needs in relation to the EU Biodiversity Strategy for 2030. To limit the scope of the meeting, it was decided to focus on terrestrial connectivity only, i.e., including riparian and dune ecosystems, but excluding river and sea connectivity. Some important cross-cutting aspects such as land planning and sectoral policies, ecosystem services approaches and Green Infrastructure were embedded in discussions throughout the meeting.

The specific objectives of the meeting included the following:

- To showcase successful examples of LIFE projects working on identification, prioritization and/or conservation of ecological corridors.
- To provide insights from experts and LIFE practitioners to policy-makers on the future EU criteria and guidance for the identification and designation of additional areas by Member States, to be developed by the end of 2021.
- To share best practices of governance of ecological corridors.
- To share knowledge about existing and innovative funding schemes for connectivity conservation.
- To discuss how connectivity conservation can help achieve the objectives and targets of the EU Biodiversity Strategy for 2030, and explore the main current challenges.
- To enable networking and sharing of knowledge between LIFE beneficiaries and with other relevant projects and organisations.
- To provide recommendations on connectivity conservation aspects to the LIFE programme.

9

3.2 STRUCTURE OF THE MEETING

The Platform meeting was initially planned to be organised in Spain, but due to Covid-19 pandemic restrictions, it was held in virtual format on 2-4 March 2021. The meeting included 4 plenary sessions, 7 Working Group sessions, 2 panel discussions and 2 sessions of project "speed presentations", also called Knowledge Markets. The main themes and objectives of the meeting were carefully integrated in the overall agenda of the meeting *Annex* 2.

Day 1 and Day 2 included plenary sessions with general presentations about identification of ecological corridors (Day 1) and governance of ecological corridors (Day 2), followed by a Q&A session. Day 1 and 2 further included 3 and 4 parallel Working Groups respectively, where the participants discussed specific connectivity related topics and issues. The participants were able to choose manually through the online Zoom application the Working Group in which they wanted to participate. In each Working Group, 2 or 3 LIFE projects made a short presentation to set the scene and provide practical examples. In some cases, Horizon 2020 projects and/or representatives from the EC (DG ENV, Joint Research Centre) also made short presentations. After the short presentations, the Working Groups engaged in a facilitated discussion. Each Working Group was coordinated by a facilitator from CINEA, a rapporteur from NEEMO and a "chat manager" from NEEMO. To help the speakers and

facilitators in better understanding their roles and ensuring their efficient preparation for the meeting, the technical team prepared two documents, Guidelines for speakers and Guidelines for facilitators. Both documents were distributed to the speakers and facilitators before the meeting. Day 1 and Day 2 finished with a Knowledge Market plenary session, consisting of 2-minute rapid presentations from a wide range of LIFE projects.

Day 3 was divided in three parts: an introduction with three keynote speeches, and then two consecutive virtual panel sessions, the first one focusing on EU public funding programmes and the second one on blended finance and private financing mechanisms. Each panel session featured four panellists presenting a specific instrument, as well as two pre-selected LIFE practitioners asking a question related to their own experience to the panellists. Questions were also collected from the other participants through Sli.do. Considering this ambitious objective and the high-quality speakers invited, it was decided to widen the audience for this session by broadcasting it through several channels and making the recorded video available afterwards.

After closing the Day 3 part of the meeting, a wrap up and conclusion session took place with the audience that attended the full 3-day Platform meeting.

4 Summary of the meeting

4.1 DAY 1: IDENTIFICATION AND PRIORITISATION OF ECOLOGICAL CORRIDORS

The aim of Day 1 was to contribute to the definition of clear objectives and selection criteria for identification and prioritization of ecological corridors, so as to ensure landscape multi-functionality including the delivery of connectivity goals, nature conservation and multiple ecosystem services in the context of climate change.

Within the LIFE programme there are numerous examples of projects that have worked on connectivity. Throughout the years, their focus has moved from individual species towards a more integrated ecosystem approach that takes into account ecosystem services and climate change. Agricultural areas play a key role in restoring and maintaining ecological connectivity between core biodiversity areas. There are many examples of LIFE projects engaging with farmers to take protective measures for nesting or feeding areas for species, or to improve habitat management.

Therefore, the Platform meeting provided an excellent stage from which to explore and share the practitioners' experience and points of view on the guiding criteria for the selection of ecological corridors and for enhancing connectivity across agricultural landscapes in practice. It was also a great opportunity to get practical insight on the existing assessment, mapping, and decision-making tools for connectivity planning, and to explore the existing gaps between scientists and practitioners.

4.1.1 Plenary synopsis

PLENARY SPEAKERS: Frank Vassen and **Joaquim Capitão**, DG ENV, Nature Protection Unit

The plenary was opened by Frank Vassen and Joaquim Capitão with a presentation focussing on the policy framework including the recently launched Biodiversity Strategy for 2030. Mr Vassen noted that conservation efforts in the EU Member States currently focus on the largest global network of protected areas and species, Natura 2000. Establishing the sites is only the beginning, implementing the conservation measures is still a work in progress and many sites are not properly managed for a variety of reasons including governance, capacity, and financing.

Mr Vassen examined the approach to establishing Natura 2000 sites across the Member States and noted that some countries protected a large number of small sites while others favoured fewer but larger sites. There does not appear to be an optimum approach as all approaches leave gaps between the core areas. He noted that there were three main issues involved where connectivity is an important factor and that these become increasingly complex:

- Species that need connectivity to complete the life cycle. For example, Atlantic salmon needs to return to the river from the sea to spawn, and if it is prevented from doing so by barriers in the river then the life cycle is broken.
- Network robustness to ensure there are no extinctions and that biodiversity is maintained. In this scenario enhancing connectivity is just one measure that is needed to contribute to increased robustness and must be considered alongside other factors such as removal of threats and increased protection.
- Making nature more resilient to climate change. This involves, *inter alia*, the need to plan for range shifts for vulnerable and marginal species. He pointed out the critical need to involve science and research to inform decision making in this difficult area.

Mr Capitão then described the policy framework and noted the key targets of the new Biodiversity Strategy:

To increase the coherent network of protected areas to 30% of land in Europe and integrate ecological corridors as part of a true Trans-European Nature Network.

CONTENTS

To implement an EU Nature Restoration Plan whereby there will be no deterioration in conservation trends and status of all protected habitats and species by 2030 and at least 30% of species and habitats not currently in favourable status show a strong positive trend.

He noted that ecological corridors can contribute significantly to the coherence of the network and that there is a need to agree on the definitions of connectivity.

PLENARY SPEAKER (VIDEO): Gary Tabor, IUCN WCPA Connectivity Conservation Specialist Group

Gary Tabor introduced the *IUCN Guidelines for Conserving Connectivity through Ecological Networks and Corridors* and gave a refreshingly different approach to connectivity. He noted that 'connectivity is the safety net for nature' and explained that the purpose of the IUCN Guidelines was to work towards consistent and measurable practice in connectivity conservation by consolidating knowledge, advancing concrete guidelines and creating an international standard.

Mr Tabor noted that connectivity is vital for species conservation and maintaining ecological processes in a world that is facing increasing fragmentation and new challenges such as climate change. He went on to explore the scientific basis for connectivity and to highlight that, while protected areas have grown as a response to decreasing biodiversity, the connections between the protected areas are limited; only 11% of terrestrial protected areas are sufficiently connected. Well-connected protected areas are more effective. Mr Tabor endorsed the view of the previous speakers by noting the need to adopt a common language for connectivity conservation and making sense of the interchangeable terms used. For example, scientists might define connectivity in terms that include gametes (genes and propagules), whereas policy makers tend to recognize movement of species and the flow of natural processes. Importantly, protected areas and OECMs are created to protect biodiversity, whereas ecological corridors, because they are not protected areas, conserve more a connectivity value. He presented the fundamental principles of ecological corridors as:

 They are not a substitute for protected areas or OECMs – they are an addition.

- They should be identified and established in areas where connectivity is required.
- They should have specific ecological objectives.

One interesting aspect was the consideration of cross-realm issues and the Guidelines speak to the applications and benefits of ecological corridors in different environments from terrestrial to marine and freshwater to airspaces. Finally, he encouraged everyone to use the Guidelines and become involved in the expert working group.

Q&A

A few questions presented to Mr Vassen and Mr Capitão after the presentations are noted below.

Q: Are there any strategies of coordination/governance between Natura 2000 sites and other protected areas foreseen? (Mattias Brummer, XCN)

A: There is an approach in discussion, to be proposed to the Member States – Member States will come up with pledges for new Natura 2000 designations (both public and private land) and commitments from landowners and then they will discuss viability at the biogeographical level, and identify gaps in the Natura 2000 network. (Joaquim Capitão)

Q: When do the legally binding targets (of the Biodiversity Strategy) come into force? (Anon)

A: There is no way to tell how long the process could take, remembering it took 3 years to negotiate the Habitats Directive with the Member States. It is important to note that there are also voluntary targets (no deterioration by 2030) that could happen more quickly. (Joaquim Capitão & Frank Vassen)

Q: Are there good examples for ecological corridors between Natura 2000 sites, functioning well and without the formal protection? (Inga Racinska, Latvian Fund for Nature, GrassLIFE).



Photo: LIFE OSMODERMA (LIFE16 NAT/LT/000701) Ecological network for Osmoderma eremita and other species dependent on veteran trees

A: We are aware of existing systems in the Member States (e.g., France) that have been in place for a few years, but this is still recent and so it is difficult to say whether the approach really works. This is a long-term process and we must be patient. Any good strategy for network of corridors must be accompanied by a strategy of maintenance, which includes financing and means of formal protection. LIFE projects on the ground can provide the EC with a lot of information as they know what works and what does not. (Joaquim Capitão)

Q: The 10% strictly protected goal is a key novel target in the 2030 Strategy. What will be the likely components of the definition of strictly protected? (Nestor Fernandez, iDiv)

A: The definition in the Strategy is 'areas where natural processes are left essentially undisturbed'. Technical note from the EC regarding this is still under review and discussions are ongoing. (Frank Vassen)

For further information on plenary speeches, please see presentation slides in *Annex 3*.

4.1.2 Working Groups

Day 1 included 3 Working Groups, the summary of which is presented below. All presentation slides and reports from the Working Groups can be found in *Annex 4*.

Working Group 1.1 Guiding criteria for identification of ecological corridors: the practitioners' perspective

Main objectives

- To collect information from practitioners on the guiding criteria most commonly used to identify ecological corridors. Special focus was put on the extent to which criteria allow for a proper integration of delivery of ecosystem services, socio-economic and climate change aspects.
- To assess potential synergies among different criteria and their integration into land planning.
- To explore the issue of bridging the gap between scientists and practitioners.
- To provide practical feedback to the DG ENV's 'Draft technical note on criteria and guidance for protected areas designations' on the section concerning connectivity corridors.

Main findings

- When developing and applying theoretical connectivity assessment models, it is necessary to consider real limitations in practice. It was suggested to develop lists of tools/guidelines of what is feasible and available.
- There is a clear lack of evidence from the ground on the effectiveness of the connectivity measures put in place, and a strong need for developing and implementing effective long-term monitoring schemes.
- Governance issues emerged as one of the most challenging aspects of connectivity management. It is of key importance getting stakeholders, including the private sector, involved and committed with connectivity conservation goals in the long-term.
- The need for specific connectivity measures should be critically assessed against other complementary conservation approaches on a case-by-case basis.
- Connectivity measures should be better integrated in spatial planning and sectoral policies. It is strongly recommended enhancing protected area managers as key partners for land use planners.
- Connectivity enhancement measures should be taken into account when defining the management/conservation plans of protected areas/species for ensuring a favourable conservation status, especially in the current climate change context.



Working group 1.2 Ensuring connectivity across agricultural landscapes

Main objectives

- To explore how to enhance connectivity across agricultural landscapes from a practical point of view.
- To elaborate how the new target of the EU Biodiversity Strategy for 2030 to bring back at least 10% of agricultural area under high-diversity landscape features could provide opportunities for improving connectivity.
- To provide practical feedback to both the DG ENV guiding criteria for the identification of priority connectivity corridors and the new Common Agricultural Policy (CAP) processes.

Main findings

- It is highly important to engage farmers in the management and restoration of ecological corridors. Various incentives are needed to engage them, including the monetary ones. Reaching out to local communities, providing technical support, building capacity, and listening to farmers' needs are also essential.
- Small-scale farming and low productive areas are important. There are several good examples across the EU of successful small-scale measures but insufficient support for scaling up.
- The selection of agricultural areas to be targeted in order to enhance connectivity should combine scientific evidence and pragmatic approach (what is doable).
- Framing actions in a long-term vision and re-connecting farming with long-term and systemic agricultural heritage are also important.
- It is important to use Rural Development Programmes and the upcoming CAP eco-schemes as leverage to scale-up local actions (e.g., After-LIFE). The lessons learnt from LIFE projects and any recommendation stemming out from the LIFE experience can be very valuable for the authorities in charge, especially with the ongoing process for the preparation of the CAP strategic plans. LIFE projects were invited to engage in this process at national level (i.e., working groups, consultations, etc.) to the extent possible (some projects reported a difficulty to do so), but also through the activities carried out within the LIFE projects, especially Integrated Projects.

Working group 1.3 Getting practical insight on the existent mapping and decision-making tools for connectivity planning

Main objectives

- To gain practical insight into existing mapping and decision-making tools, their suitability for identifying priority connectivity areas and the extent to which these could be accessed.
- To explore the issue of bridging the gap between scientists and practitioners.

Main findings

- There is a need to promote open access for spatial data at EU level, as this is currently one of the main challenges.
- Green Infrastructure should become an integral part of land use planning across multiple sectors to improve connectivity and promote ecosystem services.
- There is a need to break silos across sectors and encourage participatory approaches regarding connectivity conservation.
- It is important to raise more awareness on the relevance of ecological connectivity to the public and relevant stakeholders (mainly private land owners as to get them on board).
- There is a need for a common conceptual framework on connectivity conservation at EU and international levels.
- There is a need to synthesize and homogenize connectivity mapping also at EU level and link it with mapping at other scales (local, national, regional).

4.2 DAY 2: EFFECTIVE GOVERNANCE FOR THE LONG-TERM MANAGEMENT AND PROTECTION OF ECOLOGICAL CORRIDORS

The main aim of Day 2 was to share examples of different approaches to governance schemes that condition the long-term management of ecological corridors.

IUCN distinguishes four main types of governance of protected areas (also applicable to ecological corridors) (Table 1).



Photo: LIFE ELCN (LIFE14 PRE/DE/000005) Development of the European Land Conservation Network

While different governance schemes exist across EU Member States, type A (governance by government) is by far the most common to ensure strong legal protection. Shared and private governance mechanisms (types B and C) are developing rapidly and are increasingly being present in the EU. The LIFE programme has provided an excellent laboratory for the development of experimental mechanisms of governance. The Platform meeting provided an opportunity to showcase examples and share experience from a bottom-up approach looking into different governance models and schemes of protection, working with different stakeholders and across different land use types, with a particular focus on collaborative and participatory approaches on both public and private lands.

	GOVERNANCE TYPE	SUBTYPES
A	Governance by government	 Federal or national ministry or agency in charge Sub-national ministry or agency in charge (e.g., at regional, provincial, municipal level) Government-delegated management (e.g., to an NGO)
В	Shared governance	 Transboundary governance (formal and informal arrangements between two or more countries) Collaborative governance (through various ways in which diverse actors and institutions work together) Joint governance (pluralist board or other multi-party governing body)
С	Private governance	 Conserved areas established and run by: individual landowners non-profit organizations (e.g., NGOs, universities) for-profit organizations (e.g., corporate owners, cooperatives)
D	Governance by Indigenous Peoples and local communities	 Indigenous Peoples' conserved territories and areas—established and run by Indigenous Peoples Community conserved areas and territories—established and run by local communities

TABLE 1: IUCN PROTECTED AREA GOVERNANCE TYPES⁵

5 Borrini-Feyerabend, et al., (2013) https://www.iucn.org/content/governance-protected-areas-understanding-action. Adapted in Vasilijević et al. (2015) https://portals.iucn.org/library/sites/library/files/documents/PAG-023.pdf

4.2.1 Plenary synopsis

PLENARY SPEAKER: Boris Erg, IUCN Regional Office for Eastern Europe and Central Asia

Boris Erg delivered an interesting presentation on protected area governance typology (as shown in Table 1) and ecological corridors. Mr Erg emphasized the importance of understanding the difference between governance and management as follows:

Governance is about process: who decides the objectives, how to bring people together, how decisions are made, who holds the power, accountability, reconciling differences and deciding about trade-offs. Management is about substance: What is done, means and actions, generate, implement and monitor.

Mr Erg presented examples of different governance types, using the *Wadden Sea World Heritage Site* as an example of shared governance, including transboundary governance. For land in private ownership, he referred to De Hoge Veluwe National Park in the Netherlands that is run by a Trust Fund and a foundation, which has set up a management authority. He noted that the government-led model is prevalent in Eastern Europe where over 80% of the protected area lands are governed exclusively by government. Mr Erg encouraged participants to dive into IUCN's library to get more information about governance models in protected areas and ecological corridors.



LIFE IP GESTIRE 2020



PLENARY SPEAKERS: Marzia Cont, Lombardy Region, and **Sergio Canobbio**, Regional Agency for Agricultural and Forestry Services

The presentation of LIFE IP GESTIRE 2020 (LIFE14 IPE/ IT/000018) was shared by Marzia Cont and Sergio Canobbio. They presented the activities in the project related to planning the interventions for ecological connectivity in Lombardy (Italy), and how the interventions are being supported. They described the development of Areas of Priority Intervention (API) related to buffer zones and stepping stones around Natura 2000 sites, to support metapopulations of species. The APIs have been accepted by the Lombardy Regional Authority with an official act. There are no obligations for local authorities and landowners to implement them, but APIs are promoted as opportunities for local landowners with a dedicated call for funding the APIs. Management interventions are decided by the project and then discussed with the landowners who have expressed interest in carrying out the relevant interventions. Once the interventions are agreed, the landowners sign 15-year management agreements. The governance process is entirely bottom-up, none of the obligations are enforced by law, and the agreements are fully voluntary.

Q&A

Thereafter followed a Q&A session. A few questions for plenary speakers are noted below.

Q. Of the different governance models presented by Boris Erg, is there any evidence that one model is more effective in governance of ecological corridors than others? (Anon)

Aree Prioritarie di Intervento: API («Bees» in Italian) Goal: to guarantee the conservation of populations of given species Group 1 – N2000 Buffer Areas, reinforcement of populations inside Natura 2000 sites Matura 2000 sites Natura 2000 sites, showing populations of the species and/or very suitable habitats.

THE CONCEPT: Priority Areas of Intervention

A. Governance models depend on the context so there is no "one-size-fits-all" but it would be useful to make a study to clarify this. What IUCN tends to advocate is diversification of governance models. As corridors pass through various governance areas then some sort of shared models or co-governance structure may be better to reflect the shared responsibilities. (Boris Erg)

Q: In your experience what are the main three key elements of success for long-term governance of ecological corridors? (Anon)

A: First there is a need to understand what decision-making process is required and then identify the key stakeholders. There is a need to have a common goal and ensure transparency. No one should be left behind; if people have been left behind at the governance stage, it will be too late to include them at the management stage. There can be multiple levels of governance; sometimes governance mechanisms can be nested into larger ones. (Boris Erg)

Q: If there are no obligations to implement the API plan, is there enough interest to do this voluntary? (Pieter de Corte, LIFE Green4Grey)

A: It depends on the area and which kind of agriculture is carried out – the more diverse the agriculture the better the uptake. Intensive farming is less successfully engaged (Sergio Canobbio).

For further insights into the plenary presentations, please see the slides in *Annex 3*.

4.2.2 Working Groups

Day 2 included 4 Working Groups, the summary of which is presented below. All presentations and reports from the Working Groups can be found in *Annex 4*.

Working group 2.1 Key governance elements for effective and long-term management of ecological corridors

Main objectives

- To discuss the factors that make governance of ecological corridors successful and sustainable over the long-term.
- To elaborate on other factors important for successful governance, such as public awareness, support of local communities, transparency, and participatory approach.

Main findings

- It is crucial to get all stakeholders on board early on through an interactive dialogue in order to gain trust, create ownership and ensure their direct involvement, while also providing incentives.
- Communication is the key through storytelling, positive messages, and instilling proudness.
- Caretaking of corridors in the long term can be challenging, so ideally, they should have a legal status and be integrated into wider land planning and management plans.
- Long-term monitoring is important to assess whether connectivity has improved and continues to do so, while also keeping involvement and dialogue ongoing.
- Article 6.3 of the Habitats Directive is a strong tool to prevent damage of surrounding areas on Natura 2000 sites and to maintain ecological corridors. It is often overlooked by legislators, public authorities and also practitioners.
- Having a clear long-term vision and clear and precise strategy for planning of the area is important to set a framework for ensuring sustainability of connectivity conservation (including funding, maintenance and restoration measures).

Working group 2.2 Transboundary governance

Main objectives

- To showcase examples of successful transboundary governance arrangements relevant for connectivity conservation.
- To explore major factors of transboundary governance success, limitations and challenges.
- To discuss how transboundary governance can provide insights in advancing connectivity commitments and obligations within and across international borders.

Main findings

- There is a strong need to establish a legal framework for transboundary cooperation on ecological corridors and conservation areas at EU level to enable easier institutionalization of transboundary conservation initiatives.
- It is important to ensure long-term funding of transboundary conservation initiatives to enable sustainable and effective transboundary cooperation and governance.
- Informal arrangements and flexible non-binding agreements enhance the opportunities for successful start of transboundary cooperation, but transboundary governance needs to consider adaptive approaches where flexible instruments can evolve to binding agreements that are considered to be more efficient over the long-term period.
- Raising awareness among local authorities, local communities and civil society about the need for transboundary cooperation and their involvement in governance structures is important to ensure success of transboundary conservation initiatives.
- Harmonisation of methodology for identification of ecological corridors and coordinated management across international boundaries would enhance efficient coordination of work on transboundary ecological corridors.
- The Natura 2000 Biogeographical process is a good platform to enhance discussion on transboundary ecological corridors by the Member States.
- Continuous networking and exchange of best practices is important to ensure efficient functioning of transboundary governance arrangements.



Photo: LIFE ALNUS (LIFE16 NAT ES 000768) Restoration of alluvial Mediterranean forests

Working group 2.3 Participatory approaches and stakeholders' engagement in ecological corridor

Main objectives

- To share examples and best practices of successful participation and engagement of stakeholders in governance schemes for connectivity conservation areas.
- ► To discuss the main success factors and current challenges.
- To collect opinions and knowledge from practitioners and scientists on participatory and collaborative approaches for planning, governance and management of ecological corridors.

Main findings

It is crucial to identify the relevant stakeholders, listen to them closely and adapt the language and narrative to the type of public, by taking into account the local social and economic context, cultural values, beliefs, technical knowledge, etc. The selection of adequate communication channels and tools is also relevant, and should be adapted to the type of public and local circumstances.

- Early involvement of stakeholders is highly important, but engagement is also needed in a continuous way. A long-term vision for the corridors and other connectivity areas is crucial.
- Participation and stakeholders' engagement must be taken seriously by devoting the adequate resources (time, money) and using the adequate skills and tools (e.g., hiring mediation/participation experts, training/ capacity building of practitioners).
- Assessing in detail the possible benefits and trade-offs is key to find out how to influence stakeholders and involve them efficiently. It is important to adapt the arguments and use figures and numbers when necessary (e.g., regarding ecosystem services).
- As stakeholders' involvement is a voluntary approach in most sites, the existence of incentives, both instrumental and non-instrumental, may facilitate stakeholders' engagement.



The LIFE portfolio contains many valuable and successful examples that tested practical measures to promote stakeholders' engagement, obtain stakeholders' commitment and prevent conflicts. Further sharing of this practical knowledge across EU countries was seen as necessary by most participants.

Working group 2.4 Ensuring effective long-term connectivity conservation in OECMs and other non-legally protected areas

Main objectives

- Sharing of successful examples of connectivity governance arrangements in OECMs and other non-protected areas.
- Discussing the key governance factors, challenges and opportunities.
- Exploring cross-cutting aspects such as Green Infrastructure, nature-based solutions and ecosystem services.
- Discussing connectivity aspects on private lands.

Main findings

- The co-creation of integrated nature/land use management plans and policy (e.g., Flemish Nature Decree) leads to good governance and then to good management. The process requires public consultation.
- Shared governance and co-management of private areas and OECMs from a bottom-up approach is effective.
- The diversification of the governance models operates best where there are different landowners involved in different areas.
- Flexibility in the governance approach is essential if private sector organisations and individuals are to be involved, e.g., land owners may be reluctant to enter into long-term agreements which lock them into a certain set of actions and may prefer to have management initiatives that allow for change (which could be both an advantage and a disadvantage).
- Stakeholders' engagement is crucial to effective governance, in both public and shared governance models.
- Sufficient time must be allowed for those involved to get used to plans and the legal framework.
- The legal framework and incentives must be clear and unambiguous because most private stakeholders are not familiar with management planning approach for Nature (e.g., tax breaks).

- Capacity building amongst the different stakeholder groups (as shown in the IP GESTIRE example) is crucial and requires a lot of time and effort. It takes a lot of time to get people to accept/understand the conservation objectives and what the benefits could be for them.
- In order to avoid conflicts, it is important to get everyone's opinions early on as to agree on basic elements of cooperation and then move to the more difficult issues. Biodiversity argument is not always sufficient and there is a need to include arguments that appeal to all stakeholders (win-win solutions).

4.3 DAY 3: ENSURING FUNDING FOR CONNECTIVITY CONSERVATION

Insufficient financing is still a major obstacle to successful nature conservation measures in general, and to connectivity conservation in particular, as there is no dedicated financial instrument.

The Day 3 of the meeting sought to shed light on existing and upcoming opportunities for financing connectivity conservation and restoration under different types of mechanisms, and offered the possibility for participants to ask questions about these mechanisms to relevant experts. The objective was to present to the participants a large set of financing tools potentially available for their connectivity measures.

The session was very dense and extremely rich in information thanks to high-quality speakers. Their presentations *Annex 3* generated a large number of questions from the audience (64 in total).

4.3.1 Plenary synopsis

PLENARY SPEAKER: Jamie McCallum, IUCN WCPA

Jamie McCallum, IUCN WCPA, gave a comprehensive and analytical overview on the main types of financing mechanisms for connectivity conservation, including very innovative instruments that are just nascent. He distinguished the following types of instruments: economic instruments (price incentives/taxes), direct funding (payments and fiscal advantages), payments for ecosystem services, market creation and other innovative mechanisms (e.g., crowd funding, blockchain and green bonds, etc.). For each type, Mr McCallum explained the basic mechanisms at work, highlighting the needs and drawbacks and giving concrete illustrating examples.

PLENARY SPEAKER: Przemyslaw Oginski, DG ENV

Przemyslaw Oginski, DG ENV, presented the role of Priority Action Frameworks (PAFs) as planning tools for directing EU funding to priority actions for nature conservation; more precisely to management and restoration measures within the Natura 2000 network and also, since 2021, to Green Infrastructure outside the network. Based on the 2021-2027 PAFs received so far, the EC estimates the needs at 12.5 billion Euros per year to implement the PAFs in the EU, of which 2.4 billion Euros for connectivity measures outside Natura 2000 sites. Three examples of PAFs were given that included measures for connectivity improvement in Estonia, Slovenia and Walloon region in Belgium. Mr Oginski concluded with a word on the EU funding sources for ecological network restoration or management. Focus was made on three novelties: the future LIFE Strategic nature projects, the Resilience and Recovery Facility⁶, and the 2021-2027 EU multiannual financial framework that has recently been approved⁷.

⁶ This mechanism will add 750 billion Euros of investments from EU Member States into green transition over 2021-2023 to the EU financial framework, of which 37% shall address climate change issues. As nature-based solutions are key for tackling climate change, it can therefore offer good opportunities for funding connectivity conservation as well.

⁷ The budget approved for 2021-2027 amounts to 1,074.3 billion Euros, of which 10% will have to target biodiversity measures by 2026. The mentioned programmes with the greatest potential for connectivity conservation measures are: LIFE, European Regional Development funds, Cohesion funds INTERREG, CAP and European Maritime Fisheries and Aquaculture Fund.

PLENARY SPEAKER: Guillem Bagaria, LIFE BIORGEST

Guillem Bagaria, *LIFE BIORGEST*, provided a practitioner's view on innovative financial mechanisms. The objective of the LIFE BIORGEST project is to develop incentives for sustainable forest management enhancing biodiversity. The project has conducted a comprehensive analysis of potential financing mechanisms (public, blended and private financing) and is seeking to foster their implementation. Taking several instruments as examples – the European Agricultural Fund for Rural Development (EAFRD), tax incentives and Green funds in particular, Mr Bagaria highlighted the barriers and necessary conditions for the effective use of such instruments for forest biodiversity conservation in the Catalunya

region in particular. He especially insisted on the need to set up forest planning tools, contracts with landowners, and an effective monitoring system (with the focus on the IBP tool – index of biodiversity potential). These elements are crucial for the full implementation of effective financing mechanisms.

Q&A

These presentations raised a great interest with more than 20 questions addressed to the speakers. We highlight here below the main elements that can be retained from the series of questions and answers:



Photo: LIFE BIORGEST (LIFE17 NAT/ES/000568) Innovative forest management in the Mediterranean

- Several mentioned mechanisms are still at very early development stages (tax incentives, green funds, green tokens, blockchain instruments, and other public-private mechanisms such as PES and carbon markets) and further work is still needed to implement them in practice for connectivity conservation at large scale.
- The PAFs are critically reviewed by the EC and are expected to play a key role in better directing EU funding towards connectivity conservation. A Commission staff working document is expected later in 2021 with a quality assessment of the PAFs, in line with the EC commitments under the Biodiversity Strategy for 2030.
- Considering the permanent challenges linked to shortterm funding, the potential of market solutions is very interesting for several reasons: i) they can grant access to private funding which is very large, although currently underused for nature conservation, ii) well-regulated markets can operate continuously and can deliver exponential growth (provided that the required legal and policy frameworks are established); iii) markets are adaptable and can include innovative systems.
- Making better use of existing funding instruments such as the EAFRD requires significant effort, as experimented by the LIFE BIORGEST team for forest conservation to convince relevant authorities to open Rural Development Programme's (RDP) measure 15.1 (Payments for forestry, environmental and climate commitments), design and adapt it to the local needs, but it can give highly useful results.

Some economists are calling for a transformation of our finance system for a better protection of ecosystems, e.g., in the recently published *Dasgupta Review*. Increased awareness on the value of natural resources (ecosystems and their services) will help take better account for nature in our economies and finance system.

4.3.2 Panel session 1: Public funding instruments for connectivity conservation

Four experts from several DGs at the EC were invited to talk about the following EU-funded programmes or policies and discuss the possibilities they offer for connectivity measures with the participants: LIFE, Horizon Europe, the European Regional Development Funds (ERDF) – with a focus on Interreg, and the CAP.

PANELLIST 1 – Silvia Donato, CINEA, LIFE programme

Silvia Donato provided elements on a large sample of projects financed under the LIFE programme that have addressed ecological connectivity issues, referring to the recently published *LIFE factsheet* on this topic. It is worth noting that a lot of the LIFE support has been directed towards Natura 2000 sites, reflecting the key role of the Natura 2000 network in the EU nature policies that the LIFE programme is supporting. Many LIFE projects have sought to reduce landscape fragmentation by creating corridors, stepping stones, removing barriers (in rivers, road infrastructures), etc. The



next LIFE programme that is currently being finalised is building on the 2014-2020 programme. Opportunities for connectivity conservation are to be found in the Nature and Biodiversity strand, but also in other strands, such as Climate action (through nature-based solutions in particular).

PANELLIST 2 – Nerea Aizpurua, DG Research and Innovation (RTD), Horizon Europe programme

Nerea Aizpurua highlighted that Horizon 2020, which is the current EU framework programme for research and innovation, has supported biodiversity-related research in the EU for about 2.6 billion euros during the period 2014-2020. In recent years, focus has been put on nature-based solutions (also with demonstration projects) and on ecosystem restoration for the last call in 2020, these two topics being also related to connectivity issues. This support is expected to be further increased in the future under the Horizon Europe programme that will be adopted in mid-May 2021. DG RTD intends to have dedicated funding for ecological corridors. Ms Aizpurua also presented the EU partnership initiative on biodiversity under which joint EU-Member State calls for projects will be published to support research activities especially on monitoring and science-policy interface (first call in September-October 2021). Finally, she invited the audience to follow the news on the EU Knowledge Centre for Biodiversity that has just been established.

PANELLIST 3 – Antonia Lütteken, DG Agriculture and Rural Development (AGRI), CAP

Antonia Lütteken shed light on the CAP reform that was still being discussed at the moment of the meeting. She reminded the basics of this reform, i.e., especially the green architecture and the Strategic national plans to be prepared by Member States for the use of both pillars and to be approved by the Commission. She also pointed out the important elements for nature and biodiversity, including: the obligation to involve the environmental authorities in the design of the CAP plans, the legal obligation for each Member State to raise their ambition on the budget share allocated to environmental and climate measures compared to the previous period, a stronger legal link between the CAP and other regulations such as the Birds and Habitats Directives, the need of coherence between the CAP plans, the PAFs and species action plans at the EU or national levels, and the explicit possibility for CAP plans to support and upscale LIFE SNAPs. Examples were given on measures for landscape and biodiversity in the CAP and combinations between conditionality, eco-schemes and pillar II.

PANELLIST 4 - Maud Skäringer, DG REGIO, ERDF - Interreg

Maud Skäringer introduced the main outline of the 2021-2027 EU cohesion policy, representing about one third of the EU budget and aiming at a greener Europe (amongst other objectives) and then focused on the Interreg programme. Interreg is not the main component of the Cohesion policy



but with 8 billion Euros for 2021-2027, it is a major financial support mechanism for cooperation across the EU, including for biodiversity protection. It operates through programmes at different geographical levels (transnational, cross-border, interregional and outermost regions). Except for the interregional strand, all programmes have to include one or several environmental or climate objectives. Depending on the needs of the targeted areas, specific objectives can be selected, including enhancing the preservation of nature, biodiversity and Green Infrastructure. The next regulatory framework is being prepared.

Q&A

These four presentations gave a lot of information in a relatively short time on four major EU funding programmes for connectivity conservation. To complement these presentations with more practical aspects, two project managers were invited to share their experience and address a question to the panellists.

Jørgen Birdstrup, Danish Nature Agency, LIFE NATUREMAN (LIFE16 IPE/DK/000006)

Jørgen Birdstrup noted that the objective of LIFE IP NATUREMAN is to increase biodiversity in Danish Natura 2000 areas that are a patchwork of agricultural land and natural habitats, by enlarging the habitats' size (converting agricultural land) and by improving connectivity between the habitats. The project is developing an integrated approach, seeking synergies between nature, climate and rural development policies. In addition to the Integrated Project budget, the team is facilitating the use of complementary funding especially from CAP Pillar 2. Mr Birdstrup highlighted that for the moment the Danish RDP does not sufficiently support integrated approaches, as priority is given to the most cost-effective measures looking at one specific environmental issue. Yet, integrated agri-environmental measures can deliver a larger range of benefits (including on ecological connectivity).

Q. for Ms Lütteken: Do you agree that national or regional authorities implementing the RDP, and more generally the CAP, should be encouraged to develop integrated approaches, and will DG AGRI put emphasis on this aspect when examining the upcoming CAP National strategic plans?

A. The question is interesting as it shows how complex it is for Member States to design their CAP plan and find the right balance between very targeted but cost-efficient measures and more integrated measures. DG AGRI will assess to what extent the measures selected in the CAP plan respond to the issues highlighted in the EU Biodiversity Strategy for 2030 and in the PAF. They would indeed support integrated management commitments provided that they really tackle these issues and are described in the PAF. Therefore, it is important that nature conservation stakeholders are involved in the design of CAP plans and communicate the needs for integrated approaches. (Antonia Lütteken)

Michaela Künzl, Bavarian State Ministry of Environment, EUSALP action group on connectivity

Michaela Künzl is co-leading the action group on ecological connectivity of the *macro-regional strategy for the Alpine region* (EUSALP). The action group gathers a large range of stakeholders and after a first political launch phase, it has developed several implementation projects, especially with funding from cross-border and transnational Interreg programmes. Funding has so far been mainly dedicated to coordination, capacity-building, communication, or studies, and the action group now seeks to put emphasis on concrete conservation actions. They would therefore like to enlarge their funding sources and are thinking of mainstream ERDF and LIFE.

Q. for Silvia Donato: EUSALP is currently developing an Alpine peatland roadmap. Would the future LIFE SNAPs be a possibility for EUSALP to support the concrete implementation of this roadmap at transnational level (from Slovenia to France), or another tool would be more appropriate?

A. In principle, it would be possible for a LIFE SNAP to support EUSALP's action on peatland. However, as the LIFE programme has not been definitely adopted yet, it is premature to tell what tool would be the most appropriate. Once the call for SNAP projects is released, a help desk will be set up (the contact details will be given in the call), and possible candidates will have the opportunities to submit their idea and get an advice on whether it fits into the LIFE SNAP or into another LIFE strand. (Silvia Donato)

Additionally, a total of 27 questions were asked through Sli. do, of which 18 could be answered during the event. The following points are worth highlighting:

About LIFE

- LIFE budget for 2021-2027 has increased from 3.4 to 5.4 billion Euros.
- As the current Integrated Projects, the future LIFE SNAPs are meant to implement the PAFs (no priority topic will be defined). They are expected to be led by the authorities in charge of implementing the PAF, not by NGOs.
- Small entities play a key role in the implementation of biodiversity-oriented LIFE projects, including as coordinators. Many examples can be found in the LIFE database.

About the CAP

- The targeted tools in the CAP for ecological connectivity and biodiversity are to be found in Pillar 2. The CAP direct payments do not specifically support ecological connectivity measures but they help farmers, especially in areas that are not intensively used, to continue farming, and there is evidence that certain types of farming highly contribute to ecological connectivity.
- Member States have to spend at least 30% of Pillar 2 for environmental and climate measures, otherwise the rest of the money is blocked. Such a ring-fencing is also under discussion for the future eco-schemes in the post-2020 CAP.
- The access to agri-environmental and climate measures in CAP pillar 2 is not restricted to active farmers, they can also be directed to other land managers.
- In December 2020, the EC provided each Member State with tailored recommendations to align their CAP strategic plan with the EU Green Deal using in particular the EU Biodiversity Strategy for 2030 and the PAFs. Participants are warmly encouraged to have a look at these CAP strategic plan recommendations.

About Horizon 2020 and Horizon Europe

DG RTD organised a Workshop on transformative change in the global post-2020 Biodiversity Framework and they are going to finance research projects on the topic. DG RTD is supporting biodiversity data and knowledge acquisition. For instance, the Horizon 2020 programme is financing a project called *EuropaBON* seeking to establish an EU framework for monitoring biodiversity and ecosystem services and to identify knowledge gaps. Also funded under Horizon 2020, the AMBER project is developing citizen-science tools to improve the monitoring of river connectivity and the identification of barriers. Another example is the European biodiversity partnership that is expected to support Member States in data collection on biodiversity and harmonise monitoring on biodiversity across the EU.

About Interreg and mainstream ERDF

- Examples of projects related to ecological connectivity were provided: Conectfor and 3Lynx.
- The programmes are expected to be tailored to the needs of the targeted areas and most rules for the projects are programme-specific.
- In response to a question on the possibilities for small NGOs and small businesses to access funding, this will depend on the programme. But, as small NGOs and small businesses are likely to play a key role in the implementation of the EU Green Deal on the ground, they should normally find opportunities for funding in mainstream ERDF and Interreg programmes. NGOs can also benefit from capacity-building actions (new possibility in Interreg programmes).
- Mainstream ERDF and Interreg programmes can finance both innovative projects and best practice implementation, the balance will depend again on the analysis of the local needs.

About the coordination within the EC on energy transmission infrastructures and ecological corridors

A guidance document was prepared by DG Energy and DG ENV to achieve a sustainable development of energy transmission facilities in line with the EU nature legislation.

4.3.3 Panel session 2: "Blended" and private financing for connectivity conservation

The second panel session looked into more innovative mechanisms for nature conservation and ecological corridor management or restoration, involving private finance sources. Another panel was called in, involving four experts.

PANELLIST 1 – Andrea Bianchini, DG ENV

The EC is seeking to foster innovative solutions to support the implementation of the EU Biodiversity Strategy for 2030, with investment needs estimated at 20-35 billion Euros per year. Part of these needs will be fulfilled by the EU Multiannual Financial Framework. In this purpose, it is crucial to unlock public and private finance to scale up investments in biodiversity. The Natural Capital Financing Facility (NCFF) has been the first EU instrument set up with the European Investment Bank with this objective. Now the EC is building on lessons learnt from NCFF and exploring other solutions under the InvestEU instrument. The latter works as a bank guarantee and is expected to mobilise at least 10 billion Euros of investments in biodiversity by 2030 (but its scope is much larger than biodiversity). Whenever possible the support will take the form of blending financing. Technical assistance can be provided to develop investment projects by the InvestEU advisory hub at different project stages.

PANELLIST 2 – Vanessa Sánchez Ortega, Fundación Global Nature

The Fundación Global Nature has long experience in the restoration and management of natural areas, especially wetlands. They have used public funding, in particular from the LIFE programme, but have also sought to involve private operators in financing their nature conservation projects, using three main instruments:

- High added-value chains for sustainable agri-food products: for instance, within a LIFE project (*Estepas de la Mancha*), the Foundation has established a programme rewarding farmers who grow extensive cereal crops in rotation with legumes in central Spain, which are crucial for the preservation of steppe birds, thanks to higher prices paid by the consumers.
- Corporate social responsibility of private companies: for instance, within their corporate social responsibility, two large energy companies developed a biodiversity action plan, which has then been used for the design of compensation measures aiming at improving the connectivity of Dupont's lark habitats.
- Voluntary carbon markets: it is a new approach they are developing thanks to a LIFE project called Wetlands4Climate (LIFE19 CCM/ES/001235).

The Foundation is also involved in a national initiative for business for biodiversity led by the Ministry of Ecology in Spain.

PANELLIST 3 – Miquel Rafa, Fundació Catalunya la Pedrera

The Foundation has a large range of activities, including social, education, cultural and nature conservation projects. They manage several cultural centres, e.g., the building of La Pedrera in Barcelona, which receives a lot of visitors, generating a significant income that is then invested in the projects.

The Foundation also manages natural sites, six of them have a visitor centre offering ecotourism activities, educational activities and shops with agri-food products that also generate income. Almost half of the budget for nature conservation is covered by these sources of income. Other sources of income include: payments for ecosystem services, land use revenues, micro-donations and EU funding.

PANELLIST 4 – Chiara Rutolo, GOTEO Foundation

The GOTEO Foundation manages an open-source platform of crowdfunding called goteo.org and uses this tool to finance social and environmental projects with high collective return. Crowdfunding is about collecting small contributions from a large number of individuals, hence also fostering citizen engagement and it can also serve as a powerful tool for communicating and disseminating a project. Sometimes, the amount collected this way is doubled thanks to the participation of private or public institutions. In this case, it is called match-funding and is also promoted by GOTEO. GOTEO has also been involved in several EU-funded projects entailing crowdfunding, such as the *Interreg project Blue crowdfunding*. Two examples of successful crowdfunding campaigns for nature conservation projects were given, with budgets of about 10,000 Euros and 40,000 Euros respectively.

Q&A

Max Ricker, The Nature Conservancy, LIFE ADAPTA BLUES

The Nature Conservancy is a nature conservation NGO that has sought to develop alternatives to public funding to secure the financing of their projects. They have in particular explored insurance mechanisms, e.g., with an insurance policy for coastal ecosystems in Mexico, financing reef restoration measures for them to continue protecting the coastline. In *LIFE ADAPTA BLUES (LIFE18 CCA/ES/001160)* they will explore such mechanisms for Atlantic salt marshes in Europe.

Q. for Vanessa Sánchez Ortega: Does Fundación Global Nature have some experience in the risk-management sector for financing their projects?

A. Fundación Global Nature has not explored this type of financing mechanism yet, but it could indeed offer opportunities for wetland restoration. (Vanessa Sánchez Ortega)

Complement from Andrea Bianchini: Grouping projects to increase investments in restoration and have a bigger impact may help raise the interest of insurance operators.

Suzanne Rihal, CDC Biodiversité, Nature 2050 programme

CDC Biodiversité is a private company affiliated to a public financial institution developing tools for private and public entities to act on biodiversity. One of their main activities is to design and implement ecological projects for compensation measures. In this field, CDC Biodiversité has developed a biodiversity compensation programme that received a loan of 5 million Euros from the NCFF and was shown in a *video* during a coffee break. In addition, CDC Biodiversité is developing voluntary-based mechanisms such as the *Nature 2050 programme* that collects funding from private companies on a voluntary basis within their corporate social responsibility policy and directs it to nature conservation and nature-based solutions projects (4.6 million Euros since 2016). They would be very interested in developing match-funding also as part of their work within *LIFE ARTISAN (LIFE18 IPC/FR/000007)*.

Q. for Andrea Bianchini: Could you tell us a bit more on the NCFF and the future of this instrument?

A. InvestEU has taken over the NCFF now and can indeed be used for biodiversity loss compensation projects and naturebased solutions. Such projects can also be a component of larger investments to raise more interest from potential investors and improve the sustainability of non-environmental projects supported by InvestEU. (Andrea Bianchini)

Q. for Chiara Rutolo: Do you have any experience with match-funding for projects implementing nature-based solutions?

A. Ms Rutolo confirmed that CDC Biodiversité would be a good candidate to develop match-funding as they are in contact with local private and public stakeholders. She shared two links of *recently financed projects*.

A third speaker, Diarmuid Crehan from Peak District National Park that coordinates *the MoorLIFE 2020 project (LIFE14 NAT/UK/000070*), was also expected to participate. He had connection problems but his question about carbon credit certification process was addressed during the Q&A session (see next point).



Additionally, a total of 11 questions were asked through Sli. do and addressed during the event. Several interesting elements can be retained from the discussion, detailed below.

About the InvestEU instrument

- InvestEU does not provide any grant, it provides loans and bank guarantees (directly or through financial intermediaries) and encourages beneficiaries to apply for grants under other EU funding programmes (e.g., the Cohesion funds).
- Not all the projects applying for a loan under InvestEU have a production or service component providing income. Loans may be granted to public authorities, but not by commercial banks directly.

About the GOTEO crowdfunding platform

- 5% of the total amount of funds raised go to the GOTEO platform to cover administrative and operational costs. The GOTEO Foundation also has other sources of funding.
- GOTEO is part of the European crowdfunding network, and can support projects worldwide (example given of a nature conservation project in Mexico).

About the model developed by Fundació Catalunya la Pedrera

- The first element of best practices to develop similar models is to define a good business plan, which requires specific skills that nature conservation managers do not always have. A second point is that the visitor centres generate income if activities are organized, this is where the bulk of income comes from.
- The Covid-19 crisis affected the number of visitors (mostly tourists), hence reducing income. The Foundation has therefore established a five-year financial plan to overcome these difficult times, which includes diversifying measures e.g., mobilising EU funding more than before or marketing their products better. They nevertheless had to sell a few properties and apply for bank loans.

About the role of an NGO such as Fundación Global Nature in developing markets for sustainable agri-food products

The Foundation plays a very active role, establishing the land management agreements with farmers, packaging the legumes (chickpeas and lentils) and marketing the products. It is worth adding that the farmers are all certified organic farmers going beyond the EU requirements for steppe bird protection.

About voluntary carbon market mechanisms

Projects need to be certified to be able to finance a restoration project on the voluntary carbon market. This certification process is full of challenges. The first challenge is that the methodology used in the project to calculate the carbon credits has to be approved. For wetland restoration, only few methodologies are available (e.g., the well-known Verify Carbon Standard has a methodology for peatlands but not for Mediterranean wetlands). The requirements are usually very strict and the administrative costs for the certification can be quite high (tens of thousands of Euros). Another option is to use regional standards instead of international standards, which are also reliable and induce less costs. The Spanish Ministry of Ecological Transition has launched a process for this purpose. Another example is the *Moorfutures standard* established in Germany for peatlands.

4.4 KNOWLEDGE MARKET

26 projects were presented during the two Knowledge Market sessions that took place at the end of Day 1 and Day 2. Over 100 people attended these sessions, showing a high overall interest. The format used (2-minute speed presentation for each project) was highly successful and effective. The participants prepared synthesized presentations and generally respected the timeframe adequately. This enabled the audience to gain information about many interesting projects in a short time and provided a good opportunity for networking and knowledge exchange. A list of the projects that presented on both days is presented in Table 2 together with their project codes and active websites for further reference. All the presentations from the Knowledge Market session are provided in *Annex* 6.

A summary of all sources and links is provided in Annex 5.



TABLE 2: LIST OF KNOWLEDGE MARKET PRESENTATIONS

DAY 1: PRESENTED PROJECTS						
PROJECT NAME	PROJECT CODE	WEBSITE				
LIFE Brenta	LIFE18 NAT/IT/000756	www.parcofiumebrenta.it				
LIFE in Common Land	LIFE16 NAT/ES/000707	https://www.lifeincommonland.eu/				
LIFE Elia	LIFE10 NAT/BE/000709	www.life-elia.eu				
Huskroua	Not a LIFE project	https://openbordersforbears.com/en/				
LIFE IGIC	LIFE16 NAT/GR/000575	https://www.lifeigic.eu/				
LIFE Microtus II	LIFE17 NAT/SK/000621	https://broz.sk/projekty/life-microtus-ii/				
LIFE Wetlands4CLimate	LIFE19/CCM/ES/001235	www.wetlands4climate.eu				
LIFE Goodstream	LIFE14 ENV/SE/000047	www.goodstream.se				
LIFE LINES	LIFE14 NAT/PT/001081	https://lifelines.uevora.pt/?lang=en				
Land is Forever LIFE	LIFE17PREBE001	www.landisforever.eu				
GrassLIFE	LIFE16NAT/LV/262	https://grasslife.lv/en/				
LIFE Lynx	LIFE16 NAT/SI/000634	https://www.lifelynx.eu/				
DAY 2: PRESENTED PROJECTS						
LIFE Alnus	LIFE16 NAT/ES/000768	https://lifealnus.eu/				
Wolfux	LIFE17 NAT/PT/554	https://rewilding-portugal.com/pt/life-wolflux/				
TreesGreenInfra	LIFE15 GIE/PL/000959	www.drzewa.org.pl				
LIFE BGT	LIFE 15NAT/SE/000772	http://lifebridgingthegap.se/				
Go Green Carpathians	LIFE16 GIE/PL/000648	http://en.zielonainfrastruktura.karpatylacza.pl				
Great Mountains Corridors	Not a LIFE project	https://www.fundaciocatalunya-lapedrera.com/sites/ default/files/2020-10/Directrices-Gran_Conector_ Ecol%C3%B3gico_%28ES%29_Parte_1%5B1%5D.pdf				
LIFE Olivares Vivos	LIFE14 NAT/ES/001094	https://olivaresvivos.com/en/				
LIFE in Quarries	LIFE14 NAT/BE/000364	www.lifeinquarries.eu				
LIFE Safe Crossing	LIFE17NAT/IT/464	https://life.safe-crossing.eu/				
LIFE Forest CO2	LIFE14 CCM/ES/001271	http://lifeforestco2.eu/				
LIFE ENPLC	LIFE19 PRE/NL/000003	http://enplc.eu/				
Wildlife highways - WWF Spain	Not a LIFE project	https://mava-foundation.org/wp-content/ uploads/2019/01/wildlife_highways_wwf_spain.pdf				
LIFE Beetles	LIFE 18 NAT/PT/000864	www.lifebeetlesazores.com				
LIFE GreenChange	LIFE17 NAT/IT/000619	http://lifegreenchange.eu/it/				









24

4.5 SURVEY POLLS

Two polls were launched in Sli.do during the meeting. The questions and the results are available further below.

Question 1: What is in your opinion the current main challenge in connectivity conservation in the EU?

The poll with question 1 was launched on Day 1 during the plenary session. 161 attendees participated in the poll. The involvement of stakeholders and landowners was the most voted challenge (40%), followed by the long-term protection of corridors (23%) and the access to funding (19%) (Figure 1). These results were further confirmed during the meeting; indeed, stakeholders' engagement was a recurrent issue, as was the need for long-term vision and long-term funding of corridor areas.

FIGURE 1: SLI-DO SURVEY POLL RESULTS FOR DAY 1



6 %

Question 2: What do you consider as the most important benefit of connectivity conservation?

This question was launched on Day 3 during the last meeting session (after the web broadcast). 70 attendants participated in the poll. The option voted by most of the participants was 'Defragmentation of landscape, ensuring ecological continuity and coherence' (52% of the votes). Another important benefit included conservation of ecosystem processes and functions with 18% of votes. The full results of the survey poll are shown in Figure 2.

FIGURE 2: SLI-DO SURVEY POLL RESULTS FOR DAY 3





Photo: LIFE Trans Insubria Bionet (LIFE10 NAT/IT/000241) Habitat connectivity improvement in the Insubria ecological corridor

Organisational and 5 communication aspects

The Platform meeting was jointly organised by NEEMO, CINEA and DG ENV who created a working group responsible for the overall coordination, organisation and thematic definition of the meeting. It was co-hosted by two LIFE projects. *LIFE ALNUS* (LIFE16 NAT/ES000768) aims to enhance shared governance of riparian forests in Catalonia (Spain), and enable better integration of sectoral policies and decision-making processes. The second co-host, *LIFE BIORGEST* (LIFE17 NAT/ES000568), seeks to reconcile biodiversity conservation and the economic viability of forest production, taking into account climate change impacts in Mediterranean areas.

Due to Covid-19 pandemic, the meeting was held fully online, with substantial support provided by the ComEvenT team. They implemented a communication strategy, including outreach via LIFE programme channels and social media. The main hashtags used for the event, **#LIFE4nature** and **#LIFE connectivity**, were publicized to the participants before and during the event. Furthermore, for Day 3, a notice was prepared and released by CINEA before the event: *LIFE platform meeting on financing connectivity: Building the Trans-European Nature Network*.

5.1 CONNECTIVITY CONSERVATION PROJECT MAPPING

Prior to the Platform meeting, an important mapping exercise was carried out with the aim of detecting LIFE projects that had addressed or are currently addressing ecological connectivity issues. The mapping activity included screening of projects that have been implemented between 2007 and 2019. Although it was sometimes difficult to detect all relevant projects as it was not always obvious that project actions were directed towards improving ecological networks for species or habitats, the mapping successfully resulted with a total of 146 LIFE projects that have been working on connectivity conservation *Annex 7*. This was the first time that this kind of work was undertaken and the results are very valuable as they also show general patterns and the most common themes targeted by the LIFE programme.

As already noted above, we decided very early in the process to exclude the majority of river habitat projects from the Platform meeting as there was sufficient evidence to warrant a separate meeting devoted to connectivity issues specific to rivers. Only those projects where improving riparian connections was substantial part of the project were included in the meeting.

From all the projects, 97 focus on habitat restoration by either restoring natural habitats or creating Green Infrastructure. The most common habitats were grasslands (26% of projects) and forests (24% of projects). The full analysis of habitats is shown in Figure 3.



FIGURE 3: LIFE CONNECTIVITY PROJECTS BY HABITAT



Photo: LIFE Bear Defragmentation (LIFE12 NAT/ES/000192) Habitat defragmentation in the Cantabrian mountains

Fewer projects deal directly with connectivity for targeted species. Of the 43 projects where groups of species are mentioned, nearly half focus on birds and invertebrates, closely followed by small mammals. The full analysis of connectivity conservation projects by species (excluding fish) is shown in Figure 4 (note that some projects deal with both habitats and species and so register in both data sets).

FIGURE 4: LIFE CONNECTIVITY PROJECTS BY SPECIES



The projects include a wide variety of objectives and measures such as the creation of ecological corridors to ensure movements and dispersal of mammals and other species across landscapes, or the creation of stepping stones for birds or insect populations within the landscape. In more recent years, several LIFE projects attempted to take a more integrated ecosystem approach to connectivity by looking into strengthening connectivity between Natura 2000 sites at regional or national scale or by ensuring connectivity across semi-natural landscapes (agriculture, forestry, or even peri-urban context). These ecosystem approaches are directly relevant to the EU Biodiversity Strategy for 2030. A small part of these projects also seeks to apply the Green Infrastructure approach.

Starting from this initial list of projects, we contacted the NEEMO's monitors of the relevant countries to collect their opinion on the suitability of each project for the objectives of the Platform meeting. After this first screening, we analysed all potential projects in more detail and obtained a final list of 121 projects, which were all invited to participate at the meeting with two representatives per project. Finally, a total of 76 projects registered to attend the meeting *Annex 8*.

5.2 REGISTRATION AND PARTICIPANTS

The organisers decided that the registration for the overall meeting would be 'by invitation only' in order to limit the total number of attendees given the limitations of the online platform used for the event. The exception was made only for Day 3 considering it was expected that the topic (funding connectivity conservation) might raise considerable interest among wider public. A specific email address was created for the meeting, connectivity@neemo.eu, to enable easier communication with the participants.

The identified potential attendees were invited by email and requested to register to the event via the EU Survey registration website. The participants were required to express their selection preferences for the Working Groups during the registration process. In order to ensure quality discussions and results of the Platform meeting, the organisers invited people from institutions of diverse background (the list of participants is available in Annex 9). The meeting included the representatives of 76 selected closed and ongoing LIFE projects coming from 16 EU Member States, encompassing LIFE strands - nature (NAT), environment (ENV), environmental governance and information (GIE), climate change mitigation (CCM), climate change adaptation (CCA) and preparatory projects (PRE). Overall, the Platform meeting raised considerable interest not only among LIFE projects but also among other participants (238 in total), as can be seen in Table 3. The participants included LIFE project managers, site managers, Horizon 2020 projects, officers from governmental, local or regional authorities, non-governmental organizations, academic and technical institutions, international organizations, CINEA, the EC, and other European institutions such as the European Investment Bank and the Joint Research Centre. Average time spent viewing the meeting per day is shown in Figure 5.


TABLE 3: NUMBER OF PARTICIPANTS AT THE PLATFORM MEETING

TOTAL NUMBER OF PARTICIPANTS WHO REGISTERED AND ATTENDED THE PLATFORM MEETING	238
Number of LIFE projects represented	76
Number of CINEA staff members	13
Number of NEEMO staff members	14

As Day 3 was accessible to the public via LIFE programme Twitter and YouTube, as well as Vimeo (apart from the Zoom platform), the livestreaming of Day 3 sessions attracted more than 600 people (Table 4).

In terms of the projects presented, more than 40 projects and studies were showcased during the meeting (note that a few projects presented in more than one session) and a total of 67 presentations were delivered (Table 5).

FIGURE 5: AVERAGE TIME SPENT PER PARTICIPANT ON EACH DAY OF THE EVENT



TABLE 4: NUMBER OF PARTICIPANTS AND VIEWERS OF DAY 3 OF THE MEETING

Number of participants in Zoom	368	This figure includes participants who registered for the entire meeting and additional participants for Day 3
Number of people who viewed the Day 3 session via live webstreaming	242	
Estimated total number of people who watched the Day 3 event	610	
Number of views of the Day 3 video after the event and until 30/03/2021	216	Number of users who watched the session through Vimeo or through ec.europa.eu

TABLE 5: NUMBER OF PRESENTATIONS

	LIFE PROJECTS PRESENTED	OTHER PROJECTS / STUDIES PRESENTED	GENERAL PRESENTATIONS	TOTAL
Plenary sessions			13	20
Working Groups	18	3		21
Knowledge Market	23			26
TOTAL				67

5.3 ONLINE FORMAT: ZOOM AND SLI.DO APPLICATIONS

Zoom

Prior to the event, the communication experts ran an ex-ante evaluation of the online platform to be used for the meeting. Due to the subdivision of the main webinar meeting in Working Group sessions, Zoom was selected as the most suitable platform. The new features allowed participants to join breakout rooms of their choosing. Participants were able to view and select from a list of breakout rooms the host had created, and they were able to enter and leave the breakout rooms freely. In the meantime, the team planned 8 test-runs with a total duration of 15 hours. The ComEvenT team produced a document with technical instructions to help the speakers and facilitators with relevant IT recommendations and explanations.

Sli.do

Sli.do was used during the plenary session of Day 1 and Day 2 and during the entire Day 3 to enable the participants to write their questions to the speakers and also vote for their favourite questions. Sli.do was also used to launch two polls. The participants were asked to visit the website *https://www.sli.do/* and access the page of the event with the hash-tag #LIFE4Nature. An active participation of the attendees was observed in Sli.do during the entire meeting (Table 6). This tool provided an efficient opportunity for interactions between the attendees and the speakers (detailed analytics is available in *Annex 10*).

TABLE 6: SLI.DO STATISTICS

	TOTAL NUMBER OF USERS	NUMBER OF QUESTIONS
Day 1 (plenary & Knowledge Market)	125	18
Day 2 (plenary & Knowledge Market)	134	11
Day 3	225	75

5.4 PUBLICATIONS AND VIDEOS

We drafted and designed a factsheet on LIFE and connectivity conservation, entitled *Connecting the dots LIFE lessons on ecological connectivity*. It was produced to coincide with the Platform meeting alongside two infographics:

- LIFE connects the dots infographic: Figure 6 shows the infographic metrics in each social platform, with Twitter resulting with best results.
- 3 LIFE projects connecting bear sub-populations infographic: This infographic depicted the main ecological corridors for brown bears in the Cantabrian mountains in Spain, also featuring Natura 2000 areas. It outperformed expectations on social media, perhaps due to its quirky look and feel. Figures 7 and 8 show the social infographic in each platform, with the example of Twitter.



FIGURE 6: CONNECTIVITY SOCIAL INFOGRAPHIC METRICS

FIGURE 7: INFOGRAPHIC ON TWITTER

+	Tweet
· · · ·	LIFE Programme 💙 @LIFEprogramme · 11 mars
400 :	3 #LIFEprojects are creating ecological corridors to connect 2 bear sub-populations. Their work improves:
	P Genetic exchange
	BLong-term viability of the overall population
	W Human-bear coexistence
	➡europa.eu/!Yu88uv
	#LIFE4Nature #EUBiodiversity @fundacionoso
	Contrastor us
	COMEDORES 050
	Martine 2000
	A CONTRACT OF THE OWNER OWNER OF THE OWNER OF THE OWNER OF THE OWNER OWNER OWNER OF THE OWNER
	LITERA LITERA
	DEFRAGMENTATION 237-mater
	0:04 3,5 k vues
	Q 11 73 Q 160 T

FIGURE 8: BEAR CORRIDOR SOCIAL INFOGRAPHIC METRICS



3 LIFE PROJECTS CONNECTING BEAR SUB-POPULATIONS

Day 3 video

► After the event, the communications team shared the video link of the Day 3 sessions on Twitter. Figure 9 shows the performance for 30 days after the meeting and includes details on impressions, engagement rate, retweets, likes, and replies. The number of viewers doubled compared to the URL viewers, proving that the content of the event continued to attract the attention of the audience. Although it does not tell the watching duration, it certainly shows the broad outreach and impact of the event in social media. The video recording of the Day 3 of the meeting will remain available until February 2022 through the Vimeo platform at:

https://vimeo.com/519390574/f903c85214

Virtual LIFE Platform meeting on connectivity -Ensuring Funding for Connectivity Conservation We will start soon! LIVE Streaming EASME 4 March 2021 / 09:00 - 13:00





Event summary video

A video including a selection of highlights from the Platform meeting has been prepared after the meeting and is available at: https://www.youtube.com/watch?v=xjQHwr5yLq8



5.6 FEEDBACK FROM THE PARTICIPANTS

After the Platform meeting, the participants received a link to the EU Survey website via email to provide their opinion about the meeting. The survey was completed by 83 participants (35%).

The general appraisal of the meeting was very positive. 91% of the respondents to the feedback survey assessed the meeting as very well done or well done (Figure 10), while 94% of the respondents evaluated the selection of the online format as very well or well (Figure 11). The respondents to the survey generally appreciated that the Platform meeting brought many interesting people and ideas forward.



FIGURE 10: FEEDBACK ON OVERALL SATISFACTION WITH THE PLATFORM MEETING

FIGURE 11: APPRAISAL OF THE ONLINE FORMAT



Plenary sessions

The Platform meeting included 3 plenary sessions, one on each day. The Day 1 plenary session was assessed with 4.0 (of 5 being the maximum) as an average rate, the Day 2 plenary session was rated 3.9, and the Day 3 plenary session 4.0. The participants were generally satisfied with the content of the plenary sessions, including very insightful presentations and enough opportunities to ask questions. Some suggestions for improvement in the future included selecting the questions posted on Sli.do that received the most votes in order to keep stricter the timeframe of the meeting, enabling more quality breaks to allow reflection on the content, and reducing the amount of information.

Knowledge Market sessions

Two Knowledge Market sessions on Day 1 and Day 2 were well received by the participants, with an average rating of 3.9. The respondents to the survey felt the Knowledge Market was an excellent opportunity for networking and meeting people working on similar issues. Nevertheless, the timing was thought to be somewhat tight for the presentations, but the allocated 2 minutes per project presentation enabled large number of participating projects.

Working Groups

An average of 91% of respondents thought the Day 1 and Day 2 Working Group management in terms of the time allocated for presentations and discussions was well balanced. The respondents felt there was enough time for discussions in the Working Groups and noted that in some groups too few participants actively contributed to the discussion, suggesting the moderators to use additional 'tools' to encourage the participation.

Day 3 Panel sessions

The two panel sessions on Day 3 were assessed with a rate 4.0. The respondents particularly appreciated the practical examples featured by the panellists, as well as the fact that Day 3 was open to wider public.

Organisational aspects

The respondents generally thought the event was well organised:

- 95% of respondents noted the registration process was very well or well done (Figure 12).
- 87% of respondents thought the organisers provided excellent or good assistance prior to the event (Figure 13).
- The respondents commended Sli.do as a valuable tool to ask questions.
- 65% of respondents noted their questions were answered fully or partially.
- A comment for improvement of organisational aspects included consideration of the time zone for the outermost regions.



70%

Very well done

Verv well done

Well done
 Could be better

FIGURE 12: FEEDBACK ON THE REGISTRATION PROCESS

Apart from the feedback provided through the EU Survey, the organisers received positive feedback by many participants informally, mainly through the chat during the event, social media or by email during or after the event. Three of those comments are provided in further text.

SARA ALIACAR REWILDING PORTUGAL, LIFE WOLFLUX

It was a pleasure to be part of the meeting. I think it was very well structured and I appreciated you left space for questions and discussion. In these Covid times there are many webinars where participants can almost only hear presentations with little space for interaction. You made the difference there, valuing the experience each participant could bring.

DIARMUID CREHAN MOORLIFE 2020 LIFE14 NAT/UK/000070

Many thanks. You provided a fantastic platform for connecting, learning and moving conservation forward.

FIGURE 13: FEEDBACK ON ASSISTANCE RECEIVED PRIOR TO THE EVENT



MICHAELA KÜNZL EU-STRATEGY FOR THE ALPINE REGION (EUSALP)

It was very fruitful and inspiring for us joining the platform meeting – congratulations, everything went perfectly!

Conclusions andrecommendations

The LIFE Platform meeting on connectivity conservation provided a timely opportunity for collaboration and sharing of experiences across a broad range of organisations, professionals and policy-makers with an interest and experience in connectivity conservation. The meeting attracted a high number of participants, both those who attended the full 3-day meeting, and those who joined Day 3 sessions on funding connectivity conservation only.

Many participants appreciated the information provided by the LIFE projects and practitioners during the meeting and also valued the opportunity the meeting provided for networking, sharing of knowledge and best practices. In spite of the online format, we were pleased to note a good interaction between participants, in the Zoom chat and during the Working Groups. Vibrant discussions were often taking place in the Working Groups, where the participants discussed the key elements and challenges encountered in the identification, assessment and governance of connectivity areas in the EU. The detailed technical proceedings contained in the Annexes to this report show the excellent depth and breadth of information and discussion. Some participants also mentioned that the Platform meeting served to identify new partnerships and develop new ideas for the future, based on the information gathered and the needs identified.

The meeting has also been a useful means for showing policy makers and other EU entities what LIFE is achieving across the EU regarding connectivity conservation. It showed that the identification, prioritisation, governance and funding of ecological corridors are complex issues as most ecological corridors spread across lands with different rights and ownership, types of use and governance systems. The successful best practice examples and experience shared showed that many options exist to further strengthen the governance, management and future prioritisation of corridors.

We would like to thank all the speakers, facilitators, and participants in this meeting for providing their valuable contribution in expanding and sharing knowledge on various aspects of connectivity conservation.

6.1 CONCLUSIONS AND RECOMMENDATIONS FOR POLICY MAKERS

Summary report for policy makers is one of the key outputs of the Platform meeting. The main conclusions and recommendations for policy makers is presented under 6 overarching themes, listed here and elaborated in *Annex 11*:

- Stakeholder engagement is the key to unlocking connectivity conservation.
- Developing a long-term vision/strategy on ecological corridors is necessary.
- There is a need for clarifying and strengthening the EU policy framework on connectivity conservation.
- Connectivity issues should be integrated into land planning.
- Continuity of funding is crucial to long-term sustainability of connectivity management.
- There is a strong need of developing evidence-based monitoring schemes to assess connectivity measures.
- Data collection and data sharing needs to be widespread and open.

6.2 RECOMMENDATIONS AND PROPOSALS FOR THE LIFE PROGRAMME

Considering the findings and conclusions of the meeting, the following recommendations and proposals emerged for the LIFE programme:

Ensure that the LIFE Guidelines allow for LIFE projects to effectively operate in ecological corridors (protected or non-protected, inside or beyond Natura 2000 sites).

- Ensure that appropriate monitoring of all connectivity indicators and also ecosystem services and social and economic aspects are included in the projects aimed at improving ecological connectivity (i.e., not just species/ habitats conservation status indicators or biodiversity indexes) to assess the effectiveness and impact of the measures taken.
- ▶ In the upcoming LIFE Guidelines for Applicants:
 - Highlight and prioritize connectivity measures such as creating or restoring ecological corridors and other measures to improve the permeability of the landscape matrix among protected areas.
 - Include a point about engagement of stakeholders, so that beneficiaries allow sufficient time and budget to this aspect while designing LIFE projects. Time and resources allocated for this task are often underestimated in the project proposals.
 - Recommend to include activities that ensure the integration of connectivity measures into management plans and land planning.
- During the revision phase of projects aimed at enhancing ecological connectivity, it is recommended to take into account:
 - That the beneficiaries have considered the efficiency, costs and potential benefits of complementary conservation approaches, including the appropriate management of protected areas.
 - That the beneficiaries have taken into account climate change scenarios.

That the projects envisage specific measures to ensure as far as possible a proper integration of the connectivity measures in protected area management plans and in other spatial plans and sectoral policies, as appropriate.

LIFE projects are a highly valuable source of best practices, lessons learnt and experiences. Many participants of the meeting called for sharing and disseminating further and better the existing knowledge and know-how from LIFE projects that address ecological connectivity, in a consolidated and synthesised manner. The following proposals were discussed, also with the NEEMO monitors:

- To develop a LIFE publication on ecological connectivity including best practices and examples of LIFE projects.
- To create a web platform or an online tool to share consolidated knowledge from LIFE practitioners (e.g., contribute to IUCN's PANORAMA portal or create something similar). The recently developed Knowledge Centre for Biodiversity may be a good opportunity to share LIFE projects findings on connectivity.
- To develop a guide (roadmap) on the financing and funding possibilities for connectivity conservation in the EU.
- To organise regular online Knowledge Markets for LIFE and other projects dealing with ecological connectivity (i.e., speed presentation of projects and Q&A session).

FINAL MESSAGES

THERE IS A LOT OF GOOD WORK AND GREAT PROGRESS ON IDENTIFYING AND GOVERNING ECOLOGICAL CORRIDORS

THERE ARE A RANGE OF FUNDING SOURCES BUT ONE SCHEME DOES NOT FIT ALL ARRANGEMENTS WE NEED TO DIVERSIFY FUNDING, GOVERNANCE MODELS, MAPPING TOOLS AND ENGAGEMENT PLATFORMS WE NEED TO EMBRACE INNOVATION WHILE SUPPORTING AND PROMOTING EXISTING GOOD PRACTICE PUT CONNECTIVITY ON THE EU CONSERVATION AND RESTORATION AGENDA

7 Annexes

ANNEX 1: BACKGROUND PAPER
ANNEX 2: PLATFORM MEETING AGENDA
ANNEX 3: PLENARY PRESENTATIONS
ANNEX 4: WORKING GROUP PRESENTATIONS AND REPORTS
ANNEX 5: SOURCES AND LINKS
ANNEX 6: PRESENTATIONS OF THE KNOWLEDGE MARKET
ANNEX 7: PROJECT MAPPING
ANNEX 8: LIST OF PARTICIPATING LIFE PROJECTS
ANNEX 9: LIST OF PARTICIPANTS
ANNEX 10: SLI.DO ANALYTICS REPORT
ANNEX 11: SUMMARY FOR POLICY MAKERS



ANNEX 1:

BACKGROUND PAPER

'Lessons from LIFE on ecological connectivity towards a coherent, functional and resilient network of protected areas'

BACKGROUND PAPER

1. Background

Landscape fragmentation is one of the key drivers of biodiversity loss, mainly a result from transport infrastructure, urbanization, and intensification of agricultural and livestock practices. These threats are currently exacerbated by the increasingly noticeable effects of climate change on the ecosystems, which highlights the importance of connectivity as a necessary tool for ensuring biodiversity and the delivery of the ecosystem services in the long-term. To combat landscape fragmentation and to reduce climate change impacts, creating ecological corridors as part of a true coherent and resilient Trans-European Nature Network and ensuring adequate systems of governance, management and funding for these corridors, is essential.

Although the Natura 2000 network is the world's largest multinational coordinated network of protected areas in the world, the objective of an effectively managed, fully functional and coherent network of areas of high biodiversity value still has to be realised, according to the fitness check of the EU Nature Directives¹. The protection of natural areas has remained incomplete, and more ambitious and large-scale action is needed to ensure the ecological coherence of the network. Nevertheless, research has shown that the development of Natura 2000 network has made a relevant contribution to improving connectivity among protected areas, which illustrates the high potential of using the Natura 2000 network as a backbone for supporting efforts to increase the ecological connectivity across European landscapes².

Green infrastructure is recognized as an essential approach to increase connectivity both within and outside the Natura 2000 network. Also, if properly managed, it can deliver economic and social benefits and services³. The European Strategy on Green Infrastructure⁴ establishes the wider framework for the development of the Natura 2000 connectivity. This strategy has built momentum for the deployment of green infrastructure, although relevant gaps persist⁵ such as the lack of strategic approach at EU, national and regional levels.

Increasing functional and ecological connectivity among and within Natura 2000 sites can be achieved by restoring and conserving patches and corridors of natural or semi-natural habitats, including on agricultural land, and by implementing other kinds of measures to improve migration opportunities and landscape permeability (e.g., constructing wildlife passes over roads and railways, creating fish passes in rivers, creating biodiversity-friendly landscape elements across rural and peri-urban landscapes, etc.). In special cases, the conservation of patches and corridors could require its declaration as protected area.

¹ <u>https://ec.europa.eu/environment/nature/legislation/fitness_check/docs/nature_fitness_check.pdf</u>

² <u>https://ec.europa.eu/jrc/en/science-update/protected-area-networks-worldwide-now-significantly-better-connected-2010</u>

³ <u>https://www.eea.europa.eu/themes/biodiversity/green-infrastructure/building-a-coherent-trans-european/contributions-to-building-a-coherent/view</u>

⁴ <u>https://eur-lex.europa.eu/resource.html?uri=cellar:d41348f2-01d5-4abe-b817-4c73e6f1b2df.0014.03/DOC_1&format=PDF</u>

⁵ <u>https://ec.europa.eu/transparency/regdoc/rep/10102/2019/EN/SWD-2019-193-F1-EN-MAIN-PART-1.PDF</u>

However, for most of them 'other effective area-based conservation measures' (OECMs, as defined by IUCN⁶) should be sought. For definition of OECM and other key terms related to connectivity conservation, please see Table 1.

The new EU Biodiversity Strategy for 2030⁷ has put forward a target of 30% of EU land to be protected by 2030 through the selection of additional areas and the setting up of a **functional and coherent network of ecological corridors** and areas of high biodiversity value. Recent studies^{8,9,10} have shown that even if the targeted designation of protected areas based on their biodiversity values is still necessary in some cases, biodiversity conservation emphasis in Europe should be currently put on improving the permeability of unprotected lands and the coordinated management of adjacent protected areas. From this point of view, the selection of additional protected areas to achieve the 30% objective should take into consideration those areas identified as key elements for ensuring landscape permeability in the long-term.

Besides, the Biodiversity Strategy for 2030 sets the basis for an ambitious European Restoration Plan aimed at improving the health of existing and new protected areas and bringing diverse and resilient nature back to all landscapes and ecosystems. This will require significant public and private investments at national and European levels. Considering that, to a great extent, the deployment of a functional network of ecological corridors will take place on non-protected areas, mostly on privately owned lands, it becomes essential to explore **effective governance schemes to ensure the adequate long-term management of these connecting areas**. Achieving these targets will mean making the most of all relevant EU programmes and financing instruments, and to explore other public and private funding formulas for nature conservation both inside and outside protected areas.

The LIFE programme has directly contributed to the establishment of the Natura 2000 network and to the restoration and management of Natura 2000 areas and other areas important for biodiversity through the Nature and Biodiversity sub-programme. The Environment and Climate sub-programme of LIFE also supported a wide range of projects seeking to improve the functionality of ecosystems outside the Natura 2000 network through a focus on green infrastructure, climate change adaptation, nature-based solutions, etc. As such, the LIFE programme has relevant practical experience to share on how to select priority areas to improve ecological connectivity towards a coherent, functional and resilient Trans-European Nature network, while ensuring the delivery of multiple benefits for nature, climate and people. The LIFE programme has also demonstrated both legal, as well as alternative protection schemes to manage these corridors and green infrastructure, while exploring **different sources of funding**.

⁶ <u>https://www.iucn.org/news/protected-areas/201911/iucn-publishes-new-guidance-recognising-reporting-and-supporting-other-effective-area-based-conservation-measures</u>

⁷ EU Biodiversity strategy for 2030 | European Commission (europa.eu)

⁸ <u>https://europepmc.org/article/pmc/5825384</u>

⁹ https://www.sciencedirect.com/science/article/pii/S0006320719308225

¹⁰ <u>http://publications.jrc.ec.europa.eu/repository/handle/JRC113815</u>

Table 1: Key definitions relevant for connectivity conservation

- Green infrastructure⁴: Strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services.
- Ecological coherence of the Natura 2000 network¹¹: A sufficient representation (patch quality, total patch area, patch configuration, landscape permeability) of habitats/species to ensure favourable conservation status of habitats and species across their whole natural range.
- **Ecological connectivity**¹²: The unimpeded movement of species and the flow of natural processes that sustain life on Earth. Sub-definitions of ecological connectivity may include:
 - Ecological connectivity for species¹³: The movement of populations, individuals, genes, gametes and propagules between populations, communities and ecosystems, as well as that of non-living material from one location to another.
 - **Functional connectivity for species**¹³**:** A description of how well genes, gametes, propagules or individuals move through land, freshwater and seascape.
 - Structural connectivity for species¹³: A measure of habitat permeability based on the physical features and arrangements of habitat patches, disturbances and other land, freshwater or seascape elements presumed to be important for organisms to move through their environment. There are three key elements to define landscape structure¹⁴: the matrix (dominant habitat type), the patches (other habitats types included in the matrix, defined by their type, size and shape), and the corridors (linear elements). The set of patches is called mosaic and that of corridors, network.
- Ecological corridor¹³: A clearly defined geographical space that is governed and managed over the long term to maintain or restore effective ecological connectivity. The following terms are often used similarly: 'linkages', 'safe passages', 'ecological connectivity areas', 'ecological connectivity zones', and 'permeability areas'.
- Ecological network (for conservation)¹³: A system of core habitats (protected areas, OECMs and other intact natural areas), connected by ecological corridors, which is established, restored as needed and maintained to conserve biological diversity in systems that have been fragmented.
- **OECM (Other Effective Area-Based Conservation Measure)**⁶: A geographically defined area, other than a protected area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the *in situ* conservation of biodiversity with associated ecosystem functions and services and, where applicable, cultural, spiritual, socio-economic and other locally relevant values are also conserved.

2. Focus of the meeting

The Platform meeting will provide relevant input from LIFE to the EU Biodiversity Strategy for 2030 and its targets with a focus on ensuring ecological connectivity, as well as to the development of related criteria and guidance. The meeting would aim to address the following questions:

• How to best identify priority corridor areas for protection to achieve a coherent and functional EU nature network, i.e., defining clear selection criteria to ensure landscape multi-functionality and the delivery of connectivity goals, nature conservation and multiple ecosystem services in the context of climate change, based on existing mapping and decision-making tools.

¹¹ <u>https://ec.europa.eu/environment/nature/ecosystems/docs/adaptation_fragmentation_guidelines.pdf</u>

¹² <u>https://www.cms.int/en/document/improving-ways-addressing-connectivity-conservation-migratory-species-4</u>

¹³ https://portals.iucn.org/library/sites/library/files/documents/PAG-030-En.pdf

¹⁴ Forman, R. and Godron, M. (1986): Landscape Ecology. John Wiley & Sons Ltd., New York, 620 pp.

- How to best govern ecological corridors, i.e., looking into different governance models and landtenure schemes from LIFE, that ensure appropriate long-term management and conservation of ecological corridors and stepping stones.
- How to ensure funding for connectivity conservation, i.e., make better use of existing funding programmes, while also providing guidance on innovative funding mechanisms.

2.1 Theme 1: Identification and prioritisation of ecological corridors

The aim of Theme 1 is to contribute to definition of clear objectives and selection criteria for identification and prioritization of ecological corridors, based on existing mapping and decision-making tools, as to ensure landscape multi-functionality including the delivery of connectivity goals, nature conservation and multiple ecosystem services in the context of climate change. Working groups within this Theme will focus on:

- Guiding criteria for the identification of ecological corridors from practitioners' perspective
- Ensuring connectivity across agricultural landscapes
- Getting practical insight on the existent mapping and decision-making tools for connectivity planning.

Within the LIFE programme there are numerous examples of projects that have worked on connectivity. Initially, there were many projects with species focus where either ecological corridors were created to ensure movements and dispersal of mammal and other species across landscapes, or where barriers were removed along rivers to allow fish migrations, or by creating important stepping stones for birds or insect populations within the landscape. In more recent years, several LIFE projects attempted to take a more integrated **ecosystem approach** to connectivity by looking into strengthening networks of Natura 2000 sites in a larger region, at national level, by taking a river basin management approach, or by ensuring connectivity across semi-natural landscapes (agriculture, forestry, or even peri-urban context). These ecosystem approaches are also directly relevant to the Biodiversity Strategy for 2030 targets to bring back at least 10% of agricultural area under high-diversity landscape features to ensure connectivity among habitats and to restore at least 25,000 km of rivers into free-flowing rivers by 2030 through the removal of primarily obsolete barriers and the restoration of floodplains and wetlands.

Guiding criteria for the identification of ecological corridors from practitioners' perspective

One of the main objectives of this working group is to collect information from practitioners on the guiding criteria most commonly used to **identify ecological corridors**. Special focus will be on the extent to which criteria allow for a proper integration of delivery of ecosystem services, socio-economic and climate change aspects, while also considering different dimensions of ecological connectivity. Further on, potential synergies will be sought among different criteria and their integration during the land planning decision-making process. It will also be important to explore the issue of bridging the gap between scientists and practitioners.

Ensuring connectivity across agricultural landscapes

This working group will explore criteria specifically relevant for enhancing connectivity across agricultural landscape from a practical point of view. It will aim to elaborate on how the new target of the EU Biodiversity Strategy for 2030 to bring back at least 10% of agricultural area under high-diversity landscape features could provide opportunities for improving connectivity.

Agricultural areas play a key role in restoring and maintaining ecological connectivity between core biodiversity areas. Reconciling agricultural practices with connectivity conservation is however a challenge

in terms of governance. There are many examples of LIFE projects engaging with farmers to take protective measures for nesting or feeding areas for species¹⁵, or to improve the management of habitats (often grasslands)¹⁶. Most often these agreements are funded by **agri-environmental measures** under the EU Rural Development Programme that follow a result-based payment for biodiversity, or function as a compensation or subsidies. An interesting example is LIFE IGIC (LIFE16 NAT/GR/000575) that is developing a green infrastructure network in agro-ecosystems (olive orchards) surrounded by Natura 2000 sites, based on the **voluntary engagement of farmers** and compensation payments.

Getting practical insight on the existent mapping and decision-making tools for connectivity planning

In order to identify priority areas to ensure improved connectivity and ecological coherence, there is a strong need to define clear objectives and selection criteria to ensure multi-functionality of the landscape based on existing **mapping and decision-making tools and guidelines** to ensure both connectivity, nature conservation and delivery of multiple ecosystem services in the current context of climate change. The objective of this working group is to get insight into existing mapping and decision-making tools, their suitability for identifying priority connectivity areas and the extent to which these could be accessed, i.e., acquire relevant information on the concrete applications of theoretical models and tools in practice.

Several tools and studies to assess the ecological integrity or coherence of a landscape or the degree of landscape fragmentation were already developed in this regard. For instance, there is the Joint Research Centre's (JRC) ProtConn Indicator^{8,9} that assesses the connectivity of protected areas systems, both within and outside protected areas. The European Environmental Agency (EEA)¹⁷ has done an assessment of landscape fragmentation in the EU at country, regional and square kilometre grid level, while also including predictive models of landscape fragmentation. The EEA has also recently assessed the contribution of green infrastructure to improving the conservation status of species of Community interest and the delivery of multiple ecosystem services in Europe¹⁸. This study includes the mapping and prioritization of green infrastructure to be preserved, restored or further deployed, both within and outside of the Natura 2000 network, related to both their importance for conserving species and their capacity to provide ecosystem services. Also, the JRC, in collaboration with the EEA and the European Topic Centre on Urban Land and Soil Systems, has recently published a report¹⁹ that provides methodological guidance to support strategic policy- and decision-making on green infrastructure. The International Union for Conservation of Nature (IUCN) produced guidelines for conserving connectivity through ecological networks and corridors, including climate considerations in the design of ecological corridors¹³. Rewilding Europe in collaboration with many partners, has also done a recent mapping exercise to identify potential corridors for large-scale green infrastructure connecting Natura 2000 nodes to ensure high ecological integrity and connectivity, as a useful tool to inform the EU restoration agenda²⁰. Further, the EU Mapping and Assessing of Ecosystems and their Services (MAES) framework²¹ provides relevant indicators to ensure that multiple benefits are considered when doing the mapping exercise. An increasing number of national and international platforms are being developed to exchange knowledge and experiences, and to promote mechanisms to enhance connectivity at national and international levels. One such platform operating at international level is the Connectivity Conservation Specialist

¹⁵ <u>https://op.europa.eu/en/publication-detail/-/publication/c451afab-cfc6-11e5-a4b5-01aa75ed71a1</u>

¹⁶ <u>https://bit.ly/3hY6yvL</u>

¹⁷ Landscape fragmentation in Europe. EEA Report No 2/2011. Joint EEA-FOEN report. <u>https://bit.ly/2F8XtBG</u>

¹⁸ Contributions to building a coherent Trans-European Nature Network. EEA-ETC on Urban, Land and Soil Systems. May 2020. https://bit.ly/3brcZ8c

¹⁹ <u>http://publications.jrc.ec.europa.eu/repository/handle/JRC113815</u>

²⁰ <u>https://www.rewildingeurope.com/wp-content/uploads/publications/boosting-ecological-restoration-for-a-wilder-Europe/index.html</u>

²¹ <u>https://biodiversity.europa.eu/maes</u>

Group of the IUCN's World Commission on Protected Areas²². At national level, an example of a platform being developed in Spain is the one by the project PRO-CONNECTA²³.

Adding to the above, there are some interesting experiences within the LIFE portfolio. Partners of the Belgian Nature Integrated project BNIP (LIFE14 IPE/BE/000002) developed a defragmentation mapping GIS tool to identify priority areas in Flanders to remove barriers based on infrastructure and distribution patterns of different animal groups while predicting how these are expected to evolve over time in order to inform decision making. The Netze des Lebens (LIFE08 INF/D/000032) project's main objective was to raise awareness and increase acceptance of the necessity of connecting forest through the creation of green corridors for highly mobile species. The project developed a model to optimally link forest habitats (20,000 kilometres in length) as a basis for planning decisions and protecting diversity. LIFE NATNET (LIFE10 NAT/FI/000047) is another interesting example. It aimed to increase ecological connectivity and establish green infrastructure to improve the vitality and coherence of the Natura 2000 network (37 sites, covering an area over 5,420 square kilometres) in south-western Lapland. A corridor design tool was used for modelling. Plans were developed for a balanced extension of the protected area network based on a zonation conservation prioritization framework. The project successfully managed to establish green infrastructure and ecological connections across 381 kilometres. LIFE EcoCo project (LIFE13 BIO/UK/000428) developed an 'ecological coherence protocol' to identify the best sites to manage for coherence and resilience across central Scotland while maximising ecological, ecosystem services and socio-economic benefits. LIFE-IP 4NATURA (LIFE16 IPE/GR/000002) includes a detailed fine scale mapping and assessment of the state of ecosystems and their services at national, regional and local level to strengthen coherence within the Natura 2000 network and enhance overall connectivity. Also, LIFE TIB (LIFE10 NAT/IT/000241) aimed at increasing the functionality of the connectivity between the Alps and the Apennines through the Po Plain, in an area covering some 150 square kilometres and including 14 Natura 2000 network sites.

Biodiversity/Ecological criteria	Ecosystem Services/Green	Socio-economic criteria
	Infrastructure criteria	
 Patch size, shape Overall species diversity Presence of endangered, rare or endemic species 	 Carbon sinks Climate refuge for species Erosion/flood/drought 	 Population density Social acceptance, ownership Provimity to cities to
 Suitability for multiple species/species groups Degree of landscape heterogeneity Ecological functionality Ecosystem resilience Proximity to protected areas Contribution to ecological integrity/defragmentation Risk for spread of Invasive Alien Species, predators, 	 Food production Pollination services Pest control Local climate regulation Ecotourism, recreation, education Water and air filtration Cultural heritage Health services Supporting services (photo-synthesis, soil formation, nutrient 	 Provinity to cities, to roads Degree of access/ remoteness (in terms of isolation/ altitude) Economic impact of measures and opportunities Cost-effective solutions Feasibility Availability of funds and people to manage these areas
diseases, pests	cycling)	Transboundary aspects

Table 2: Key criteria for tools, guidel	nes, and mapping exercises toward	ls improved ecological connectivity

²² https://www.iucn.org/commissions/world-commission-protected-areas/our-work/connectivity-conservation

²³ <u>http://www.fungobe.org/proconecta</u>

Table 2 provides the summary of criteria considered for tools, guidelines, and mapping exercises towards improved ecological connectivity and coherence with the aim of maximising multiple benefits.

2.2 Theme 2: Effective governance for the long-term management and protection of ecological corridors

The aim of Theme 2 is to share successful examples of governance models and land-tenure schemes from LIFE that ensure appropriate long-term management and conservation of ecological corridors and stepping stones and that might be on protected or non-legally protected areas. Working groups will focus on:

- Key governance elements for effective and long-term management of ecological corridors
- Transboundary governance
- Participatory approaches and stakeholders' engagement in ecological corridor
- Ensuring effective long-term connectivity conservation in OECMs and other non-legally protected areas

Key governance elements for effective and long-term management of ecological corridors

IUCN distinguishes four main **types of governance**, as presented in Table 3. While different governance schemes exist across EU member states, type A (Governance by government) is by far the most common and the main one that ensures strong legal protection. Shared and private governance mechanisms (types B and C) are however developing rapidly and are increasingly being used in the EU. While these approaches cannot replace regulatory approaches, they can be complementary and are especially relevant for connectivity areas, green infrastructure and other elements providing ecosystem services. These areas are often located in land where multiple interests co-exist and that are not protected by law.

	Governance Type	Subtypes
Α	Governance by	 Federal or national ministry or agency in charge
	government	 Sub-national ministry or agency in charge (e.g., at regional,
		provincial, municipal level)
		 Government-delegated management (e.g., to an NGO)
В	Shared governance	 Transboundary governance (formal and informal arrangements
		between two or more countries)
		 Collaborative governance (through various ways in which diverse
		actors and institutions work together)
		 Joint governance (pluralist board or other multi-party governing
		body)
С	Private governance	Conserved areas established and run by:
		individual landowners
		 non-profit organizations (e.g., NGOs, universities)
		 for-profit organizations (e.g., corporate owners, cooperatives)
D	Governance by	 Indigenous Peoples' conserved territories and areas—established
	Indigenous Peoples and	and run by Indigenous Peoples
	local communities	 Community conserved areas and territories—established and run by
		local communities

T . 1.1.	2			
iable	3:	IUCN	governance	types ²

²⁴ Borrini-Feyerabend, et al., (2013) <u>https://www.iucn.org/content/governance-protected-areas-understanding-action</u>. Adapted in Vasilijević et al. (2015) <u>https://portals.iucn.org/library/sites/library/files/documents/PAG-023.pdf</u>

The LIFE programme has provided an excellent laboratory for the development of experimental and innovative mechanisms of governance, with a focus on collaborative and participatory approaches on both public and private lands. This working group's objectives are to collect opinions and knowledge from practitioners and scientists on diversity of governance arrangements pertaining to ecological corridors, to discuss the factors that make governance of ecological corridors successful and sustainable over the long-term, discuss the potential of the ecosystem approach as a means for ensuring long-term governance and financing of corridors, to explore whether the integration of connectivity objectives into land planning is necessary/useful to ensure long-term adequate connectivity conservation, and how this can be achieved, and to elaborate on other factors important for successful governance, such as public awareness, support of local communities, transparency, participatory approach.

Transboundary governance

The main objectives of this working group are to showcase examples of successful **transboundary governance arrangements** relevant for connectivity conservation, explore major factors of success, limitations and challenges, and discuss how transboundary governance can provide insights in advancing connectivity commitments and obligations within and across international borders.

The aim of LIFE OSMODERMA (LIFE16 NAT/LT/000701) is to establish ecological corridors and stepping stones, as well as temporary habitats between the core zones for target species and in particular the hermit beetle. This ecological network will become part of Lithuania-Latvia cross-border network, with the aim to reduce fragmentation and gaps in the gene flow among populations. Another example of transboundary corridor governance is LIFE FLANDRE (LIFE12 NAT/BE/000631) whose main objective is to ensure dune restoration in Natura 2000 sites across the Belgian-French border. A transboundary nature park was created and a transnational advisory committee established to ensure long term protection and restoration.

Participatory approaches and stakeholders' engagement in ecological corridor

This working group will focus on providing insights into examples and best practices of participatory and collaborative approaches, having in mind that governance of ecological corridors should ideally ensure transparency and stakeholders' engagement in early stages of connectivity conservation planning. Main challenges and opportunities will also be discussed.

The success of shared or private governance seems to be often linked to the early involvement and efficient **engagement of all relevant stakeholders** in the governance process. Many good examples of **participatory and bottom-up approaches** exist in the LIFE portfolio, of which a few relate to connectivity elements. LIFE GREEN4GREY (LIFE13 ENV/BE/000212) project converted peri-urban areas into ecological stepping stones with a multifunctional character, and designed a network of green infrastructures such as pools, orchards, natural grassland and watercourses using a large participatory approach by engaging local inhabitants, visitors, companies, experts and students, NGOs and local administrations.

A series of LIFE projects have worked through close collaboration with **atypical stakeholders** such as military area managers, cultural heritage organisations, public fire and police departments, prisons, utility companies (water or energy), and tour operators. Most of them were included in the publication `LIFE and new partnerships for nature conservation¹⁵ and could inspire future initiatives in ecological corridors or areas delivering ecosystem services. The project ELIA (LIFE10 NAT/BE/709) developed an innovative approach for the creation and maintenance of 138 kilometres of linear ecological corridors under overhead power lines, to maximise their potential benefits for biodiversity. The process involved many public and private stakeholders and the energy utility companies continued the system after the project ended.

A good example of **collaborative governance** in corridor areas is LIFE TransInsubria Bionet project (LIFE10 NAT/IT/000241) that implemented conservation measures along the Insubria ecological corridor between the Alps and the Ticino valley. The decision-making is done through a collaborative process, under a "Contract of Network" involving 43 municipalities, the Varese Province, the Campo dei Fiori and Ticino Regional Parks and the Lombardia Region. The more recent project LIFE GREENCHANGE (LIFE17 NAT/IT/000619) is also developing a governance system in agricultural lands of Agro Pontino and northern Malta, and seeks to integrate ecological functionality and connectivity goals for agro-ecosystems into public and private decision-making processes through the involvement of public entities, management bodies and farmers.

Effective mechanisms of governance are also essential in **riparian areas and alluvial plains**, where biodiversity conservation often conflicts with water management needs. LIFE ALNUS (LIFE16 NAT ES 000768, the host of this meeting, is working towards a more efficient shared governance of riparian forests in Catalonia, and a better integration of sectoral policies and decision-making processes. In the same line of work, the Integrated project LIFE Delta Nature (LIFE15 IPE/NL/000016) intends to develop an integrated governance approach in Natura 2000 sites in collaboration with 27 partners, that allows combining nature conservation with economy, water management and flood protection.

A number of LIFE projects have also **combined various forms of governance** adapted to the local context, in order to reach a common goal. For example, in corridor areas of Northern Spain, successive projects dealing with brown bear conservation in Spain²⁵ have implemented different systems: land purchase (individual or common estates), land stewardship with private owners and municipalities, collaboration agreements with land users (hunters, farmers, bee-keepers) among others.

Ensuring effective long-term connectivity conservation in OECMs and other non-legally protected areas The main objectives of this working group include sharing of successful examples of governance arrangements in OECMs and other non-protected areas, discussing the key governance factors, challenges and opportunities related to connectivity conservation governance of OECMs and non-protected areas, exploring cross-cutting aspects such as green infrastructure, nature-based solutions and ecosystem services, and discussing connectivity aspects on private lands.

About 60% of the Natura 2000 network and an important part of the EU rural areas are on privately owned land. These include areas with high potential for delivering ecosystem services and ecological connectivity. **Private land conservation** has, therefore, a crucial role to ensure a functional and coherent Natura 2000 network. In rural and semi-natural areas particularly, private land conservation will be indispensable to ensure connectivity between protected areas.

The contribution of the LIFE programme in engaging private stakeholders in nature conservation is well known and documented through numerous successful projects. Experiences from LIFE projects (2005-2015) are summarized in the thematic study 'LIFE and Land Stewardship'¹⁶. This study revealed that **land stewardship agreements** are the most common tools for private nature conservation. The implementation of such agreements has been increasingly used over the past decade in many EU countries. This approach has a high potential for application in ecological corridors and other "green patches" outside the Natura 2000 network as it offers a means of extending conservation practices beyond the boundaries of conventional legally protected areas.

²⁵ LIFE07 NAT/E/000735 Corridors for Brown Bear Conservation, LIFE12 NAT/ES/000192 LIFE Bear defragmentation and LIFE16 NAT/ES/000573 LIFE OSO COUREL

The strategic project LIFE10 INF/ES/000540 LANDLIFE was a cornerstone in the use of land stewardship agreements; it produced a European Manual on Land Stewardship²⁶ 'Caring together for Nature' and a toolkit for organisations in Europe. In Spain, LIFE MONTSERRAT project (LIFE13 BIO/BIO/000094) supported the creation of nine livestock farms in the rural area surrounding the Montserrat Natural Park, based mainly on silvo-pastoral grazing and long-term stewardship agreements. The system delivers biodiversity, connectivity, and fire prevention benefits, while providing income for local breeders. This win-win system is however still at risk as the economic viability of the breeding farms remains precarious without external funding. Another example includes orchid protection in grasslands owned by citizens: the project LIFE Orchids (LIFE17 NAT/IT/00059624) aims at establishing 100 land stewardship agreements with local stakeholders covering 500 hectares. In south-western Lapland, the project NATNET (LIFE10 NAT/FI/000047) focused on the improvement of forest ecological connectivity using easements to get agreements for permanent protection of 28,59 square kilometres of privately owned corridor areas under the Finnish Nature Conservation Act. Land-owners receive a tax-free compensation for profit loss and land ownership remains unchanged. There are also three recent preparatory LIFE projects (ELCN LIFE16 PRE/DE/005, Land Is For Ever LIFE17 PRE/BE/001 and ENPLC LIFE19 PRE/NL/003)²⁷ that focus specifically on private land conservation providing relevant insight into different management schemes and policy input.

The Horizon 2020 Contracts2.0²⁸ explores **novel land-tenure systems and contract-based approaches** that can provide tangible support to farmers for the provision of environmental public services along with private goods. For example, cooperative models (collective or coordinated individual contracts) are being tested to reduce transaction costs and to target the appropriate scale. These could be especially relevant for the management of corridor areas such as hedges or woodlands. LIFE NATUREMAN project (LIFE16 IPE/DK/000006) is developing and testing a governance system to consider nature conservation in agricultural areas as a separate farming activity. The idea is to make it financially attractive for farmers to include natural areas with grazing or biomass harvesting in their farming activities, through the development of high-value products.

2.3 Theme 3: Ensuring funding for connectivity conservation

In addition to direct regulation or land stewardship schemes, economic instruments can be used to support connectivity measures. The aim of Theme 3 is to present an overview of the existing funding programmes and mechanisms for connectivity conservation and provide guidance for future opportunities on the existing and innovative financial instruments. An expert panel will elaborate how connectivity conservation can be funded under different existing and upcoming funding mechanisms, followed by a debate on public funding instruments, market-based mechanisms and business and finance for biodiversity.

The IUCN paper on the legal aspects of connectivity conservation²⁹ lists different categories of economic tools: direct funding, payment and fiscal advantages (positive incentives), taxes and charges (negative incentives), market creation (e.g., offset credits), label and certification schemes and the removal of perverse incentives (e.g., area-based agricultural payments). The LIFE and the Horizon 2020 programmes, have provided direct funding for connectivity conservation, mapping and/or concrete conservation measures, and have explored different ways to increase the financial resources allocated to connectivity conservation. Nevertheless, both the fitness check of the Nature Directives and the recent review of the

²⁶ https://elcn.eu/sites/default/files/2018-02/XCT%202013%20European%20Land%20Stewardship%20Manual.pdf

²⁷ European Land Conservation Network ELCN (LIFE16 PRE/DE/005), Land Is For Ever (LIFE17 PRE/BE/001), European Networks for Private Land Conservation – ENPLC (LIFE19 PRE/NL/003) <u>http://enplc.eu/</u>

²⁸ <u>https://www.project-contracts20.eu/objectives/</u>

²⁹ <u>https://www.iucn.org/sites/dev/files/legal_aspects_of_connectivity_conservation-_a_concept_pape.pdf</u>

EU Strategy on Green Infrastructure³⁰ show that the integration of nature conservation and green infrastructure targets into existing funding instruments has been insufficient.

The lack of a dedicated financial instrument for connectivity conservation and the focus of the existing resources for nature conservation on the Natura 2000 network are generally perceived as obstacles by the connectivity conservation stakeholders. Considering the large funding needs to reach the ambitious 2030 targets of the new EU Biodiversity Strategy (at least €20 billion a year), a major effort is required to make better use of existing instruments and increase the total financial resources allocated to connectivity conservation.

Making better use of existing public funding instruments

The LIFE programme itself has been a major source of direct funding to connectivity conservation, as highlighted in the IUCN above-mentioned publication²⁹. Numerous examples of LIFE projects can be provided, such as LIFE Dommeldal (LIFE05 NAT/B/000091), that used LIFE funding to restore valuable habitats in a cross-border area over Flanders and the Netherlands, thus creating a network of stepping stones for species migration (e.g., the European nightjar, Alcon blue butterfly). A LIFE brochure from 2010³¹ compiled LIFE projects' contributions to the EU green infrastructure policy. Ten years later, more experience has been gained on the use of LIFE funding for connectivity actions, while also identifying gaps and barriers (e.g., land purchase expenses are not eligible for areas outside Natura 2000).

In addition, many LIFE projects aided to direct other public funding instruments (at EU and national levels) towards nature conservation both within and outside protected areas. These instruments have provided for either direct funding to nature conservation organisations to undertake actions or for financial incentives to private stakeholders, especially farmers, forest managers and landowners, committing to conservation management practices (tax exemptions, compensation payments, etc.). For instance, as mentioned in Chapter 2.2., within the project LIFE NATNET (LIFE10 NAT/FI/000047), land-owners have received a tax-free compensation for profit loss if they commit to forest management practices that are in line with nature conservation objectives, hence contributing to improving connectivity between protected areas.

Numerous LIFE projects have also helped improve the use of agri-environmental and climatic measures (funded by the European Agricultural Fund for Rural Development (EAFRD) and EU Member States) for landscape connectivity. For instance, in Austria, several LIFE projects³² have contributed to the improved connectivity of steppe habitats favourable to Great bustard and other bird species, through the development of agri-environmental measures promoting extensive grassland management.

LIFE projects have also made a valuable contribution to the development of new types of agrienvironmental schemes, namely **result-based payment schemes (RBPS)**, the first one being LIFE BURREN project (LIFE04 NAT/IE/000125). Here, a specific result-based agri-environmental scheme (the Burren Farm Conservation Programme) was co-created by farmers and nature conservation experts, which then served as a model for the development of other result-based schemes³³. The agri-environmental payment was granted to farmers to open up limestone grasslands and limestone pavement. LIFE ELCN (LIFE16 PRE/DE/000005) is exploring the adaptability and scalability of the BURREN model. LIFE In Common Land project (LIFE16 NAT/ES/000707) is working to develop and implement management schemes based on conservation outcomes on communal lands, in order to improve the structure and function of habitats

³⁰ https://ec.europa.eu/transparency/regdoc/rep/1/2019/EN/COM-2019-236-F1-EN-MAIN-PART-1.PDF

³¹ LIFE building up Europe's green infrastructure: Addressing connectivity and enhancing ecosystem functions, 2010, Luxembourg: Publications Office of the European Union

³² LIFE15 NAT/AT/000834, LIFE09 NAT/AT/000225, LIFE05 NAT/A/000077

³³ https://rbaps.eu/

over 50 square kilometres. RBPSs have also been investigated within Horizon 2020 projects, e.g., Contracts 2.0 project³⁴, and within a specific call for pilot projects launched by the European Commission Directorate General for Environment (DG ENV) in 2014. Now that significant experience has been acquired, it is the right moment to share experience and come up with policy recommendations. This debate started at a DG ENV conference in 2019³⁵, focusing on selected pilot projects, which the Platform meeting can further add to.

The LIFE Integrated Projects in nature area and future Strategic Nature Projects (SNaPs) are also relevant to look at, given that they assess funding priorities for nature conservation at national level (to support the implementation of the EU Members States' Prioritised Action Frameworks) and mainstream conservation objectives in sectoral policies and funding programmes, such as EU and national programmes (including EAFRD). LIFE Integrated Project N2K Revisited (LIFE17 IPE/CZ/000005) takes the typical Integrated Project approach: the project estimates the financial needs for the management of the Natura 2000 network in Czech Republic and supports regional authorities, municipalities and land users to help them mobilise their own resources, including recommendations for the EU 2021-2027 funding period. Another Integrated Project, LIFE NATUREMAN (LIFE16 IPE/DK/00006), is developing a different and more original approach working closely with agricultural stakeholders to make nature conservation financially interesting for the farmers by grazing or mowing through various mechanisms (e.g., developing supporting schemes for farming on natural areas, creating marketing and value chains).

Developing new financial incentives

Some LIFE projects have explored new financial mechanisms to improve biodiversity through adapting management practices, such as the Platform meeting's co-host project LIFE BIORGEST (LIFE17 NAT/ES/000568), which seeks to reconcile biodiversity conservation and the economic viability of forest production, taking into account climate change impacts in Mediterranean areas. It includes specific actions to analyse innovative financial mechanisms and contractual models to finance these practices or compensate forest owners. LIFE ELCN (LIFE16 PRE/DE/000005) has run a pilot action in Spain on the use of tax incentives for private landowners committing to conservation measures within land stewardship contracts. Six different types of **tax incentives** were studied and tested by the beneficiaries, in close cooperation with several departments of the regional and national governments.

The development of **payments for ecosystem services** (PES) may bring opportunities for financing nature conservation actions. They consist of transactions in which the beneficiaries of the ecosystem services pay the providers of these services, either for activity-enhancing improvement measures of the ecosystems or activity-capping harmful activities of the ecosystem services. Most common examples are related to recreation and ecotourism that have provided alternative income. Several LIFE projects have sought to develop such schemes. Although most of them have been working on methodologies, some have developed a full PES scheme. For instance, LIFE Making Good Natura (LIFE11 ENV/IT/000168³⁶) developed a model to identify and estimate the ecosystem services provided by the Natura 2000 sites, and used the results to create and test specific PES/self-financing schemes for funding the implementation of Natura 2000 management plans and conservation measures. About 60 schemes were developed and part of the PES agreements were signed by the end of the project. The project results have raised true interest by academic, technical and institutional stakeholders and the lessons learnt from the difficulties encountered, especially in the involvement of the different types of stakeholders, can be useful for the development of other PES schemes. Such funding mechanisms may not be transferrable to areas outside Natura 2000 areas but the approach can certainly be inspiring.

³⁴ <u>https://www.project-contracts20.eu/</u>

³⁵ https://ieep.eu/news/event-building-on-the-know-how-from-the-results-based-payment-scheme-rbps-pilots

³⁶<u>https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4231&docType=p</u> <u>df</u>

Another interesting example is the Pennine PeatLIFE project (LIFE16 NAT/UK/000725) that developed a financial payment for ecosystem services mechanism under the UK Peatland Code in order to finance blanket bog restoration measures. However, the mechanism is perceived as too complex by landowners and with a possible impact on agri-environment payments. Discussions are therefore ongoing with the IUCN UK Peatland Programme to upgrade the Peatland Code towards a multi-tier system with different levels of interaction in terms of blended financing coming from public and private sources. The current focus of the Peatland Code on carbon might also be reconsidered.

Several Horizon 2020 projects also contribute to the development of new financial incentives in favour of landscape connectivity conservation or restoration measures. For instance, Horizon 2020 project Contracts 2.0 explores new contract-based approaches to incentivise farmers for the increased provision of environmental public goods along with private goods (also mentioned in Chapter 2.2). The Horizon 2020 High Nature Value Farming: Learning, Innovation and Knowledge project (HNV-link³⁷) identified innovative solutions as well as obstacles and opportunities to enhance the viability of high-nature value farming, which maintains a diversity of land cover, and a high density of landscape features such as hedges, stone walls, terraces and ponds that enhance landscape structure and connectivity.

Risk management related to climate change, such as sea level rise, droughts, and floods can also provide new opportunities. Based on the ecosystem services provided by well conserved estuarine areas, such as flood protection, the project LIFE ADAPTA BLUES (LIFE18 CCA/ES/001160) intends to develop an **insurance product** that puts a price tag on the risk, provides incentives for risk reduction, and creates formalised pay-out structures.

Negative incentives (taxes, charges) can also be applied to avoid practices or land-use changes that have a detrimental impact on connectivity. Such incentives have not or have been poorly used within LIFE projects, but it might be interesting to discuss why and what would be the conditions for their implementation and effectiveness.

Creation of markets

The LIFE programme is contributing to the development of market mechanisms to finance nature conservation measures in a multifunctional approach. For example, LIFE CLIMARK (LIFE16 CCM/ES/000065) project promotes multifunctional forest management for climate change mitigation, through the design and testing of a pilot local market of 'climate credits' (including criteria on greenhouse gas emissions but also on water and biodiversity). The project team is currently working on a marketing strategy. LIFE BLUE NATURA (LIFE14 CCM/ES/000957) also aims to quantify carbon deposits and sequestration rates of marsh and seagrass meadow habitats in Andalusia, Spain, and to encourage initiatives to finance conservation through carbon emissions trading or carbon markets.

Creation of certification schemes

Other LIFE projects have worked on biodiversity-friendly agricultural and other land practices through **branding of niche products** on the market that receive growing interest. LIFE Olive Alive (LIFE14 NAT/ES/001094) has successfully developed a certification scheme for olive groves with high landscape and biodiversity features, giving added value to the conservation effort made by olive growers and to the benefits generated for landscape and biodiversity conservation. Another relevant example for landscape connectivity is the approach developed within LIFE IGIC (LIFE16 NAT/GR/000575). The project aims to develop a green infrastructure network in agro-ecosystems in 10 pilot areas in southern Crete, and to demonstrate its potential to enhance ecosystem services such as pest control, pollination, and nutrient

³⁷ https://ec.europa.eu/eip/agriculture/en/content/hnv-link-high-nature-value-farming-learning-innovation-and-knowledge

provision while boosting local agro-biodiversity and improving connectivity between the surrounding Natura 2000 sites. The project will make suggestions to integrate green infrastructure development criteria into existing regional/national certification schemes and to enhance their market uptake.

Other examples include LIFE-SALINAS (LIFE17 NAT/ES/000184) that has implemented a certification scheme for biodiversity-friendly salt production, LIFE GRASSLIFE (LIFE16 NAT/LV/000262) that has explored grassland product and their business potential, and LIFE RED QUEBRANTAHUESOS (LIFE12 NAT/ES/000322) that has created a brand to support extensive livestock farming in mountain areas. Although not all the projects aimed specifically at enhancing ecological connectivity, these approaches seem to be relevant for this purpose.

Attracting direct funding from other donors

Another way to involve the private sector in financing landscape connectivity conservation measures, apart from economic mechanisms based on ecosystem services, is to get private stakeholders co-finance conservation actions directly. Companies are progressively including environmental aspects in their business models, beyond the legal requirements as part of their **corporate social responsibility**. This could be through greening their business areas (e.g., LIFE GREEN4GREY LIFE13 ENV/BE/000212), or by offsetting their negative environmental impact in collaboration with key conservation stakeholders.

Other approaches to mobilise funds from the public or donations from individuals are emerging, such as **online crowdfunding** for more limited amounts, or **fundraising campaigns**. For example, LIFE Hen harriers (LIFE13 NAT/UK/000258) was able to fit satellite transmitters to 117 birds thanks to public and private donations. For every 1€ spent by RSPB the project attracted 8€ in direct funding and support in kind: their Hen Harrier Appeal alone raised 20% of project costs from RSPB members. The work of the Foundation Conservation Carpathia is also worth mentioning here³⁸. Their main goal is to restore and preserve the Fagaras mountain area in Romania, the second largest biodiversity reservoir in the country, and ultimately create a national park. To do so, the Foundation Conservation of all-natural elements. Public money has also been used, including from the LIFE programme (LIFE CARPATHIA Restoration LIFE11 NAT/RO/000823).

In some countries, such as the UK, Netherlands, and Belgium, part of LIFE projects' co-funding payments comes from the **National Lottery.** Part of the profits generated by the lottery are indeed donated to social and environmental projects. Given the volume of benefits of this system these donations allow funding projects lasting for several years.

On La Réunion island, following two LIFE projects aimed at preserving unique semi-xerophilic forest habitats and re-establishing the connectivity between restored and relict plots (LIFE COREXERUN LIFE07 NAT/FR/000188 and LIFE+ FORET SECHE LIFE13 BIO/FR/000259), the national park has developed a real **sponsorship strategy** to efficiently attract funding from the private sector and from individual donors for the conservation of the semi-dry forest.

3. Organisers

The Platform Meeting is coordinated by the NEEMO external monitoring team on behalf of the European Commission Directorate General for Environment and the European Agency for Small and Medium Enterprises.

³⁸ <u>https://www.carpathia.org/</u>

4. Target audience

Target audience includes representatives of LIFE projects from Nature and Biodiversity, Environment and Climate strands, and including LIFE Integrated Projects. In addition, the meeting will also include policy-makers, research partners of relevant Horizon 2020 projects, JRC, EEA, international organisations (e.g., IUCN), national researchers etc.

5. Host projects

The Platform meeting will be co-hosted by LIFE ALNUS³⁹ (LIFE16 NAT/ES000768) and LIFE BIORGEST⁴⁰ (LIFE17 NAT/ES000568) projects. Both projects are being implemented in Catalonia (Spain) and, in the second case, also in Occitanie (France). LIFE ALNUS intends to improve both the governance aspects and the current conservation status of alder forests in 3 river basins of Catalonia: Segre, Besòs and Ter. The objectives and actions are varied and wide-ranging. The project first worked on a precise mapping exercise of this priority habitat at regional level, that led to the identification of priority conservation areas taking also into account connectivity and climate change factors. This study also resulted in a proposal of extension of various Natura 2000 sites. The project is currently working toward the improvement of the governance models in these riparian areas, by developing collaborative governance mechanisms engaging the public authorities, scientists, and other relevant stakeholders and end-users (land farmers, fishing groups, city councils, etc.). Concrete conservation and restoration measures are also under progress in three pilot areas to improve habitat continuity and ecological quality.

The main objective of LIFE BIORGEST is to improve the biodiversity of Mediterranean forests by integrating specific measures and innovative practices into forest planning and management instruments, and through setting up new financing and compensation mechanisms. It is therefore intended to reconcile the improvement of biodiversity with the economic sustainability of forest management, ensuring forest persistence and their adaptation to climate change. Among others, this includes the development of management models aimed at improving biodiversity of Mediterranean forests and the integration of these measures in the policy and regulations at a regional level, the assessment of the economic costs and benefits associated to these management practices and the elaboration of proposal and measures to stimulate/compensate the owners.

³⁹ https://lifealnus.eu/es/

⁴⁰ <u>http://lifebiorgest.eu/</u>

ANNEX 2:

PLATFORM MEETING AGENDA



'Lessons from LIFE on ecological connectivity towards a coherent, functional and resilient network of protected areas'

AGENDA

DAY 1: 2 March 2021 THEME 1: IDENTIFICATION AND PRIORITISATION OF ECOLOGICAL CORRIDORS			
Plenary session Chair: Maia Mikosinska			
8:45 – 9:00 Joining the online session			
9:00 - 9:10	Welcome, objectives of the meeting and housekeeping rules	Maja Mikosinska, EASME	
9:10 - 9:25	The policy framework - Biodiversity Strategy for 2030	Joaquim Capitao, DG ENV, Frank Vassen, DG ENV	
9:25 – 9:40	IUCN Best Practice Guidelines for conserving connectivity through	Gary Tabor, IUCN WCPA Connectivity Conservation Specialist Group	
	ecological networks and corridors (Video)		
9:40 - 10:10	9:40 – 10:10 Q&A		
Plenary question for voting			
10:15 - 10:20	Presenting the organisation of parallel working group sessions	Maja Mikosinska, EASME	
10:20 – 10:35 Coffee break – assign participants to working groups			
Parallel working group sessions			
Working group 1.1: Guiding criteria for identification of ecological corridors: the practitioners' perspective			

Facilitator: Simona Bacchereti, Rapporteur: Sara Mora			
10:35 - 10:45	Introduction	Simona Bacchereti, EASME	
10:45 - 10:55	LIFE EcoCo (LIFE13 BIO/UK/000428)	Paul Sizeland, Scottish Natural Heritage	
10:55 - 11:05	LIFE #CC# NATURADAPT (LIFE17/CCA/FR/000089)	Anne-Cerise Tissot, Réserves Naturelles de France	
11:05 - 11:15	LIFE OSMODERMA (LIFE16 NAT/LT/000701)	Dalia Basyste-Cseh, Lithuanian Fund for Nature	
11:15 – 12:35	Discussion		
12:35 – 12:45	Wrap up		
	Working group 1.2: Ensuring con	nectivity across agricultural landscapes	
	Facilitator: Silvia Donato	, Rapporteur: Maud Latruberce	
10:35 - 10:45	Introduction	Silvia Donato, EASME	
10:45 - 10:55	Connectivity across agricultural landscapes	Jérémie Crespin, DG ENV	
10:55 - 11:05	LIFE IGIC (LIFE16 NAT/GR/000575)	Emmanouil Kabourakis, Hellenic Agricultural Organisation	
11:05 - 11:15	LIFE Ostrovné lúky (LIFE 12 NAT/SK/001155)	Adriana Brossmannova, BROZ – Bratislavské regionálne ochranárske	
		združenie	
11:15 – 12:35	Discussion		
12:35 – 12:45	Wrap up		
	Working group 1.3: Getting practical insight on the existent mapping and decision-making tools for connectivity planning		
	Facilitator: Sylvia Ba	rova, Rapporteur: An Bollen	
10:35 - 10:45	Introduction	Sylvia Barova, EASME	
10:45 - 10:55	Strategic Green Infrastructure and Ecosystem Restoration:	Christine Estreguil, EC, Joint Research Council (JRC)	
	geospatial methods, data and tools		
10:55 - 11:05	BiodivERsA project WOODNET	Jacques Baudry, French Research Institute for Agriculture,	
		Food and the Environment (INRAE)	
	LIFE ALNUS (LIFE16 NAT/ES000768)	Virgilio Hermoso , Forest Science and Technology Centre of Catalonia	
	LIFE BNIP (LIFE14 IPE/BE/000002)	Joris Everaert, Research Institute for Nature and Forest	
11:05 - 11:45	LIFE BNIP (LIFE14 IPE/BE/000002) LIFE NATNET (LIFE10 NAT/FI/000047)	Joris Everaert, Research Institute for Nature and Forest Ari Nikula, Natural Resources Institute Finland	
11:05 - 11:45	LIFE BNIP (LIFE14 IPE/BE/000002) LIFE NATNET (LIFE10 NAT/FI/000047) Rewilding EU	Joris Everaert, Research Institute for Nature and Forest Ari Nikula, Natural Resources Institute Finland Néstor Fernández, German Centre for Integrative Biodiversity	
11:05 - 11:45	LIFE BNIP (LIFE14 IPE/BE/000002) LIFE NATNET (LIFE10 NAT/FI/000047) Rewilding EU	Joris Everaert, Research Institute for Nature and Forest Ari Nikula, Natural Resources Institute Finland Néstor Fernández, German Centre for Integrative Biodiversity Research	
11:05 - 11:45 11:45 - 12:35	LIFE BNIP (LIFE14 IPE/BE/000002) LIFE NATNET (LIFE10 NAT/FI/000047) Rewilding EU Discussion	Joris Everaert, Research Institute for Nature and Forest Ari Nikula, Natural Resources Institute Finland Néstor Fernández, German Centre for Integrative Biodiversity Research	
11:05 - 11:45 11:45 - 12:35 12:35 - 12:45	LIFE BNIP (LIFE14 IPE/BE/000002) LIFE NATNET (LIFE10 NAT/FI/000047) Rewilding EU Discussion Wrap up	Joris Everaert, Research Institute for Nature and Forest Ari Nikula, Natural Resources Institute Finland Néstor Fernández, German Centre for Integrative Biodiversity Research	
11:05 - 11:45 11:45 - 12:35 12:35 - 12:45 12:45 - 13:15	LIFE BNIP (LIFE14 IPE/BE/000002) LIFE NATNET (LIFE10 NAT/FI/000047) Rewilding EU Discussion Wrap up Knowledg	Joris Everaert, Research Institute for Nature and Forest Ari Nikula, Natural Resources Institute Finland Néstor Fernández, German Centre for Integrative Biodiversity Research	

DAY 2: 3 March 2021			
THEME 2: EFFECTIVE GOVERNANCE FOR THE LONG-TERM MANAGEMENT AND PROTECTION OF ECOLOGICAL CORRIDORS			
Plenary session			
	Chair: Maja Mikos	sinska	
8:45 - 9:00	Joining the online session		
9:00 - 9:10	Welcome and main conclusions from Theme 1	Maja Mikosinska, EASME, Sara Mora, NEEMO	
9:10 - 9:15	Group photo		
9:15 - 9:25	IUCN protected area governance typology and ecological corridors	Boris Erg, IUCN ECARO	
9:25 – 9:35	LIFE IP GESTIRE 2020 (LIFE14 IPE/IT/000018)	Marzia Cont, Lombardy Region, Sergio Canobbio, Regional Agency for Agricultural and Forestry Services (ERSAF)	
9:35 – 9:55	Q&A		
9:55 – 10:00	Presenting the organisation of parallel working group sessions	Maja Mikosinska, EASME	
10:00 - 10:15	Coffee break – assign participants to working groups		
	Parallel working grou	p sessions	
Working group 2.1: Key governance elements for effective and long-term management of ecological corridors			
	Facilitator: Simona Bacchereti, R	apporteur: An Bollen	
10:15 - 10:25	Introduction Simona Bacchereti, EASME		
10:25 - 10:35	TIB - Trans Insubria Bionet (LIFE10 NAT/IT/000241)	Sara Barbieri, Province of Varese, Italy	
10:35 - 10:45	LIFE Bear Defragmentation (LIFE12 NAT/ES/000192)	Fernando Ballesteros, Fundación Oso Pardo (FOP)	
10:45 - 12:10	Discussion		
12:10 - 12:20	Wrap up		
	Working group 2.2: Transbour	ndary governance	
	Facilitator: Eva Paparatti, Rappor	teur: Maja Vasilijević	
10:15 - 10:25	Introduction	Eva Paparatti, EASME	
10:25 – 10:35	LIFE FLANDRE (LIFE12 NAT/BE/000631)	Jean Louis Herrier, Flemish Government - Agency for Nature and	
		Forest (ANB)	
10:35 - 10:45	LIFE Lynx (LIFE16 NAT/SI/000634)	Rok Černe, Slovenian Forest Service	
10:45 - 12:10	Discussion		
12:10 - 12:20	Wrap up		
Working group 2.3: Participatory approaches and stakeholders' engagement in ecological corridor			
Facilitator: Gustavo Becerra-Jurado, Rapporteur: Audrey Thenard			
10:15 - 10:25	Introduction	Gustavo Becerra-Jurado, EASME	
10:25 - 10:35	LIFE Green-Go! Carpathians (LIFE16 GIE PL 000648)	Piotr Mikołajczyk, UNEP/GRID-Warsaw Centre	

10:35 - 10:45	LIFE WOLFlux (LIFE17 NAT/PT/000554)	Sara Aliácar, Rewilding Portugal		
10:45 - 10:55	LIFE ALNUS (LIFE16 NAT/ES/000768)	Pol Guardis , Forest Science and Technology Centre of Catalonia (CTFC)		
10:55 - 12:10	Discussion			
12:10 - 12:20	Wrap up			
Working group 2.4: Ensuring effective long-term connectivity conservation in OECMs and other non-legally protected areas				
Facilitator: Silvia Donato, Rapporteur: Lynne Barratt				
10:15 - 10:25	Introduction	Silvia Donato, EASME		
10:25 - 10:35	LIFE GREEN4GREY (LIFE13 ENV/BE/000212)	Pieter De Corte, Vlaamse Landmaatschappij (VLM)		
10:35 - 10:45	LIFE ELCN (LIFE16 PRE/DE/000005)	Stefan Versweyveld, Natuurpunt		
10:45 - 10:55	LIFE LINES (LIFE14 NAT/PT/001081)	Graça Maria Dias Garcia, Infraestruturas de Portugal SA		
10:55 - 12:10	Discussion			
12:10 - 12:20	Wrap up			
12:20 - 12:50	Knowledge market - part 2			
	Facilitator: Sara Mora			
12:50 - 13:00	Main conclusions from Theme 2	Audrey Thenard, NEEMO		

DAY 3: 4 March 2021 THEME 3: ENSURING FUNDING FOR CONNECTIVITY CONSERVATION				
Plenary session				
Chair: Maia Mikosinska				
8:45 – 9:00	Joining the online session			
9:00 - 9:10	Welcome and introduction of Days 1 and 2 of the Platform meeting	Maja Mikosinska, EASME		
9:10 - 9:20	Overview of financing mechanisms for connectivity conservation	Jamie McCallum, IUCN World Commission on Protected Areas		
9:20 - 9:30	Priority Action Frameworks (PAFs) and connectivity	Przemyslaw Oginski, DG ENV		
9:30 - 9:40	LIFE BIORGEST: Innovative financial mechanisms for forest	Guillem Bagaria, Xarxa per a la Conservació de la Natura (XCN)		
	management			
9:40 - 10:10	Q&A			
10:10 - 10:20	Coffee break – Slide show/video			
Panel session 1: Public funding instruments for connectivity conservation				
Chair: Sylvia Barova				
10:20 - 10:25	Presenting the panel session 1	Sylvia Barova, EASME		
10:25 – 10:55	LIFE programme and connectivity conservation	Silvia Donato, EASME		

	Horizon Europe	Nerea Aizpurua, DG RESEARCH		
	Funding opportunities within the upcoming reform of the Common	Antonia Lütteken, DG AGRI		
	Agricultural Policy (CAP) in support of connectivity conservation in			
	the agriculture context			
	European Regional Development Fund (ERDF) – Interreg: Funding	Maud Skäringer, DG REGIO		
	opportunities for connectivity across borders			
10:55 – 11:35	Structured debate with the panellists			
	LIFE NATUREMAN (LIFE16 IPE/DK/000006)	Jorgen Birdstrup, Danish Nature Agency		
	EUSALP action group on connectivity	Michaela Künzl, Bavarian State Ministry of the Environment		
11:35 – 11:45	Coffee break – Slide show/video			
Panel session 2: "Blended" and private financing for connectivity conservation				
Chair: Sylvia Barova				
11:45 - 11:50	Presenting the panel session 2	Sylvia Barova, EASME		
	EC initiatives on Business for biodiversity/Natural capital	Andrea Bianchini, DG-ENV		
	investments			
	Supporting nature conservation through sustainable agri-food	Vanessa Sánchez Ortega, Foundation Global Nature		
	products, voluntary carbon markets and Corporate social			
	responsibility (CSR) of private companies			
	Diversifying private sources of income and funding for	Miquel Rafa, Fundació Catalunya La Pedrera		
	conservation			
	Promoting "civic funding" tools to support nature conservation	Chiara Rutolo, GOTEO Foundation		
	projects			
12:20 - 13:00	Structured debate with the panellists			
	MoorLIFE 2020 (LIFE14 NAT/UK/000070)	Diarmuid Crehan, Peak District National Park		
	LIFE ADAPTA BLUES (LIFE18 CCA/ES/001160)	Max Ricker, The Nature Conservancy		
	CDC Biodiversité: NCFF project + Natura 2050 programme	Suzanne Rihal, CDC Biodiversité		
Closing session				
Chair: Maja Mikosinska				
Plenary question for voting				
13:05 - 13:25	Main conclusions of workshop Day 1, 2, 3	Lynne Barratt, NEEMO		
13:25 - 13:35	Closing statements	Maja Mikosinska, EASME		



The Platform Meeting is coordinated by the NEEMO external monitoring team on behalf of the European Commission Directorate General Environment and the European Agency for Small and Medium Enterprises

ANNEX 3:

PLENARY PRESENTATIONS



Policy framework: Biodiversity Strategy for 2030

LIFE Platform meeting of 2 March 2021 Joaquim CAPITÃO & Frank VASSEN DG ENV.D3, Nature Protection Unit







EU nature policy focus so far: Natura 2000



- EU wide network of >27 800 sites, covering 18% of EU land and ca. 9% of marine area (+/- completed on land, still major marine gaps !)
- site-specific conservation objectives and measures: still work in progress!
- many sites still not properly managed (lack of administrative capacity and staff resources, insufficient financing, etc.)
- still many signs of ongoing deterioration, restoration works too small scale...




Improving connectivity – why, where and how?

increasing uncertainty about what exactly is needed, where, how much, etc.

- allowing migrating/mobile species to complete their life cycle (eg. Atlantic salmon)
- improving coherence and robustness of the protected area network
 - (i) improving site quality by better management
 - (ii) increasing the size of current sites
 - (iii) enhancing connections between, or join up, sites, either through physical corridors or stepping stones.
 - (iv) creating new sites
 - (v) reducing pressures by improving the wider environment, including through buffering of sites
- making nature more resilient to climate change (expected range shifts)



Key targets of the EU Biodiversity Strategy



30% of land in Europe

- Coherent network of protected areas :
 - → legally protect a minimum of 30% of the EU's land area and integrate ecological corridors, as part of a true **Trans-European Nature Network.**
- EU Nature Restoration Plan:
 - → no deterioration in conservation trends and status of all protected habitats and species by 2030;
 - → at least 30% of species and habitats not currently in favorable status are in that category or show a strong positive trend



Thank you





CONTENTS

IUCN Guidelines for Conserving Connectivity through Ecological Networks and Corridors

Gary Tabor V.M.D M.E.S.

President, Center for Large Landscape Conservation (CLLC)

Chair, IUCN WCPA Connectivity Conservation Specialist Group (CCSG)

Presented to the Virtual LIFE Platform meeting: "Lessons from LIFE on ecological connectivity towards a coherent, functional and resilient network of protected areas"





WORLD COMMISSION ON PROTECTED AREAS

IUCN Guidance on Protected and Conserved Areas





Established 2016

Experts working in government, scientific, academic, non-profit, and business sectors with over 450+ institutions represented





CENTER for LARGE LANDSCAPE CONSERVATION

960+ Members in 120+ Countries









CONSERVATION







- \succ Established 2017
- \geq 120+ Members on six continents
- >Subgroups
 - Asian Elephant Transport WG
 - Latin America & Caribbean Transport WG
- >IUCN Guidance: Addressing the impacts of linear transportation infrastructure on ecological connectivity (anticipated 2021)



CCSG Transport Working Group (TWG)



CCSG Marine Connectivity Working Group (MCWG)

- ► Established 2019
- ≻90+ members in 25+ countries
- Objectives: Science; Planning; Governance and participation; and Communication, technical outreach, anc support
- ➤Select activities:
 - Rules of thumb for building connectivity conservation into MPA network design
 - Global Roadmap for Marine Connectivity Conservation



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Ecological Connectivity for Marine Protected Areas



Two Decades in Development

2001 to 2020







Global Guidelines Consultations

- July 2017 in Cartagena (Colombia) 20 participants (SCB/ICCB meetings)
- Aug 2017 in Foz do Iguaçu (Brazil) 10 participants (SER meetings)
- Jan 2018 in Nairobi (Kenya)

50 participants

- Jan 2018 in Arusha (Tanzania) 25 participants
- Mar 2018 in Canberra (Australia) 55 participants
- July Sept 2019: Global Online Consultation

over 100 participants

Nov 2019 in Brasov (Romania)

50 participants (EU CoreHabs)

Feb 2020 in New Delhi (India)

15 participants (CWC meetings)







CENTER for LARGE LANDSCAPE CONSERVATION

A truly Global Group Effort

- ≻16 core authors
- ➤38 case study authors
- 150+ individual reviews in consultations
- From 30 countries on every continent outside Antarctica



English, French...and Spanish





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Guidelines Purpose

Consistent and Measurable Practice

Launch forward connectivity conservation by:

- Consolidating a wealth of knowledge and best-available practices
- Advancing concrete guidelines for what a conserved ecological corridor entails
- Recommending conserved ecological corridors be tracked by the World Database on Protected Areas







- 1 million species at risk of extinction
- Anthropogenic activities expanding
- Climate change
- While protected areas and other effective area-based conservation measures (OECMs) are essential, need connectivity
- The need: clarify and standardize a shift to large conservation networks.
- Ecological networks for conservation: designed, implemented and managed so ecological connectivity is maintained and enhanced where present, or restored where it has been lost

Introduction: The need for connectivity







- Many terrestrial protected areas within human-dominated systems are isolated from one another.
- Island biogeography and metapopulation theory
- Spatially distinct subpopulations can be reconnected by movement of individuals = genetic exchange and possible reestablishing of populations.
- Improving or sustaining connectivity between protected areas and OECMs = key for conservation of biodiversity.
- Common approaches for modeling connectivity







Only 9.3-11.7% of the terrestrial realm *connected*; marine... not yet been assessed

Saura et al. 2018. <u>Protected area</u> <u>connectivity: shortfalls in global targets and</u> <u>country-level priorities</u>. Biological Conservation 219: 53-67. <u>https://doi.org/10.1016/j.biocon.2017.12.020</u>

Growth in Protected Area coverage (1990-2018)





From UNEP-WCMC, IUCN, and NGS, 2018. Reproduced with permission



Terrestrial Protected Areas Mapped Around the Globe

CONTENTS



Global Assessment of 550 Connectivity Plans (effective n=263)

Authors: Keeley, Beier, Creech, Jones, Jongman, Stonecipher, and Tabor Environmental Research Letters – Oct 1 2019

Making sense of the predominant and interchangeable terms used in connectivity conservation







"Ecological connectivity is the unimpeded movement of species and the flow of natural processes that sustain life on Earth."

Endorsed by the 13th Conference of the Parties to the Convention on Migratory Species (CMS, 2020)





CONTENTS

Definitions:

"Ecological connectivity is the unimpeded movement of species and the flow of natural processes that sustain life on Earth" (CMS, 2020).

and

"The movement of populations, individuals, genes, gametes and propagules between populations, communities and ecosystems, as well as that of non-living material from one location to another."



LARGE LANDSCAPE

WHAT is the spatial term for conserving connectivity?

There are different terms and practices used around the world!

- Areas of connectivity conservation
- Biological corridors
- Climate corridors
- Conservation lands networks
- Conservation management networks
- Linkage zones
- Permeability areas
- Territorial systems of ecological stability
- Marine protected area networks
- Transboundary conservation areas
- Wildlife corridors



Ecological Corridor

A clearly defined geographical space that is governed and managed over the longterm to maintain or restore effective ecological connectivity

	Protected areas	OECMs	Ecological corridors
MUST conserve in situ biodiversity	•	•	
MAY conserve in situ biodiversity			•
MUST conserve connectivity			•
MAY conserve connectivity	•	•	



The Architecture for Large Scale Conservation



Western Thailand

© Songtam Suksawang / Thailand National Parks Office, Department of National Parks Wildlife and Plant Conservation, Ministry of Natural Resources and Environment

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Ecological network for conservation

A system of core habitats (protected areas, OECMs, and other intact natural areas),

(if not already connected by protected areas) connected by ecological corridors outside of protected areas.

to conserve biological diversity in systems that have been fragmented

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Conceptual representation of an ecological network for conservation





➢Objectives

Contribution to ecological network

- Social & economic values
- ➤Delineation
- ➢Governance
- ≻Tenure
- ≻Legal mechanisms
- ➤Longevity
- ≻Management
- >Monitoring, evaluation, reporting









A Compendium of Implementable Actions

Perhaps Ideal = Corridor legislation

➤Land use plans and zoning for landscapes;

➤Marine spatial plans and zoning for seascapes;

➤Covenants and easements;

Incentives and disincentives;

➢ Regulatory controls for public health and safety;

> Development controls and building standards; and

Written voluntary conservation agreements with specific landowners or rightsholders.







Connectivity is relevant across a range of environments from **terrestrial** and **marine** to **freshwater** and **airspaces**.







Ecological connectivity increasingly in law and policy International instruments and bodies:

- Convention on Biological Diversity (CBD)
- Ramsar Convention
- Convention on the Conservation of Migratory Species (CMS)
- World Heritage Convention
- UN Convention for the Law of the Sea (UNCLOS)
- UN Framework Convention on Climate Change (UNFCC)
- UNESCO's Man and the Biosphere Programme
- Revised African Convention on the Conservation of Nature and Natural Resources (Maputo Convention)
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)

ARGE LANDSCAP

• UN Convention on Non-Navigational Uses of International Watercourses





A principal recommendation of these Guidelines is that the designation 'ecological corridor' be recognized in regional, national, and subnational law and policy, such as:

- ≻Bhutan
- Costa Rica,
- ➤Croatia,
- ≻India,
- ≻Kenya,
- ≻Malaysia,
- ➤The Netherlands



CENTER for LARGE LANDSCAPE CONSERVATION

Tools & Reporting

Protected Planet: World Database on Protected areas

Area-based commitments











CENTER for LARGE LANDSCAPE CONSERVATION
Ecological corridors in terrestrial, freshwater and marine ecosystems are a critical conservation designation needed to ensure healthy ecosystems.

- Overall, connectivity conservation, by linking together protected areas, OECMs and ecological corridors, offers scalable solutions for environmental, social and economic challenges to conserve biodiversity in the face of climate change.
- Connectivity conservation is growing exponentially around the world and can be strengthened by the Guidelines



ARGELANDSCAP

🛨 Terrestrial **†** Freshwater ★ Marine 6.

Annex: Approaches to conserving ecological corridors in ecological networks



The Great Eastern Ranges: Australia's first continental-scale ecological network for conservation

Ian Pulsford, Connectivity Conservation and Protected Area Consultant Gary Howling, Great Eastern Ranges Initiative

Key Lesson

A bold mission to protect, restore and relink habitat to allow nature and people to continue to thrive despite changing climatic conditions can lead to engagement of many parts of society and on-ground conservation activities.







The Spanish National Network of Drover's Roads (Vías Pecuarias)

Marcos Pradas, Independent Forest Engineer

Key Lesson

A transportation network originally established for moving livestock can provide ecological connectivity among protected areas, especially when restored for that function.





WCP WORLD COMMISS ON PROTECTED AN



COREHABS to BearConnect: Securing ROAMing in the wilderness corner of Europe (Ancuta Fedorca, Transilvania University)

Context and challenge

- Romania's Carpathian Mountains: largest continuous forest ecosystems in Europe; well-preserved natural habitats; large herbivores and carnivores (brown bear, wolf, lynx)
- Biodiversity hotspot at the crossroads of important biogeographic regions
- Threats: changes in land ownership & infrastructure development
- 30.2% of Romania is forest (including virgin forests and ancient beech forests), much of it privately owned.
- Many sites (24.46% of the country) included in Natura 2000 network; *however, sites are spatially disconnected*









- Kathy MacKinnon (Chair, IUCN WCPA), Trevor Sandwith (Head, IUCN Global Protected Areas Program), Craig Groves (Editor, BPG Series), and Dave Harmon (editing and layout)
- Publication Coordinators Aaron Laur, Gabriel Oppler and Grace Stonecipher, and Copyeditor Abigail Breuer.
- 16 Core authors, 38 case study contributors, 150+ consultation reviewers

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Yellowstone to Yukon Conservation Initiative







GORDON AND BETTY MOORE FOUNDATION



Contact

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IUCN WCPA CCSG: Gary Tabor, Chair (gary@largelandscapes.org)

More Information: <u>www.conservationcorridor.org/ccsg</u>

Read the full Guidelines: https://doi.org/10.2305/IUCN.CH.2020.PAG.30.en



Virtual LIFE Platform Meeting 2-4 March 2021

Plenary presentations Day 2

IUCN Protected Area Governance Typology and Ecological Corridors

Boris Erg, Director IUCN Regional Office for Eastern Europe and Central Asia (ECARO) Kevan Zunckel, Chair IUCN WCPA Transboundary Conservation Specialist Group (TBC SG)

Content

- Definition of governance
- Relevance for ecological corridors
- PA governance typology
- Governance vs. management



Governance and ecological corridors



Graham et al. (2003) define governance as:

"the interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say."

Hilty et al. (2020) define an ecological corridor as:

"a clearly defined geographical space that is governed and managed over the long term to maintain or restore effective ecological connectivity."





Governance vs. management

Governance	is about process	 Who decides what the objectives are, what to do to pursue them, and with what means How to bring together the appropriate people with the best available information to determine what ought to happen How the decisions are taken Who holds power, authority, and responsibility Who is or should be held accountable Reconciling differences between and among stakeholders Deciding amongst choices that lead to trade-offs
Management	is about substance	 What is done in pursuit of given objectives The means and actions to achieve such objectives Generate, implement, and assess the effectiveness of alternative policies, programmes, and plans

Vasilijević et al. (2015) adapted from Borrini-Feyerabend et al. (2013)



Rationale behind the application of governance typologies to ecological corridors

- Protected areas are isolated, no matter their description.
- Islands are vulnerable due to fragmentation and isolation.
- Ecosystems often span national and other administrative boundaries.
- Climate change exacerbates the situation due to the movement of climate envelopes and the need for ecosystems and biodiversity to adapt and move accordingly.
- Protected area expansion and connectivity is urgently required, no matter the format.





IUCN PA governance types

IUCN defines a protected area as a "clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values."

The definition is expanded by six management categories, are applied with a typology of governance types – a description of who holds authority and responsibility for the protected area.

Type A. Governance by government: Federal or national ministry/agency in charge; Sub-national ministry or agency in charge (e.g. at regional, provincial, municipal level); Government-delegated management (e.g. to NGO)

Type B. Shared governance: Transboundary governance (formal and informal arrangements between two or more countries); Collaborative governance (through various ways in which diverse actors and institutions work together); Joint governance (pluralist board or other multi-party governing body)

Type C. Private governance: Conserved areas established and run by individual landowners; non-profit organizations (e.g. NGOs, universities) and for-profit organizations (e.g. corporate landowners)

Type D. Governance by Indigenous Peoples and local communities: Indigenous Peoples' conserved areas and territories - established and run by Indigenous Peoples; Community conserved areas – established and run by local communities.

Vasilijević et al. (2015) adapted from Borrini-Feyerabend et al. (2013)



IUCN Protected Area Matrix

Governance type	A. Governance by government		B. Shared governance		C. Private governance			D. Governance by indigenous peoples and local communities			
Management category	Federal crrational ministry or agency in charge	Sub-national ministry or agency in charge	Government-delegated management (e.g. an NGO)	Fandounciary governance	Collaborative governance ivarious forms of piugal st influence)	Joint governance (pluralist governing body)	Conserved areas established and runbyindividual landowners	by non-profit organisations (e.g. corporate land Owners)	by for-profit organisations (e.g., corporate jand ownears)	Indige nous peoples' conserve d areas and territories – established and run by indigerous peoples	Community conserved areas and territories - established and run by local communities
I a. Strict Nature Reserve											
Ib. Wilderness Area											
II. National Park											
III. Natural Monument											
IV. Habitat/ Species Management											
V. Protected Landscape/ Seascape											
VI. Protected Area with Sustainable Use of Natural Resources											

Borrini-Feyerabend, G. and Hill, R. (2015)

Examples of PA governance types



Shared



https://www.waddensea-worldheritage.org/one-wadden-sea-one-global-heritage



https://www.uitinapeldoorn.nl/het-nationale-park-de-hoge-veluwe

Indigenous Peoples



https://www.countryneedspeople.org.au/what_are_ipas

Government









Marzia Cont, Sergio Canobbio

LIFE IP GESTIRE 2020 'Lessons from LIFE on ecological connectivity towards a coherent, functional and resilient network of protected areas'

virtual LIFE Platform meeting, 2-4 March 2021





La intrategae presprata per liete Natura (1000 e la boodieersità in Londaer)

LIFE IP GESTIRE 2020 – Ecological Connectivity

Implementation of the **Prioritized Action Framework** in Lombardy - Italy

tibe * interestion in the second seco

Action A05: Planning of interventions for the ecological connectivity in Lombardy Action C04: Support to the realization of the interventions



Strengthening connectivity through the consolidation of **functional habitats** to target animal species.

Focus on **plain and foothills** - intense anthropogenic pressure due to agriculture, urbanization, infrastructures





IFE GESTIRE 2020 - Nature Integrated Management to 2020.

THE CONCEPT: Priority Areas of Intervention



API - Priority Areas of Intervention

Anthropogenic pressure + Ecological suitability + Presence of specific habitats for target species



	Target species	Key habitats					
	Dragoflies and diurnal butterflies	Riparian vegetation and suitable meadows					
	Rana latastei and Rana dalmatina	Wet woods					
+	Triturus carnifex and Lissotriton vulgaris	Ponds and swamps					
	Ixobrychus minutus	Reeds					
	Ardea purpurea	Hedgerows and reeds					
	Alcedo atthis	Riparian vegetation and banks					
	Lanius collurio and Lanius minor	Margins and prairies					
Sec.	Bats	Ecomosaic of the agricultural and suburban landscape					

GIS-related information, literature, databases, management plans of Natura 2000 sites

Field visit check by Gestire 2020 «Technical Facilitators» (perimeters, feasibility, photographic reportage of key features...)





IFE GESTIRE 2020 - Nature Integrated Management to 2020.

API - Priority Areas of Intervention



Gruppo01

VA

API - Datasheet



Provincia

Varese

API – From Theory to Practice

- 1. APIs existence has been **acknowledged** by Regione Lombardia with an official act.
- 2. There are **no obligations** for local authorities and landowners. APIs should be seen as **opportunities** to support locals in implementing effective interventions for conservation purposes.
- 3. There has been a huge activity to **increase awareness** about APIs:
- They have been included in the official GIS data about protected areas.
- They have been presented in many meetings with local authorities and professionals, and discussion about how to raise funds for interventions was a key point.
- Datasheets available on the web, and a presentation video for each API has been made.
- 4. A **dedicated funding call** has been issued.



API – Into Practice: the Governance model



- 27 APIs: inside protected areas → the referent is the Regional Park or the Local Park.
- 14 APIs: ouside protected areas → the referent can be a municipality, province or land reclamation authority.

The local referent contacts **landowners** of the areas potentially interested by interventions



They **verify and agree** where and how to realize the interventions according to the API datasheet. Reasons for the interventions are explained, in order to raise awareness about biodiversity.



API – Into Practice: the Governance model





- The local referent realizes, takes care and supervises the interventions.
- The landowner accepts not to modify the areas for 15 y.
- Regione Lombardia advertises the action, underlining the owners' environmental commitment (nice for farmhouses and tourism...)

Signature of the agreements

Definitive project (LIFE funds from Gestire 2020)

Interventions are realized





FE GESTIRE 2020 - Nature Integrated Management to 2020 students internets or Peter Neture 2020 a la historietta in Lamberta





LIFE GESTIRE 2020 - Nature Integrated Management to 2020. La stratega integrate per Refe Neture 2000 e la Sociedada in Londerdia

API – Perspectives

4 agreements with local «managing referents» (2 municipalities, 1 local park and 1 land reclamation authority) and landowners have been signed in as many APIs. **Interventions covered by LIFE funds**.

1 attempt has been unsuccessful, due to the stand back of the landowner.

December 2020 – March 2021: Funding Call **(mixed LIFE and Regional funds)** open to potential API referents. At the moment **8 applications** have been submitted in as many APIs, both for interventions in public and private areas.



API – Bottom line

LIFE IP GESTIRE 2020 identified **«Priority Areas»** as a tool to increase ecological connectivity.

Areas have been **identified** with a **top-down approach** (need for a vision of the overall regional conservation strategy).

The **governance process** for the areas is totally **bottom-up**. No obligations are enforced by law, and the agreements are fully voluntary.

LIFE IP GESTIRE 2020 promotes in many ways (directly or looking for complementary funds) the **funding** of the interventions.



LIFE IP GESTIRE 2020





"Overview of financing mechanisms for connectivity conservation"

Jamie McCallum Transboundary Conservation – Specialist Group IUCN - WCPA Virtual LIFE Platform Meeting; 2-4 March 2021



Non-finance options and negative incentives

- **Direct regulation**
- Perverse incentives
- Voluntary active management





Economic instruments

- Choice (not command!)
- Price signals to change behaviour and remedy market failure
- Positive price signal incentives for positive externalities
- Negative price signal taxes/charges for negative externalities





Direct funding (payments and fiscal advantages)

- Payments (including results based payment systems (RBPS)) Subsidies
- Tax reductions, incentives and exemptions
- Compensation





Payments for ecosystem services

- Service beneficiary and landholder contracts
- Activity capping harmful activities
- Activity enhancing measures
- Insurance opportunities





Market creation

- Access to private sector markets
- Credits generated and traded (e.g. REDD+, biodiversity)
- Trading rights (including property) and legislation
- Independent verification




Other innovations

- Corporations (ESG, supply chain certification, sponsorship)
- Citizens (crowdfunding and lotteries)
- Conservation outcome bonds
- Blockchain and green tokens



146 ANNEX 3- PI FNARY PRESENTATIONS







Priority Action Frameworks and connectivity

Ecological connectivity, restoration and management needs for Natura 2000 in 2021-2027

Przemyslaw Oginski

Unit D.3 "Nature Protection" DG Environment

Virtual LIFE Platform meeting

4 March 2021



PAFs – planning tools to achieve the goals of nature legislation





- First cycle 2014-2020;
- Second cycle 2021-2027;
- Priorities and measures for funding;
- Planning tools for EU funds (operational programmes, CAP strategic plans, LIFE integrated projects [SNAPs]).



State of play with PAF submission

- Received 55 PAFs from 24 MS: AT, BE, BG, CY, CZ, DE, EE, EL, ES, FI, HR, HU, IE, IT (11 regions), LT, LU, LV, MT, NL, PL, Pt, RO, SI, SK
- Assessments provided → 2-step evaluation





Aggregation of costs

EU27		
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Maintenance and restoration needs (annual and one-off)

•

- 3 main types of needs (horizontal, ecosystem-related, species-specific)
- Inside Natura 2000 and outside Natura 2000 ("green infrastructure")



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

PAF format for presenting information on major ecosystem types:

- Current status and progress made so far
- Further measures needed
- Prioritization of measures to be implemented during next MFF
- List of prioritized measures to be carried out, and estimated costs for these measures
- Expected results (incl., if relevant, other benefits)







Conservation status as a driver for priorities and measures

Exaple of heaths in Ireland

Code	Short/common name	2007	2013	2019
1420	Halophilous scrub	Basi	Bad 4	Bad 4
2140	Empetrum dunes*	Bad	Inadequate=	Favourable
2150	Dune heath*	Bad	inadequate=	Inadequate=
2170	Dunes with creeping willow	Inadequate	inadequate=	inadequate=
4010	Wet heaths	Bath	(Bad)+	Bed &
4030	Dry heaths	Inadequate	Back.	Bald=
4060	Alpine and subalpine heath	Inadequate	Bad 1	Bad (*
5130	Juniper scrub	Inadequate	inadequate=	Favourable



CONTENTS

PAFs – example of prioritisation of measures for grasslands

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
Agri-environmental scheme for Fixed coastal dunes (2130): extensive grazing, no fertiliser input (average annual cost per bectare: £490)	recurring	1 500ha	735 000	FAERD
Agri-environmental scheme for Machair (21A0): extensive grazing, no fertiliser input (average annual cost per hectare: €490)	recurring	1,000ha	490,000	EAFRD
Agri-environmental scheme for Semi-natural dry grasslands (6210): extensive grazing, no fertiliser input (average annual cost per hectare: €350)	recurring	800ha	280,000	EAFRD
Agri-environmental scheme for Species-rich Nardus grasslands (6230): extensive grazing, no fertiliser input (average annual cost per hectare: €350)	recurring	100ha	35,000	EAFRD
Agri-environmental scheme for <i>Molinia</i> meadows (6410); extensive grazing, no fertiliser input (average annual cost per hectare: €350)	recurring	400ha	140,000	EAFRD
Agri-environmental scheme for Lowland hay meadows (6510) (average annual cost per hectare: €350)	recurring	100ha	35,000	EAFRD
Non-productive investment for the restoration of Fixed coastal dunes (2130): Exclusion areas to prevent encroachment of livestock (average annual cost per hectare: €200)	One-off	10ha	286	EAFRD/national
Non-productive investment for the restoration of Machair (21A0): Exclusion areas to prevent encroachment of livestock (average annual cost per hectare: €200)	One-off	10ha	286	EAFRD/national
Non-productive investment for the restoration of Calaminarian grasslands (6130): Scrub removal (average annual cost per hectare: €200)	One-off	10ha	286	EAFRD/national
Non-productive investment for the restoration of Semi-natural dry grasslands (6210): Scrub removal and re-instatement of mowing regimes	One-off	50ha	1430	EAFRD/national

within Natura 2000 sites designated for the targeted habitats and species







• E.2.8. Freshwater habitats (rivers and lakes)

Connectivity of habitats and fish populations should be restored, e.g with fish passes or removal of obstacles • (dams) where necessary and possible within Natura 2000 sites and outside Natura 2000 sites. Planning and implementation of measures for creation and improvement of habitat connectivity of freshwater habitats for species not listed on annexes of HD (e.g. European eel Anguilla Anguilla) should also be enhanced.

 additional measures beyond Natura 2000 (wider green infrastr 	ucture meas	sures)		
Name and short description of the measures	Type of measure*	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Possible EU co- funding source
Creation of habitat connectivity with fish passes in freshwater habitats for species not listed on HD (e.g. European eel Anguilla anguilla)	One-off		350 000 - 450 000	LIFE, ERDF

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

	Name and short description of the measures	Type of measure*	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Possible EU co- funding
l					source
	Establishing connectivity and maintenance of key corridors for mobile species with concrete conservation measures predominantly on state owned land	One-off	9 projects	0.5 M – 0.8 M	ERDF, LIFE, EARDF
	Overpasses for mammals and underpasses/tunnels for amphibians and mammals in accordance with the Strategy Transport Development of the Republic of Slovenia until 2030	One-off	2 x Highway overpases (10 M), 10x underpasses for amphibians (10 M)	2,5 M – 3,5 M	ERDF, LIFE
ł	N A T U R A 2000	1.20	1		



Belgium Wallonia:

- "for connectivity reasons, the restoration of 200 ha of dry heathlands, and 100 ha of wet heathlands is still necessary";
- **Re-creation of surfaces** is needed to improve the surface area parameter and to improve connectivity of *inland dunes with open Corynephorus and Agrostis grasslands (HT 2330): creation of 75 ha of which 25 ha in Natura 2000 sites.*
- The conservation status of the 3 amphibian species (Alytes obstetricans, Bombina variegata and Bufo calamita) were evaluated as bad, mainly on the basis of population and future prospects parameters. [...], the main pressures are the lack of connectivity between the remaining (scattered) populations, beside direct habitat destruction in quarries and industrial fallow lands.







Estonia:

1. Protected area connectivity and	One-off	20.000		
functionality analysis	One-on	20 000	LIFE	

- 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
- Analyses of spatial connectivity of old-growth forest and other habitats suitable for its biota (oldgrowth forests connectivity analysis)
- Studies on determining the viable population size and spatial **connectivity of endangered species**
- E.2.6. Woodlands and forests
- Improving habitat conditions (incl. connectivity) of forest species (incl. *Tetrao urogallus*, *Pteromys volans*, *Chiroptera* species)







Connectivity in PAFs and LIFE (SNAPs)





- Strategic nature projects (SNAPs) - one of the project categories under subprogramme "Nature and Biodiversity"
- To implement PAFs (national or regional) and other plans necessary for BS2030
- Conservation actions, capacity building, mobilisation of other resources
- Connectivity could be one of the priorities



Other funding source for ecological connectivity

Next Generation EU	Temporary reinfo	• RRF
2021-2023	€ 750 billion	(RRPs)
Multiannual Financial Framework 2021-2027 Min. 7,5 min. 100 for biodi	€ 1 074.3 billion % (2024) % (2026) versity	 LIFE CAP ERDF/CF Interreg EMFAF



LIFE BIORGEST: Innovative Forest Management Strategies to Enhance Biodiversity in Mediterranean Forests. Incentives & Management Tools

Innovative financial mechanisms for forest management

Platform meeting on Connectivity 4 March 2021 Guillem Bagaria





Analysis of the potential innovative financing mechanisms

Public	Private	Public/private
Tax incentives	Capital funds	Carbon markets
Tax pathways	Certifications, labels	Biodiversity banking
EAFRD - CAP	Environmental sponsorship, CSR	Payments for ecosystem services
ERDF		
LIFE programme		
Green funds		
Other public mechanisms		
		Link to the document in Spanish
artners:	*	in the second





European Agricultural Fund for Rural Development (EAFRD)

- Most financial support to forest management derives from EAFRD, through the CAP.
- Few of the measures of Spanish RDPs have a practical use for biodiversity conservation.
- Submeasure 15.1 (payments for forestry, environmental and climate commitments) has potential, but:
 - Only three Spanish autonomous communities opened calls for this submeasure.
 - Few beneficiaries, all of them public administrations.
 - Complex to design and adapt to local context but the effort is worth it!





CTFC 🚅













Tax incentives

Current situation

- Several tax incentives for forest management in Spain, but none strictly covering biodiversity conservation.
- In some countries, conservation easements have important tax benefits.
- Efforts have been made to promote this kind of incentives in Catalonia, with no success yet.

Getting closer

- Catalonia will approve this year a public registry of conservation estates (PPAs and OECMs).
- It is a crucial step towards the implementation of tax incentives for biodiversity conservation.







Other mechanisms

Green funds

- Strong potential for biodiversity conservation.
- In Catalonia, the Natural Heritage Fund will be operational soon, nourished by CO₂ emission taxes.

Private or public-private mechanisms

- The access to these funds is still difficult, but some examples of labels, environmental sponsorship...
- Several experiences of **PES** in Spain, almost all involving public administrations.
- A pioneer carbon-biodiversity-water market under development in Catalonia (LIFE CLIMARK project).







Tools for a full implementation of financial mechanisms

Ensuring long-term effectiveness

- Forest planning tools incorporating conservation goals.
- Contracts with landowners (e.g. land stewardship contracts), with conservation commitments.

Monitoring

- Need for effective but low-effort monitoring systems to prove the results of management on biodiversity.
- An Index of Biodiversity Potential (IBP) for Catalan forests developed within the LIFE Biorgest project.
- The IBP also provides information on management and recommendations to retain and increase biodiversity.







Tools for a full implementation of financial mechanisms

The Index of Biodiversity Potential (IBP)

Stand and management factors	Context factors
Native species	Woodland continuity over time
Vertical structure of the vegetation	Aquatic habitats
Standing deadwood	Rocky habitats
Deadwood on the ground	
Very large live trees	
Microhabitat-bearing trees	IBD CAT
Openness	
artners:	
CONSORCI FORESTAL DE CATALUNYA CTFC C Generalitat de Catalunya Departament d'Agricultu Ramaderia, Pesca i Alim	rra, entació Centre de la Propietat 🏟 CREAF 👬 💥 XCN





Executive Agency for

Small and Medium-sized Enterprises

EASME

LIFE and connectivity

LIFE Platform Meeting on connectivity - 04/03/2021 Silvia Donato Project Adviser









The LIFE programme 2021 - 2027

- Increased budget from 3.4 billion EUR (2014-2020) to 5.4 billion EUR (2021-2027)
- STILL the only EU programme <u>solely</u> dedicated to: environment, nature conservation and climate action
- 4 sub-programmes including a new one linked to Clean Energy transition
- Support to the EU Green Deal









Executive Agency for

Small and Medium-sized Enterprises

EASME

Thank you

https://ec.europa.eu/easme/en



Horizon Europe

Nerea Aizpurua DG RTD



Virtual LIFE Platform meeting 2 THEME 3: ENSURING FUNDING FOR CONNECTIVITY CONSERVATION

Research & Innovation: Key Driver of the EU Biodiversity Strategy 2030

HORIZON 2020

> €2.6 billion EU investments in biodiversityrelated research

> In 2020, the Green Deal Call (€1bn, launch 18/09), includes ecosystems restoration.

> 70 cities in Naturebased solutions demonstration projects





> over 100 R&I actions support EU Biodiversity Strategy for 2030 implementation

Cluster 6 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' will include a long-term strategic research agenda for biodiversity.

Biodiversity & Ecosystem Services Destination:

- understanding biodiversity decline;
- valuing and restoring biodiversity and ecosystem services;
- managing biodiversity in primary production;
- enabling transformative change on biodiversity;
- interconnecting biodiversity research and supporting policies.



Research & Innovation: Key Driver of the EU Biodiversity Strategy 2030



https://www.biodiversa.org/1759



Where to find updated information on Horizon Europe funding opportunities'



https://ec.europa.eu/info/fundingtenders/opportunities/portal/screen/home



https://knowledge4policy.ec.europa.eu/biodiversity_en





Funding opportunities within the CAP for connectivity

Antonia Lütteken

European Commission, DG AGRI.F1 Conception of Rural Development





A JOINED-UP, RESULTS-BASED, TARGETED APPROACH

- MS plan use of both CAP Pillars together (including sectorial interventions)
- SWOT analysis, needs assessment

10-50

ENHANCED

- Selection of tools from flexible toolbox
- Targets set, achievements monitored
- Consultation with national stakeholders
- CAP plans approved by Commission

European Commiss



IN A NUTSHELL: Important aspects for nature & biodiversity

- "No backsliding": legal obligation on MS to raise ambition on environment and climate compared to current period. Valid for Nature
- List of legislation concerned in Annex XI of CAP Plan Regulation
- **12 items** listed including Birds and Habitats Directives
- CAP plans needs to take account of analysis, objectives and targets from habitats and birds directive. This includes **Prioritized Action Frameworks, Species Actions Plans** at EU (eg Turtle Dove) or MS level (eg Wolf Plan in France) and to some extend Natura 2000 conservation measures or management plans.
- Strategic Nature Projects: CAP to leverage support and upscale of LIFE SNaPs (Art 86)
- Competent authorities for environment & climate to be "effectively involved" (Art. 94)


Green architecture for landscape and biodiversity on agricultural land

- Designed to focus on several elements beneficial to biodiversity on farm, including birds, pollinator protection, and EU protected species.
- Can promote the protection of existing elements, but also increasing the presence of elements, and of management practices which are beneficial.
- Provides also measures to prevent damage of protected species on agriculture (e.g., wolves).

CAP specific objective 6: Contribute to the protection of biodiversity, enhance ecosystem services and preserve habitats and landscapes







CAP specific objective:

Contribute to the protection of biodiversity, enhance ecosystem services and preserve habitats and landscapes

Green architecture for NATURA 2000 sites

- The combination for Natura 2000 aims at contributing to reach a favourable conservation status of habitats and species of EU interest in agricultural area covered by Directives 92/43/EEC and 2009/147/EC, by
 - preserving or restoring habitats associated with agriculture through adequate management for Natura 2000 sites (e.g. adequate grazing, mowing, habitats re-creation, restoring hydrological management, extensive management of arable land, protecting and restoring hedges and ponds, protection of breeding birds from farm operations),
 - in accordance with the Prioritized Actions Frameworks.

CAP specific objective 6: Contribute to the protection of biodiversity, enhance ecosystem services and preserve habitats and landscapes



Green architecture for NATURA 2000 sites – illustrative examples



Contribute to the protection of biodiversity, enhance ecosystem services and PRESERVE HABITATS and landscapes

Useful links (click on the hyperlink)

- Analysis of links between CAP Reform and Green Deal
- How the future CAP will contribute to the EU green deal
- <u>Commission recommendations to Member States as regards their</u> strategic plan for the CAP
- <u>Review of implementation of the green infrastructure strategy</u>



Thank you



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European Regional Development Fund (ERDF) – Interreg: Funding opportunities for connectivity across borders

LIFE platform meeting Ecological connectivity 4 March 2021

Maud Skäringer European Commission DG Regional and Urban Policy

Cohesion policy 2021-2027



Investment for jobs and growth goal (ERDF and ESF+) eligibility, 2021-2027 informal update based on unpublished lists of regions

- Nearly 1/3 of the EU budget, including European Regional Development Fund (ERDF), European Social Fund Plus (ESF+), Cohesion Fund and Just Transition Fund (JTF), to:
 - Reduce disparities between Europe's regions, strengthening economic, social and territorial cohesion
 - Contribute to EU priorities
- 5 Policy Objectives:
 - 1. A more competitive and smarter Europe
 - 2. A greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe
 - 3. A more connected Europe
 - 4. A more social and inclusive Europe
 - 5. A Europe closer to citizens
- 2 additional Specific Objectives for Interreg:
 - 1. A better cooperation governance
 - 2. A safer and more secure Europe



Entry into force of 2021-2027 regulatory framework expected summer 2021

Interreg is ...?

- One of the two goals of EU cohesion policy
 - Investment for Jobs and Growth (ERDF, ESF+, Cohesion Fund, JTF)
 - European Territorial Cooperation (ETC) or "Interreg" (ERDF)
- A **cooperation framework** between national, regional and local actors from different Member States (MS) and also third countries
- An instrument that operates via programmes at different geographical levels
 - **Cross-border** (strand A): Cooperation between border regions from at least two different MS (or at external borders)
 - **Transnational** (strand B): Cooperation involving regions from several MS / third countries forming larger areas
 - Interregional (strand C): Cooperation between regions from any MS under programmes covering the whole of the EU (Interreg Europe, URBACT, INTERACT, ESPON)
 - **Outermost regions** (strand D): Cooperation of outermost regions with their neighbouring environment
- With EUR 8 050 000 000 of ERDF 2021-2027, a major financial support mechanism for cooperation across borders, including for protection and preservation of nature and biodiversity



Policy Objective 2 (compulsory for Interreg strand A, B, D programmes)

A greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate change mitigation and adaptation and risk prevention and management, and sustainable urban mobility

- Specific Objectives*:
 - i. Promoting energy efficiency measures and reducing greenhouse gas emissions
 - ii. Promoting renewable energy in accordance with Renewable Energy Directive (EU) 2018/2001, including the sustainability criteria set out therein
 - iii. Developing smart energy systems, grids and storage outside TEN-E
 - iv. Promoting climate change adaptation and disaster risk prevention, resilience, taking into account eco-system based approaches
 - v. Promoting access to water and sustainable water management
 - vi. Promoting the transition to a circular and resource efficient economy
 - vii. Enhancing protection and preservation of nature, biodiversity and green infrastructure, including in urban areas, and reducing all forms of pollution
 - viii. Promoting sustainable multimodal urban mobility, as part of transition to a net zero carbon economy



* Provisional regulatory text based on ERDF / Cohesion Fund Regulation political agreement December 2020

Enhancing protection and preservation of nature, biodiversity and green infrastructure, including in urban areas, and reducing all forms of pollution Specific Objective 2.vii

- This includes, for instance:
 - > Protection and preservation of nature and biodiversity, ecosystem restoration
 - Green infrastructure
 - > Measures to improve air quality, including monitoring
 - > Soil decontamination and remediation, rehabilitation of industrial sites and contaminated land
 - Noise reduction
- Added value of cross-border cooperation can include:
 - > Joint knowledge development and planning
 - Protection of cross-border ecosystems
 - Joint management of natural sites
 - > EU-level green infrastructure, for instance ecological corridors across borders
 - > Addressing cross-border pollution sources, including air, soil, water
- Added value of transnational cooperation can include:
 - > Joint knowledge development and planning and joint monitoring at large geographical scale
 - > EU-level green infrastructure, for instance ecological corridors across several borders
 - > Addressing transnational pollution sources, including air, soil, water

"... in order to have a truly coherent and resilient Trans-European Nature Network ... investments in green and blue infrastructure and cooperation across borders among Member States should be promoted and supported, including through the European Territorial Cooperation." (EU Biodiversity Strategy for 2030, May 2020)



Interreg programmes and projects Next steps for 2021-2027 and key takeaways

- Preparation (currently ongoing), implementation and evaluation of 2021-2027 Interreg programmes by participating MS / third countries to involve partnership
 - Involving all those who are concerned / affected by the programme, at all stages
 - Much wider than the national and regional public authorities, for instance:
 - Local authorities (e.g. cities, ...)
 - Economic and social partners (e.g. chambers of commerce, transport operators, ...)
 - Civil society (e.g. environmental partners, NGOs, associations, ...)
 - Cross-border bodies (e.g. Euroregions, ...)
- Programming negotiations with Commission services about programme objectives, types of actions and financial allocations of the programme
- Adoption of programmes by the Commission
- Interreg projects
 - Involvement of at least two partners from two different MS (or a MS and a third country)
 - · Projects need to match the thematic scope of the programme and contribute to its results
 - (Usually) relatively small in size, compared to national or regional ERDF / Cohesion Fund projects
 - · Focus on new solutions, not business as usual
 - Many rules are programme-specific (including eligibility)
 - · Funding decisions are taken by the programme monitoring committee
 - Cooperation takes time and effort



• (Implementation of 2014-2020 programmes still ongoing until end 2023)

Thank you for your attention!

Further information: <u>https://ec.europa.eu/regional_policy/index_en.cfm</u>

Data and further information on cohesion policy support, including Interreg*, for protection of nature and biodiversity 2014-2020: https://cohesiondata.ec.europa.eu/stories/s/Cohesion-policy-protectingnature-and-biodiversity/gznm-sv2i/

*Interreg = "TC" in data charts





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Panel 2 presentations Day 3

EC initiatives on business for biodiversity and natural capital investments

Bringing nature back into our lives

Unlocking public and private finance to scale up investments in biodiversity and nature based solutions Andrea BIANCHINI DG ENV, E1

European Union

PDF processed with CutePDF evaluation edition w

Key targets in the Biodiversity Strategy

- Unlocking €20 billion/year for biodiversity (through MFF, MS co-funding and investments leveraged e.g. via InvestEU)
- 10 billion investment instrument, having InvestEU as a basis

HOW?

- Biodiversity investment needs overall estimated at €20-35 billion/year
- New legally binding targets on ecosystem restoration (on top of Natura2000 legislation) likely to create investment opportunities
- €10 billion investment instrument: build on the global energy efficiency and renewable energy fund of fund (GEEREF) and the natural capital financing facility (NCFF)
- Technical assistance will be key (cf. European Green Deal Investment Plan)



The InvestEU programme

- InvestEU is a new programme providing bank guarantees
- Budget 26,2 bn, expected to mobilise 372 bn
- 30% climate target and 60% env/climate target under the Sust. Infra. Window
- DNSH principle + sustainability proofing





€ 6.9 bn in EU guarantee

RESEARCH, INNOVATION
AND DIGITISATION
€ 6.6 bn in EU guarantee



€ 2.8 bn in EU guarantee



The InvestEU Advisory Hub

- Key role of **technical assistance**
- Advisory hub budget: EUR 400m
- **5 advisory products**: SIW, RID, SME, SIS and Cross-cutting
- EUR 50m additionally provided by LIFE on **TA for Natural Napital and Circular Economy**
- Importance of **blending/combined financing with LIFE, ERDF/CF or private funds**





Thanks for your attention

Andrea Bianchini DG Environment Directorate E - Implementation & Support to Member States Unit E1 - Mainstreaming & Environmental Assessments andrea.bianchini@ec.europa.eu



'Lessons from LIFE on ecological connectivity towards a coherent, functional and resilient network of protected areas'

Supporting nature conservation through sustainable agri-food products, voluntary carbon markets and Corporate social responsibility (CSR) of private companies

Virtual LIFE Platform meeting 2-4 March 2021







FUNDACIÓN

GLOBAL NATURE

Wetlands restoration.

More than 20 projects for the restoration of ecosystems funded by the E.U. mainly by LIFE programs

18,9 million euros invested in more than 14,000 ha of 110 wetlands.

HUMEDALES ESPAÑOLES DONDE SE DESARROLLAN PROYECTOS

Castilla y León

- 1 Humedales de Tierra de Campos
- 2 Laguna del Osó
- 3 Lagunas del Canal de Castilla (72 humedales inventariados, acciones en 30 de ellas)

Comunidad de Madrid

4 Humedales del Parque Regional del Sureste (el Parque cuenta con más de 200 lagunas pero se trabajaron 3)

Castilla-La Mancha

- 5 Laguna del Hito
- 6 27 Tagunas de La Mancha Hümeda, situadas en los complejos lagunares de Alcázar de San Juar; Manjavecas; Pedro Muñoz; Lillo; Vilacañas, Cuero; Villafrance de Los Cabateros; Las Mesas y Las Pedroñeras

Galicia

7 Laguna de Louro (Muros)

Asturias

8 Turberas de Roñanza (Llanes)

Comunidad Valenciana

- 9 L'Albufera de Valencia
- 10 Prat de Cabanes-Torreblanca
- 11 Marjal Dels Moros 12 Marjal de Pego-Oliva

Extremadora

 Humedales del Guadiana
Embalse de Talaván; estanques mediterráneos en Talaván, Hinojal y Trujillo



Wetlands restoration and Voluntary Carbon Markets. Carbon footprint compensation

LIFE Wetlands4Climate





Demonstrate that Mediterranean wetlands may act as carbon sinks if they are properly managed, conserving their ecological integrity.

Calculation of management measures` carbon cycle in 10 pilot wetlands (30 measures)

Approval of a Methodology in the Voluntary Carbon Market Standards regarding Mediterranean wetlands restoration that allow us to certificate and sell Carbon Credits

- Freshwater and brackish marshes showed capacity for **C capture**, especially in the restored sites, with a paramount role of helophytes of 9,5 t/ha/yr (Morant.et.al 2020)



Sustainable Agri-food products Our business case: organic lentils and chickpeas produced to preserve biodiversity.





Private program with farmers in Central Spain for demonstrating that the implementation of biodiversity conservation measures helps to recover endangered bird population and increasing added value of traditional leguminous crops (lentils and chickpeas).

Spanish extensive cereal crops, in rotation with local legumes, house the last European populations of steppe birds. <u>LIFE Estepas de La Mancha</u>

The extra "social value + biodiversity" received by the farmer = $1.02 \notin kg$.

The consumer pays: 1€/kg for conventional legumes, and up to 3.3 €/kg for "ecological + conservation" legumes Average exported to Germany: 50-70 t/yr and 20-25 t/yr sold in Spain



Corporate Social Responsibility:

Improving the connectivity of Dupont's lark populations

Steppe habitats in the Northeast of Castilla-La Mancha. Conversion of cereal crops into other crops (lavender, as a permanent crop):

- Protection of Dunpont's lark to improve the connectivity of different populations
- Less use of fertilizers and pesticides.
- No need to plough (semi permanent crop): less erosion.
- Tourism services.
- A more profitable crop. Better social impact.

Finance by Naturgy and ENEL (compensation measures & CSR)







www.fundacionglobalnature.org





ENSURING FUNDING FOR CONNECTIVITY CONSERVATION

Diversifying private sources of income and funding for conservation:

A practical study case from Foundation Catalunya- La Pedrera (Catalonia, Spain)

Miquel Rafa, Director of Land and Environment <u>miquel.rafa@fcatalunyalapedrera.com</u>



Fundació Catalunya

La Pedrera

TALENT We foster creativity. education and research







Fundació

Catalunya La Pedrera

PPAs Network Facts & figures:

	Nº Sites	Surface (ha)	% of Total Catalonia Region
Nature Sites-			
Properties	27	7.834	0,24%
Land Stewardship Agreements & Payments for Environmental Services	39	288	
Other Conservation Agreements	90	157.741	
totals	156	166.333	5,12 %



- Visitors to Natura Sites: 406.067 visitors (2019)
- Direct jobs: 33
- Protected status: 79% under PAs, 99,7% in Natura2000, 9 Hunting Refuges



Fundació Catalunya La Pedrera

Visitors' centres



Fundació Catalunya La Pedrera

Ecotourism- visitors' centres and agro-shops





















Fundació Catalunya La Pedrera

Parking fees (payment for services)

Benvinguts Bienvenidos Bienvenues Welcome

Espai Natura Congost de **Mont-rebei**

Amb la teva aportació. contribueixes al manteniment i cura d'aquest espai natural

With your donation, you contribute to the maintenance and care of this natural reserve.

Con tu aportación. contribuyes al mantenimiento y cuidado de este espacio natural.

Grace a votre contribution, vous participez à l'entretien et à la préservation de cet espace naturei

CONGOST DE MONT-REBEI 46 aportació Data: Ref. 0/000

CONGOST DE MONT-REBEI

Aportació de 4€ per vehicle Data: Ref. 0/000

XARXA ESPAIS NATURA

Amb la teva aportació, contribueixes al manteniment i cura d'aquest espai natura L'Espai Natura Congost de Mont rebei està gestionat per la Fundació Catalunya La Pedreta










Crowdfunding and *Matchfunding* for social innovation projects



Chiara Rutolo EU Project Manager and Fundraiser at Goteo.org

01 What is crowdfunding?

> Collective financing realised through small contributions in exchange for rewards

> It implies a **digital collaborative platform** to run online campaigns

> It allows: collecting money, fostering participation and awareness raising, widening your network of contacts



02 What is matchfunding?



03 What is Goteo.org?

- Goteo is a platform for civic crowdfunding focusing on projects generate a collective return
- Unique approach to data transparency: we are one of the few open source crowdfunding platforms in the world (stats.goteo.org)



04 Not only a crowdfunding platform...

- In recent years, the **EC**'s interest in **alternative financing** has raised
- Goteo is partner in different EU projects in which crowdunfunding is used as a tool to foster inclusion and collective involvement in a wide range of thematic areas

i.e. **Blue Crowdfunding**, an InterregMED project aiming at spreading information and know-how about crowdfunding as such and as applied to blue economy, in order to make it more accessible to the private and public stakeholders of the sector



Project co-financed by the European Regional Development Fund







ANNEX 4:

WORKING GROUP PRESENTATIONS AND REPORTS

Presentations Working Group 1.1 Guiding criteria for identification of ecological corridors: the practitioners' perspective





Joining up nature across central Scotland

EcoCoLife Connectivity? Identifying where to act

Virtual LIFE Platform meeting 2-4 March 2021

'Lessons from LIFE on ecological connectivity towards a coherent, functional

and resilient network of protected areas'

DAY 1: 2 March 2021

THEME 1: IDENTIFICATION AND PRIORITISATION OF ECOLOGICAL CORRIDORS

Paul Sizeland, NatureScot



Joining up nature across central Scotland

#EcoCoLife





"Implementation of integrated habitat networks to improve ecological coherence across the Central Scotland Green Network"

Develop and follow an "ecological coherence protocol" to test sites and target action in the best possible places to maximise ecological and socio-economic benefits



EU LIFE+; €3M September 2014 – March 2019





NatureScot Scotland's Nature Agency Buidheann Nàdair na h-Alba





Scottish Natural Heritage Commissioned Report No. 512

Ecological coherence definitions in policy and practice

Ecological Coherence - A working definition;

Proposed Working Definition: In the context of the Natura Directives, an ecologically coherent network consists of sites designated for the protection of relevant habitats and/or species; it should support habitats and populations of species in favourable conservation status across the whole of their natural range (including the wider environment and marine areas beyond Natura 2000 sites); and contribute significantly to the biological diversity of the biogeographic region. At the scale of the whole network, coherence is achieved when: the full range of variation in valued features is represented; replication of specific features occurs at different sites over a wide geographic area; dispersal, migration and genetic exchange of individuals is possible between relevant sites; all critical areas for rare, highly threatened and endemic species are included; and the network is resilient to disturbance or damage caused by natural and anthropogenic factors.

17115







Sottish Natural Heritage Commissioned Report No. 552

Ecological coherence definitions in policy and practice

Ecological Coherence - A working definition;

'more, bigger, better, and better connected'

to the biological diversity of the biogeographic region. At the scale of the whole network, coherence is achieved when: the full range of variation in valued features is represented; replication of specific features occurs at different sites over a wide geographic area; dispersal, migration and genetic exchange of individuals is possible between relevant sites; all critical areas for rare, highly threatened and endemic species are included; and the network is resilient to disturbance or damage caused by natural and anthropogenic factors.

1000





Ecological Coherence Protocol





River Restoration adjacent land At CSGN scale

Riparian habitat enhancement in Freshwater







Habitat Networks

















Ecosystem Services







Ecosystem Services



Joining up nature across central Scotland

Service	Environmental capacity indicators	Regulatory demand and societal needs indicators
Accessible nature	Site accessibility, perceived naturalness	Health, Index of Multiple Deprivation, likelihood of use
Education	Site accessibility, habitat diversity	Number of young people, education, Index of Multiple Deprivation, distance from schools
Green travel	Perceived naturalness, access routes	Cost distance from origin and destination travel locations.
Carbon storage	Carbon content per habitat	All assumed to have demand
Local climate regulation	Cover of woodland	Urban areas and domestic houses. Population at risk from heat events.
Air purification	Purification score per habitat	Road type, sealed surfaces, population, health Index of Multiple Deprivation.
Noise regulation	Regulation score per habitat	Predicted noise levels (cumulative), population, health Index of Multiple Deprivation
Water purification	Roughness score, slope angle	Soil erosion risk, pollution risk, distance to water courses.
Pollination	Pollinator visitation likelihood	Distance to arable, orchards and allotments.





06092015.pdf - Adobe Reader







06092015.pdf - Adobe Reader





Opportunity Areas















Scale of opportunity across the CSGN

Habitat/conservation action	Total opportunity identified (km ²) (within networks)	Number of individual patches
Lowland wetland creation	316	22,789
Mires (peat) conservation	460	1131
Floodplain wetland creation	10	825
Tree removal on peat	15	1319
Ditch blocking on peet	0.7	23
River restoration adjacent land	20	4059
TOTAL	021.7	30,146






Ecological Coherence Protocol ... A Practitioners Guide...





A Practitioners Guide



AN INTEGRATED APPROACH TO PLANNING HABITAT CREATION AND ENHANCEMENTS

The EcoCo project (2014-2019) developed an 'ecological coherence protocor' to identify the best paces ecross central Sociand for carrying our management interventions to maximise ecological, ecosystem service and socio-economic benefits, inner Forth Futures plotoed the approach to produce a revelated version of the inprotocol in collaboration with staff from local government, statutory bodies and conservation organisations in late 2018.

Findings from the inner Forth are presented as a case study. Testing the ecological coherence approach has allowed the partners to develop a habitat network for a large management zone area of the CSGN area, as well as refine an approach that can deliver multiple benefits for stakeholders, communicies and sites. throughout the Central Scotland Green Network area and further afield.

This guide introduces practitioners to the streamlined ecological coherence approach and provides guidance to those tooking to undertake similar work in their landscape, land-holding or area.

You can find full guidance at

AN INTRODUCTION TO ECOLOGICAL COHERENCE AND THE APPROACH

In 2010, the Making Spate for Nature' raview

In 3010, the Making Space for Namy' incident understation by Ciphol sectors append for a "stop-barries in the UKs approach to widdlife undersamption," withing a vision where a landscape scale approach to hubitar researching is "under parenet by the re-eggistratement of ecological processes and ecosystem services, for the benefits of by the re-eggistratement of the benefits of parenet and widdlife. "The Revision call for more, biggst, bears and better converse that benefits of parenet half with the plotted and referred in scarce local parenet file with the plotted and referred in scarce local scales, we have adopted scatters have an impact of the works, exceeded definition on ecological coherence introughout this work; "A plotte scale of the works exceeded definition on

"... At the scale of the whole network, otherence is achieved when the full range of variation in valued features is represented, replication of specific features occurs at different sites over a wide geographic area: dopertal, regraphin and genetic exchange of individuals is possible between relevant sites; all critical ereas for rare, highly threatened and endemic species are included; and the network is resilient to disturbance or damage caused by network and anthropogenic factors."



The ecological coherence approach has three components habitat neonoxis, ecosystem services; and opportunity anals. When relevant data and information naising the difference in consistent almins a set geographical boundary; the base plans to carry out ecologically (othered tables with calculated the base) plans to carry out ecologically (othered the case of the fourth three areas are calced to the other with calculated the case is the fourth three areas are calced to the other with calculated the case table with whicher's considerant plans through the period. In the set of the set of the set of the set of the episod. While this guide the last optical through the set of the set of the form as a case stooly.









A few learning points

- Establishing whose priority the "best place"
- Involving people, establishing ownership
- Appliance of science how deep should we go?
- Reliance on models and data how far can we go?
- Relative values of ecosystem services & people benefits
- Visualising results e.g. connectivity, migration, dispersal
- Opportunity bias the low hanging fruit, easy wins
- Is connectivity *always* GOOD?







Measuring connectivity ...







Joining up nature across central Scotland

Thank you for listening







References and thanks to;

- <u>Ecological coherence definitions in policy and practice</u>. Catchpole, R. 2013. NatureScot Commissioned Report No. 552.
- The EcoCoLife Ecological Coherence Protocol
- <u>Developing a habitat connectivity indicator for Scotland</u>Scottish Natural Heritage Research Report No. 887
- <u>EcoServ-GIS v.3.3: A toolkit for mapping ecosystem services</u> Ecoserv GIS; NatureScot Research Report 954
- EcoCo LIFE Scotland, "Implementation of integrated habitat networks to improve ecological coherence across the CSGN. <u>LIFE13 BIO/UK/000428</u>"
- NatureScot; <u>https://www.nature.scot/</u>
- Central Scotland Green Network <u>www.centralscotlandgreennetwork.org</u>
- The EU LIFE Programme
- EcoCoLife; EcoCoLife https://www.ecocolife.scot/, contact Paul.sizeland@nature.scot
- EcoCo Partners;







Scottish



« NaturAdapt, The indispensable adaptation. »



LIFE Natur'Adapt Connectivity & Climate change

Anne-Cerise Tissot, LIFE Natur'Adapt project manager, Réserves Naturelles de France

Platform meeting on connectivity – March 3rd 2021

LIFE #CC #NATURADAPT - LIFE17 CCA/FR/000089





The LIFE Natur'Adapt



CONTENTS









Why are we interested in connectivity?



Species can adapt to climate change in 3 mains ways :



Internal

Ex: *Perca fluviatilis* Shifting in feeding regime (adapting to new prey present) (Gillet & Dubois, 2009)



Temporal

Ex: Acrocephalus arundinaceus Advance laying periods (Dyrcz & Halupka, 2009)

Spatial



Trying to follow the favourable climate !



Ex: Processionary caterpillar *Thaumetopoea processionea* going North in France



Main spatial shifts occuring

In France, they tend to move :

- North (latitudinal shift due to T° rise)
- ➡ Up (latitudinal shift due to T° rise)
- From coastline to inland (due to rising water levels, erosion of the coastline, disappearance of dunes, etc.)





Challenges ADAPT

But in many cases, they can't follow their climatic area

- **Time** to adapt is very short (due to climate change speed)
- Land use does not facilitate this spatial adaptation (due to habitat loss and fragmentation)





⇒ DEVELOPPING CONNECTIVITY *IN* and *BETWEEN* PROTECTED AREAS seems to be an essential measure to help nature adapt to climate change



What we wonder :

- Should we **promote** connectivity as an adaptation measure ?
- How efficient is it? In which conditions? Which scale is the best approah ?
- What does science says?
- Are there any feedbacks from the ground?
- How managers consider it?
- €
- \Rightarrow A systematic review on connectivity is ongoing (MNHN)
- ⇒ 21 adaptation plans will be analyzed to see how connectivity is considered

What we know now:

From 2 previous reviews on adaptation measures :

- Corridors are among the measures most recommended in the literature for adapting biodiversity to climate change
- In the same time, there is very little feedbacks on corridor effectiveness, even less in a climate change context



First findings



Prober et al., 2019

From the ongoing work (MNHN) :

- 16 articles robust enough to demonstrate or not the role of the corridors at local landscape level, over 20 000 initially found on the subject
- Despite the lack of literature, reduced patch isolation, corridor presence, diversity of habitats, and connectedness appear to boost species richness



- LIFE Natur'Adapt leaflet [EN] : <u>https://naturadapt.com/groups/communaute/documents</u> /<u>189/get</u>
- LIFE Natur'Adapt collaborative web platform : <u>https://naturadapt.com</u>
- Europarc knowledge hub on climate change : <u>https://www.europarc.org/knowlege-hub/climate-change/</u>
- Shifting the conservation paradigm: a synthesis of options for renovating nature under climate change <u>https://esajournals.onlinelibrary.wiley.com/doi/full/10.10</u> 02/ecm.1333





Thank you for your attention

Project coordinator



Contact : naturadapt-rnf@espaces-naturels.fr / 03.80.48.91.00

Partners involved in the project



Project co-financers



The Natur'Adapt project has received funding from the LIFE Programme of the European Union



Dalia Bastytė-Cseh

Ecological network for Osmoderma eremita and other species dependent on veteran trees





Platform on Connectivity 2 – 4 March 2021

Hermit beetle (Osmoderma eremita / barnabita)





The Hermit Beetle has a three-year life cycle consisting of the Egg, Larva. Pupa and Imago (adult) stages.

Goal

- to create a functional ecological network for Osmoderma eremita and other species dependent on deciduous veteran trees by:
 - habitat management in core habitats for the species,
 - development of stepping stone elements within the area of ecological corridors and
 - re-establishing hermit beetle populations in restored historical habitats of the species.





Ecological network Kaunas - Vilnius





LIETUVOS GAMTOS FONDAS

Defining of the ecological corridors

Core zones – N2000 designated for *O. eremita*.

- ➤ Ecological corridors:
- Ecology of the target species
 - Habitat requirements
 - Sedentary
- ➢ Available data in the databases,
- ➢ Modelling,
- Field investigations according to the scenarios defined by modelling,
- Permissions for the habitat management work by landowners and responsible institutions.



Data for the ecological corridors

Data from the existing national spatial data bases was selected:

- ➤ Cadastre of Forests,
- results of inventories of Woodland Key Habitats: wooden pastures, giant trees, old broad leaved forests,
- EU natural habitat distribution database (BIGIS): 9070
 Fennoscandian wooded pastures and 9180 * *Tilio-Acerion* forests of slopes, screes and ravines,
- the Informational System for Protected Species (SRIS): old data about O. eremita and data about other species, e.g. Fistulina hepatica,
- data about urban forests (old manor or settlement parks, old trees in alleys and cemeteries etc.)





Area for the ecological network



Scenarios for the ecological network

Ecological corridors

- Inventorisation of trees which girth is greater than 3 m (544 trees);
- Selecting priority trees (273 trees);
- Evaluation which of them need arborist care or restoration of insolation (230 trees);
- Landowners' agreements for tree management with landowners' commitments not to harm the trees (126 trees).





Core zones

- Nature management plans for 2 Natura2000 areas;
- Maintenance and Management Guidelines for Veteran Trees and Deadwood:



https://www.osmoderma.lt/publications



Core zones

Evaluating the need of trees for management and their suitability for protected species:



- 41 trees in Neris river slope by Verkiai;
- 252 trees in Dūkštos oak forest;
- 707 trees in Kaunas oak forest.





HABITAT RESTORATION AND SPECIES CONSERVATION





Medžių senolių tvarkymo darbai

1

1. Lajos redukcinis genėjimas

Priemonė, skirta medžio stabilumui užtikrinti. Dažniausiai atliekama, kai medžio kamienas ar pagrindinės šakos yra drevėtos ir gali neatlaikyti medžio lajos svorio. Skirstoma į šluos tipus:

- pavienių šakų redukcija kai sutrupinamos neproporcingai ilgos šakos,
- viršūnės redukcija kai sutrumpinama medžio viršūnė,
- visos lajos redukcija kai trumpinamos šakos visoje lajoje.

2. Lajos priežiūros genėjimas

Atliekamas genėjimas, siekiant laiku pašalinti nedideles lajos augimo problemas (pvz.: besikryžiuojančias šakas). Šie darbai neturi įtakos medžiui, tačiau leidžia išvengti brangių tvarkymo darbų ateityje.

3. Sausų šakų redukcija

Priemonė, skirta parko lankytojų saugumui užtikrinti. Trumpinamos sausos medžių šakos, augančios virš takų ir kitų dažnai lankomų vietų.

4. Lają peraugančių ir stelbiančių medžių šalinimas

Senieji medžiai užaugo esant geroms apšviestumo sąlygoms. Šviesos stygius ilgalniui lemia apatinių šakų praradimą, todėl iš po senųjų medžių lajų bus šalinami jauni medeliai. Kai kuriose vietose seniesiems medžiams bus atverta daugiau erdvės iš pietinės pusės.



LIETUVOS

GAMT05 FONDAS





3

Darbai vykdomi jgyvendinant 2017–2022 m. Europos Sąjungos aplinkos finansinio mechanizmo "LIFE" ir Lietuvos Respublikos aplinkos ministerijos finansuojamą projektą "Ekologinio tinklo nuo brandžių medžių priklausomiems organizmams sukūrimas" (LIFE16 NAT/LT/000701).

PO

PRIEŠ

5. Dinaminė jungtis

Jungtis įrengiama du ir daugiau kamienų turintiems medžiams. Pučiant stipriam vėjui, specialūs medžiams pritaikyti lynai apsaugo kamieną nuo skilimo.

6. Statinė jungtis

Jungtis įrengiama tiems medžiams, kurių kamienas jau skilęs. Priemonės tikslas – apsaugoti kamieną nuo tolimesnio skilimo. Statinė jungtis įrengiama kartu su dinaminė jungtimi.

7. Drevių išvalymas

6

8

Statybinėmis medžiagomis uždengtos drevės žaloja kamieną, nes medis nesugeba užsiauginti drevės, be to – ji nesivėdina, tad pagerėja sąlygos veistis grybams. Mūras bus šalinamas tiems medžiams, kur tai galima padaryti jiems nepakenkiant.

8. Mulčiavimas ir mikrobiologinių preparatų įterpimas

Priemonė, skirta pagerinti medžio augimo sąlygas ir atkurti tinkamas dirvos savybės tose vietose, kur dirvožemis yra sutryptas (pvz.: šalia takų). Po medžio laja įterpiami specialūs mikrobiologiniai preparatai ir mulčiuojama lapuočių mediena.

Pietinys D.Augubyte in M.Augubyte

Life Osmoderma Daugiau informacijos www.osmoderma.lt

Population restoration of the hermit beetle



- 15 beetles mated in 2019 in Lithuanian zoological garden;
- ➤ 324 larvae grew for a year;





Population restoration of the hermit beetle

> 160 larvae released to Verkiai in 2020.


Population restoration of the hermit beetle



Ecological network Latvia – Lithuania: https://www.osmoderma.lt/publications





Thank you for your attention!

Contacts: Dalia Bastytė-Cseh <u>Dalia.b@glis.lt</u> Lithuanian Fund for Nature







Synthesis report Working Group 1.1 Guiding criteria for identification of ecological corridors: the practitioners' perspective

The objectives of this Working Group were:

- To collect information from practitioners on the guiding criteria most commonly used to identify ecological corridors. Special focus was put on the criteria that allow for a proper integration of delivery of ecosystem services, socio-economic and climate change aspects, while also considering different dimensions of ecological connectivity.
- To provide practical feedback to the DG ENV 'Draft technical note on criteria and guidance for protected areas designations' on the section concerning connectivity corridors.
- To explore the issue of bridging the gap between scientists and practitioners.
- To seek potential synergies among different criteria and their integration during the land planning decision-making process.

Three projects were presented during the session:

LIFE EcoCo (LIFE13 BIO/UK/000428) - Implementation of integrated habitat networks to improve ecological coherence across the CSGN It developed an 'ecological coherence protocol' to identify the best sites to manage for coherence and resilience across the central Scotland while maximising ecological, ecosystem services and socio-economic benefits. LIFE #CC# NATURADAPT (LIFE17/CCA/FR/000089) - Adapting nature protection to the challenges of climate change in Europe: basis of dynamic collective learning The project is setting up tools to help nature conservation managers integrate climate change into their management plans. They are developing a methodology to be implemented at the EU level and producing tutorials and an exchange platform for managers. (LIFE16 NAT/LT/000701) LIFE OSMODERMA - Ecological network Osmoderma eremita and other species dependent on veteran trees This project seeks to establish ecological corridors and stepping stones, as well as temporary habitats between the core zones for target species and in particular the hermit beetle. This ecological network will become part of the Lithuania-Latvia cross-border network, to reduce fragmentation and gaps in the gene flow among populations.

The main findings of the session were the following:

• Governance issues emerged as one of the most challenging aspects of connectivity management. It is of key importance getting stakeholders, including private sector, involved and committed with connectivity conservation goals in the long-term. This is a complex task that requires devoting important human resources and find financial and human incentives to conclude long-term agreements.

• There is a clear lack of evidence from the ground on the effectiveness of the connectivity measures already in place, and a strong need for developing and implementing effective long-term monitoring schemes.

• Connectivity should be regarded as a valuable tool for enhancing biodiversity conservation, but not the solution in itself. It is necessary to also critically consider the efficiency, costs and potential benefits of complementary conservation approaches on a case-by-case basis, including the appropriate management of protected areas.

• It is important to work towards bridging the gap between scientists and the real needs of practitioners/policy makers. When developing theoretical connectivity models, it is necessary to consider real limitations in practice (e.g., private lands). To this is end, there is a need for the development of lists of tools/recipes of what is feasible/ available.

• Even if protected areas are at the core of the Trans-European ecological network, the managers of these areas do not feel legitimated to act outside them and sometimes they lack information on what is going on in the surrounding territory. It is recommended improving the integration of connectivity measures in spatial planning and sectoral policies, as well as of the protected areas themselves in the surrounding rural areas. It is strongly recommended enhancing protected areas managers as key partners for land use planners.

• Enhancing connectivity could be an essential measure to be taken into account in the management/conservation plans of the protected areas/species for ensuring a favourable conservation status of species and habitats, especially in the current climate change context.



Ensuring connectivity across agricultural landscapes

Tuesday 2 March 2021 Jérémie CRESPIN DG ENV.D3, Nature Protection Unit





Opportunities of the EU Biodiversity Strategy (1)







- Coherent network of protected areas :

 → Legally protect a minimum of 30% of the EU's land area and integrate ecological corridors, as part of a true Trans-European Nature Network.
- EU Nature Restoration Plan:
 - → No deterioration in conservation trends and status of all protected habitats and species by 2030, including agriculture related ones; At least 30% of species and habitats not currently in favorable status are in that category or show a strong positive



Opportunities of the EU biodiversity strategy (2)



- EU Nature Restoration Plan:
 - → Bring back at least 10% of agricultural area under high-diversity landscape features. Member States will need to translate the 10% EU target to a lower geographical scale to ensure connectivity among habitats, especially through the CAP instruments and CAP Strategic Plans, in line with the Farm to Fork Strategy, and through the implementation of the Habitats Directive
 - \rightarrow Implementation of EU-wide agro-ecological targets
 - → Increase of uptake of agroforestry support measures under rural development
 - → Afforestation, reforestation and tree planting to support biodiversity and ecosystem restoration



Information from State of Nature



The State of Nature in the EU

Conservation status and brends of species and habitats protected by the EU Nature directives 2015–2018



Current available tools in Nature legislation







• Stepping stones to improve the ecological coherence of Natura 2000 (Habitats Directive Article 10)

• System of strict protection of species (Habitats Directive Article 12 and 13, Birds Directive article 5)

- Preservation, maintenance and reestablishment of biotopes and habitats (Birds Directive article 3) -upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones
- Conservation measures for natura 2000 sites which correspond to to the ecological requirements of the natural habitat types in Annex I and the species in Annex II (Habitats Directive article 6)



Green infrastructure: review of meanstreaming in agricultural policy



COM(2019) 236 final : Review of progress on implementation of the EU green infrastructure strategy:

- Rural Development Programmes: measures that support the conservation, restoration and creation of habitats (e.g : 1,2 million HNV grassland in Romania)
- Challenges remain and the deployment of GI needs to be further scaled up
- GI deployment is often only implemented at a small scale
- Uptake in EU funding mechanisms provides opportunities, but too limited



EU Pollinators initiative

PRIORITY II: Tackling the causes of pollinator decline includes the objectives that Pollinator habitats are effectively connected in the wider landscape, allowing them to disperse across territories.



ACTION 5 — IMPROVE POLLINATOR HABITATS ON AND AROUND FARMLAND		
5A)	The Commission will assess existing experience on the use of pollinator-relevant measures under the common agricultural policy 2014-2020. Based on this, it will develop guidance for managing authorities and farmers, providing technical advice on how to increase the effectiveness of measures, and actively promote it in the common agricultural policy post 2020.	First milestone in Q4 2018
5B)	Member States should encourage the uptake of pollinator-relevant measures in rural development programmes for 2014-2020, including through training and awareness-raising for farmers and other relevant stakeholders.	Continuous
5C)	The Commission will promote the integration of pollinator considerations in the implementation of the post-2020 common agricultural policy, and will include a pollinator indicator in the performance and monitoring framework once finalized and operational.	Continuous



EU funding opportunities



- → LIFE traditional projects, LIFE integrated projects, LIFE Strategic Nature Projects
- → Common Agricultural Policy : new ecoscheme, enhanced conditionality, AgriEnvironment schemes
- \rightarrow Horizon Europe
- \rightarrow Role of Prioritized Action Frameworks :
 - 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
 - Needs identified for CAP, agroecosystems and additional "Green infrastructure" measures beyond Natura 2000 (further improving coherence of the Natura 2000 network, including in a cross-border context)

Useful links (click on the hyperlink)

- EU biodiversity strategy
- <u>Review of implementation of the green infrastructure strategy</u>
- Green Infrastructure on BISE
- <u>State of Nature</u>
- <u>Natura 2000</u>
- Pollinators initiative
- Prioritized Action Frameworks



Thank you





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Virtual LIFE platform meeting on connectivity

Life IGIC

Improvement of green infrastructure (GI) in agroecosystems: reconnecting natural areas by countering habitat fragmentation

Emmanouil M. Kabourakis

Olive and Agroecological Production Systems Lab (EOPS) Department of Agriculture Hellenic Mediterranean University (HMU)

email: info@lifeigic.eu

www.lifeigic.eu

LIFE16 NAT/GR/000575

OBJECTIVES

- Offset the due to intensive farming
 - loss of biodiversity and
 - deterioration of ecological conditions
 - habitat fragmentation
 - in the project area.





LIFE IGIC work

- Development of a network of GI components in an area surrounded by Natura sites.
- Improvement and provision of habitats and enhancement of the conservation status of flora and fauna target species.
- Provision of the basis for up scaling GI development though approaches targeting stakeholders and decision-makers:
 - initiatives of certification and labelling schemes,
 - a sustainable tourism development approach and
 - public awareness/educational activities.
- Assessment of land use, ecosystems and habitats
 - expected to generate a well-established paradigm of biodiversity's status





SCOPE

- Develop Green Infrastructure (GI) and supporting Sustainable Farming Methods in pilot olive orchards that will:
 - conserve and increase biodiversity,
 - enhance agroecosystem services
 - carbon sequestration, conserve landscape, minimize erosion, etc.
 - provide the basis for reconnecting existing nature areas
 - lead to High Nature Value olive orchards.
 - play a demonstrative role in regional, national and EU level





Green Infrastructure (GI) for High Nature Value (HNV) olive orchards

- Support and increase the agroecosystem services in the olive orchards:
 - Conserve biodiversity and rural landscape
 - Added value for tourism
 - Conserve soil fertility and minimise soil erosion
 - Improve olive tree nutrition, water absorption and productivity.
 - Increase beneficials.
 - Reduce olive pest populations.
 - Fix carbon climate change.





Green Infrastructure (GI) and supporting sustainable olive farming practices

- Environmental quality of olive products:
 - added value for olive products.
- Reduce habitat fragmentation connect with surrounding nature areas









www.lifeigic.eu

Green Infrastructure (GI) in olive orchards

- GI in olive orchards includes:
 - Farming practices
 - cover crops
 - Use of pruning residues
 - Pesticide and fertiliser use and applications
 - Water use
 - Conservation of flora species and planting of species that host beneficials and fix nitrogen.
 - Conserve and create habitats for wildlife and beneficials







Policy implications

- The LIFE IGIC project aims to contribute to the EU's Biodiversity strategy to 2020
 - which includes the commitment to develop a green infrastructure (GI) strategy
- The project is backing up the new ERDF and CAP EU policies
 - which promote the integration of GI into new rural development funds.
- Formulation of a concrete proposal to policy makers with regards to specific targets of the Greek National Biodiversity Strategy and Action Plan
 - promoting GI development in non protected farming areas.





Green Infrastructure (GI) and connectivity

- Farming activities (growing and grazing) often negatively effect the Natura areas.
- GI and supporting sustainable farming methods in rural areas
 - reduce habitat and biodiversity losses
 - connects habitats in the landscape
- Economic support and practical technical measures are required for developing GI in farming areas









www.lifeigic.eu





Website: www.lifeigic.eu

<u>@lifeigic</u>





Ensuring connectivity across agricultural landscapes

Lessons learned from LIFE – Ostrovné lúky LIFE12 NAT/SK/001155





Presented by: Adriana Brossmannová, field manager, BROZ

SPECIAL PROTECTED AREA OSTROVNÉ LÚKY



Located on the **Pannonian lowland** – area formed by river dynamics – the Danube river, Little Danube, Dudváh

Dedicated in 2008

Habitats:

Lowland meadows Wetlands Periodic wetlands

13 cadastral areas

Hungarian-speaking minority



Red-footed falcon, Falco vespertinus





Target species



Tawny pippit, Anthus campestris







Red-footed falcon, Falco vespertinus



Target species



Tawny pippit, Anthus campestris



Lesser grey shrike, Lanius minor



Project objective: restore feeding and nesting habitats of target species through establishing a suitable model management of the agricultural land













Project objective: restore feeding and nesting habitats of target species through establishing a suitable model management of the agricultural land



Enhancing connectivity in agricultural areas Lessons learned



Enhancing connectivity in agricultural areas Know your local stakeholders

Who are the interest groups in the area?

- Understand their point of view
- Find common problems
- Find common interests
- Find common solutions



Enhancing connectivity in agricultural areas Lessons learned

Having a local influencer helps 🙂






Know your local stakeholder

Restoring flowering belts along field roads

Stakeholders: mayors, farmers

Problem:

Stakeholders: filed roads hard to drive through in rainy season **Conservation:** No clear boarder, tilling until grass dissapears

Common goal: fixing field roads using hard material – gravel

Conservation goal: allocating a portion of the road parcel to restore flowering belts









Know your local stakeholder

Planting trees and bushes

Stakeholders: local hunter's club

Common problem: wildlife quickly dissapearing

Common goal: restoring natural areas and biocorridors





Know your local stakeholder

Planting trees and bushes

Stakeholders: local inhabitatns and mayors

Common problem: low landscape diversity

Common goal: increase natural diversity in the agricultural landscape







Identifying and engancing regional biocorridors







Restored wetland and willows planted

Restored grassland



Enhancing connectivity in agricultural areas Challenges and Opportunities



Challenges

National conditions

- Messy land ownership avg. 20 owners for one land parcel
- State-owned land in protected areas not managed for public interest
- Slovak Agricultural Fund = muddy waters
- Contracts for "indefinite period"
- Limited knowledge of ecological practices among farmers



Challenges

Policy failures & perverse incentives

- Farmers subsidised by ha of land and not based on farming practice
- Farmers incentivise to remove trees (satelite imagery)
- Livestock farming extremely beaurocratic = non-existant



Opportunities

Replicability: increased interest of land owners to offer land for nature conservation

Know-how transfer: process and permits necessary for tree planting or willow pollarding

Competetiveness: neighbor to neighbor, village to village

Climate change: farmers increasingly forced to reinvent: adapt and adopt less intense practices

Opportunity for adding ecology and biodiversity principles



Opportunities



Unloading **beurocratic burden** for livestock farming

Notably bigger incentives for open grasslands extensive livestock farming

Notably bigger incentives for nature friendly farming practices

Requiring non-productive nature elements

Putting a cieling to monoculture acreage

Thank you for your attention!



CONTENTS

Synthesis report Working Group 1.2 Ensuring connectivity across agricultural landscapes

Agricultural areas play a key role in restoring and maintaining ecological connectivity between core biodiversity areas. Reconciling agricultural practices with connectivity conservation is however a challenge. Many LIFE projects have sought to meet this challenge and engage with farmers to take protective measures for ecological corridors.

The objectives of this session were as follows:

- To explore criteria specifically relevant for enhancing connectivity across agricultural landscape from a practical point of view.
- To elaborate how the new target of the EU Biodiversity Strategy for 2030 to bring back at least 10% of agricultural area under high-diversity landscape features could provide opportunities for improving the connectivity.
- features could provide opportunities for improving the connectivity.
 To provide practical feedback to both the DG ENV guiding criteria for the identification of priority connectivity corridors and the new CAP processes.

Three presentations were provided at the start of the session, giving three different perspectives.

Presentation by DG ENV, Unit D3 – Nature protection on connectivity in agricultural landscapes

The presentation gave a comprehensive view on the issues at stake for ecological connectivity on farmland and on the policy landscape and ongoing processes.

- The policy framework is indeed moving, with the impulse given by the EU biodiversity strategy for 2030 and the ongoing CAP reform. Within the preparation of the EU nature restoration plan, discussions are taking place at the EU level on several issues related to agriculture, such as how the target of 10% of agricultural areas under high-diversity landscape features set up in the Biodiversity strategy shall be implemented at the local level.
- The removal of small landscape features has been identified as the third source of pressure on farmland habitats in the EU state of nature, after land abandonment and pesticides, some species being particularly endangered by agricultural landscape fragmentation, e.g., the Eurasian hamster.
- The nature legislation offers several tools to address this issue (e.g., article 10 of the Habitats directive). Other EU policies are also relevant e.g., the Green infrastructure strategy (ongoing progress review) and the Pollinators initiative (tackling pollinators' decline can be an effective way to promote ecological connectivity).
- About funding, a main source of funding is the CAP. A crucial element to be considered however is that the CAP support is at farm level and needs to be steered by other larger scale strategies to deliver on ecological connectivity. Funding opportunities are to be found in other EU programmes as well, especially in the LIFE programme – within traditional projects and IPs/SNAPs for mainstreaming and integration. DG ENV is eager to know more about the results of LIFE projects on this topic.

LIFE IGIC (LIFE16 NAT/GR/000575) - Improvement of green infrastructure in agroecosystems: reconnecting natural areas by countering habitat fragmentation

The project aims to develop a green infrastructure network in agro-ecosystems in 10 pilot areas in southern Crete, and to demonstrate its potential to enhance ecosystem services such as pest control, pollination, and nutrient provision while boosting local agro-biodiversity and improving connectivity between the surrounding Natura 2000 sites. The project mainly works with olive farmers, as olive orchards are the main cropping system in the area, and with livestock farmers as well. They do not provide any financial support to farmers, to avoid any dependency and sustain the actions after the end of the project.

LIFE Ostrovné lúky (LIFE 12 NAT/SK/001155) - Ostrovné lúky - Conservation of birds in the SPA Ostrovné lúky

The project aims to contribute to habitat restoration of three Annex I species of the Bird Directive in the SPA Ostrovné lúky by establishing a suitable management model for agricultural land and restoring feeding and nesting habitats. Among others, specific objectives include the restoration of a bio-corridors network (17 km) (flowering field strips, planting trees, restoring small ponds), which, in addition to its primary function, provides feeding and nesting opportunities for targeted bird species. The presentation focused on the lessons learned within the project to convince farmers in implementing such measures, the challenges and opportunities for restoring and maintaining ecological corridors in agricultural landscapes.

Discussion and main findings

Different aspects and issues were discussed and raised during the Working Group session and can be divided into 3 main chapters: the need to engage farmers, the importance of small-scale farming and the role of the CAP (and RDP).

- 1. Engaging farmers in the management and restoration of ecological corridors is key.
 - Incentives are needed to engage them, but not just monetary ones. Farmers need motivation, knowledge and support.
 - Their involvement should build on a two-ways communication: offering good practices, technical support but also listening to their needs and find solutions to their problems.
 - Reaching out local communities, providing technical support, building capacity, and developing result-based approaches can be useful.
- 2. Importance of small-scale farming and low productive areas.
 - The selection of the agricultural areas to be targeted in order to enhance connectivity should combine scientific evidence (especially species that benefit from connectivity) and what is doable (pragmatic approach).
 - Framing actions in a long-term vision and re-connecting farming with long term and systemic agricultural heritage are also important. "The restoration of ecosystem functionality and agricultural productivity are not antagonist; on the contrary, healthy ecosystems sustain long-term agricultural production." (quote from a participant).
 - The potential of corridors in intensively used landscapes is also extremely high, due to the hardness and scale of the matrix.
 - There are several good examples across EU of successful small-scale measures but insufficient support for scaling up.
 - Importance of using Rural Development Programmes and the upcoming Common Agricultural Policy eco-schemes as leverage to scale-up local actions (e.g., After-LIFE).
 - An opportunity arises from the ongoing work at national level following the EC publication of country recommendations for the preparation of CAP Strategic plans¹. These recommendations are aligned with the Green deal objectives and provide entry points also for addressing ecological connectivity.
 - The lessons learnt from the LIFE projects and any recommendation stemming out from the LIFE experience can be very valuable in this context, especially if it is immediately actionable. LIFE projects were invited to engage in this process at national level (i.e., working groups, consultations, etc.) to the extent possible (some projects reported a difficulty to do so), but also through their LIFE projects, especially IPs, informing EASME and DG ENV of their work. Any project working on this or having CAP-related recommendations is invited to share them with them by email (Silvia Donato gave her email).

LIFE PLATFORM MEETING ON CONNECTIVITY

Session 1.3. Getting practical insight on the existent mapping and decision-making tools for connectivity planning 2 March 2021 | 10.15 – 12.55h CET | Online

Strategic Green Infrastructure and Ecosystem Restoration Christine ESTREGUIL

European Commission Joint Research Centre – Directorate D - Sustainable Resources



EU Guidance documents to help planners, policy makers, and businesses

EUROPEAN COMMISSION	EUROPEAN COMMESSION
Brussels, 24:5-2019 SWD(2019) 193 final	Brussels, 38.7.2019 SWD(2089) 305 final PART 1/3
COMMISSION STAFF WORKING DOCUMENT Guidance on a strategic framework for further supporting the deployment of EU-level green and blue infrastructure	COMMISSION STAFF WORKING DOCUMENT EU galdance on integrating ecosystems and their services into decision-making



JOINT SCIENCE FOR POLICY REPORT No paint Bases to Canve the European Environment Agency, the European Tank Center on Under Land und Son Systems and DE Basement

Strategic Green Infrastructure and Ecosystem Restoration

Geospatial methods, date and tools benefit to be to consists in Group A.



https://ec.europa.eu/environment/nature/ecosystems/strategy/index_en.htm



https://biodiversity.europa.eu/green-infrastructure/key-documents



Green Infrastructure



GI is instrumental to monitor PA performance, management effectiveness, to help decide what needs to be prioritised, restored and where, to support participatory approaches across sectors

- PA network expansion
- Cross-border coordination
- Permeability of unprotected lands
- Quality /comparability of information



Spatial and functional : A structure to deliver nature' benefits to people





Estreguil, C. et al, 2019 DOI:10.2760/36800

Case study	Landscape/ rural	Urban/ Peri-urban	Regional	EU-wide Cross-border
Physical mapping				
Connectivity of European terrestrial protected areas	х		х	Х
European overview of GI network connectivity	х		х	Х
European riparian corridors	Х			х
GI for forest protection	х		х	x
Climate change impact on GI: Prioritisation for more resilience	Х		х	х
Regional GI well connected for forest and agri-env.: cost benefit solutions and restoration priorities	х		х	х
Harmonization of regional green spaces: towards a national GI network	Х		х	
EU large urban zones: Compactness and expansion patterns according to land use policy scenarios		х		
Ecosystem service based mapping				
Green Infrastructure for healthier environment in the city		х		
Green Infrastructure for climate proofing in the city		х		
Providing ecosystem services through Natura 2000 linkages			х	X
Conservation tools to identify restoration priorities				Х
Cultural ecosystem services to inform the implementation of GI	X		x	
EU level GI network for conservation and restoration of habitats	х		х	x
Contribution of the European Green Belt to the implementation of EU-level GI	x		х	x

European Commission

Data and modelling tools

Descriptor	GI element	Datasets	Data Origin	Coverage	Web link	COPERFICUS Europe's resion Earth
GI components GI backbone - C GI artificial conne GI natural conne GI in urban and p GI sustainable us GI issues of com Threats to GI e.g	- GI e.g. forest, grassla GI element e.g. Protect ectivity features e.g. wil ctivity features e.g. ripa peri-urban areas - GI el sed and multifunctional nectivity, defragmentati . Fire, Flood, Soil, Inva	ind, freshwater, – Data ed sites, Biodiversity rich Idlife overpass – Data O arian vegetation, small w ement e.g street tree lay zones e.g. HNV farmlar ion and prioritization – da isive species	Copernicus - Primary n areas –N2k - SM - Primary roody features rer – data Urban Atlas nd, HNV forest, MAES r ata derived	data	to dataset	Global Pan-European Local Imagery and reference of Vou are here: Home / Pan-European Pan-European Orean
						CORINE Land Cover High Resolution Related Pan- Layers European products

https://	land.co	pernicu	ls.eu/	pan-euro	bear

Local





-

Rural landscapes : permeability and defragmentation

Where to convert crop land to best enhance connectivity and benefit pollinators ?

Case study: Lombardy

GI are hectare cells with low to high vegetation share for pollinators (flying range of 200 m up to 500 m); Best potential new cells in blue shade



Where to prioritize restoration ? Where are the best cost benefit solutions for ensuring permeability in between GI subsets?

24 new paths where to convert crop land into vegetation with minimum monetary cost ranging from 100€ to 2,500€ per unit.



Well connected GIs also promote ecosystem services



4 types of corridors:

Resistance surface capture the difficulty for movement of forest/woodland mammals through different land covers.

Estreguil et al. (2019) ; De la Fuente et a, 2018

European Commission

Restoration is needed in agricultural landscapes: narrow connectors in high resistance areas e.g riparian bottlenecks with riverine ecosystems crucial for water and soil quality

Feedbacks from stakeholders and forest practitioners

"We need more training, coordination and integration"

- > 30% nature protection target and restoration target of BDS2030 > The strategic location of new PAs is crucial. Their connectivity depends on the possibility of species movement through protected and unprotected landscapes.
- We need more coordinated management- > Break silos across sectors and more participatory approaches: main players, priorities per sector, and according to ecosystem and region. Tools (incl. geospatial) may facilitate and structure the dialogue between different stakeholders for priority setting and trade-off.
- Tools and guidance exist to evaluate shortfalls and local/regional/national priorities, but are they used? We need more actionable information.
- "Positive" combination and integration of qualitative in-situ knowledge and quantitative territorial knowledge; Competition for land : need highlighting economic and social benefit (cultural/regulating services) of conservation actions
- Limited technical know-how, limited access to scientific data : more training, 'reformatting' of knowledge and capacity building



The Knowledge Centre for Biodiversity

A web-based one-stop shop to find key information about biodiversity

A platform to monitor progress of the EU Strategy, and the mainstreaming of biodiversity into sectorial policies

An interface where scientists can network, that helps harvesting and translating the science

A mechanism fostering cooperation and partnership



Knowledge Centre for Biodiversity It's ordered the browindge base. Seculate its sharing and fester cross What we do PAGE CONTRACT -Read root Recent Revealed politics Brownshi by Steps is therefore, there is and structure in downlar and ruling Eastenable I Lane Growledge spation management policy and staty and ultima and kontrasty inside out rotating if it is herrophenetic failured in stimul for impactor syndor Brief me Do May 20, 2020, the European Co. most adopted the new Weiller taly filosopy for 2000 and an and Active Plan- a comprehensive, antidious largeless plan for probability takins and receivery Is exampled the stratings of Atoministips Counter her Municipa . That and assess property in the EU and its partners, including Endowed, fielded international half-preside Ratio impositor and partnership totaling to a property surface description of As this Knowledge Carthy is in its inferry. Its control is apparent to charge and grow pairs res for months RC, Rodowsky integraphic 202 Beetler & Barris Corrison Con Search our KnowledgeBase 0-Browse Biodiversity by topic Endworkly Conservation Research, Improvidenhappying antidions, for prose-Topic Highlight Latest in the KnowledgeBas User forum EU as a global leader BISE Purters New Jopen BU calls for funding **Events** Resources

Bull Preside



Thank you for your attention

The Knowledge Centre for Biodiversity

https://ec.europa.eu/knowledge4policy/biodiversity_en

Contact

EC-Biodiversity-KC@ec.europa.eu

The Knowledge Centre for Biodiversity is at the heart of the Green New Deal for Europe.

"Only what gets measured gets done. If we want to deliver on the EU Biodiversity Strategy, we need to better connect all the dots and we need sound data..." Commissioner for the Environment, Oceans and Fisheries, Virginijus Sinkevičius



Climate resilient urban and peri-urban landscapes

Utrecht, examples of (peri-)urban green







Local HR (5x5m) incl land use, exposure, vulnerability, adaptive capacity and risk-maps floods and urban heat island effects Triple win Nature based solutions for climate, **biodiversity and health**, (Quickscan Model - Verweij et al, 2016)

CONTENTS



'Lessons from LIFE on ecological connectivity towards a coherent, functional and resilient network of protected areas'

Session 1.3: Getting practical insight on the existent mapping and decision-making tools for connectivity planning

WOODNET

Connectivity patterns and processes along a gradient of European landscapes with woody vegetation and spatial heterogeneity

Landscape mapping issues and connectivity models

Jacques Baudry (jacques.baudry@inrae.fr)

With: Julie Betbeder, Hugues Boussard, Aitor Gastón González, Miguel Marchamalo, Audrey Mercier,









https://woodnetweb.wordpress.com/project-fr/



Landscape mapping issues

Ecological networks, connectivity pathways are all derived from maps

The characteristics of these maps are key in the output of the models

This is often overlooked, people utilize the maps readily available

To have a map suited for a specific analysis is not straightforward, most of the time

The basics:

map extent and resolution (depend of the group of species of interest) map information content (land cover/ use; key landscape features for ecological processes for the focal species, etc.) update information

The questions:

- are freely available maps suitable?
- do we have to produce our own maps?
- can we combine existing map to obtain what we need?
- do we have to run a model to produce important features not on maps?

Landscape mapping issues

Categorial/ mosaic (qualitative) or gradient (quantitative) maps?

Categorial maps have a number of blind spots:

- All elements of a given type, a wheat field, a deciduous forest have the same representation, no internal heterogeneity
- All interfaces between elements of different types (wheat/barley or wheat/wood) have the same weight in landscape metrics
- The changes in phenology or biophysical states cannot be included



Weaker results on the relationships between landscape and biodiversity

Sentinel 1 & 2 are free and can be used to produce such maps

Quantitative maps can represent structural gradient inside landscape elements (their quality)



Extracted from a radar (Terra-SAR satellite image)

(2014) Betbeder, J., et al, Detection and Characterization of Hedgerows Using TerraSAR-X Imagery, Remote Sensing (2015). Betbeder, J., et al "Assessing ecological habitat structure from local to landscape scales using synthetic aperture radar." Ecological Indicators

Landscape mapping issues Adding features by modeling



A hedgerow is:

1) A linear structure of trees and shrubs (habitat and corridor for "forest species" and a barrier for open landscape species)

BUT on maps, not both are represented

2) A herbaceous linear structure (habitat and corridor for open landscape species and a barrier for forest species

Building the most appropriate map is a tedious but crucial task

We can add a herbaceous layer to integrate its function



Landscape mapping issues Producing maps from satellite, aircrafts We now have a wide range of data/ images some free (Sentinel1 & 2, satellite images) some expensive (Lidar). The map they permit to produce are different (e.g., Cantabrian Range, Spain)

Cisneros-Araujo et al, submitted The role of remote sensing data in habitat selection and connectivity modelling: insights from the Cantabrian brown bear.



Sentinel 1 & 2 Globally available for free Requires processing by experts

Low thematic resolution No data on canopy structure

Copernicus Pan-European HR Layers Available for free (Europe) Standard GIS processing Intermediate thematic resolution Canopy cover data

Manually photointerpreted forest map + LIDAR

Expensive and only available in some countries High thematic resolution Canopy cover and height data



In the case of Cantabrian Brown Bear, the different landscape maps produce similar connectivity modelling results (correlation of effective distances between bear locations highly correlated among three landscape maps, $\rho = 0.74-0.96$)

Connectivity modelling (Circuitscape)



Connectivity models

Different connectivity models According to functional groups



Landscape "quality" for species moving fast and far

Type of model: graph, circuit



"corridor = habitat continuity for slow moving species

Type of model: surface accessibility



The usual business

Land cover



Friction coefficients

The making of landscape permeability maps

code		friction
	1	1
	2	15
	4	1
	5	1
	6	1
	7	10
	8	20
	13	10
	14	5
	15	3

Friction map



low

high

But the environment of any species is more than the type of patch it is in. The surrounding landscape matters
Connectivity models The surrounding landscape matters Bears in the Cantabrian range (Spain) They are more frequent in areas where heterogeneity is low at a 16 km scale. One reason maybe that in heterogeneous landscapes food resource is more fragmented N Spanish study area Heterogeneity (window radius = 8km) 0 0.57579 1.15158 1.72737 2.30316 75 100 km 50

Mercier, A. 2021, Evaluation of Sentinel-1 & Sentinel-2 time series for the identification and characterization of ecological continuities, from wooded to crop-dominated landscapes PhD thesis Rennes

Connectivity models The surrounding landscape matters Landscape heterogeneity regulate the local climate (windbreak)



For species living in hedgerows, the environment is different in A (fine grain) and B (coarse grain)



The importance of working with practionners

biodiverso is a research program aiming at fostering science for action in order to support public policies

Here, we are two teams from



We both actively worked with practionners to develop and test our ideas and methods

For the Spanish team: Brown Bear Foundation, Regional Government of Andalucía (Iberian Lynx recovery project, Iberlince and Lynxconnect LIFE projects), Regional Government of Castilla y León, WWF-Spain (Natura 2000 connectivity), TRAGSA company (Green Infrastructure Planning)

For the French team: Brittany Region with support of EU funds from European Development Funds (ERDF) and The Lannion-Trégor Community and the Hunters Association of Côtes d'Armor

Our partners brought in data, planning/ conservation expertise and experience of the area to manage



LIFE PLATFORM MEETING ON CONNECTIVITY

Session 1.3. Getting practical insight on the existent mapping and decision-making tools for connectivity planning 2 March 2021 | 10.15 – 12.55h CET | Online

LIFE16 NAT/ES/000768 Understanding and restoring Mediterranean alluvial forests

Assessing functions and resilience of alluvial habitats at regional level for restoration purposes

Virgilio Hermoso Centre de Ciència i Tecnologia Forestal de Catalunya





1. Objective of the model or tool





MOTIVATION FRAMEWORK

Eurosiberian alluvial forests of alder (Alnus glutinosa)

- ✓ One of the <u>main riparian formations</u> of temperate Europe (potential range = 1/3 of Catalonia's territory)
 - ✓ Considered a "*sheltering ecosystem*"
 - ✓ `<u>Threatened</u>', specially in the Mediterranean bioregion

Designated as a 'priority habitat' in the framework of the *Habitats Directive*: 91E0* = Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*

Conservation status and future evolution projections for the habitat still unfavorable (according with nat./CEE reports) after 28 years from HD approval and <u>18 years after Natura 2000</u> territorial implementation of Natura2000!

1. Objective of the model or tool

Identify priority reaches for restoration to:

- 1) Improve connectivity among remaining patches
- 2) Benefit threatened species
- 3) Connect Natura 2000 sites





1. Objective of the model or tool



What is <u>Marxan</u>?

		ABOUT	MARXAN GETTING	STARTED COMMUNIT	Y SOFTWARE O
in t					
CONSERVATION IN THE CORAL TRIANGLE	TRANSBOUNDARY PLANNING IN THE PACIFIC	OPTIMIZED LANDSCAPES IN EAST KALIMANTAN	NATIONAL PLANNING IN GUYANA	LANDSCAPE-LEVEL MITIGATION IN MONGOLIA	TUNA CONSERVATION IN GULF OF MEXICO
Integrating regional conservation priorities for multiple objectives into national policy for the Coral Triangle Initiative	A baseline analysis to design a network of marine protected areas in the Pacific region of Baja Colifornia	Optimong production landscapes and biodiversity in Borneo	Protected Area planning to Inform Abob target 17	Applying the misgation hierarchy in Mongolia	Wigratory multi-species tuna conservation in the Gulf
					Â
MARINE SPATIAL PLANNING IN ST. KITTS AND NEVIS	PLANNING FOR THE DALY CATCHMENT	OCEAN ZONING FOR TUN MUSTAPHA PARK IN SABAH	MARINE PROTECTED AREAS IN THE ENGLISH CHANNEL	LAND-SEA PLANNING IN PAPUA NEW GUINEA	MAPUTALAND'S CONSERVATION CORRIDOR
Marine Zoning in the Caribbean	Planning for multiple land uses while navgoring trade-offs in Northern Australia	From Marxan to management octan zoning with statleholders for Tun Mustaona Park in Sabah, Malaysia	Linking spatial prioritization software and ecosystem and fisheries modelling tools	This assessment used Maxian to undersin a systematic construction planning approach in Papua New Guinea	Developing a Trans-frontien Conservation Area in the Waputeland Centre of Endemism











2. Criteria used in the model or tool



2. Criteria used in the model or tool



3. Application of the model





SOLUTIONS



Natura 2000
Existing Alder forest
Restoration priority
Not priority

4. Accessibility of the model



MARXAN IS FREELY AVAILABLE

https://marxansolutions.org/

5. Future potential / limitation of the model

Opportunities

Limitations

- Flexibility to address other problems
- Support by an extended community
- Training materials and courses

Data needs



LIFE PLATFORM MEETING ON CONNECTIVITY Session 1.3. Getting practical insight on the existent mapping and decision-making tools for connectivity planning

2 March 2021 | 10.15 – 12.55h CET | Online

LIFE BNIP (LIFE14 IPE/BE/000002) – Defragmentation tool

Model based dynamic defragmentation tool for Flanders (Belgium)

Joris Everaert Research Institute for Nature and Forest (INBO)

RESEARCH INSTITUTE

Flanders State of the Art



1. Objective of the tool

Identify priority locations for defragmentation measures with wildlife passages along road infrastructure in Flanders (Belgium), for several mammal, amphibian and reptile species:

- Flemish and EU priority species
- other more 'road-safety' related large species

Requirements:

- Spatial modelling tool.
- Possibility to also take into account different (future) scenario's.

RESEARCH INSTITUTE

NATURE AND FOREST

• Quick & easy updates with new information.

Building of the tool:

- INBO (Joris Everaert)
- VITO (Inge Uljee, Guy Engelen)







New spatial modelling tool, based on the 'constrained cellular automata' land-use model for Flanders, with 100 m raster analysis.

The tool combines several data layers for the whole area of Flanders:

 Suitability maps for 21 species made by INBO, with GeoDynamiX tool scripting for mapping suitable/potential habitat & buffers.
+ extra valuation with land-use map and actual species distribution data.



- Road infrastructure map + existing defragmentation measures (wildlife passages)
- Map of the buildings grade









Build-up area as extra barrier:

> 88% buildings grade was not used for proposed defragmentation measures in the model



Distance decline curve values for quality of defragmentation around (possible) wildlife passages



Distance (m) from a wildlife passage (+ eco-raster)

Example of the moor frog:

search the best locations for amphibian-tunnels along roads.

- Step 1: Define the suitable habitat (+ buffers).
- Step 2: Extra valuation of the suitable habitat.
- Step 3: Overlay the suitable habitat with current barriers: road infrastructure and high buildings grade.
- Step 4: Locate the existing wildlife passages.
- Step 5: Calculate the defragmentation score along roads.
- Step 6: Define the best location for an amphibian-tunnel in the raster cell with the highest score.
- Go back to step 5 (looping process)







3. Results and application of the tool

Model runs for the whole area of Flanders, to identify priority points for defragmentation measures, a 'super' run:

- separate runs for 21 species: 500 proposed points per species = 10.500 !
- run for 21 species together: 500 proposed points
- runs for 6 species groups (weighted average): 500 proposed points per group = 3.000 !

Per run, also additional run with extra valuation for 'actual distribution' in the species suitability maps.



3. Results and application of the tool

Priority locations of defragmentation, for 6 species groups:

- large land bound mammals
- small land bound mammals
- very small land bound mammals
- reptiles
- amphibians
- water bound mammals



3. Results and application of the tool

Application

 Currently mainly used by Flemish administration, as one of the ecological criteria in the database and decision-making tool "<u>Flemish Action Program on Ecological Defragmentation (VAPEO)</u>" to mitigate ecological impact of road infrastructure in Flanders by construction of wildlife passages and improving corridors.

Ecological criteria:

- priority points of the defragmentation tool
- Natura-2000 area goals & priorities
- priorities for other protected nature areas
- priorities in species protection programs
- prediction model results for wildlife road kill blackpots

Feasibility criteria:

-

• Also used as input layers in a few more local projects to create/improve corridors.



VAPEO database



VAPEO short-term projects map

4. Accessibility of the tool

- Currently, only accessible by experts of the Flemish administrations (= Flanders).
- Results are available upon request, for experts, e.g. in more local projects.
- Full accessibility for the public is difficult: interpretation of complex results..
- Currently no user-friendly interface, and the model runs only at VITO servers, but possibility for web-interface is being investigated.

5. Future potential / limitation of the tool

- Tool model is currently on scale of Flanders. Extension with Wallonia and other countries is probably difficult (some input data layers are different) but this could be investigated.
- Update of the tool in 2021, with new 'runs' of model: improved criteria, new data layers for species suitability maps & actual distribution data.
- Current & future limitations: not all possible local factors are available as GIS layer on the scale of Flanders.

Flanders

State of the Art



LIFE10 NAT/FI/000047 - Increasing the ecological connections and coherence of the Natura 2000 network in South-West Lapland – NATNET

Zonation framework

Ari Nikula Natural Resources Institute Finland ari.nikula@luke.fi

LIFE PLATFORM MEETING ON CONNECTIVITY

Session 1.3. Getting practical insight on the existent mapping and decision-making tools for connectivity planning

2 March 2021 | 10.15 – 12.55h CET | Online



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1

1. Objective of the NATNET project

- Increasing ecological connections and coherence of the Natura 2000 network -NATNET
 - Part of Finnish forest biodiversity program
 - Searched for high biodiversity value forests in privately owned land
 - Made agreements about the protection of forests with voluntary forest owners
- About 2 mill. € for compensating about 2800 ha of voluntarily protected habitats
 - Taiga forests 450 ha
 - Rich soil type forests 100 ha
 - Land uplift successional series 100 ha
 - Aapa fens 1000 ha
 - Forested bogs 400 ha
 - Calcareous peatlands 500 ha
 - Other habitats 250 ha
- The best composition of protected areas in relation to
 - Habitat quality
 - Location



1. Objective – Planning area

- Project area 571000 ha
- State owned land 217000 ha
- Private land 240600 ha
- Protected areas 87800 ha
- Peatlands 83 %
- Forests 17 %



Zonation approach in NATNET project

Zonation is a decision support tool for spatial conservation planning

- Developed by prof. Atte Moilanen and his team in Helsinki University, Finland
- Produces hierarchical prioritization of the landscape based on the conservation value of sites
- Grid based, can process areas with up to ~50 mill. cells and tens of feature layers
- Produces a prioritization of the landscape based on spatial distributions of species, habitats, costs and threats
- As a result, every pixel is ranked between 0-1 according to multiple criteria

In NATNET Zonation was used to identify the most valuable forest areas that are also well-connected to other valuable forest sites and protected areas



Zonation framework in NATNET project

J. Lehtomäki, A. Moilanen (2013) Methods and workflow for spatial conservation prioritization using Zonation. Environmental Modelling & Software 47: 128-137.



5

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Zonation framework: from biodiversity features to data features



Data used in the model or tool

- Forest planning data
 - State land 216914 ha, 43105 planning units
 - Private owned land 240641 ha, 145497 planning units
- Tree species
- Diameter
- Age
- Tree stock
- Site type
- ...




CONTENTS

Zonation approach: Habitat models

- Old-growth forest birds
 - Black woodpecker
 - Three-toed woodpecker
 - Siberian jay
- Protected plant species
 - Fairy slipper and Lady's slipper
- Logistic regression:
 - Probability of habitat suitability



Zonation framework: parameterization

- Scaling tree diameter between 1 – 0
 - PINE: mean = 13,60 cm, med= 13 cm, max. = 49,32 cm
 - SPRUCE: mean = 14,60 cm, med. = 15 cm, max. = 42,06 cm
 - BIRCH: mean = 12,29 cm, med. = 13 cm, max. = 40,85 cm
 - OTHER DECIDUOUS: mean = 14,22 cm, med. = 14 cm, max.
 = 67,45 cm



Zonation framework: Weighting layers

Fertile

--

Poor

Birch Spruce

Pine

Other dec.

Birch

Other

Pine

1.0

0.9

0.7

0.4

0.2

0.1

0,1

Fertile --

dec.

Spruce

Fertile --

2.5

1.5

4.0

1.0

0.6

1.0

0.5

0.7

0.7

1.0

1.0

0.9

0.7

0.2

0.2

1.0

1.0

2.5

1.0

Spruce Other dec. Pine

0.8

0.4

1.0

0.2

0.7

0.9

1.0

1.0

0.9

0.5

0,5

1.5

1.0

1.5

1.0

0.3

0.7

0.5

1.0

0.4

0.7

0.9

1.0

1.0

0.6

0.6

0.1

0.1

0.2

0.5

0.6

1.0

0.8

4.0

2.5

6.0

2.5

Birch

1.0

0.6

1.0

0.4

1.0

1.0

0.9

0.7

04

0.1

0.1

-- Poor

1.0

1.5

2.0

Poor

0.1

0.1

0.2

0.5

0.6

0.8

1.0

1.0

2.0

1.0

2.0

1.0

- Weights for site types
- Similarity matrices
 - Tree species
 - Site types
- Connectivity
 - Similar habitats 500 m
 - Conservation areas 2000 m
 - Protected by law 100 m

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Zonation framework: Feature layers

- Total of 40 feature layers:
 - Tree species × site type (24 layers)
 - Peatlands (8)
 - Small waters (1)
 - Open rock (1)
 - Habitat models (3)
 - Conservation areas (1)
 - Areas protected by forest law (1)
 - Land ownership (1)
- All in 50 m x 50 m grid cells (2,3 mill. cells)



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Zonation framework: Corridor tool

- Pouzouls, F.M., Moilanen, A. 2014. A method for building corridors in spatial conservation prioritization. Landscape Ecology 29:789-801.
- Corridors via good habitats
- Working principle is the use of a penalty structure in an iterative algorithm used for producing a spatial priority ranking
- Aims to prevent loss or degradation of structural connections required to keep networks connected







THE 2 I NUMBER AND A LOSSE AND A LOSSE

Selection of best ranked habitats for field inventories and land owner contacts

- Protection agreements 2860 hectares
- Restorations in the Natura 2000 sites:
 - Forest restorations 50 hectares
 - Mire restorations 195 hectares
- Restorations and nature management practices outside the Natura 2000
 - Mire restorations 610 hectares
 - Production of decayed wood 201 hectares
 - Production of charred and burned wood 155 hectares
 - Nature management plans for 5018 hectares



+ 8+ 6824 + 1/6/ ×



Future potential / limitation of the model

- Zonation has been applied world wide in tens of projects and subjects
- Dr. Atte Moilanen has 17278 citations in Google Scholar
- For experts
 - Requires advanced computational and subject skills
 - Rather complex to use
 - Computationally heavy
- Good outputs as maps and feature performance curves
- Allows for multiple types of information
- Freely available at https://www.helsinki.fi/en/researchgroups/digital-geographylab/software-developed-in-cbig#section-52992



Thank you!





German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig



Reconnecting wilder ecosystems in Europe

Néstor Fernández

Science-policy project: Promoting and shaping the EU ecological restoration agenda, through mobilisation of rewilding principles



iDiv is a research centre of the DFG Deutsche Forschungsgemeinschaft

Multiple dimensions of nature degradation

Global declines of 68% in vertebrates, 1970–2020



Size-differential defaunation





Multiple dimensions of nature degradation



50% of Europe is within 1.5 km of transportation infrastructure



Multiple dimensions of nature degradation



>40% of the potential annual productivity in Europe is appropriated by humans





CONTENTS



A rewilding approach to large-scale restoration:



The functional diversity and deficit of European megafauna





We mapped the functional deficit of species by comparing current distributions of large European carnivores and herbivores against counterfactual baseline maps of areas where species could have persisted in the absence of anthropogenic pressures

Only about 5% of the area covered by the European Union preserves (or has recovered) half or more of the baseline functional diversity

Fernández et al. in prep.

Restoring wilder Nature: Connected landscapes that allow for dispersal

© Néstor Fernandez

The connectivity of natural habitats Affected by urban and infrastructures and intensive agriculture



Restoring wilder Nature Ecosystem dynamics and disturbances occur naturally

© Adam Wajra

The human control of natural ecosystem dynamics

The proportion of harvested primary production in natural and semi-natural areas



Around 20% of European grasslands and forests preserve medium to low (<10%) levels of harvest



After Plutzar et al. 2016

Putting European Nature back on the map



Fernández et al. in prep.

An Ecological Integrity Index for European landscapes

- Reflects the extent to which defaunation, fragmentation of the landscape and continued extraction of the natural resources, have altered the **natural** state of ecosystems
- It is used to identify suitable conditions for self-sustained nature, and to support restoration planning by identify constraints in each of the three axes



Boosting restoration to connect the Natura 2000 Network



Fernández et al. in prep.

Best connection pathways

637 largest clusters of Natura 2000 sites



>100.000 km of corridors identified as priority pathways for connecting high-integrity clusters of Natura 2000 sites

An EU-level perspective of connectivity restoration that explicitly addresses:

Revert defaunation and the associated loss of ecological functions



Promote wildness through passive restoration



Restore self-regulated complex ecosystems



Large-scale, synoptic perspective of connectivity restoration



Thank you

🔰 Nestor_fdez

Boosting Ecological Restoration for a Wilder Europe Making the Green Deal Work for Nature

Néstor Fernández iDiv – German Centre for Integrative Biodiversity Research



Synthesis report Working Group 1.3 Getting practical insight on the existent mapping and decision-making tools for connectivity planning

The objectives of the session were as follows:

- To get insight into existing mapping and decision-making tools, their suitability for identifying priority connectivity areas and the extent to which these could be accessed. The idea was to get relevant information on the concrete applications of theoretical models and tools in practice.
- To explore the issue of bridging the gap between scientists and practitioners.

Six short presentations were provided at the start of the session. The first two focused on challenges of spatial data issues, mapping and the limitations of models.

JRC Study on Strategic Green Infrastructure and Ecosystem Restoration: geospatial methods, data and tools - by Christine Estreguil (Joint Research Centre)

Presentation of the recent report: *Estreguil, C., Dige, G., Kleeschulte, S., Carrao, H., Raynal, J. and Teller, A., Strategic Green Infrastructure and Ecosystem Restoration: geospatial methods, data and tools, 2019.* This report is intended to improve and strengthen information about Green Infrastructure, and contributes to "reviewing the extent and quality of the technical and spatial data available for decision-makers in relation to Green Infrastructure deployment" identified in the EU Strategy on Green Infrastructure.

BiodivERsA project WOODNET - Tools for enhancing connectivity analysis of functional networks - by Jacques Baudry (French Research Institute for Agriculture, Food and the Environment, INRAE)

WOODNET aims at providing innovative spatially-explicit tools for connectivity analysis along a range of landscapes where woody vegetation elements play a key role for conservation or service delivery. It is expected that the project will provide new tools for enhancing connectivity analysis of a diversity of functional networks, together with an evaluation of the synergies and antagonisms among them. For arable crops, the project will study how landscape connectivity drives the distribution of pest and beneficial arthropods and the associated (dis)services.

The other four presentations presented the use of an actual model or decision-making tool in a LIFE project or other. Presentations were done according to a set template to allow for comparison, including the following principles:

- Objective of the tool
- Criteria used in the model or tool
- Application of the model
- Accessibility of the model
- Future potential and limitation of the model or tool

LIFE ALNUS (LIFE16 NAT/ES000768) - Restoration, conservation and governance of the Alnus alluvial forests in the Mediterranean Region - by Virgilio Hermoso (Forest Science and Technology Centre of Catalunya)

LIFE Alnus aims to better understand the causes for the recession of the Mediterranean alder forests (91E0*) at different functional levels, as well as to design and promote alternative conservation strategies to improve their conservation status at regional level. For the identification of the priority riparian areas to be restored, they used a series of modelling tools and methodologies based on the Marxan Model.

Model based dynamic defragmentation tool for Flanders (Belgium) as part of the LIFE BNIP (LIFE14 IPE/BE/000002) - Belgian Nature Integrated Project - by Joris Everaert (Research Institute for Nature and Forest, INBO)

The project developed a defragmentation mapping GIS tool to identify priority areas in

Flanders to remove barriers based on infrastructure and distribution patterns of different animal groups while predicting how these are expected to evolve over time in order to inform decision making.

LIFE NATNET (LIFE10 NAT/FI/000047) - Increasing the ecological connections and coherence of the Natura 2000 network in South-west Lapland - by Ari Nikula (Natural Resources Institute Finland)

This project focused on the improvement of forest ecological connectivity using easements to get agreements for permanent protection of 2,859 ha of privately owned corridor areas under the Finnish Nature Conservation Act. Land-owners receive a tax-free compensation for profit loss and land ownership remains unchanged.

Rewilding EU - Promoting and shaping the EU restoration agenda, including TEN-G, through mobilisation of rewilding principles to create a coherent Ecological Network in Europe - by Nestor Fernandez (German Centre for Integrative Research)

This is a joint project of Rewilding Europe, WWF (European Policy Office), Birdlife Europe & Central Asia, the European Environmental Bureau and the German Centre for Integrative Biodiversity Research (iDiv) and Martin-Luther-Universität Halle-Wittenberg. As part of it, the iDiv conducted a research on how rewilding principles can help to restore biodiversity at a European level, as well as develop a case for a strong trans-European Green Infrastructure.

The main findings of the session were as follows:

I. Main challenges and limitations for models/tools of connectivity conservation

- Limitation of the model/tool is the quality of the maps used as input.
- Important to get most suitable map, not many maps actually capture heterogeneity of heterogeneity of
- habitat, especially at local scale
- Importance of doing reality check of spatial data to further improve
- Limited technical know-how of practitioners (also regarding to map processing)
 Limited access to scientific data, even if spatial data has improved significantly in recent years
- Challenge of matching EU level and local scale data (work with clusters)

II. Application of models

- There is no standalone user friendly 'one size fits all' tool, very dificult to have a common approach
- Reference was made to MSPA approach as a reference for mapping at EU level (guidos toolbox) but even more the global CONEFOR toolbox that is more adjusted to assess GI
- Connectivity models differ per functional group. Scale matters. Importance of clearly identifying your objective (removing barriers, increase connectivity in network, improve resilience to CC)
- Stepwise decision-making approach
- Set clear objective -> Data preparation -> Processing/Run model or tool ->
 Interpretation (feasibility, consultation, priority ranking, benefits/threats, land
 planning, costs) -> recommendations
- Use of electrical or infrastructure networks (roads, train, ...) also as opportunities using ecological engineering, not just as barriers (LIFE ELIA, example of green patches along road in PT) – 'connectivity infrastructure'

III. Bridging gap between scientists and practitioners

- Need for more training, coordinated management and integration of information to select key areas
- Translating the science into more actionable work on the ground for practitioners is still missing
- Ecological science is often done without action context
- We need to compile best practices between scientists and practitioners as there are many good examples but more is needed

- IV. Recommendations for EU policy makers regarding data, mapping, tools for connectivity conservation
 - Promote open access for spatial data at EU level, as this is currently one of the main challenges
 - Green Infrastructure should become integral part of land use planning across multiple sectors (to improve connectivity and promote ecosystem services)
 - Break silos across sectors and encourage participatory approaches regarding connectivity conservation
 - Raising more awareness on the importance of ecological connectivity to the public and relevant stakeholders (mainly private land owners to get them on board)
 - Need for a common conceptual framework on connectivity conservation at ÉU and international level - Need to synthesize connectivity mapping also at EU level and link it with mapping at other scales (local, national, regional)

Relevant links shared by participants on links to models, tools, reports and more

- The EU Strategy on Green Infrastructure <u>https://ec.europa.eu/environment/nature/ecosystems/strategy/index_en.htm</u>
 Key documents and links on EU Green Infrastructure
- Key documents and links on EO Green infrastructure https://biodiversity.europa.eu/green-infrastructure/key-documents
- EU Knowledge Centre for Biodiversity
- <u>https://ec.europa.eu/knowledge4policy/biodiversity_en</u>
 JRC Study of 2019 on Strategic Green Infrastructure and Ecosystem Restoration https://ec.europa.eu/irc/en/publication/strategic-green-infrastructure-and-
- <u>ecosystem-restoration</u>
 MARXAN Conservation Solutions (freeware model) https://marxansolutions.org/
- Zonation Tool (freeware decision support software tool) <u>https://www.helsinki.fi/en/researchgroups/digital-geography-lab/software-</u> developed-in-cbig#section-52992
- Rewilding Europe policy papers 'putting nature back on the map' https://rewildingeurope.com/space-for-wild-nature/
- Space Intelligence to develop a EUNIS level 2 habitat and land cover map using satellite data and AI for Natural Capital <u>https://www.space-intelligence.com/</u>
- Nature Scot Opportunity mapping and connectivity https://www.nature.scot/information-hub/seminars
- MSPA Guidos toolbox (Graphical User Interface for the Description of image Objects and their Shapes) https://forest.irc.ec.europa.eu/en/activities/lpa/qtb/
- Conefor Decision making tool software package that allows quantifying the importance of habitat areas and links for the maintenance or improvement of connectivity <u>http://www.conefor.org/</u>
- Publication 'Combining spatial prioritization and expert knowledge facilitates effectiveness of large-scale mire protection process in Finland' https://www.sciencedirect.com/science/article/abs/pii/S0006320719306214

Presentations Working Group 2.1 Key governance elements for effective and long-term management of ecological corridors



Habitat connectivity and improvement along the Insubria ecological corridor between the Alps and the Ticino valley

Sara Barbieri – Province of Varese

Claudio Celada – Lipu BirdLife Italia

3 March 2021 LIFE Platform - Session 2.1 : Key governance elements for effective and long-term management of ecological corridors



PDF processed with CutePDF evaluation edition www.CutePDF.com

Project area



http://natura2000.eea.europa.eu

Corine Land Cover 2006



TIB ecological corridor

- Is one of the last connections linking the Alps and the Appennines trough the Po Plain and can help wildlife to face climate change
- Contributes to biodiversity conservation connecting protected areas: 2 Nature Parks, 13 SACs, 5 SPAs and 2 Nature Reserves, across 50 Municipalities

www.cartografia.provincia.va.it


Preparatory projects 2007-2011

- Studies to identify ecological corridors of PV connecting Natura2000 sites (naturalistic and Land Plans of Municipalities) and priority connections:
 - very narrow passageways (connectivity critical/lost)
 - continuous loss of connectivity outside
 Natura2000 sites (due to legal practices)
- Feasibility study of concrete actions to improve TIB ecological corridor:
 - defragmentation of passageways
 - habitat improvement
- Analysis of **legislative and planning instruments** able to effectively protect the ecological corridor
- Identify, inform and involve the stakeholders

Province of Varese Ecological Network Map: ------ main e.c. ----- secondary e.c.



Loss of connectivity

Very narrow passageways closed by uncontrolled urban development





Loss of connectivity

Habitat fragmentation by infrastrucures in semi natural areas







The governance challenge

- Mandatory rules only inside Natura 2000 sites and Parks/Protected Areas (National and Regional Law) and for projects and land plans subbject to Environmental Impact Assessment
- Outside, Ecological network (Lombardia e.n. 2008; Province of Varese e.n. 2007) was not prescriptive over local planning and projects (especially for infrastructures/works of public utility and projects proposed by farmers)
- Involve Municipalities through a voluntary agreement:
 - 2009 Round tables (plenary and individual) to inform and involve
 - Feb 2011 signature of "Towards the Network Agreement", a first commitment to protect TIB e.c. including it in their Land Plans



Network Agreement

 2013: Managing Authorities of Natura2000 sites (Province of Varese, Campo dei Fiori Park, Ticino River Valley Park) decide to apply art. 6.3 of Habitats Directive on the whole TIB ecological corridor, because of its key role of connecting sites at local and european scale.

The assessment focuses on reducing land consumption and maintaining ecological connections.

2014: signature of the "Network Agreement"

(42 Municipalities, Province of Varese, 2 Parks, Lombardia Region, partners) with the commitment to protect the ecological corridor through local land planning and the Assessment of effects of plans/projects on sites





LIFE TIB

- 2011-2015, 3,1 MLN €
- Concrete actions inside and outside N2000 sites
- Province Varese,
 LIPU, Lombardia Region
 Cariplo F., EU





LIFE TIB: defragmentation actions





- Road Underpasses
 - (5 amphibians, 10 mammals)
- Restore connectivity along 5 waterways
- Bird-scaring devices on power lines



Actions to improve environmental quality





- 8 new small wetlands and recovery of 2 larger existing
- 500 m dry stone walls
- Necromass: 2.500 interventions exotic trees, 150 log pyramids, 350 white willows to be managed by pollarding



LIFE TIB: other actions





- Pilot actions against invasive exotic species (Nelumbo nucifera and Ludwigia grandiflora)
- Monitoring target species
- Awareness-raising actions



Success factors

- Strong Partnership: LIPU (Nature conservation organisation), Province of Varese (Public body), Cariplo Foundation (Private foundation); later Lombardia Region and the 2 Regional Parks
- Multi sectoral working group: naturalists (Pavia University, FLA), local engineers and land use plan experts, Lawyer
- Assessment of land plans of Municipalities: thanks also to the Network Agreement the effect of around 50 plans on N2000 sites was assessed
- "public interest" of ecological corridor: around 320 agreements with private property (99% voluntary) with economic compensation







After LIFE sustainability

- Province of Varese continues to watch over plans and projects in TIB e.c. (Network agreement and regional laws)
- ✓ Maintenance of interventions: around
 40.000 €/5 years spent, staff and volunteers
- Post-life monitoring after 2 and 5 years: shows improvement for some target species and a stable situation for others
- Further communication activities (articles in scientific journals, conferences, involvement of schools...)
- New projects from partners to further improve N2000 sites, TIB and other ecological corridors





 Replication of the model in other Provinces and in Piemonte Region





www.lifetib.it

sbarbieri@provincia.va.it

All pictures from LIFETIB website and reports



Lessons from LIFE on ecological connectivity towards a coherent, functional and resilient network of protected areas

Virtual LIFE Platform meeting, 2-4 March 2021



Key governance elements for effective and long-term management of ecological corridors. The experience of LIFE Bear Defragmentation



Fernando Ballesteros Brown Bear Foundation **the issue:** restoration of connectivity of the Cantabrian brown bear population

the big picture: restoration of the functional connectivity of the territory, improvement of biodiversity, information and awareness of the local population for a good coexistence with the newly arrived brown bear





Multifunctionality of the landscape

Each stakeholder values the landscape in a different way







LIFE Defragmentation Bear is proposed as a pilot action to restore connectivity, but also addressing bear-human coexistence

- Design of corridors and transfer of proposals to management documents
- Damage prevention measures
- Information and awareness
- Creation of connectivity and trophic enrichment forests (as stepping stones)





From science to policy





Connectivity models (Circuitscape, Conefor) show two main paths and allow to identify key areas with high connectivity value and existing gaps

Confront scientific results, models, etc. with the reality of a varied and multifunctional territory



Confront scientific results, models, etc. with the reality of a varied and multifunctional territory

- Informative meetings at different scales to inform, raise awareness and promote acceptance and interest in corridor improvement actions
- Contrast with other land uses, especially extensive cattle raising, to avoid conflicts (land occupation, problems for plantations, conflicts towards the bear, discomfort with the actions) and maintain multifunctionality
- Involve local society in the project (collaboration in the definition, detail actions, land stewardship agreements, participation in activities, volunteering, creation of local employment)

"ecological corridors are important for species, but also for ecosystem services and people"



Integrate the design of the corridor and the management and restoration proposals in the existing management tools

 Creation of working tables with administrations, managers and researchers. Detailed work and debate for the specific integration in document (i.e. brown bear recovery plan, Natura 2000 site management plans, forest plans, etc.)







Stakeholders involvement

KEYS TO SUCCESS FOR STAKEHOLDERS ENGAGEMENT

- **INFORMATION** (the more and the more practical, the better)
- **TRUST** (hard to obtain, easy to lose) involvement
- **PARTICIPATION**, meetings, decissions...
- **GOVERNANCE** (one step further) Governance groups (i.e. LIFE Natura 2000 + bear)



KEYS TO SUCCESS FOR STAKEHOLDERS ENGAGEMENT

Identify strategic social actors



Spread positive messages -be practical and explain "Good practices" -solve problems -prevent conflicts







Involve the local population in connectivity and conservation Facilitate opportunities for direct involvement (Jobs, volunteers...)



Communicate at different scales - Take advantage of opportunities



Promote communication between equals (trust) -Exchange of experiences between social actors -Visits to other areas



Brown bear and Natura 2000

KEYS TO SUCCESS FOR EFECTIVE ENGAGEMENT

Create value to change attitudes -Symbols that represent territories -Vision of opportunities -Ecosystem services







Synthesis report Working Group 2.1 Key governance elements for effective and long-term management of ecological corridors

The LIFE programme has provided an excellent laboratory for the development of experimental mechanisms of governance, with a focus on collaborative and participatory approaches on both public and private lands.

This working group's objectives were:

- To discuss the factors that make governance of ecological corridors successful and sustainable over the long-term.
- To explore whether the integration of connectivity objectives into land planning is necessary/useful to ensure long-term adequate connectivity conservation, and how this can be achieved.
- To elaborate on other factors important for successful governance, such as public awareness, support of local communities, transparency, participatory approach.

Two projects were presented during this session, both are successful examples of corridor identification, planning, and management.

LIFE Trans Insubria Bionet LIFE10 NAT/IT/000241 - Habitat connection and improvement along the Insubria ecological corridor between the Alps and the Ticino valley – by Sara Barbieri (Province of Varese)

The integration of connectivity aspects into early land-planning and the set-up of a shared governance scheme were the main factors of success in the long-term management of Insubria Bionet, an area covering some 15,000 ha and including 14 Natura 2000 network sites. Awareness-raising and capacity of local authorities was another crucial aspect of the project success. Post-life monitoring after 2 and 5 years shows improvement for some target species and a stable situation for others.

LIFE Bear Defragmentation LIFE12 NAT/ES/000192 - Habitat defragmentation for brown bear in the Cantabrian mountains and LIFE07 NAT/E/000735 Corridors for Cantabrian brown bear conservation – by Fernando Ballesteros (Fundacion Oso Pardo, FOP)

The Fundación Oso Pardo (FOP) offered a long-term perspective of corridor management and talked about the lessons learnt over the years and the factors that may condition a successful long-term management of corridors for large carnivores. In particular, the importance of confronting scientific modelling and studies with the reality of a multi-use rural area was raised, as well as the importance of integrating connectivity aspects into land-planning and nature management documents (e.g., forest plants, N2000 site management plans, brown bear recovery plan, etc.).

Discussion and main findings

Different aspects and issues were discussed and raised during the Working Group session and can be divided into 3 main chapters: Elements of success, Challenges to overcome and Feedback to EU Policy makers

I. ELEMENTS OF SUCCESS

1. Participatory approach & collaborative process

 Stepwise approach to engage stakeholders: Information -> Trust /Acceptance -> Participation/ Involvement (change of attitudes)
 -> Governance

- Improving social climate, mobilise local consensus and support

- Transparency on the process, importance to involve stakeholders early on in the process
- İmportance of understanding the local context well
- Provide incentives, create opportunities for collaboration and involvement (jobs, volunteering, income generation)

2. Dialogue & ownership

- Communication and awareness raising, positive messages are important, use storytelling, work with media
- Communication between equals and visit other areas where approach works
- Creating a sense of proudness, use of symbols that people identify with, local knowledge
- Engage in an interactive dialogue, listening to concerns of stakeholders

3. Technical capacity

- Getting the science right, importance of good preparation for ecological corridors (also at local level)
- Work with multidisciplinary group (scientists, engineers, land owners, lawyers, park managers,)
- Focus on technicians of local administrations to explain what ecological connectivity is and why it is important in a one-on-one dialogue

4. Different governance models

- Not one particular approach that works best, importance of diversifying governance models giving many stakeholders/land owners for ecological corridors – 'no one should be left out'
- Bottom-up approach works for governance and very practical measures work best
- Cross sectoral collaboration is key in land planning process also early on in the process (often top-down process)
- Create a legal reality by working with different working groups (managers, scientists, administrative officers) to integrate approach into management plans -> regional conservation and recovery plans
- Use of mechanism of public interest to build connectivity structures (passage ways) on private land (legal instrument) but many land owners were keen to sign voluntary agreements – ex. ELIA 'no mans land' with value generates more interest of land owners on land for powerlines, more commitment and a shared vision
- Long-term vision and planning of area with a clear strategy can be a key tool to set a framework to ensure sustainability of connectivity including funding, maintenance and restoration measures
- Spillover effect in neighbouring regions adopting similar approaches in their corridors
- Replication: Spillover effect in neighbouring regions/areas adopting similar approaches in their land planning.
- See reality as a dynamic one, to adjust approaches to current reality (also in link with climate change)

5. Monitoring to assess impact (also long term)

- Continue to monitor if the approach taken leads to improved connectivity for species, along with delivery of other benefits (ecosystem services, landscape and people)
- Interesting to assess if connectivity measures have an impact not just on target species but also other species
- Important to keep the involvement and dynamics going even after a project has finished

II. CHALLENGES TO OVERCOME

- Dealing with and preventing conflict is important (prevention), so important to identify solutions to get acceptance for connectivity (large carnivores) and reach 'good co-existence/co-habitation'

- Conflicting land uses 'Each stakeholder values landscapes in a different way' common vision, common goal
- Confront scientifical results of models with the reality of a multifunctional territory
- Caretaking of corridors in the long term is challenging, legal status is often questionable, might be turnover in administration having new priorities, important to establish long term safeguards
- LIFE projects can be really good to get connectivity conservation started, but then legal measures or governance approaches as well as funding are need to continue and ensure sustainability
- Ecological connectivity only can make a difference if it works in the long-term and is sustained

III. FEEDBACK TO EU POLICY MAKERS

- Long term effects take time so getting municipalities on board is key. EU preparatory funding would be helpful
- Give connectivity conservation the attention it deserves (also in terms of funding addressed to this as a priority issue)
- Article 6.3 Habitats Directive have been a strong tool to prevent damage or maintaining ecological corridors. Often overlooked by legislators and practitioners "Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives".
- Long-term vision and planning of area with a clear strategy can be a key tool to set a framework to ensure sustainability of connectivity (including funding, maintenance and restoration measures)

LIFE Platform meeting Connectivity 03-03-2021 LIFE+12/NAT/BE/000631 FLANDRE FLemish And North French Dunes REstoration



NATURA 2000 BELGIUM

SAC BE2500001 Duingebieden inclusief IJzermonding en Zwin: 2.200 ha in project area SPA BE2500121 Westkust

NATURA 2000 FRANCE

ZSC FR3100474 Dunes de la Plaine maritime flamande: 885 ha ZSC FR3100475 Dunes flandriennes décalcifiées de Ghyvelde: 195 ha



EU habitat directive target habitats





Conservatoire du littoral

AGENCY NATURE & FORESTS is natuur


EU habitat directive target habitats



NATURA 2000

EU habitat directive target species

1903 Liparis loeseli

1614 Apium repens



1202 Epidalea calamita



1014 Vertigo angustior 1016 Vertigo moulinsiana



1166 Triturus cristatus







`Duinen van de Westkust + Dunes de Flandre' France-Belgium state border artificially divides the Flemish coastal dunes since Peace of Nijmegen (1678) and Peace of Utrecht (1713)



same threats:
Artificial interferences to natural aeolian & tidal dynamics

history of human activities

- Invasive alien species
- Encroachment scrub & tall grasses

Common origin, physical environment,

- Recreational pressure
- ⇒ Same habitats and species
- Similar conservation objectives and management to reach favourable state of conservation
- ⇒ coordinated approach & management of cross-border sites = necessity
- ⇒ ° LIFE+ Nature project FLANDRE





Life+12/NAT/BE/000631 FLANDRE FLemish And North French Dunes REstoration

Main public owners and managers of dunes on both sides of the border = initiators and partners of the project LIFE FLANDRE

Belgium

Agentschap voor Natuur en Bos (Agency for Nature and Forests) - ANB

Flemish government agency competent for conservation policy & management of regional forests and nature reserves

France

Conservatoire du Littoral - CDL

French public institution created in 1975 for the preservation of coastal areas **Département du Nord – CD59**

Local authority that intervenes in various fields. Manager of the coastal dunes belonging to the Conservatoire du LIttoral

Total budget € 4.066.454 EU Life support € 2.033.226

Duration of the project : 5 years + 2 extensions 02/09/2013 - 31/12/2020







Actions B.1&2 Purchase of land Duinen van de Vlaamse Westkust + Dunes de Flandre 1794 – 1814: Austrian Netherlands annexed to France

Ownership of coastal dunes both in French and Belgian Flanders:

privatized during French revolution and Napoleon (1794 -1814)

- \Rightarrow numerous allotments in 20th Century
- \Rightarrow strong urbanization
- \Rightarrow spatial & ecological fragmentation
- \Rightarrow extremely fragmented ownership structure
- \Rightarrow NO management of privately owned dunes
- \Rightarrow need of land purchase by

Conservatoire du Littoral - France

Agentschap voor Natuur en Bos - Belgium







important achievement of LIFE+ FLANDRE:

expansion of managed public dune domains by purchase of 104 ha

35 ha by CdL

69 ha by ANB







Cross border project area extremely **urbanized** => remaining coastal dune area **strongly fragmented**



You said connectivity ?





Conservatoire du littoral AGENCY NATURE & FORESTS





Westhoek nature reserve (BE) – Dune du Perroquet (FR) from sea-front to polder: border materialized as camping = environmental barrier vs spatial cohesion & ecological connectivity





itoire AGENCY al NATURE & FOREST:





LIFE FLANDRE: Preparatory studies and management plans

Masterplan & legal basis for the protection and management as a transnational nature park of the cross-border dune belt between Dunkergue and Westende: ambition to be exemplary for similar cross border Natura 2000 areas

Masterplan (contractor Wvi & INBO) recommendations spatial planning policy & nature restoration



is natuur

du littoral

eg. restoration of ecological connectivity and natural dynamics



LIFE FLANDRE: Preparatory studies and management plans

Masterplan







LIFE FLANDRE: Preparatory studies and management plans

legal basis

contractor: LDR environment Lawyers + University of Ghent + Université de Bretagne Occ. perennial cooperation + protection & management as cross border nature park

- Study started from **inventory of existing cross border nature parks** in France and Belgium
- GECT 'Parc Européen Alpi Marittime Mercantour' (FR-IT)
- Parc naturel transfrontalier du Hainaut (FR-BE/Walloonia)
- BENELUX 'Grenspark Kalmthoutse Heide De Zoom' (NL-BE/Flanders)

and interviews of stakeholders

- > after analysis: possible / recommended forms for cooperation
 - Bilateral international agreement
 - GLCT / LSGS Lokaal Samenwerkingsverband voor Grensoverschrijdende Samenwerking between local and regional authorities (cfr Brussels Agreement 16-09-2002 FR-BE-VL-Wa-Bru ...)
 - **GECT / EGTS Groupement Européen pour la Coopération Territoriale**, possible in theory but there is already an operational GECT that covers the entire project territory: West-Vlaanderen/Flandre-Dunkerque-Côte d'Opale





Obstacles for cross boder cooperation between France and Flanders:

Differences

- in language -
- in attitude and habits, eq. hunting, recreational activities ...
- national legislation, access regulation ... -
- administrative procedures ... -

1st phase of process:**not binding frame for cross-border cooperation**

Chosen instrument: memorandum of understanding

> Agreement: parties can choose what will or will not be included in the memorandum

> Not binding: no enforceable obligations are included

> Flexible instrument: memorandum is subject to change based on the wishes and needs of the parties

> Basic document: in the **future** parties can **evolve** towards cooperation with concrete **enforceable obligations** e.g. **GECT/EGTS or GLCT/LSGS**

AGENCY









> Flemish minister competent for nature conservation (minister guardianship ANB)

AGENCY

- > Préfet de région 'Hauts de France' for the French state
- > Director of the Conservatoire du Littoral
- > Président du Conseil Départemental du Nord



Conservatoire du littoral



Vlaanderen in advances



MoU – European Objectives of Conservation

The partners of the MoU commit themselves to establish a contractual and legal basis within 5 years of the signature of the MoU

Implementation European Habitat and Birds Directive / Focus on:

common vision on protection, restoration and development of the dune habitats: ecological connectivity - strengthening dune sites - coherence with national legislations

2. management of the sites + integration in spatial planning and national policies

3. facilitate coordination & dialogue with **local authorities + other stakeholders** on the conservation objectives of Natura 2000

4. promote & develop **scientific research** and the capitalization of **knowledge of species and habitats of Community interest** in order to develop further the Natura 2000 network (**extension of perimeters to establish connections**)

- 5. raising public awareness
- 6. discovery and leisure activities adapted to the vulnerability of the natural environment
- 7. combatting abandonment and degradation of natural habitats and landscapes





MoU - organization structure of cross border cooperation

Operational project – team LIFE+FLANDRE + DREAL + DDTM -> meets 4 X/year

Advisory committee of MoU = advisory committee LIFE+ FLANDRE

->To be consulted about actions, cooperation and development of the cross border protected nature area – meets at least 1 X/year

-> consists of representatives of **4 partners** and of **other stakeholders**:

--- on French side :

4 French municipalities, Syndicat Intercommunale des Dunes de Flandre, Communauté Urbaine de Dunkerque, région « Hauts de France »

--- on Belgian side :

4 Belgian municipalities, Province West-Vlaanderen, drinking water production Cy IWVA, relevant Flemish & Belgian federal authorities (Coastal Protection, Marine Environment, Ministry of Defense)

---- On both sides: scientific experts and nature conservation NGO's

AGENCY













Preventing the extinction of the Dinaric-SE Alpine lynx population through reinforcement and long-term conservation



Connectivity for lynx, bear and other large mammals

Rok Černe



Natura 2000 sites

LIFE Lynx



Source: https://natura2000.eea.europa.eu/

Habitat suitability map created for bear



Source: Recio et al. 2018, Potočnik et al. 2019



Action A3: Analysis of spatial connectivity and preparation of environmental impact assessment guidelines

Prepared by: Mariano Kodriguez Recio¹ and Klemen Jerina² Medicinghi design free for section 2.7% conducted the mat/yes, independed the results, and wrow the action 2.7% conducted the mat/yes, biological data particular 2% integrated the results, and commands of the report.

Contributors' Felix Knauer³, Anja Mohnari-Johns⁴, Claudio Groff⁴, Djuro Huber³, Paolo Molinari⁵, Luca Pedrotti⁵, Stefano Filacorda⁵ Commend on methodiagical design and the swith Commend on the result and percise har locates dan Percised her incrime dan

Suggested Citation:

Recio, M.R., Knauer, F., Molinari-Johin, A., Groff, C., Huber, D., Molinari, P., Pedrotti, L., Filacceda, S., Jerna, K., (2015) Azakyins of spatial connectivity and preparations of environmental impact assessment guidelines, prepared within A3 action of LIFE DINALP BLAR Project (LIFE1) NATISU005): 37 pp.

April 2018



Habitat suitability map created for lynx



Source: Potočnik et al. 2019

Identification of corridors



HANDBOOK FOR INTEGRATING THE BEAR HABITAT SUITABILITY AND CONNECTIVITY TO SPATIAL PLANNING



Source: Recio et al. 2018, Potočnik et al. 2019



• Despite all this efforts corridors are not protected.

Protection of corridors in SLO

- 10 year Forest management plans are also plans for Natura 2000 sites protection.
- Functions define the level of protection.
- Corridors included as priority 1.
- Map of concrete protected corridors forests (large mammals).
- Management plans adopted by the government.

Evaluation of the metod

• Map available to spatial planers and need to be respected.

LIFE

• Important forest corridors protected.

LIFE

Transboundary protection of corridors

Work within the Alpine convention:

- Spatial Planning and Sustainable Development Working Group
- Large Carnivores, Wild Ungulates and Society Working Group (WISO)

Synthesis report Working Group 2.2 Transboundary Governance

The main objectives of this working group were:

- To showcase examples of successful transboundary governance arrangements relevant for connectivity conservation.
- To explore major factors of success, limitations and challenges.
- To discuss how transboundary governance can provide insights in advancing connectivity commitments and obligations within and across international borders.

Two LIFE projects were presented at the start of this session.

LIFE FLANDRE LIFE12 NAT/BE/000631 - Flemish and North-French Dunes Restoration

The project aimed at improving the ecological coherence of the network of dunes (N2000 sites) on both sides of the border (FR/BE) by restoring dune habitats highly impacted by urbanisation and fragmentation, and by boosting specific species. A master plan was prepared for the future management of the entire cross-border coastal area. To ensure the continuation and consolidation of the cross-border cooperation, a permanent and formal partnership between Nature and Forest of the Flemish Government, the French State, the Conservatoire du Littoral and the Département du Nord was established for the protection and management of the cross-border dune belts. A "memorandum of understanding" was signed in February 2020, with the ultimate goal of developing a transnational European natural park 'Dunes de Flandre - Westkust'.

LIFE LYNX LIFE16 NAT/SI/000634 - Preventing the Extinction of the Dinaric-SE Alpine Lynx Population Through Reinforcement and Long-term Conservation

The project intends to set up a collaboration across all EU countries sharing Lynx populations (Slovenia, Croatia and Italy), and to develop and implement a standardized and systematic transnational approach to ensure long-term viability of Lynx populations. The project will develop International Guidelines for establishing lynx meta-population connectivity between Swiss Alpine, Dinaric/SE Alpine, and Balkan populations.

I. Main factors of success in transboundary governance of ecological corridors

- Existence of common issues (e.g., history of human activities, same species and habitats, similar conservation objectives) related to all involved countries.
- Identifying and addressing common threats that can be tackled by all the concerned countries (e.g., invasive alien species, encroachment, recreational pressure).
- Coordinated approach in addressing the threats and in management of transboundary sites.
- Collaboration on identification of joint vision and common objectives for connectivity conservation across borders.
- Facilitation of communication with local authorities and the public.
- Wide participatory approach in governance structures (involvement of e.g., national authorities, regional authorities, municipalities, scientific experts, NGOs).
- The need for cross-sectoral cooperation within and across borders (e.g., forest service planning institutions; scientific cooperation between Universities).
- Adoption of appropriate legal instruments for transboundary governance of corridors.

- Harmonisation of methodology for identification and management of ecological corridors across borders.
- Natura 2000 biogeographic process can be used to discuss transboundary ecological corridors further.
- Involvement of local municipalities and having binding agreements are essential to ensure sustainability of transboundary collaboration.
- Ensuring networking and exchange of experiences and good practices.

II. Key challenges in transboundary governance of ecological corridors

- Multiple diffe
- Multiple differences between the concerned countries, e.g., in language, management (hunting, recreation etc.), national legislations, administrative procedures, etc.
- Sometimes a challenge is to convince local authorities to work at transboundary level.
- No legal framework for transboundary ecological corridors/Natura 2000/conservation areas at European level. There are some frameworks at European or global level that provide for the legal status of transboundary initiatives, such as transboundary international designations (World Heritage, Ramsar, Biosphere Reserves) or European Grouping of Territorial Cooperation (EGTC). EGTC is a wider framework not focused only on conservation, but a good start to work in a transboundary way.
- Similar priorities in countries for prioritisation of ecological corridors would be needed for efficient transboundary cooperation.
- Integration of corridors to spatial planning is lacking.
- Limited access to data at EU level. Also, in some cases quality data on species and habitats is missing.
- Lack of awareness of local authorities of the importance of natural heritage compounded with socio-economic pressures.
- Lack of efficient cooperation at ministerial level in the concerned countries.

III. Efficient implementation of a variety of transboundary governance mechanisms

- Collaboration between parties across borders as the key approach in implementing any transboundary governance arrangements.
- Formal arrangements (bilateral or other agreements) should be established at various levels (e.g., state level, local/regional authorities, EGTC).
- Flexible agreements such as Memoranda of Understanding where parties can choose what will be included, non-binding agreements are important as they can enhance the chances for successful start of transboundary initiatives.
- Implement an adaptive approach in transboundary governance where flexible instruments can evolve to binding agreements.
- There is sometimes a need for the establishment of new structures (institutions) that would take care of transboundary cooperation/cross-sectoral issues. Otherwise, at least new 'duties' or adequate coordination mechanisms should be established within the existing structures.
- Soft informal arrangements can be efficient in certain cases, although it is desired to get formal commitment.
- In cases where transboundary cooperation is established at very formal level (topdown), it is very important to get support from local communities, local authorities, NGOs, thus awareness raising is important. Furthermore, connectivity

conservation at transboundary level requires bottom-up approaches that take into account the practical limitations and active participation of local actors.

IV. Recommendations for EU policy makers regarding data, mapping, tools for connectivity

- There is a strong need to establish a legal framework for transboundary cooperation on ecological corridors/conservation areas at EU level to enable easier institutionalization of transboundary conservation initiatives.
- More open access to data necessary for ecological connectivity planning and sharing of data between Member States is needed.
- It is important to ensure long-term funding of transboundary conservation initiatives to enable sustainability of transboundary cooperation and effective cross-border governance.
- The Natura 2000 Biogeographical process should be used as a platform for enhanced discussion on transboundary ecological corridors by the Member States.



Local initiatives for deployment of green infrastructure within Natura 2000 sites in the Carpathians

LIFE16 GIE/PL/000648

http://en.zielonainfrastruktura.karpatylacza.pl

Piotr Mikołajczyk UNEP/GRID-Warsaw Centre E-mail: piotr@gridw.pl

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Since 1991



LIFE Green-Go!

CARPATHIANS

National Fund for Environmental Protection and Water Management





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for Environmental Protection and Water Management



Objectives

- supporting liaison and cooperation of local stakeholders towards the maintenance, restoration and enhancement of green infrastructure in Polish Carpathians
- disseminating knowledge on the role and importance of green infrastructure and ecological connectivity for biodiversity conservation, access to ecosystem services and sustainable local development
- promoting use of **spatial data resources** and **geoinformation tools** in spatial planning and management of nature-sensitive areas
- dissemination of good practices of participatory spatial management among the Carpathian region countries.



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Implementation period: Sep. 2017 – Dec. 2021 (COVID-extended)

Primary target groups:

- local self-gov. authorities
- local communities

from the 200 Carpathian communes in PL

Other partners / stakeholders:

- regional nature protection authorities in charge of Natura 2000
- landscape and national parks
- regional (province) self-governments
- other: selected NGOs, regional forestry authorities, agricultural institutions...

... that is, stakeholders with impact on how the terrain is managed/used.

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Pragmatic approach, tangible incentives, comprehensible scale

Merging biodiversity (ecol. connectivity) AND sustainable local development





Natural assets / capital Ecosystem services





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Investment / Cost / Loss

Profit / Benefit / Saving





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Actions

- GIS analysis of green infrastructure and ecological connectivity
- seminars for nature protection institutions
- trainings for local stakeholders
- e-learning course with GI-related multimedia materials
- **geo-portal** and **mobile application** for field inventory, mapping, and assessment of green infrastructure
- local green infrastructure case studies (competition)
- informational-promotional campaigns
- manual on protection and proper management of GI in Natura 2000 sites in the Carpathians



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Ecosystem types in PL Carpathians





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Landscape diversity – aggregated land cover classification

Class code	Description		
LZ	Forests, woodlands		
RK	Shrubs		
UT	Permanent crops (orchards, plantations, allotment gardens, plant nurseries etc.)		
UZ	Agricultural lands – meadows and pastures		
GO	Agricultural lands – arable (ploughed) fields		
WP	Surface waters – standing and running		
ZAB	Built-up areas		
ТА	Other anthropogenic areas (non-built-up, transport infrastructure, squares, Surface excavation areas, landfills)		
Р	Screes and rocks		

Aggregation of land cover classes from the Topographic Object Database, scale: 10k



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Landscape diversity – ind. values' distribution in communes



Shannon's Diversity Index - SHDI







Interspersion and Juxtaposition
36 - 44

Edge Density [m/ha] 37 - 90 90 - 144 144 - 198 196 - 252 252 - 306



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44 - 53

53 - 62

62 - 70

70 - 79



Housing dispersion







Disp



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Analysis of fragmentation





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Analysis of communes' spatial planning documents

Class	Description	
Μ	Residential housing (single-family, multi-family, tourism facilities, summer houses, etc.)	
M, U	Mixed: residential and services, multi-functional zones	
M, P	Mixed: residential and industrial buildings for commercial activities	
U	Service areas / facilities	
Ρ	Industrial / commercial areas / facilities	
P, U	Mixed: industrial / commercial / services	
UT	Tourism and sports areas	
KD	Areas allocated for projected (major) highways and expressways	



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Analysis of communes' spatial planning documents





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Analysis of communes' spatial planning documents



Land reserves for building up in spatial planning documents



- **High investment pressure** ٠
- Fast rate of land allocation oversupply of ٠ "investment lands"
- Lack of consideration for sound demographic and economic analyses



Multiplier of demographic absorption (projected population)



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(yellow)

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The geoportal and mobile application for green infrastructure inventory and mapping





WARSZAWA

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Scrutinizing hotspots





- isolating Natura 2000 sites
- severing ecological corridors – NOT ADEQUATELY PROTECTED BY LAW
- degrading open areas

Importance of GI-friendly spatial planning



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e-Learning platform

Thematic animations





... and other resources on GI



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VR video clips



Application / putting into practice

- planners (local GI spatial databases)
- decision makers / policy makers
- crowdsourcing / citizen science / education / community engagement (NGOs, school projects);
- local entrepreneurs (e.g. tourist service providers, operators)
- nature protection institutions
- ... ???



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THANK YOU !! ③ Piotr Mikołajczyk, PhD UNEP/GRID-Warsaw Centre

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Fot. P. Mikołajczyk



Iberian Wolf (Canis lupus signatus) pack. Photo credit: Andoni Canela I Rewilding Europe



Decreasing socio-ecological barriers to connectivity for wolves south of the Douro river

Sara Aliácar, Conservation Officer at Rewilding Portugal



Project snapshot

Project Title: Decreasing socio-ecological barriers to connectivity for wolves south of the Douro river (LIFE WolFlux).**Project Code:** LIFE17 NAT/PT/000554

 Duration: 5 years (01-01-2019 to 30-11-2023)

 Total budget: 2,185,383.00 €

 EU contribution: 1,639,036.00 €

 Project location: Centro (Portugal)

Partnership: Rewilding Portugal, Universidade de Aveiro,
ATNatureza, Zoo Logical and Rewilding Europe
Co-funding: Endangered Landscapes Programme





Lack of wild prey availability and diversity

Roe Deer (Capreolus capreolus). Photo credit: Grzegorz Leśniewski I Rewilding Europe



Limousin cow, Quinta das Machadas, Greater Coa Valley. Photo credit: Juan Carlos Muñoz I Rewilding Europe

Habitat loss

Infrastructure and eucaliptus plantations

Arada mountains, central Portugal. Photo credit: Sara Aliácar I Rewilding Portugal





Wolf injured by a illegal snare directed to wild boar. Photo credit: Zoo Logical I LIFE WolFlux

Negative attitudes

Overcoming threats to reduce barriers



Ensure the viability of the wolf subpopulation south of the Douro river



Promote coexistence and reduce conflicts with livestock owners



Increase the number of wild prey for Iberian wolf (roe deer)



Develop a strategy to promote local products (agricultural products, tourism, etc.)

Understanding attitudes and narratives towards wolf



Attitudes towards wolf, its prey and nature conservation

Key actor: one who influences management or has interests involved in the area, for example, related to economic activities (Lopes-Fernandes et al 2018).

Profile	Characterization	Relation with the territory: activities and interests
Local authorities	Elected members of the executive commission of local governments	- Voted by local population
		- Represent the interests of the local population
	Local decision and representation	- Knowledge of other key actors and main problems and interests
		occurring in the area
		- Dynamization of social activities, including nature activities
Nature conservation practitioners	Officers and technicians of the public sector, associations or NGOs active in the territory.	- Surveillance and monitoring of interventions
		- Assessment of interventions and emission of authorizations and
		permits
		- Legal enforcement
		- Implementation of nature conservation projects
		- Monitoring of species and habitats
Hunting managers	Directors or other members of the board of hunting associations and managers of municipal hunting associations.	- Elaboration of hunting management plans
		- Management of hunting species and habitats
		- Communication with the authorities
Livestock breeders	Owners of the main types of livestock predated by wolf in the	Determination of the stand because if a model is a
	project area: cattle, sheep or goats.	- Potentially affected by wolf predation
		- Their practices condition predation risk
		- Direct influence in the management of habitats
Nature activity promoters	Private enterprises, institutions and associations that organise activities related to nature (e.g., wildlife watching, hiking) or in nature (e.g., kayaking, mountain bike trails)	- Interest in natural areas
		- Bring tourism and visitors to rural areas

Identifying and mapping social barriers

Lamege Vila Nova de Foz Côa Cinfães Castro Da Figueira de Castelo Rodrigo Nova de 13 Trancoso 16^{®Pinhel} São Pedro do Sul Viseu **Vilar Formoso** LIFE WolFlux project area Parishes sampled (A.7)* Intolerance towards wolf presence (for livestock breeders, hunting managers and local authorities) O(Tolerant) = 1-2 = 3-4 = 5 = 6-7 (Most intolerant) 19 20 20 km 10 Espirito-Santo et al. submitted.

Intolerance index towards wolf presence

Positive outcomes of an early participatory approach

- First contact of the key actors with a project is people who listen to them;
- Conservation practioners understand and can take into consideration people's own narratives and points of view about the territory and the species;
- Identification of key actors to start working with.



Participatory approaches to develop conservation actions

- Participatory Hunting Management Plans for wolf prey;
- Finding solutions to reduce damage together with livestock owners: case by case assessment;
- Exchange of best practices among livestock breeders: letting people talk and learn from each other;
- A network of wildlife ambassadors: a deep insight to intervene in local realities;
- A network of local entrepreneurs: building sustainable economies together;
- Involving and working together with public institutions, police force, local authorities and other NGOs.



Some challenges encountered

- Overcoming a dominant utilitarian point of view over nature;
- Lack of trust of local communities in institutions: preponderance of the group effect;
- Difficulty of access of nature conservation funding when one of the main complains of communities towards conservation projects is "lack of continuity";
- Differences between nature conservation and agricultural incentives create diferent interests over the territory.









Participatory approaches and stakeholder's engagement in ecological corridor



Lessons from LIFE on ecological connectivity towards a coherent, functional and resilient network of protected areas





LIFE ALNUS. The forest of the river

 LIFE Alnus is developing an experimental, regional-level (Catalonia) alternative conservation strategy for Mediterranean alder forests (habitat of Community interest 91EO*) to reverse the decline and deterioration of this riverside habitat and create a model that can be rolled out to the rest of the Mediterranean biogeographical region



working towards a more efficient shared governance of riparian forests in Catalonia, and for a better integration of sectoral policies and decision-making processes.




Governance in riparian ecosystems

• The complexity of riparian ecosystems is also proportional to the complexity of the uses, infrastructures, and actors involved.





Discussion rooms

- A support tool that meets multiple goals:
 - dissemination of the project
 - know the concerns of the discussion sector
 - generate complicities, trust and referentiality
 - determine shared challenges
 - generate proposals and consensus













A simple methodology to promote...

- Several pre interviews with a representatives actors
- Digital moeting with different actors (often with oppositors positions)
- General challenges for the sector
- Organizing the challenges in three or four groups (legal_technical_communicative...)
- Discussing challenges in little discussion groups and making proposals for consensus
- Explaining the discussion and proposals for all meeters
- Final discussion and making the consensus document in a decalogue







Thanks for your attention!



Synthesis report Working Group 2.3 Participatory approaches and stakeholders engagement in ecological corridor

Joaquim Teodósio (SPEA-PT): "Stakeholders' involvement is the first step for sustainable connectivity".

The success of shared or private governance is often linked to the early involvement and efficient engagement of all relevant stakeholders in the governance process. Many good examples of participatory and bottom-up approaches exist in the LIFE portfolio, of which a few relate to connectivity elements.

The main objectives of this working group were:

- To share examples and best practices of successful participation and engagement of stakeholders in governance schemes for connectivity areas.
- To discuss the main success factors and current challenges. The governance arrangements in ecological corridors should ideally ensure transparency, stakeholders' engagement and participation of local communities to ensure long-term adequate management.
- To gather opinions and knowledge between practitioners and scientists on participatory approaches for planning, governance and management of ecological corridors. Stakeholders' participation and engagement can happen in a variety of ways and at various stages: during connectivity conservation planning, at early stages of the design of governance mechanisms, during decision-making processes affecting the ecological corridors, during the daily management of corridors, etc.

43 participants attended the session. Three LIFE projects were presented at the start of this session.

LIFE Green-Go! Carpathians LIFE16 GIE/PL /000648 – Local initiatives for deployment of green infrastructure within Natura 2000 sites in the Carpathians

The project is working to increase the level of knowledge about Green Infrastructure (GI) and Ecosystem services including ecological connectivity both within and between N2000 sites in the Polish part of the Carpathians. The project manager presented the project activities and outputs, that includes an analysis of current spatial planning, the development of a comprehensive Geographical Information System and a geoportal with public access, and a mobile application that allows including data bout GI and ecological corridors. An e-learning platform has also been created and complementary products such as videos. These outputs are aimed at various stakeholders including planners, local communities, entrepreneurs, nature protection institutions, etc.

LIFE ALNUS LIFE16 NAT/ES/000768 – Restoration, conservation and governance of the Alnus alluvial forests in the Mediterranean Region

The project intends to improve the governance of rivers and riparian areas in Catalonia as it is currently extremely complex, causing a lack of cooperation, coherence and efficiency. One of the tools tested by the project and presented during the meeting is the organization of online "deliberative rooms" to involve specific stakeholders (the ones who are open to dialogue and discussion), with the support of mediation experts. This tool was found to be efficient in getting to know the concerns of each sector (local authorities, farmers, etc.), in generating proposals of action and consensus and specific issues. The result will be a "Decalogue" of statements agreed by the participants.

statements agreed by the participants. LIFE WOLFlux LIFE17 NAT/PT/000554 - Decreasing socio-ecological barriers to connectivity for wolves south of the Douro river

The project manager presented the identification and mapping of socio-ecological barriers carried out in the south of the Douro river, an area with traditionally negative attitudes towards the target species. She also explained the creation of a network of

"wildlife ambassadors" and the positive outcomes of an early participatory approach, including a wide range of stakeholders (livestock breeders, entrepreneurs, other NGOs, public authorities, etc). She also raised the challenges faced, such as the lack of trust of local communities, the lack of continuity of conservation projects, etc.

I. Main current challenges of stakeholders' engagement and participation

The participants gave their opinions on the main current challenges of stakeholders" involvement in ecological corridors. These were classified under the following main categories:

- 1. Lack of understanding of most stakeholders about the importance of corridors and ecological connectivity, leading to a lack of interest and commitment. Lack of technical capacity and knowledge on connectivity.
- 2. Public participation and engaging stakeholders into the planning, decision-making and implementation processes is a complex task. There is a lack of skills in public participation, facilitation and mediation. Nature practitioners are not trained for this.
- 3. Problem of time and availability of stakeholders: getting informed and participating requires time and resources/skills.
- 4. Lack of common framework and terminology (e.g., what is a corridor for a farmer, a builder, a land planner, a conservationist?). There is a need to "understand each other's' language".
- 5. Lack of long-term commitment: need for long time frames to implement effective participation and engage stakeholders in a fruitful manner. Lack of long-term vision at project level but also at institutional and local/regional/national authorities' level.
- 6. Difficulties in engaging and motivating stakeholders. The participants mentioned the "fatigue" of stakeholders, in particular linked with the non-continuity of conservation projects/initiatives (e.g., LIFE projects), which make them lose interest and trust.
- 7. Convince stakeholders about the long-term benefits of connectivity conservation is still a huge challenge in most sites, in particular where no instruments/incentives are in place. the following challenges were mentioned regarding trade-offs, incentives and benefits:
 - lack of financial incentives to participate, lack of predefined subsidies for land use
 - most stakeholders see the short-term benefit and the economic aspects
 - society not rewarding the contribution of stakeholders
 - distribution of benefits is low
 - existence of other uses reporting economic benefits in the same area
 - funding inconsistencies at national and EU level; for example, farmers in Spain can lose CAP payments if they invest in Green Infrastructure.
- 8. Lack of access to datasets or geographical/spatial data and lack of homogeneity of data formats across countries and organisations. It makes it difficult to provide open access information such as maps and to upscale/replicate regional initiatives.
- 9. Barriers linked to IT issues among stakeholders': general IT literacy, use of apps, access to reports, maps or databases.
- 10. Other issues mentioned: contrasting interests in the same area and land, minding own business/profit above all, constraints imposed by activity and way of living of stakeholders, fears such as losing their land to protected areas, farmers' disillusionment, and traditional practices feeling threatened.

II. Discussion on the elements of success for effective stakeholders' engagement

Identification of stakeholders, engagement processes and timing

Stakeholders' engagement can happen under varied regimes of governance, at various levels (area/site, regional, national) and at different periods. Stakeholders' engagement can occur before the design of connectivity conservation planning to collect opinions and ideas, during the decision-making linked to the concrete measures to be taken, and finally during and after the implementation of connectivity measures.

- The participants highlighted the importance of **identifying relevant key stakeholders**. These should be open to dialogue and have capacity of reflection, so as to avoid a polarization of the debate based on radical/extreme position. Key stakeholders shall be "influencers with authority", who will be able to set things in motion and engage other people. Participants raised the difficulty in finding such spokespersons who really represent most stakeholders. The importance of listening also to all voices including the radical and contrary opinions was also mentioned, depending on the local context and circumstances.
- Another factor discussed was the importance of **listening to stakeholders closely**. Getting to speak with each local stakeholder individually is often useful and efficient, although time-consuming. Most participants agreed on the fact that it is crucial to devote all necessary resources to this step as it will condition many other project aspects. Regular feedback should be requested and taken into account by authorities and corridor managers.
- The participants mentioned the need for involving the local stakeholders at the right moment (adequate timing) to optimise their engagement and the results of it. In particular, they raised the importance for site managers and entities which have the power and responsibility over the corridor area of establishing relationship with local stakeholders at very early stages and explaining transparently the objectives and the actions to be carried out in the corridor.
- Governance of ecological corridors should ideally ensure **transparency and stakeholders' engagement in early stages of connectivity planning**, before any decision is made regarding the corridor. Local stakeholders are the ones who really know on-the-ground issues. **The co-design** of the project measures and management activities between authorities, site managers and stakeholders was mentioned as an interesting bottom-up possibility, although not always possible. Top-down approach might also be valuable if there are too many interests and consensus is not possible. (Governance of corridors is usually complex. Several levels of governance).
- Early/preparatory work is crucial, although often underestimated in conservation projects. In particular, it is essential to address all conflicts if possible, at early stages. This is highly resource-demanding but crucial to ensure stable and long-term involvement. In the case of deeply rooted conflicts (e.g., ancient historic "wars" between landowner families or intrinsic/ structural conflicts such as investors vs. conservationists), the intervention of an outsider might be useful; i.e., an entity with no "historic burden" and separated from local issues.

Resources/skills

- The diversity of stakes and stakeholders require inclusive participatory and collaborative approaches, and also require that sufficient resources be in place to ensure that the participation objectives can be achieved. Most of the participants agreed on the need to take participation and stakeholders' engagement seriously and devote the necessary resources to it: time, money, training/capacity building of practitioners in public participation, hiring of mediation/participation/communication experts, etc.
- Resources and skills are also needed on the stakeholders' side. In particular, getting involved in participation processes takes time it is not clear how to ensure fair and balanced participation.
- The importance of using the **appropriate means and communication channels** was highlighted. Access to information is crucial in public participation and stakeholders" engagement processes, there is a need to promote open access data and technologies and to use communication channels adapted to the targeted public.
- Connectivity planners and managers must have the capacity of adapting to the type of public targeted, taking into account the **local social and economic context**, **cultural values, beliefs**, etc. it is also important to take into account previous learnings in the area (e.g., lessons learnt from previous projects implemented) to avoid starting from scratch.
- Setting up mechanisms of public participation and/or mediation and implement them **require specific skills**, that practitioners do not always have. These tasks

can be done by external professionals specialised in participation or mediation. Involving external bodies or organisation as "mediators" can also help.

 Engagement of stakeholders need some adaptation and learning at all levels. For example, public authorities may have to change their way of accounting or reporting to include stakeholders' views. Stakeholders must learn how to express their views, communicate, dialogue and must adapt to the "participation rules" => it is a change of mindset at various levels.

Costs/ Benefits/ Trade-offs

Local stakeholders and rightsholders often focus on direct personal profit rather than ecosystem benefits, they are interested in tangible and short-term benefits. Convincing people that benefits will arise in the long-term is a real challenge.

- It was reported as essential to **assess all possible benefits and trade-offs** at early stages to find out how to convince stakeholders, and explain them in a transparent way.
- The participants agreed on the need to make sure that **all stakeholders can/will benefit as much as possible** from the measures implemented and the management of the land. The "mutual gain" approach was mentioned (see LIFE IP NATUUR:
- <u>https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.</u> <u>dspPage&n_proj_id=6103</u>)
- It is necessary to **adapt the language, the narrative and the arguments** in function of the type of public, e.g., talk about nature-based solutions or social benefits providing concrete figures ("People like numbers" said one participant).
- Some practitioners had the view that using **the approach of ecosystem services** and their linked economic valuation can be a valuable tool to defend and "sell" the idea of connectivity conservation. People need to be approached with concrete information and figures. Some other participants had mixed feelings about the relevance of ecosystem services valuation. It can be difficult to discuss with stakeholders about who bears the cost and benefits of ecosystem services.
- The following publication includes valuable insights into the use of pertinent arguments for nature conservation: <u>https://ec.europa.eu/jrc/en/publication/arguments-biodiversity-conservation-natura-</u> 2000-sites-analysis-based-life-projects.
- As stakeholders' involvement is a voluntary approach in most sites, the existence of incentives, both instrumental and non-instrumental, may facilitate stakeholders' engagement, although it also has some negative sides.

Long-term vision

- **Continuity in conservation initiatives** is crucial to avoid losing interest and support from stakeholders. **Continuity in funding** is crucial too. The lack of continuity was found to be a real challenge in most connectivity orientated efforts. One possibility is to connect to ongoing EU subsidy programmes (e.g., Rural Development Programme.) although it is not always feasible.
- **Capacity to plan long term**. Most participants confirmed the crucial need for a long-term vision and long-term commitment in ecological corridors ("what is the corridor going to look like in 10, 20 years", "What happens when this project is over and long gone?"). It is often difficult to give an answer to this question and this undermines the efforts put into the engagement of local stakeholders. This is necessary also within institutions and authorities, who must be clear on the possibilities of future engagement.
- Most participants agreed on the fact that short-term projects cause "fatigue" of stakeholders and negatively affects their involvement; they slowly lose trust and interest.
- Ideally, with long term involvement, the stakeholders would be able to see that biodiversity and connectivity have a positive impact on their life, which would motivate them further and serve as example for other initiatives.

III. Other issues raised and discussed

- <u>Site location within or outside N2000:</u> depending on the country, whether corridors are inside N2000 sites may or may not help stakeholders' engagement. It seems that in Southern countries like Spain and Portugal where N2000 management is still deficient, it does not make any difference. However, in northern countries, it seems to have a positive impact on the engagement of stakeholders, although the conclusion is not totally clear.
- Replication and scale up can happen when people see the tangible results of it ("copying the neighbours", "word of mouth"). And through the use of dedicated platforms, exchanges, networking, etc.

.

IV. Recommendations for the LIFE projects and programme:

- Include in the LIFE Guide for applicants specific recommendations about public participation and stakeholder's involvement so that beneficiaries allow sufficient time and budget to this aspect while designing LIFE projects. Time and resources allocated to this task are often underestimated in the project proposals.
- Sharing LIFE project Best Practices on connectivity: participants demand more practical consolidated information and references of successful experiences and a network of practitioners.

Presentations Working Group 2.4 Other Effective Area Based Conservation Measures (OECM) and other non-legally protected areas

LIFE Platform meeting – Connectivity 2-4 March 2021 Pieter De Corte (Flemish Land Agency)- BELGIUM

URBAN GREY COLOURING GREEN AND BLUE

FROM PLAN TO PRACTICE IN FLANDERS AND EUROPE Final report LIFE-project Green4Grey









Environmental Problem: Greying of the landscape => fragmentation



CONTENTS

Greying of the landscape (Flanders)



Figuur 8. Historische en toekomstige evolutie van de bebouwde oppervlakte op schaal van Vlaanderen (bron: Poelmans, 2010) van links naar rechts en boven naar onder: 1976, 1988, 2000 en 2050, rood = bebouwde oppervlakte, wit = akkerland, lichtgroen = grasland, donkergroen = bos, blauw = wateroppervlak

- Urban sprawl: competition for "space" : loss of 7ha/day open space
- Degradation of the green and blue infrastructure & loss of connectivity between green spaces



"Grey" problems linked to cities



PROJECT methodology



Creating <u>additional</u> & improving the <u>quality</u> and <u>connectivity</u> of Green infrastructure in Grey peri-urban environments

GREY => GREEN

- **1. LANDSCAPE TRANSFORMATIONS**
- 2. ECOSYSTEM SERVICES
- 3. INTEGRATED PROJECTS
- 4. TOGETHER





1. Landscape transformations: from grey to green



2. Multiple functions of green infrastructure (ecosystem services)



3. Ecosystem services in "integrated" plans/ projects





4. Together: creating these projects together with many stakeholders



CASE : Connectivity problems of Green Infrastructure in urban environments

Flemish Peri-urban belt around Brussels Region (municipality of Asse)





Pressure of urban infrastructure on the green infrastructure => building blocks



Planning context



Creating connectivity: green infrastructure



Agriculture land/dumping area (under urban pressure) => ecological park





Transformation of former wet meadows into pools for amphibians creates an ecological stepping stone



Planting new forested areas, constructing pools, , creating grassland and scrub on former agricultural land in an urban environment.



Transformation of a former dumping-ground into a new forest next to a business site



Ecological stepping stones create a green oasis for workers and residents in the suburbs



Creating connectivity: green infrastructure









Private investments

RED LABS

Ecologische herinrichting als groene verbinding op het researchpark Zellik (conform ruimere visie VLM)





Public investments



Conversion of the superfluous concrete lane (grey) with an expansion of the park area with new vegetation (green) and the construction of a bicycle path for CO2-neutral commuter traffic, Small Picture: before landscape development - Large Picture: after landscape development



Development of private business sites with new vegetation including



Green/blue veining of the business site: retention of an ecological forest corridor between two companies (left)

Creating connectivity: green infrastructure



Arable land => ecological park





CONTENTS

Creating connectivity: green infrastructure



Wet meadows => ecological park




A landscape bridge over the motorway....



More information

pieter.decorte@vlm.be

PROJECTFILM

https://www.youtube.com/watch?v=wcB-AsFd6OM&feature=youtu.be

DETAILED REPORT / LAYMANS REPORT/ EU INSPIRATION GUIDE https://green4grey.be/en/knowledge-base





LIFE Citizens' Prize



natuurpun

Integrated Nature Management Plans

Natuurpunt and other landowners joining forces for more and better nature in Flanders

Life ELCN - briefly

- ELCN = European Land Conservation Network
- Life Preparatory project (budget 1,6 Meuro)
- Aim:
 - 1. to test a number of private land conservation tools with an eye to promoting their replication at a wider level
 - 2. to develop a robust, well-informed European network on private land conservation with a clear long-term strategy
- 10 partners across Europe
- AGM 2019 Eurosite: official integration ELCN
- <u>www.elcn.eu</u> and <u>www.eurosite.org</u>





Natuurpunt?

- Who:
 - largest Belgian NGO working on the protection of nature and biodiversity
- Main goal:
 - long term protection & restoration of important habitats, species, landscapes and natural heritage
 - working on nature based solutions for climate and people
- How:
 - acquiring/renting land to manage and restore nature
 - nature experiences & freely accessible natural areas
 - study/monitoring/citizen science
 - awareness & educational programs
 - advocacy







Natuurpunt?	natuurpunt
• Some numbers:	: life :
 >26.000 ha nature reserve in Flanders 125.000 members (= families) 	ELCN
• 11.000 volunteers	
 +40 million observations in <u>www.waarnemingen.be</u> 173 local branches & 120 study working groups 	

- +7.000 activitities/year
- <u>www.natuurpunt.be</u>

ELCN and Natuurpunt

- Objective:
 - developing and writing integrated nature management plans with local private and public landowners with focus on Natura 2000 sites and/or species on the Annexes of Habitat and Birds Directive
 - submit joint management plans to the competent Flemish minister for recognition as a nature reserve
- Supported by new Flemish Nature Decree developed during same time frame as writing Life proposal
- Life ELCN allowed Natuurpunt to test new tool and to learn from the experiences with aim of replicating the approach





ELCN and Natuurpunt

- Results:
 - 5 integrated nature management plans developed
 - very diverse group of private and public stakeholders
 - submitted to Flemish authorities for recognisation as a nature reserve
- One integrated nature management plan already approved (19/01/2021), area officially recognised as nature reserve for a period of 24 years
- Other nature management plans currently in evaluation procedure

CONTENTS





ELCN and Natuurpunt

- Methodology for integrated nature management plans further explained by means of two pilots:
 - Krabbels-Lovenhoek
 - Fortresses of Antwerp
- Experiences & lessons learned





Management plan with local landowners Krabbels - Lovenhoek

- Area and plots involved
- Landowners
- Cooperation for management
- Objective on landscape scale
- Objectives habitats and species







Consortium landowners 'Krabbels – Lovenhoek'



Eigenaar	GIS_OPP(m2)	GIS_OPP(ha)
Natuurpunt Beheer vzw	2.006.451,18	200,65
Gaëtan van de Werve	457.789,01	45,78
Alain van de Werve	368.131,84	36,81
Patricia van de Werve	240.938,29	24,09
Olivier van de Werve	201.445,79	20,14
Guido Seeldraeyers	36.949,85	3,69
NVLovenhoek/NP	36.375,51	3,64
Frans Timmermans	13.303,10	1,33
Roger Vermeulen	10.911,36	1,09
ANB/VLM	1.400,97	0,14
TOTAAL	3.373.696,90	337,37





Consortium landowners 'Krabbels – Lovenhoek'



Krabbels – Lovenhoek Goals landscape scale







Krabbels – Lovenhoek Goals (vegetation)



Krabbels – Lovenhoek





Integrated management plan with local landowners Forts Antwerp

- Area
- Landowners
- Challenges/goals



natuurbun



Area









Landowners

- 1 NGO
- 3 local governments
- 3 private landowners







Forts of Antwerp: challenges and goals

- Majority of the fortesses are Natura 2000
- Some are protected heritage site
- Some forts are commercially exploited
- Very divers
 - Brick vs concrete
 - 100-1600 bats
 - No -> intense use

-> Find balance between commercial activities, heritage protection and conservation of nature & biodiversity (especially bats)





Forts of Antwerp











Forts of Antwerp















- Integrated management plan developped and submitted to Flemish authorities for approval and recognition as nature reserve
- Approval of all landowners!
- Management plan has the agreement of other key stakeholders such as the heritage sector
- Public consultation foreseen in spring 2021





- Implementing new legislation:
 - new and changing rules cause feeling of uneasiness
 - new 'problems/situations', even for administration, with delays as a consequence
 - complex situations emerged, need for flexible and creative solutions
 - a lot to explore, a lot to explain

 \Rightarrow sufficient time must be allowed for those involved to get used to this new tool





- Private (and also public) landowners are not familiar with this management planning approach:
 - think and decide for 24 years
 - think in terms of management planning
 - little knowledge of nature management, difficult for owners to assess what is expected of them
 - frequently changing plans
 - fear to lose control

=> capacity building is crucial and requires a lot of time and efforts (more than foreseen)





- Emotional reactions:
 - logical because it is about their land
 - there is often a lot of history behind it
 - lack of understanding for some measures, necessary to achieve nature goals on their land (and why there?)
 - discussions starting from their point of view which they believe or are convinced of (e.g. removal of trees and forest is a typical one)

=> building a relationship of trust is essential, not only for this process but also for the implementation of the management plan in the coming years and decades, but consumes a lot of time







- Joint/integrated management plan:
 - many participants and stakeholders (crucial support for the plan)



- inavoidable delays for delivering input, texts
- decision-making procedure with the partners and stakeholders is long

=> good preparation, drawing up a realistic timeline, good agreements, regular feeback and evaluation are essential

Conclusions

- Integrated nature management plans are a very good and powerful tool for restoring and sustainably managing natural values over larger, robust areas with different landowners.
- 2. The cooperation between and with the various partners is of great added-value:
 - 1. concrete achievements and results for nature & biodiversity
 - 2. better understanding between stakeholders active in land conservation
 - 3. building trust and bridging gaps among different partners
 - 4. capacity building and expanding knowledge/experience in nature management/restoration provides opportunities

С	onclusions	natuurpunt
3.	Provided that a clear (legislative) framework and the necessary incentives are in place, this tool can certainly be used elsewhere in Europe.	

4. Natuurpunt will continue to use this tool in Flanders to achieve its objectives (more and better nature with partners).







LIFE-LINES (LIFE14 NAT/PT/001081) Linear Infrastructure Networks with Ecological Solutions 60% co-financed project by the LIFE -Nature and Biodiversity Program of the European Commission

LIFE LINES - Linear Infrastructure Networks with Ecological Solutions

Reducing Fauna Roadkills and Improving Connectivity



Graça Garcia



Summary





- 1. Introduction
- 2. Actions implemented by IP
- 3. Results and lessons to the future
- 3. Final Considerations













Introduction



Infraestruturas de Portugal (IP) is the Portuguese public company holding a long-term concession contract of the national road and rail infrastructures in Portugal.

IP manages around 14,000 km of roads and over 2,500 km of railways, providing a public service in areas such as funding, maintenance, operation and development of the Road and Rail Networks.

Environmental sustainability is one important goal of IP and is incorporated in IP's procedures.







Introduction

IP is one of the partners of **LIFE LINES - Linear Infrastructure Networks with Ecological Solutions**, coordinated by Évora University.

IP was responsible for the implementation of several actions at the project area:

- mitigation of roadkills and increase of landscape connectivity
- improvement of the vegetation along the road and control of invasive species
- volunteering activities, promoting environmental awareness and active participation, with collaborators and relatives












Mitigation measures applied:

✓ Dry Ledges in culverts







- very efficient measure (culverts are being used frequently, and monitoring has shown that the roadkills have decreased by 50% in what concerns carnivores, and some other mammals too)
- reasonably easy to construct and IP has a National Program to Monitor Fauna Roadkills which helps to define priorities for intervention







- ✓ Fences guiding the animals to underpasses
- ✓ Fences with additional small mesh net placed in "L" shape





- very recently applied, so it's soon to prove its efficiency
- there might be some constrains in its application (related to existing road accesses and space available to install it)







Barriers for amphibians, guiding them to adapted culverts







- > very efficient measure (monitoring has shown that the roadkills have decreased by 100%)
- reasonably easy to construct. Its appliance in the future has a great potential as our roads have a large number of culverts that can be easily adapted for this purpose.







Barriers for raising the flight of birds

- efficient measure (monitoring has shown that the flying vertebrates roadkills have decreased by 50%)
- there might be some constrains in its application (related to the ideal height versus resistance to wind









✓ **Road sign specific for amphibians**



- efficiency dependent of drivers behave. So far, the results have been positive
- very easy to apply, but it's essential to know where it is needed the most

✓ <u>Reflectors for light deflection of headlights</u> to produce a warning effect in owls





- very recently applied, so it's soon to prove its efficiency
- reasonably easy to apply, but its availability in the market is still low in Portugal



LIFELINES

Actions of the Project National roadkill database and mobile application





mobile application

• ± 100 000 records of 228 species (2001-2020)

- Organizing and gathering the information on wildlife mortality in the same database allows enhancing the consistency of the dataset, and thus support the recommendation of sustainable and efficient conservation and management measures.
- The participation of the citizens is a major contribute to the global data (± 1200 validated records so far)
- The maintenance of the mobile application and the data validation by experts consume daily resources that may not be permanently available







- ✓ Mowing the vegetation at the track closer to the road to avoid risk of roadkills
- ✓ Managing the vegetation along the roads to promote its use by fauna as shelter, food supply and travel corridors
- green corridors can be an important tools to promote connectivity, if we keep a track with low vegetation in the middle of both grey and green corridors
- it may be incompatible with legislation for preventing fires
- IP already incorporated this guideline in its procedures for managing verges



Virtual LIFE Platform meeting - 'Lessons from LIFE on ecological connectivity towards a coherent, functional and resilient network of protected areas' | mar2021

de Portugal





✓ <u>Control of invasive exotic vegetation</u>

- Herbicide brush application on the stump immediately after the tree cut
- Injection of herbicide or debarking of the trunk, so trees die with less new shoots
- Hand pulling of shoots
- Plantation of native species to compete with the invasive species (combined with the previous techniques)
- Repeated cuts of reeds (Arundo donax)
- Total remove of reeds including the rhizomes (on level slopes)

















Control of Invasive vegetation

- So far, the method that showed better results was the debarking (Acacias spp.) \geq
- Repeated cuts of reeds also produced an immediate reduction in its cover. but \geq it was followed by a progressive recovery (though without reaching the initial extension and density)
- \geq Total remove of reeds is more efficient but is difficult to apply in a large scale along roads, and its application can reduce the slopes stability
- Plantation of native species takes some time to become efficient and presented high levels of mortality due to climate conditions and human interference. Nevertheless, in the long-term it is essential to avoid the recolonization by invasive species
- IP has included all these methods in its procedures for managing verges, but \geq its selection is done accordingly to the conditions *in situ* and road safe issues.









Plantation of strawberry tree barrier



Creation of two micro-reserves





- Sowing and plantation of native species for improving habitats for butterflies and small mammals, and a line of strawberry trees to elevate bird's flight, besides promoting habitat for butterflies
- Works were carried out by Évora University, MARCA and IP, with the contribute of IP volunteers (collaborators and their families)
- So far, monitoring results indicate an increase in the diversity and richness of native flora species.
- The strawberry trees still lack the height to produce results
- Creation of micro-reserves is difficult to replicate in a large scale since IP doesn't own many surplus plots and has no legal power to buy property
- The implementation of the vegetation barrier proved to be difficult, with a high level of mortality, due to the past dried years, and had to be replaced several times. Also, it takes time to achieve the correct high. Must be planned as a long-term solution and be associated with other measures with faster results.







Actions of the Project Volunteering and public awareness events



- > 14 events , with IP employees and their families
- The activities were mainly: collecting seeds, sowing and pricking plants, planting trees and shrubs and controlling invasive species
- These events were an opportunity to raise awareness about the importance of biodiversity conservation and to spread information about the good results of the project, inverting the skepticism towards the innovate solutions
- Reasonably easy to implement and replicate in the future









Virtual LIFE Platform meeting - 'Lessons from LIFE on ecological connectivity towards a coherent, functional and resilient network of protected areas' | mar2021



Infraestruturas de Portugal



Final Considerations



- LIFE LINES was an extraordinary opportunity to:
 - Find new solutions and improve some known less-efficient/less-viable solutions to minimize the impacts of roads on biodiversity and improve landscape connectivity
 - Find the best cost/benefit relationship in different scenarios, taking in account the restrains concerning road safeness, road features and landscape
- Most solutions that showed good results are already being applied at other roads /projects and the best techniques for verges management were integrated in IP's regular procedures (and are set out in Road Conservation Contracts)
- IP is preparing a manual to its collaborators, designers and constructors, concerning these solutions and how to apply them, assuring a more sustainable relationship between infrastructures and biodiversity.





Thank you

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f https://www.facebook.com/lifelinesconservation/

Synthesis report Working Group 2.4 Other Effective Area Based Conservation Measures (OECM) and other non-legally protected areas

It is becoming increasingly clear that OECMs could play an Important role in supporting, or forming part of, ecological corridors. How these areas are governed depends on their status and there is no 'one size fits all'. Land ownership is a key issue as is the inclusion of all relevant stakeholders. We were keen to explore the different governance models with the presenters and the people in the room. We had 30 participants throughout the session.

The objectives of this session were as follows:

- Explore how to ensure adequate governance of non-legally protected ecological corridors in the long run. What are the key governance factors to ensure a long-term successful management? What are the barriers and incentives?
- Successful examples of mixed governance arrangements (e.g., collaboration with private entities and local authorities)
- What are the main current gaps and challenges for efficient corridor management in private land, and how can they be tackled?
- What the OECM approach can bring to connectivity conservation?
- How to replicate or scale up successful initiatives?

Three presentations were provided at the start of the session, giving three different perspectives.

LIFE 13 ENV/BE/000212 LIFE GREEN4GREY – Green networks for and through business sites – presented by Pieter de Corte

The project demonstrated the innovative development and design of multifunctional green and blue infrastructure (GI&BI) elements in peri-urban areas while working with different stakeholders in the private sector and government. Essentially the project took us from plan to practice and emphasised the need to take everyone on the journey from the beginning. The recurrent theme of the platform meeting – stakeholder involvement – came through very clearly in this presentation. Key points raised through the discussion were:

- Transformations done with bottom-up approach all stakeholders had a chance to comment on the plans – the stakeholders take ownership of the area and this makes the social control better. It is 'our area' we have a role in making decisions and we will look after it better because we are invested in the plans.
- Create green infrastructure within the areas under management which are supported by the stakeholders using a participatory approach.
- What about land-grabbing? Was the project criticized by the farming lobby of land-grabbing for nature conservation? The project acknowledged that sometimes biodiversity argument is not enough to convince people to be involved – ecosystem services can provide additional reasons for stakeholders to be involved.
- Flexibility for private sector is important- could be an asset as well as a disadvantage. Sometimes the private sector does not want to enter into long term arrangements as they cannot see so far into the future. A flexible approach is necessary to keep them interested and engaged.
- The shared governance model (as noted by Boris Erg in the plenary presentations) adopted in the Grey4Green example.
- Lobbying by conservation NGOs include and use knowledge also a role for science and the need to include research to inform decision making was raised.

• The project formed a steering group that brought everyone together in the decision-making process – in a joint governance body.

LIFE16 PRE/DE/000005 – LIFE European Land Conservation Network (ELCN) – integrated nature management planning with local landowners presented by Stefan Versweyveld

This network supports private landowners (non-public bodies or individuals) that do not have conservation as the core of their mission, but who are willing to engage in conservation on, at least, part of their land, and are exploring different approaches to private land conservation through different pilot actions. They have already developed 5 integrated nature management plans involving very diverse groups of private and public stakeholders. One areas has already received approval and is officially recognised as a nature reserve for a period of 24 years. Main points raised are discussed were:

- Co-creation of management plans and policy (Flemish Nature Decree) leads to good governance. This was another example of the shared governance model.
- The private sector organisations sign up to the management plan it is a 24 year plan
- New rules and changes create uneasiness.
- Decide and think for many years ahead difficult for people to understand the scale and scope of the management decisions required over long periods of time.
- Building a relationship of trust is essential not only for this process bit also for the implementation of the management plan in the coming years and decades.
- · Discussions must start from the landowners' point of view.
- Financing for measures comes from variety of sources.

LIFE14 NAT/PT/001081 LIFE LINES – creating corridors using transport infrastructure presented by Graça Maria Dias Garcia

The project promoted the creation of a demonstrative Green Infrastructure, based in corridors and stepping-stones that can increment connectivity and improve conservation of local/regional biodiversity. Its target area is one of the main transport/energy corridors linking Portugal to Spain. The objective was to mitigate road kills and increase landscape connectivity. The project also controlled invasive species on the roadside and used volunteers to carry out some of the work to increase awareness. Main points raised are discussed were:

- 1. Finding new solutions and improve some existing solutions to minimize the impacts of roads on biodiversity but also use this as an opportunity to improve the landscape.
- 2. Finding the best cost/benefit relationship in different scenarios taking into account road safety, features and landscape.
- 3. This is clearly an example of an OECM that has a 'government governance' model with no need for management agreements as the public sector will continue with the management interventions over time. An effective way of extending corridors.

Discussion and main findings

Different aspects and issues were discussed and raised during the Working Group session and the need to develop effective plans with the full involvement of the stakeholders was arguably the most important aspect that came through in the discussions – leave no one behind and adopt a bottom-up approach. The main points agreed are summarised below:

- 1. Co-creation of integrated nature/land use management plans and policy (Flemish Nature Decree) leads to good governance and then to good management (needs public consultation).
- 2. Co-management of the area from a bottom-up approach people are invested in the area and this leads to successful management.
- 3. Shared governance model works well in settings where there are many different

and a disadvantage).

planning approach for Nature).

 8. Conflict reso to agree on a argument is arguments th 9. Very importa need to infor 10. It is essentia conservation The findings of challenge in cor stakeholders inv 	Intered governance models. Iution – get everyone to put forward opinions – use low hanging cooperation and then move to the more difficult issues – biodive not always enough (need to open out the argument to include that appeal to all stakeholders (win-win solutions). Int to bring together the academics and the practitioners – rese m decision making. I to understand the social-economic benefits of biodiversity the workgroups agree with the Sli.do poll that the current interesting private landown olved.	g fruit ersity arch nt main ers and
	Active pol What is in your opinion the current main challenge in connectivity Conservation in the EU? Getting private landowners and stakeholders involved 39%	
Join at slido.com LIFE4NATURE	Ensuring long-term legal (or other) protection of the ecological corridor 24% Access to funding for connectivity outside Natura 2000 areas or other protected areas 20% Effective identification of priority areas for connectivity conservation 12%	P
Alter and a second	Establishing and maintaining cross-border cooperation on connectivity conservation	

stakeholder groups – it can bring together diverse groups with different agendas.Private sector involvement needs to be flexible (which could be both an advantage)

framework and incentives must be unambiguous (not familiar with management

7. Stakeholder engagement is an essential element of effective governance - in both

5. Sufficient time must be allowed for those involved to get used to plans, legal

6. Capacity building is crucial and required a lot of time and effort (more than foreseen), clear legal framework and incentives (e.g., tax breaks).

And finally, Emmanouil Kabourakis from the LIFE IGIC project recommended the following YouTube TEDx Talk:

Where does the money come from - Ole Berg https://www.youtube.com/watch?v=CvH66fz9nyU

ANNEX 5:

SOURCES AND LINKS

Coverage of the event	https://ec.europa.eu/easme/en/news/life-platform-meeting-financing-		
	connectivity-building-trans-european-nature-network		
Ensuring funding for connectivity conservation (day 3 recording)	https://vimeo.com/519390574/f903c85214		

Funding				
EU DG ENV LIFE Call for proposals	https://cinea.ec.europa.eu/life/life-calls-proposals_en			
DG RTD Horizon Europe	https://ec.europa.eu/info/horizon-europe_en			
DG RTD EU partnership initiative on biodiversity	https://www.biodiversa.org/1759			
DG AGRI CAP -analysis link CAP & Green Deal	https://ec.europa.eu/info/sites/info/files/food-farming- fisheries/sustainability_and_natural_resources/documents/analysis-of-links- between-cap-and-green-deal_en.pdf			
DG AGRI CAP - how CAP can contribute to Green Deal	https://ec.europa.eu/info/sites/info/files/food-farming- fisheries/sustainability_and_natural_resources/documents/factsheet-how-cap- contributes-to-green-deal_en.pdf			
DG AGRI - recommendations to MS for their CAP Strategic Plan	General communication: https://eur-lex.europa.eu/legal- content/EN/TXT/?uri=CELEX%3A52020DC0846 National recommendations: https://ec.europa.eu/info/food-farming-fisheries/key- policies/common-agricultural-policy/cap-strategic-plans_en#documents			
DG REGIO - Cohesion Policy	https://ec.europa.eu/regional_policy/index_en.cfm			
DG REGIO - Cohesion Policy funding nature (Interreg)	https://cohesiondata.ec.europa.eu/stories/s/Cohesion-policy-protecting-nature-ar			
Review of implementation of green infrastructure strategy	https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019SC0184&			
InvestEU instrument	https://europa.eu/investeu/home_en and https://eiah.eib.org/			
InvestEU advisory hub	https://europa.eu/investeu/investeu-advisory-hub/about-investeu-advisory-hub_e			
GOTEO crowdfunding	https://en.goteo.org/ and http://stats.goteo.org/home/en			
EU Financing Natura2000 network - Priority Action Frameworks	https://ec.europa.eu/environment/nature/natura2000/financing/index_en.htm			
IUCN Fair Finance for effective conservation	https://www.iucn.org/theme/protected-areas/our-work/iucn-green-list-protected- and-conserved-areas/fair-finance-effective-conservation			
EU long term budget	https://ec.europa.eu/info/strategy/eu-budget/long-term-eu-budget/2021-2027/			
EU resilience and recovery facility	https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-			
Further reading				
EU Biodiversity Strategy 2030	https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en			
EEA Building a coherent Trans-European Nature Network	https://www.eea.europa.eu/publications/building-a-coherent-trans-european			
EU Knowledge for Biodiversity Center	https://knowledge4policy.ec.europa.eu/biodiversity_en			
IUCN Guidelines for connectivity conservation	https://portals.iucn.org/library/sites/library/files/documents/PAG-030-En.pdf			
IUCN Transboundary conservation : a systematic and integrated approach	https://www.iucn.org/content/transboundary-conservation-a-systematic-and-inte			
Green belt Europe. Borders separate, nature unifies	https://www.iucn.org/regions/eastern-europe-and-central-asia/projects/complete			
	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/a			
Economics of biodiversity - the Dasgputa review, 2020	ttachment_data/file/962785/The_Economics_of_Biodiversity_The_Dasgupta_R eview_Full_Report.pdf			

Analysis of EU funded research projects on biodiversity and nature-based solutions	https://www.biodiversa.org/1759_
EU knowledge centre for biodiversity	https://knowledge4policy.ec.europa.eu/biodiversity_en
EC guidance document on energy transmission facilities and the EU nature logislation	https://ec.europa.eu/environment/nature/natura2000/management/docs/Energ
	y%20guidance%20and%20EU%20Nature%20legislation.pdf
EC DC BTD workshan on transformative change	https://ec.europa.eu/info/events/workshop-transformative-change-global-post-
	2020-biodiversity-framework-2020-mar-18_en
LIFE publications	
Bringing Nature Back Through LIFE (brochure)	https://ec.europa.eu/easme/sites/easme-site/files/bringing_nature_back_throug
Bringing Nature Back Through LIFE (full study)	https://ec.europa.eu/easme/sites/easme-site/files/bringing_nature_back_throug
Factsheet on connectivity conservation. Connecting the dots	https://ec.europa.eu/easme/sites/easme-site/files/life_connectivity_factsheet.pc
Infographic on connectivity conservation	https://twitter.com/LIFEprogramme/status/1366305106971549697
#LIFE4Nature #LIFEconnectivity video	https://www.facebook.com/watch/?v=1148625035563928
Gary Tabor IUCN presentation on connectivity conservation guidelines	nttps://arive.googie.com/file/a/TLUTnqlssBuQU8UIYATJZH9U5fWT8kR86/VIeW
Links to mentioned projects, other than LIFE	
EUSALP strategy - action group on Ecological connectivity	https://www.alpine-region.eu/action-group-7
Horizon 2020 project EUROPABON (EU biodiversity monitoring framework)	https://europabon.org/
Horizon 2020 project AMBER (river continuity+citizen science)	https://amber.international/
Interreg CONECTFOR	https://xcn.cat/projecte/conectfor/
Interreg 3Lynx	https://www.interreg-central.eu/Content.Node/3Lynx.html
Interreg Blue crowdfunding	https://blue-crowdfunding.interreg-med.eu/
CDC Biodiversité Nature 2050 programme	https://www.nature2050.com/
MoorFutures (German carbon credit certificate)	https://www.moorfutures.de/
Videos	
LIFE16 GIE PL 000648 Green Go Carpathians	https://www.youtube.com/watch?v=R33TDkrr4Kc
CDC Biodiversité - natural capital	https://www.youtube.com/watch?v=ig0Pv1eC040
LIFE16 NAT ES 000768 LIFE ALNUS	Short: https://www.youtube.com/watch?v=199Ij5Z8Mvk
LIFE12 NAT ES 000192 Bear defragmentation	https://vimeo.com/87095168

Stakeholders engagement

Arguments for biodiversity conservation in Natura 2000 sites: An analysis based on LIFE prehttps://natureconservation.pensoft.net/articles.php?id=4848

ANNEX 6:

PRESENTATIONS OF THE KNOWLEDGE MARKET





www.parcofiumebrenta.it

Con il contributo dello strumento finanziario LIFE dell'Unione Europea LIFE18-NAT_IT_000756

Context & objectives

- SCA/SPA of 3.848 ha, with no active management: riparian forests, wetlands, ex-gravel pits.
- Main problems: lack of governance & funding, ecological connectivity, and water abstraction.
- The site is providing drinking water to 1.5 MLN users.
- How to convert the threat into a conservation opportunity?





Results and sustainability

- Art. 9 of Water Directive polluter/user pay principle (Environmental and Resource Cost - ERC)
- National Decreet 39/2015 allows the cost recovery for measures related to water conservation and mitigation of environmental impacts through the water bill
- Ensured funding and integration of Natura 2000 and drinking water sector





SIDADE DA CORUÑA

Lessons from LIFE on Ecological Connectivity

LIFE IN COMMON LAND

EPUTACIÓN DE LUGO

Life in Common Land (LIFE 16 NAT/ES/000707)

- <u>Ramón Alberto Díaz-Varela¹</u>; Laura Lagos Abarzuza²
- ¹ramon.diaz@usc.es, Universidade de Santiago de Compostela
- ²laura.lagos@udc.es
 Universidade de A Coruña



"The tree lined River Tilt, Glen Tilt, Tayside and Clackmannanshire Area. ©Lorne Gill/NatureScot" Picture Courtesy of LIFE13 BIO UK 000428







With the contribution of the LIFE financial instrument of the European Union LIFE in Common Land (LIFE 16 NAT/ES/000707) Life in Common Land Preserving biodiversity in an uncommon land with uncommon people



Lessons from LIFE on Ecological Connectivity

STORE STORE AND A STORE

- W. T. S. M. P. S. S. R. L. L. L. S. Speed presentation : The role of power line network to enhance connectivity
- LIFE 10/NAT/BE/709
- **LIFE Elia-RTE**
- Presenters : Pierrette NYSSEN & Jean-François GODEAU (Ecofirst)
- Email : if godeau@ecofirst.eu





Objectives linked to Connectivity

1. Transform power line network into green network

2. Implement and replicate best practices for vegetation management of transport infrastructure ("Integrated Vegetation Management")

3. Restore and manage endangered habitats and species over 500+ ha in BE and FR





AfterLIFE results

 Biological monitoring : 80%
 sites enhanced biodiversity
 New vegetation management policy in FR and BE
 Improve conservation status of ~ 150 ha of natural habitats (EC directive)

AfterLIFE perspectives

 New LIFE application (Grid4LIFE) : Fr, BE, PT & SK
 Power line infrastructure

increases:

Natura 2000 connectivity
 ecological network ("Trame
 Verte & Bleue", "Structure Ecologique")





Grid4LIFE (2021-2026)

Application submitted (17/2/2021)

Actions :

- Conservation (470 ha; 4 countries)
- Monitoring (biol., connectivity, cost efficiency, stakeholders, ecosystem services)
- Replication & transfer

a second s	FIRML IMPOSE	here and the second			
Target surfaces (ha) - number of ponds	Belgium	France	Portugal	Slovaku	Total action
Action 1 - Edges	28	58	7	25	118
Action 2 - Trees	0	0	42	0	42
Action 3 - Grazing	16	27	0	3	46
Action 4 - Meadow	10	73	0	42	125
Action 5 - Heathland	17	65	21	1	104
Action 6 - Wetland	5	30	0	0	35
Action 7 - Ponds	23	31	0	1	55
Total taget surface	76	253	70	71	470



ECOFIRST

aires biologiques réalisés sur les aménagées dans le cadre du Lif Su-RTE et du proiet LIFE 2

Lessons from LIFE on Ecological Connection

"UNESCO primeval forest, Str

 Knowledge market presentation • HUSKROUA/1702/6.1/0010 Open Borders for Wildlife in the Carpathians Alexandra Puşcaş apuscas@wwf.ro

Saiut, Maramures", Picture Credit WWF RO, Timur Ch

Objectives:

 key ecological corridors of transboundary interest identified, using harmonized methodology
 functionality of at least 3 critical ecological corridors in the RO-UA transboundary area is improved by implementing at least 5 management measures

3. key ecological corridors of transboundary interest in the ENI Carpathians **benefit of increased protection** as a result of advocacy actions





- The project will improve connectivity across 4 countries (HUSKROUA) and will support integrated habitat management for brown bears (Ursus Arctos) wolves (Canis Lupus) and Eurasian lynx (Lynx Lynx)
 - identification of ecological corridors (structural and functional connectivity): 1) large scale modelling; 2) bottleneck mapping
 - development of management measures
 - implementation of management measures: enhancing trophic availability for the benefit of LC





Results

 network of key ecological corridors (HUSKROUA)
 participatory conservation measures
 functionality for corridors improved ensuring connectivity for more than
 300.000 ha habitats

Project sustainability

 dissemination to national level as well as CCIBS, Carpathian Convention
 MoUs with SH
 strategic objective for WWF



- Result: final map of connectivity network including clear definition (mapping) of core areas, wildlife corridors and bottleneck identification in the transboundary HUSKROUA area
- Outcome: Ensure connectivity in the ENI Carpathians via designing, implementing and promoting harmonized methodology for identification and designation of ecological corridors



Lessons from LIFE IGIC on Ecological Connectivity



- LIFE IGIC (LIFE16 NAT/GR/000575) www.lifeigic.eu
- Improvement of green infrastructure in agroecosystems: reconnecting natural areas by countering habitat fragmentation
- Dr Emmanouil Kabourakis
- ekabourakis@hmu.gr



Objectives linked to Connectivity 1. development of a GI network, 2. conserving biodiversity and enhancing agroecosystem services, 3. reconnect nature with agricultural areas.



• Ensuring connectivity across agricultural landscapes

- LIFE IGIC aims to develop Green Infrastructure (GI) and supporting Sustainable Farming Methods in pilot olive orchards.
- The project area, surrounded by Natura 2000 sites, is of great cultural, natural and agricultural value.
- Land-use change towards intensive farming has been applied the last decades, led to reduction of species and loss of habitats.
- Overall biodiversity has suffered, and ecological conditions of the area has been deteriorated.







Results 1. GI in pilot olive orchards 2. Sustainable farming methods for HNV olive production 3. Link GI to tourism and recreation

AfterLIFE & project sustainability 1. demonstrate to farmers 2. demonstrate to other economic sectors 3. link to consumers

3. link to consumers through certification



- Develop and maintain a demonstrative GI components in Natura-surrounded sites.
- Improve habitats and enhance the conservation status of targeted flora and fauna species.
- Provide the basis for upscaling GI development by using
 - regional & national initiatives of certification & labelling schemes;
 - a sustainable tourism development approach and
 - public awareness/educational activities;
- Form a concrete proposal to policy makers at EU and national level.
- Demonstrate to famers the sustainable farming methods that related to GI and HNV farming.
- Demonstrate links to other sectors of the economy and especially tourism






Lessons from LIFE on Ecological Connectivity

Knowledge market presentation

- LIFE17 NAT/SK/000621
- LIFE Microtus II Restoration of habitats for root vole *Microtus oeconomus mehelyi
- Žofia Filagová
- filagova@broz.sk



Čiliz stream – main biocorridor

estored flood gate

no la stalen

wetland management

Microtus oeconomus mehelyi - an endemic species of the Pannonian lowland.
Main threats: drainage of wet meadows and grasslands, habitat fragmentation
Solutions: 1. step: wetlands restoration (previous LIFE08 NAT/SK/000239)
2. step: connecting restored habitats, water levels management





« Mediterranean Wetlands Management and Restoration as Carbon Sinks. WETLANDS4CLIMATE»

Virtual LIFE Platform meeting 2-4 March 2021





www.wetlands4clim@te.eu info@wetlands4climate.eu



CON LA CONTRIBUCIÓN DEL INSTRUMENTO FINANCIERO LIFE DE LA UNIÓN EUROPEA

LIFE Wetlands4Climate'S Objectives linked to connectivity

Providing a methodology that allows both quantifying GHG emissions and conserving the ecosystem services hat wetlands provide as connectivity ecosystems

To inform managers and policy decision-makers on the enormous carbon storage potential of certain wetlands, until now underestimated in climate change policies

To propose mechanisms for the private initiative to join voluntarily by creating a methodology that allows the offsetting of GHG emissions in the voluntary carbon market





EXPECTED IMPACTS

- Management guidelines to increase the carbon sink function of coastal and saline wetlands; database of results of carbon cycle process rates and other management indicators
- Evaluation of the socioeconomic impact of different management models

	End of project	3 years after
CO ₂	330 t/y	330 t/y
Methane	103 t/y	206 t/y
Carbon storage	162 t/y	324 t/y
Hectars wetlands improved	60 ha	120 ha
Increase in water birds (%)	5%	5%

- Methodology presented to an international standard of the voluntary carbon market on restoration of Mediterranean coastal and saline wetlands quantifying the fixation of GHG
- Transfer of results to **legislative proposals** at regional, national and European level, with support from entities dedicated to climate change and/or wetlands such as RAMSAR or IPCC

After LIFE Continuation:

The development of a **methodology to compensate GHG in the voluntary carbon market** (VCS) will allow the carbon credits quantification and the verified reduction (VER) of emissions for private companies The policy incidence and transfer of results to National Authorities will allow to include the **wetlands carbon sink capacity in national regulations (LULUCF**)







www.wetlands4climate.eu info@wetlands4climate.eu



CON LA CONTRIBUCIÓN DEL INSTRUMENTO FINANCIERO LIFE DE LA UNIÓN EUROPEA









- Project: LIFE-Goodstream LIFE14 ENV/SE/000047 (2016-2021)
- *Title*: Good ecological status of an agricultural stream
- Presenter (and project leader) : John Strand
- Organization: Hushållningssällskapet Halland (a Swedish Non-profit NGO)
- Mail: John.strand@hushaliningssallskapet.se
- Project webpage: <u>www.goodstream.se</u>



Project site on the Swedish south-west coast



Top left photo: removing migration barrier. Top right: outdoor class room. Below: Ruddy Darter (Sympetrum sanguineum)





Objective: to transfer an agricultural stream to Good Ecological Status

Links to Connectivity: 1. Migration barrier removal 2. Habitat restoration 3. Wetland construction

I signed up for workshops on: - Ensuring connectivity across agricultural landscapes

- Participatory approaches and stakeholders engagement in ecological corridors



Problems









Floods



Eutrophication

Measures done so far





3 New stream parts



Re-connecting stream parts





600 Nest boxes (solitary bees, birds, bats)



26 amphibian ponds



30 creotopes



34 Constructed wetlands





Results

- 1. Migration in stream
- 2. Lower nutrients
- 3. Decreased floods
- 4. Increased biodiversity

Bonus result: 1. Showed clear effects of urban areas on the nutrient concentration in agricultural streams

2. Dragonflies are good indicator organisms







https://lifelines.uevora.pt/?lang=en

MULTISPECIES DYNAMIC CONNECTIVITY MODELS towards resilient and functional landscapes

Adapted from Salgueiro *et al*, Jour. Env. Management, 2021



Connectivity maps - validation with roadkill data and defining restoration locations



Adapted from Valerio et al, Env. Management, 2019



New tools to engage private landowners in nature conservation



LIFE17PREBE001 - Land Is For Ever www.landisforever.eu Anne-Sophie Mulier anne-sophie.mulier@elo.org





Private landowners engaged in nature conservation





60% Natura2000 area is private

EU BD 2030 targets and EU action plan



Legal entity Economic reality Ecologic needs









Incentives and compensation

Annual payments Tax Benefits Labels for recognition or market access

Land designation and management

Private reserves / PPA designation Land Trusts & Easements Conservation contracts and programs Land Stewardship



Issues private land conservation





More info: www.landisforever.eu or anne-sophie.mulier@elo.org

LIFE16NAT/LV/262 GrassLIFE

Solvita Rūsiņa, Ainārs Auniņš, Inga Račinska

solvita.rusina@gmail.com

University of Latvia







Objectives linked to Connectivity

1. Development of grassland connectivity model (graph theoretical approach using least-cost distance over the landscape)

2. Recommendations for connectivitybased prioritization for grassland restoration sites (project farms and mobile grazing units)

3. Proposals for improvement the coverage of EU grassland habitats by Natura 2000 network (presently only 40% of LV grasslands inside the Natura 2000 network)

Workshop's topic: Identification and prioritisation of ecological networks



Results

1. Grassland connectivity model (v1.0, v2.0) helping to identify hot-spots for restoration for organisms with different dispersal abilities

2. Proposals for improving the Natura 2000 network to be developed by the end of 2022

Hot-spots for restoration at different scales



Max allowed

cost distance: 500



AfterLIFE & project sustainability

1. Further development of the model in LatViaNature Integrated LIFE project: *habitat-specific models*

2. Connectivity-based prioritisation of grasslands to enable targeted and *cost-effective allocation of funding* for restoration

3. Connectivity-based adjustments to Natura 2000 network – *conservation where it matters the most*





Preventing the extinction of the Dinaric-SE Alpine lynx population through reinforcement and long-term conservation



TOWARDS ECOLOGICAL CONNECTIVITY FOR LARGE CARNIVORES AND UNGULATES IN SLOVENIA



- Knowledge market presentation:
- Project: LIFE Lynx
- Presenters: Jernej Javornik and Rok Černe, Slovenia Forest Service
- Email: arno.javornik@gmail.com



Lessons from LIFE on Ecological Connectivity





OBJECTIVES LINKED TO CONNECTIVITY

 Identify corridors between large forested areas (Natura 2000 sites) in Slovenia



- Big urbanization pressure on forest pathces connecting Natura 2000 sites.
- **METHODOLOGICAL PROBLEM:** How to identify the most important corridors?
- **PROJECTS:** Life lynx + national level forest management plans



METHODOLOGY:





- Least-cost-path (LCP) analysis.
- Empirical evaluation of the LCP results (expert knowledge, roadkill data,...).

RESULTS:

- 81 corridors identified.
- Forests protected within the forest management plans.









LIFE Platform meeting Ecological connectivity

Virtual meeting

KNOWLEDGE MARKET – II





HOUSEKEEPING RULES

- Include your NAME and PROJECT/AFFILIATION in Zoom
- The organisation will share all the presentations and unmute microphones for the speakers
- TURN ON your cameras (<u>speaker's view</u>)
- 2 mins/ presentation!
- 2 warnings (organisation raised hand: 1st when 30 sec. left, 2nd when time is over)
- When time is over, the next presentation will appear on the screen
- Do not raise hands. Instead:
 - ✓ Use the chat to communicate with the speaker (private)
 - ✓ Use Slido (**#LIFE4nature**) to launch questions to the audience
 - ✓ Clap hands/ use reaction buttons
- Technical problems, don't panic!
 - ✓ If connection drops: try to reconnect
 - ✓ Other technical problems: we will help you



Virtual LIFE Platform meeting Lessons on Ecological Connectivity KNOWLEDGE MARKET PRESENTATION

• LIFE ALNUS: restoration, conservation and governance of the alder alluvial forests in the Mediterranean Region (LIFE16 NAT/ES000768).

- Jordi Camprodon
- iordi.camprodon@ctfc.cat

LIFE Alnus tests at regional level (Catalonia) an alternative conservation strategy of the **Mediterranean alder alluvial forests** (91E0 *), using demonstrative tools and practices.

Goals: to **reverse the degradation** of the habitat and be **replicable** at Mediterranean region level.





lifealnus.eu

Understanding and restoring Mediterranian alluvial forest



www.lifealnus.eu

Connectivity goals

- To increase the legal protection of 1. river systems, interconnecting SACs.
- To plan the **reversal of riparian** 2. habitats fragmentation, increasing its area at the watershed scale, restoring the "riparian continuum".
- 3. Connectivity restoration in **selected** stretches.

Marxan model for the selection of optimal stretches for the restoration of riparian forest connectivity. Project explained in Working group 1.3.



Three large pilot basins: Segre, Ter and Besòs.





Agència Catalana



Fundació Catalunya La Pedrera







Understanding and restoring Mediterranian alluvial forest



Expected results

- 1. Management planning in 24 SAC (949 km of rivers): using systemic planning models. Project explained in Working group 1.3.
- 2. Direct conservation actions in 480 ha. Restoring connectivity and integrity.
- 3. Riparian governance: land stewardship agreements & implication of stakeholders (deliberative on-line focus groups, consensus & guidelines). Project explained in Working group 2.3.

AfterLIFE & project sustainability

Maintained by means of stewardship agreements, permanent monitoring plots, adaptive management and better governance.



Lessons from LIFE on Ecological Connectivity

- Knowledge market presentation
- LIFE17 NAT/PT/000554
- Decreasing socio-ecological barriers to connectivity for wolves south of the Douro river (LIFE WolFlux)
- Sara Aliácar
- sara.aliacar@rewilding-Portugal.com



"The tree lined River Tilt, Glen Tilt, Tayside and Clackmannanshire Area.©Lorne Gill/NatureScot" Picture Courtesy of LIFE13 BIO UK 000428

Objectives linked to Connectivity

1. Increase genetic flux between wolf packs south of the Douro river in Portugal.

2. Reduce socioecological barriers.



- The Portuguese subpopulation of Iberian wolf south of the Douro river is currently fragmented and highly isolated from the rest of the Iberian population due to geographic, ecological and social barriers.
- The LIFE WolFlux project aims to promote the ecological and socio-economic conditions needed to support the viability of this wolf subpopulation.



Results

1. First contact of the key actors with a project is people who listen to them;

2. Conservation practitioners understand and can take into consideration people's own narratives and points of view about the territory and the species;

3. Identification of key actors to start working with.



Some challenges encountered

- Overcoming a dominant utilitarian point of view over nature;
- Lack of trust of local communities in institutions: preponderance of the group effect;
- Difficulty of access of nature conservation funding when one of the main complains of communities towards conservation projects is "lack of continuity";
- Differences between nature conservation and agricultural incentives create different interests over the territory.





Lessons from LIFE on Ecological Connectivity

- Knowledge market presentation
- LIFE15 GIE/PL/000959
- TREES FOR EUROPE'S GREEN INFRASTRUCTURE
- Kamil Witkos-Gnach
- kamil@fer.org.pl





- 1. IMPROVE TREE MANAGEMENT
 - 2. INFLUENCE REGULATIONS
 - 3. GAIN PUBLIC SUPPORT





- Trees are key elements of green infrastructure
- Trees are underappreciated
- Tree-lined roads, streets and dikes in **rural** and **urban** areas are crucial for ecological connectivity
- Roads might be barriers to some species but are corridors to many other
- Lack of regulations makes trees vulnerable to bad practices and unnecessary felling



RESULTS

- 1. Created standards for tree management
 - 2. Number of legislation changed
 - 3. Established Tree Friends Network

- 30 000 trees planted in ROADS FOR NATURE (LIFE 11 INF/PL/467) proved that there is place for roadside trees
- Large-scale public information campaigns are key to gain support and make positive change
- Hermit bettle is commonly known in Poland
- YES LIFE projects help changing national and EU legislation

VISIT Drzewa.org.pl





Lessons from LIFE on Ecological Connectivity

- LIFE15NAT/SE/000772 •
- Project Title: LIFE Bridging the Gap
- Presenter: Carina Greiff
- Email: carina.greiff@lansstyrelsen.se



LIFE Bridging the Gap- one connectivity project

Restoration of habitats Before:



After:





LIFE Bridging the Gap- one connectivity project



Plantation of trees and bushes

Veteranisation - arborist in action

Wood mould boxes


- Knowledge market presentation
- LIFE (several)
- Great Mountain Corridor Alps- Pyrenees- Cantabric Mts.
- Miquel Rafa
- miquel.rafa@fcatalunyalapedrera.com



"The tree lined River Tilt, Glen Tilt, Tayside and Clackmannanshire Area.©Lorne Gill/NatureScot" Picture Courtesy of LIFE13 BIO UK 000428

Connectivity: 1. Large scale view 2. GIS & spatial analysis 3. International cooperation



Great Mountain Corridor Cantabric - Pyrenees - Alps



A large connectivity concept to re- connect the Alps-Massif Central- Pyrenees – Cantabric Mts. is being developed since 2005 (Y2Y inspired):



 An Strategic Plan for this corridor was developed by IUCN Spain & IUCN France (2013):



Results: 1. Landscape permeability, connectivity and fragmentation analysis 2. International cooperation 3. At least 3 LIFE projects



• LIFE projects have been developed so far under this concept:







LIFE Green-Go! CARPATHIANS

Local initiatives for deployment of green infrastructure within Natura 2000 sites in the Carpathians

LIFE16 GIE/PL/000648

http://en.zielonainfrastruktura.karpatylacza.p

Piotr Mikołajczyk

UNEP/GRID-Warsaw Centre E-mail: piotr@gridw.pl







Project LIFE16 GIE/PL/000648 is co-financed by the European Union within the LIFE Programme and the National Fund for Environmental Protection and Water Management



National Fund for Environmental Protection and Water Management



SPATIAL PLANNING, LAND and GI MANAGEMENT, AWARENESS

for ecological connectivity and sustainable local development (ecosystem services)

For – and with - whom

- local self-gov. authorities and communities 200 communes in PL Carpathians
- regional nature protection authorities
- regional (province) self-governments
- recipients in other Carpathian countries
 - seminars (for institutions) and trainings (for local stakeholders)
 - e-learning course with GI-related multimedia materials (animations, VR clips)
 - geo-portal and mobile application local for field inventory, mapping of GI
 - green infrastructure local case studies (competition)
 - informational-promotional campaigns
 - manual on protection and proper management of GI in the Carpathians



Actions / Outputs



National Fund for Environmental Protection and Water Management







Project LIFE16 GIE/PL/000648 is co-financed by the European Union within the LIFE Programme and the National Fund for Environmental Protection and Water Management



National Fund for Environmental Protection and Water Management

- LIFE14 NAT/ES/001094. OLIVARES VIVOS
- Towards the design and certification of biodiversity friendly olive groves.
- Carlos Ruiz SEO/BirdLife
- cruiz@seo.org
- www.olivaresvivos.com



Main objective: To recover the biodiversity of the olive groves, a key agro-ecosystem in Europe.



Olivares Vivos Agro-Environmental Scheme

1. Sustainable management of herbaceous cover

2. Restoration of unproductive areas of the farms

3. Structures to help fauna







Olivares Vivos Certification

To increase Profitability

Implication of key stakeholders: Farmers & Consumers

Mediterranean network of biodiversity friendly olive groves farms





- Better market prices,
- Readiness for new CAP requirements &
- Increase of ecosystem services







LIFE14 NAT/BE/000364 – VICTOR DE NEVE – V.DENEVE@FEDIEX.BE





LIFE IN QUARRIES – OBJECTIVES

To implement integrated biodiversity management in active quarries - by (1) raising awareness amongst

operators, (2) supporting onsite conservation actions and training, (3) integrating quarries into the regional





LIFE IN QUARRIES - LONG-TERM COMMITMENT

















LIFE SAFE-CROSSING – LIFE 17NAT/IT/464

Preventing Animal-Vehicle Collisions – Demonstration of Best Practices targeting prioprity species in SE Europe

2018-2023

Annette Mertens, Simone Ricci

Lessons from LIFE on Ecological Connectivity -LIFE Platform Meeting – 2-4 March 2021



Lessons from LIFE on Ecological Connectivity -LIFE Platform Meeting – 2-4 March 2021



Actions

Understanding impact of roads on large carnivores

→ Monitoring on 400 km roads

Reduce the mortality on roads due to accident with vehicles

→ installation of 27 innovative alert systems for animals and drivers + 35 km virtual fence Improve connectivity

 \rightarrow adaptation of 100 existing crossing structures

- Encourage drivers to drive carefully
- \rightarrow installation of 100 road information panels specifically designed through Neuromarketing technique

After-LIFE and sustainability

Responsible authorities directly involved, will maintain the systems Very high replication potential because of development of innovative tools



Lessons from LIFE on Ecological Connectivity -LIFE Platform Meeting – 2-4 March 2021

les formesilience: Region de Muncia" Picture Countesy o

- Knowledge market
 presentation
- LIFE14 CCM/ES/001271
- LIFE FOREST CO2
- Miguel Chamón Fernández
- miguel.chamon@carm.es



<u>Objectives linked to</u> <u>Connectivity</u>

 Sustainable Forest Management (SFM) as a tool for CC mitigation
 Involve forest-based sector in SFM
 Forestry conceived by stakeholders as an activity with high potential to generate social, economic and environmental benefits (source of financing for conservation)



Involvement of forest owners and diffuse sectors in climate change mitigation.



Work with forest owners to encourage the development of sustainable forest management projects to generate CO2 credits Work with organizations and companies from diffuse sectors to encourage carbon footprint compensations through these credits

Ensuring effective long term connectivity conservation in protected and not protected áreas (Working Group 2.4)

<u>Results</u>

 Involvement of forest owners and companies in voluntary carbon compensation schemes
 Set SFM as multiple tool for both CC mitigation and reducing vulnerability of ecosystems.

3. Enhance social perception of SFM as an ecosystem and socioeconomic benefit provider.

AfterLIFE & project sustainability

1. Management of carbon voluntary markets through SFM

2. Cooperation agreements to invigorate carbon sinks form SFM

3. Dissemination of results



Ecosystem's and socio-economic collateral benefits of SFM



Air quality improvement



Biodiversity conservation



Climate Change mitigation



Reduce vulnerability



Soil protection



Heritage protection



Hidric regulation



Rural and local employement





EUROPEAN NETWORKS FOR PRIVATE LAND CONSERVATION

Knowledge Market Presentation LIFE19 PRE/NL/000003 – LIFE ENPLC Carolina Halevy - Project Officer Feel free to reach out () Schalevy@eurosite.org







Objectives linked to Connectivity

1. Key governance elements for effective and longterm management of (PPA)

2. Ensuring effective long term connectivity conservation in OECM's and other non-legally protected areas.

3. Participatory approaches and stakeholders engagement in (PPA)

4. Ensuring funding for (PPA) Conservation



WWF Spain conservation visión Connectivity network among Natura 2000



Knowledge market presentation Gema Rodríguez WWF Spain



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Results of the study

Corredores prioritarios





- Knowledge market presentation
- LIFE BEETLES LIFE 18 NAT/PT/000864
- Bringing Environmental and Ecological Threats Lower to Endangered Species
- Maria Teresa Ferreira
- Maria.tm.Ferreira@azores.gov.pt



"The tree lined River Tilt, Glen Tilt, Tayside and Clackmannanshire Area.©Lorne Gill/NatureScot" Picture Courtesy of LIFE13 BIO UK 000428

1. Increase favourable habitat for the endangered beetle *Tarphius floresensis* in Flores Island

2. Creation of a favorable green infrastructure within peri-urban areas





- *Tarphius floresensis* is an endemic specie from Flores Island in the Azores that is critically endangered (IUCN).
- The intervention areas are very disturbed with the use of nature-based solutions along with a stepping stone approach, we intend to improve the habitat of this specie and gain connectivity between protected areas and peri-urban areas along riverbeds.
- Guiding criteria for identification of ecological corridors we used the riverbeds that connect two areas of known distribution of this species.

Expected Results 1. Improvement of habitat with control of invasive species and planting of endemics in pockets of intervention 2. Control of erosion of riverbed with NBS

AfterLIFE: Continued efforts to control invasive species





Knowledge market presentation

LIFE GREENCHANGE (LIFE17 NAT/IT/000619)

Green infrastructures for increasing biodiversity In Agro Pontino and Maltese rural areas

Federica Benelli – Poliedra, Politecnico di Milano

fed.benelli@gmail.com | info@lifegreenchange.eu | http://lifegreenchange.eu/

Objectives linked to connectivity



greenchange

aims at preserving biodiversity and enhancing the ecological value of agro-ecosystems in the Pontine Plain and Malta









 by planning and implementing GREEN INFRASTRUCTURES







 by supporting governance tools based on the assessment of ecosystem services: THE PACT FOR BIODIVERSITY, as a permanent working table involving farmers and decision makers to share tools and practices for the sustainable management of rural areas and networking environmental actions. **Results** → Demonstrative actions in partner farms

→ Tools to improve the access to CAP/RDP agroenvironmental resources

AfterLIFE & project sustainability

→ Land-stewardship contracts



- Restoration of windbreakers and riparian buffer strips
- New wetland habitats
- Restoration of **rubble walls** and planting **wildflower strips**
- **Guidelines** for the management of new/restored green infrastructures
- Orientation and training tools,
- Contributes to improve the authorization procedures and funding criteria in the new programming period









©Giovanni Mastrobu

ANNEX 7:

PROJECT MAPPING

Number Numer Numer Numer <th></th> <th>Project code</th> <th>Project name</th> <th>Coordinating Beneficiary</th> <th>Contact email</th> <th>First name</th> <th>Last name</th> <th>Web summary link</th>		Project code	Project name	Coordinating Beneficiary	Contact email	First name	Last name	Web summary link
I LIFE 10 INAT/86/000700 LIFE ELIA ELIA part of jabolitymal.com Gerard Jadoui Province and the second		-						http://www.life-elia.eu/
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10			Biologische Station Stadteregion	in a family of the section of the			ect/Projects/index.cfm?fuseaction=search.
18	LIFE 15 NAT/DE/000473	LIFE Amphibienverbund	Aachen e.v	Joset.wegge@bs-aachen.de	Josef	wegge	dspPage&n_proj_id=5843
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19	LIFETS NAT/DE/000745	LIFE Patches and Corridors	Aachen e.V	josef.wegge@bs-aachen.de	Josef	wegge	dspPage&n_proj_id=5844
			County Administrative Board of				https://ec.europa.eu/environment/life/proj
			Ostergötland/Länsstyrelsen				ect/Projects/index.cfm?fuseaction=search.
20	LIFE15 NAT/SE/000772	LIFE BTG	Ostergötland	carina.greiff@lansstyrelsen.se	Carina	Greiff	dspPage&n_proj_id=5863
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21	LIFE13 NAT/BE/001067	LIFE Pays mosan	Reserves naturelles RNOB asbl	joelle.huysecom@natagora.be	Joelle Huysecom	Huysecom	dspPage&n_proj_id=5041
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22	LIFE14 NAT/PT/001081	LIFE LINES	Universidade de Evora	graca.garcia@infraestruturasdeportugal.pt	Graca	Garcia	dspPage&n_proj_id=5340
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23	LIFE13 BIO/UK/000428	EcoCo LIFE	Scottish Natural Heritage	paul.sizeland@nature.scot	Paul	Sizeland	ect/Projects/index.cfm?fuseaction=search.
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24	LIFE17 IPE/HU/000018	LIFE-IP Grassland-HU	Herman Ottó Institute (HOI)	prommer.matyas@hoi.hu	Matyas	Prommer	dspPage&n proj id=7003
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25	LIFE14 ENV/SE/000047	LIFE GoodStream	Society of Halland	goodstream@wetlands.se	John	Strand	http://goodstream.se/
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26	LIFE18 NA1/LU/000136	LIFE BATS & BIRDS	d Natur	secretariat@naturemweit.iu	Nathalle	Grotz	
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27	LFIE17 NAT/11/000596	LIFEOrchids	Universita degli Studi di Torino	mariangela.girianda@unito.lt	Mariangeia	Girianda	dspPage&n_proj_id=6804
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28	LIFET8 CCA/ES/001160	LIFE ADAPTA BLUES	Hidraulica Ambiental de Cantabria)	Juanesjeunican.es	Jose Antonio	Juanes de la Pena	dspPage&n_proj_id=/119
							nttps://ec.europa.eu/environment/ine/proj
20			Diversão Designal de Ambiento	Maria TM Farming@aranaa aau at	Maria Tarana	Formaina	ect/Projects/index.cfm?fuseaction=search.
29	LIFE18 NAT/P1/000864	LIFE BEETLES	Direcção Regional do Ambiente	Maria. TM.Ferreira@azores.gov.pt	Maria Teresa	Ferreira	dspPage&n_proj_id=7262
							nups://ec.europa.eu/environment/life/proj
30	LIFE07 NAT/E/000735	LIFE CORREDORES OSO	Fundación Oso Pardo	fop@fundacionosopardo.org	Guillermo	Palomero	ect/projects/index.cfm?fuseaction=search.
					L		https://ec.europa.eu/environment/life/proj
					Guillermo	Palomero	ect/Projects/index.cfm?fuseaction=search.
31	LIFE12 NAT/ES000192	LIFE Bear Defragmentation	Fundación Oso Pardo	fop@fundacionosopardo.org	Fernando	Ballesteros	dspPage&n_proj_id=4634
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
32	LIFE16 NAT/ES000573	LIFE Oso Courel	Fundación Oso Pardo	fop@fundacionosopardo.org	Guillermo	Palomero	dspPage&n_proj_id=6225
							https://ec.europa.eu/environment/life/proj
					Pedro	Prata	ect/Projects/index.cfm?fuseaction=search.
33	LIFE17 NAT/PT000554	LIFE WolFlux	Associação Rewilding Iberia PT	pedro.prata@rewilding-portugal.com	Sara	Aliacar	dspPage&n_proj_id=6805
			,				https://ec.europa.eu/environment/life/proi
							ect/Projects/index.cfm?fuseaction=search
34	LIFE18 NAT/ES000930	LIFE CAÑADAS	Universidad Autónoma de Madrid	fm.azcarate@uam.es	Francisco	Martín Azcárate	dspPage&n_proj_id=7242
					1		https://ec.europa.eu/environment/life/proi
							ect/Projects/index.cfm?fuseaction=search
35	LIFE12 ENV/FS000567	LIFE ZARAGOZA NATURAI	Avuntamiento de Zaragoza	medionatural@zaragoza.es	Luis	Manso de Zúñiga (dspPage&n_proj_id=4627
			,		-2.0	L	aspiragedri_proj_id=1021

	Project code	Project name	Coordinating Beneficiary	Contact email	First name	Last name	Web summary link
			;				https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
36		LIEF Redcanacita2015	Fundación González Bernáldez	oficina@redeuroparc.org	Marta	Múgica	dspPage&n proj id=5831
50				oneinaeredeuroparetorg	Maita	Mugica	https://ec.europa.eu/environment/life/proj
			Consejería para la Transición				act/Projects/index.cfm2fuseaction_search
			Ecológica y Sostenibilidad. Junta de				denPage&n proj id=5862
37	LIFE15 NAT/ES/001016	LIFE ZEPAURBAN	Extremadura	atanasio.fernandez@juntaex.es	Atanasio	Fernández García	<u>usprageon_proj_iu=3002</u>
							https://ec.europa.eu/environment/life/proj
			Oficina de Impulso Socioeconómico				ect/Projects/index.cfm?fuseaction=search.
38	LIFE14 CCM/ES/001271	LIFE Forests CO2	del Medio Ambiente	miguel.chamon@carm.es	Miguel	Chamon	dspPage&n_proj_id=5258
							https://ec.europa.eu/environment/life/proj
							<pre>ect/Projects/index.cfm?fuseaction=search.</pre>
39	LIFE15 NAT/ES/000734	LIFE STEPPE FARMING	Fundación Global Nature	edemiguel@fundacionglobalnature.org	Eduardo	de Miguel	dspPage&n_proj_id=5857
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
40	LIFE16 NAT/ES/000707	In common Land	Diputación de Lugo	Luis.reija@deputacionlugo.org	Luis	Reija	dspPage&n_proj_id=6337
							https://ec.europa.eu/environment/life/proj
			Consejería de Agricultura, Desarrollo				ect/Projects/index.cfm?fuseaction=search.
			rural, Medio Ambiente y Energía.				dspPage&n_proj_id=4629
41	LIFE12 ENV/ES/000148	LIFE Comforest	Junta de Extremadura	joaquin.polanco@juntaex.es	Joaquín	Polanco Noaín	
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
42	LIFE17 IPE/PT/000010	LIFE-IP AZORES NATURA	Direcção Regional do Ambiente	diana.c.pereira@azores.gov.pt	Diana	Pereira	dspPage&n_proj_id=7004
							https://ec.europa.eu/environment/life/proj
10			Contrada de E.Constituida - Ourritada ata	is set is set of the s		o	ect/Projects/index.cfm?fuseaction=search.
43	LIFE14 NAT/ES/001094	LIFE Olivares Vivos	Sociedad ESpanola de Ornitologia	jegutierrez@seo.org	José Eugenio	Gutièrrez	dspPage&n_proj_id=5323
				a gatta@atroona it	Omor	Cotto	https://ec.europa.eu/environment/life/proj
11	LIEE 1 9 NAT /IT /000756	LIEE Bronto 2020	Etra Spa	ologsandra loonardi@atifor.com	Alossandro	Loopardi	ect/Projects/Index.ctm?fuseaction=searcn.
	LIFE TO NAT/11/000730	LIFE BIEIIta 2030		alessandro.leonardi@etiror.com	Alessanuru	Leonardi	dspPage&n_proj_ld=7184
			Consejería de Medio Ambiente v				act /Projects /index cfm2fuseaction_search
45	LIFE14 CCA ES 000612	LIFE Adaptamed	Ordenación del Territorio	pn snevada cmaot@iuntadeandalucia es	Francisco	Sanchez Gutierrez	denPage&n proj id=5248
10				priorioradatorna oce janta doarna a doarno	Trancisco		https://ec.europa.eu/environment/life/proi
							ect/Projects/index.cfm?fuseaction=search.
46	LIFE 16 NAT/GR/000575	LIFE IGIC	HMU	ekabourakis@hmu.gr	Emmanouil	Kabourakis	dspPage&n proj id=6331
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
47	LIFE 15 GIE/PL/000959	Trees Green Infra LIFE	Fundacja EkoRozwoju	tyszko@fer.org.pl	Piotr	Tyszko-Chmielowi	dspPage&n_proj_id=6038
48	LIFE14 IPE/IT/000018	LIFE IP GESTIRE 2020	Regione Lombardia	Marzia_Cont@regione.lombardia.it	Marzia	Cont	https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
							dspPage&n_proj_id=5436
			Consciería de Media Ambiente :				
49			Ordonación del Territoria Junto de				nttps://ec.europa.eu/environment/life/proj
				isser guzmen@iuntedeendelueis.co	logá Domán	Curmón Álvors-	ect/Projects/index.ctm?fuseaction=search.
	LIFET I DIU/E3/UUUZ/0			Josei .guzman@juntaueanualucia.es	JUSE Kalliuli		usprageon_proj_id=4352
							act /Projects / index cfm2fusesetion_costch
50	LIFE10 INE/ES/000540		Xarxa de Custodia del Territori	smari@custodiaterritori.org	Serai	Marí	depDage&n_proj_id=4129
	LI LI O IN / LJ/ 000340			onane odocodiacomong	- Sergi		https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction_search
	LIFE12 NAT /50 (000000		Fundacion para la Conservavión del	for all an all reacted by some of the	C		dspPage&n_proj_id=4674
51	LIFE 12 NAT/ES/000322			ICq@queprantanuesos.org	Gerardo	Baguena Sanchez	there is an understanding for this of the
52	LIFE 10 NA1/11/000946	LIFE GREEN4BLUE	CONSULTIO DELLA DOULLICA RELIGUA	a.morsonneoonnicarenaña.tt	Andrea	IMOLSOILL	there is no websummary for this project



	Project code	Project name	Coordinating Beneficiary	Contact email	First name	Last name	Web summary link
					[1	https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
53	LIFE 12 NAT BE 000438	LIFE Grote Netewoud	Natuurpunt Beheer vzw	Stefan.versweyveld@natuurpunt.be	Stefan	Versweyveld	dspPage&n_proj_id=4606
54	LIFE14 NAT/IT/000938	LIFE Risorgive	Comune di Bressanvido	salvatoreabbate@comune.bressanvido.vi.it	Abbate	Salvatore	https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
							dspPage&n_proj_id=5328
55	LIFE 14 NAT/BE/000364						https://ec.europa.eu/environment/life/proj
			Fédération des Industries Extractives	info@lifeinguarries.eu			ect/Projects/index.cfm?fuseaction=search.
		LIFE in Quarries	SCRL	v.deneve@fediex.be	Michel	Calozet	dspPage&n_proj_id=5310
56							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
			Department of Forests Ministry of				dspPage&n proj id=5837
			Agriculture Natural Resources and		Michel	Christou	<u></u>
	LIEF 15 NAT/CY/000850		Environmen	achristou@fd moa gov cv	Victor		
			Litwironnien	achinstoueru.moa.gov.cy	VICCOI	Denveve	https://ec.europa.eu/environment/life/proj
			Ente di gestione per i Parchi e la				act/Projects/index.cfm2fuseaction_search
57	LIFE 16 NAT/IT/000245	LIFE 4 Oak Forests	Biodiversità-Romagna	fabio ghirelli@romagnafaentina it	Fabio	Ghirelli	denPage&n proj. id=6335
						Grintein	
58	LIFE18 NAT/DK/000747	LIFE Open Woods	Danish Nature Agency	<u>stemt@nst.dk</u>	Steffan	Thomsen	
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
59	LIFE 16 IPE/GR/000002	LIFE-IP 4 Natura	Ministry of Environment and Energy	i.mitsopoulos@prv.ypeka.gr	Ioannis	Motsopoulis	dspPage&n_proj_id=6520
							https://ec.europa.eu/environment/life/proj
			Device Network American		1.	B: 1 .	ect/Projects/index.cfm?fuseaction=search.
60	LIFE 16 IPE/DK/000006	NATUREMAN	Danish Nature Agency	<u>Jobid@nst.dk</u>	Jorgen	Bidstrup	dspPage&n_proj_id=6522
			Department of Environment Ministry				https://ec.europa.eu/environment/life/proj
			of Agriculture, Bural Development				ect/Projects/index.cfm?fuseaction=search.
61	LIFE18 IPE/CY/000006	IP Physis	and Environment	estylianopoulou@environment_moa.gov.cv	Flena	Stylianopoulou	dspPage&n_proj_id=7402
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
62	LIFE17 IPE/CZ/000005	N2K Revisited	Ministry of the Environment	Pavel Gruntorad@mzp.cz	Pavel	Gruntorád	dspPage&n proj id=7002
						Grancoraa	https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
63	LIFE 18 IPE/EE/000007	ForEST&FarmLand	Ministry of the Environment	voldemar.rannap@envir.ee	Voldemar	Rannap	dspPage&n_proj_id=7398
				fundacion@fnyh.org			https://ec.europa.eu/environment/life/proj
64	LIFE12 NAT/ES/000595		Fundación Naturaleza v Hombre	sanchez@fnyh.org	Carlos	Sanchez	ect/Projects/index.cfm?fuseaction=search.
51	L. L. L I II, (17 L0, 0000000		BROZ (Regional Association for				https://ec.europa.eu/environment/life/proj
			Nature Conservation and Sustainable	filagova@broz.sk	Žofia	Filadová	ect/Projects/index cfm?fuseaction=search
65	LIFE 12 NAT/SK/001155	LIEE - Ostrovné lúky	Development)	hrossmannova@broz.sk	Adriana	Brossmannova	dspPage&n_proj_id=4776
					/ tantana	Diossinaniova	https://ec.europa.eu/environment/life/proj
				rozenn.le-touze@intradef.gouv.fr and		1	ect/Projects/index.cfm?fuseaction_search
66	LIFE18 GIE/FR/001029	LIFE NATURARMY	Ministère des forces armées	perrine.paris@reseau-cen.org	Rozenn	Le Touze	dspPage&n_proj_id=7226
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
67	LIFE15 NAT/BE/000774	LIFE NARDUS	Natagora	dominique.lafontaine@natagora.be	Dominique	Lafontaine	dspPage&n_proj_id=5836
68	LIFE19 NAT/FR/000828	LIFE COTEAUX GASCONS	ADASEA Gers	a032@adasea.net	Claire	Lemouzy	
						1	https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
				naturadapt-rnf@espaces-naturels.fr		1	dspPage&n_proj_id=6700
69	LIFE17 CCA/FR/000089	#CC# Naturadapt	RNF	annecerise.tissot-rnf@espaces-naturels.fr	Anne-Cerise	Tissot	

	Project code	Project name	Coordinating Beneficiary	Contact email	First name	Last name	Web summary link
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
70	LIFE18 IPC/FR/00007	LIFE ARTISAN	OFB	mathilde.loury@ofb.gouv.fr	Mathilde	Loury	dspPage&n_proj_id=7406
							https://ec.europa.eu/environment/life/proj
71	LIFF14 NAT/LIK/000070	Moorl IEE 2020	Peak District National Park Authority	diarmuid crehan@peakdistrict.gov.uk	Diarmuid	Crehan	ect/Projects/index.cfm?fuseaction=search.
			Direction générale opérationnelle de	diamander on and pour district goviar	Diarritata	Creman	dspPage&n_prol_id=5345 https://ec.europa.eu/environment/life/proi
			l'Agriculture, des Ressources				ect/Projects/index cfm?fuseaction=search
72	LIFE 10 NAT BE 000706	Ardenne liégeoise	naturelles et de l'Environnement	d.parkinson@berinzenne.be	Denis	Parkinson	dspPage&n proj id=4048
							https://ec.europa.eu/environment/life/proj
			UNEP/GRID - NARODOWA FUNDACJA				ect/Projects/index.cfm?fuseaction=search.
73	LIFE16 GIE/PL/000648	LIFE Green-Go!Carpathians	OCHRONY RODOWISKA	piotr@gridw.pl	Piotr	Mikołajczyk	dspPage&n_proj_id=6379
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
74	LIFE16 NAT/UK/000725	Pennine PeatLIFE	Durham County Council	pleadbitter@northpenninesaonb.org.uk	Paul	Leadbitter	dspPage&n_proj_id=6339
							https://ec.europa.eu/environment/life/proj
75					Course ille	0	ect/Projects/index.cfm?fuseaction=search.
75	LIFE I / CCA/SE/000048	LIFECUAST Adapt	CAB Skane	Camina.grein wskane.se	Camilia	Greiff	dspPage&n_proj_id=6861
			Agentschap voor Natuur en Bos -				nttps://ec.europa.eu/environment/ine/proj
76	LIFE12 NAT BE 000631	LIFE Flandre	ANB	jeanlouis.herrier@vlaanderen.be	Jean Louis	Herrier	depPage n proj. id 4610
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
77	LIFE12 NAT UK 001068	LIFE Connect Carpathians	Flora & Fauna International	paul.hotham@fauna-flora.org	Paul	Hotham	dspPage&n_proj_id=4759
							https://ec.europa.eu/environment/life/proj
70			Università degli Studi di Devie (UNID)/)	ailvianaala aasini@uninv.it	Ciluia	Annini	ect/Projects/index.cfm?fuseaction=search.
/ 8	LIFE 18 NA1/11/000803		Universita degli Studi di Pavia (UNIPV)	Silviapaola.assilieunipv.it	Silvia	Assini	dspPage&n_proj_id=/245
							nttps://ec.europa.eu/environment/iiie/proj
79	LIFE18 NAT/UK/000838	LIFE 100% favourable	RSPB	nick.folkard@rspb.org.uk	Nick	Folkard	dspPage&n proj id=7320
							https://ec.europa.eu/environment/life/proj
			Oesterreichische Gesellschaft				ect/Projects/index.cfm?fuseaction=search.
80	LIFE15 NAT/AT/000834	LIFE Great Bustard	Grosstrappenschutz	werner.falb-meixner@grosstrappe.at	Werner	Falb-Meixner	dspPage&n_proj_id=5834
							https://ec.europa.eu/environment/life/proj
			Conservatoire des espaces naturels				ect/Projects/index.cfm?fuseaction=search.
81	LIFE13 NAT/FR/000092	LIFE DESMAN	de Midi-Pyrénées (CEN MP)	melanie.nemoz@espaces-naturels.fr	Mélanie	Nemoz	dspPage&n_proj_id=5004
82	LIFE16 NAT/FR/000872	LIFE VISON	oiseaux)	ingrid marchand@lpo_fr	Ingrid	Marchand	https://lifevison.fr/
					3		https://ec.europa.eu/environment/life/proi
					-		ect/Projects/index.cfm?fuseaction=search.
83	LIFE15 NA1/IT/000989	LIFE LICINOBIOSecure	Parco Lombardo della Valle del Ticino	tauna@parcoticino.it	Francesco	Magna	denDagoen proi id 5952
				Alt contact			nttps://ec.europa.eu/environment/life/proj
84	LIFE16 NAT/ES000771	LIFE FLUVIAL	Universidad de Oviedo	lifefluvial@uniovi.es	Luisa	Alonso	ect/Projects/Index.ctm?tuseaction=search.
							https://ec.europa.eu/environment/life/proi
							ect/Projects/index.cfm?fuseaction=search.
85	LIFE11 NAT/ES/000691	DESMANIA	Fundación Biodiversidad	itorres@fundacion-biodiversidad.es	Ignacio	Torres	dspPage&n_proj_id=4339
			Consejería de Medio Ambiente y				https://ec.europa.eu/environment/life/proj
			Ordenación del Territorio. Junta de				ect/Projects/index.cfm?fuseaction=search.
86	LIFE14 CCM/ES000957	LIFE Blue Natura	Andalucía	rosa.mendoza@juntadeandalucia.es	Rosa	Mendoza Castellór	dspPage&n_proj_id=5258
			via donau Österreichische				https://ec.europa.eu/environment/life/proj
	LIFE 1 0 NIAT / 1T (000700		Wasserstraßen- Gesellschaft mbH		Dalaart	T 1	ect/Projects/index.cfm?fuseaction=search.
87	LIFE 18 NAT/AT/000733	Dynamic LIFE Lines Danube		robert.toegel@viadonau.org	KODERT	roegel	dspPage&n_proj_id=7218
							nups://ec.europa.eu/environment/life/proj
22	LIEF18 NAT/AT/000915	I IEE Network Danube+	VERBLIND Austrian Hydro Power AG	gerd frik@verbund.com	Gerd	Frik	depPage&p_proj_id=7178
00			TABOIND AUSTIAN HYDRO FOWER AG	gerunnkeverbunu.com		11 UN	$usprayeon_pio_iu=i i i o$


	Project code	Project name	Coordinating Beneficiary	Contact email	First name	Last name	Web summary link
							https://ec.europa.eu/environment/life/proj
			Ministry of Agriculture, Nature and				ect/Projects/index.cfm?fuseaction=search.
89	LIFE15 IPE/NL/000016	LIFE Delta Natuur	Food Quality	p.a.a.vanvelzen@minlnv.nl	Peter	van Velzen	dspPage&n_proj_id=6103
							https://ec.europa.eu/environment/life/proj
90			Ministry of Interior Hungary	zeuzeenne bereig@hm.gov.bu	7011700000	Horeig	ect/Projects/index.cfm?fuseaction=search.
30	LIFE TO CCA/HU/000113	LIFE-MICACC		zsuzsanna.nercig@bin.gov.nu	ZSUZSALITA	nercig	no LIFE database entry
91	LIFE15 PRE/ES/000002	LIFE FURO BIRD PORTAL	Technologia Forestal de Catalunya	dani.villero@ctfc.es	Dani	Villero	http://eurobirdportal.org/ebp/ep
		European Land Conservation		Konstantin.kreiser@nabu.de	Konstantin	Kreiser	no LIFE database entry
92	LIFE16 PRE/DE/000005	Networsk - ELCN	NABU	stefan.versweyveld@natuurpunt.be	Stefan	Versweyveld	http://elcn.eu
						-	https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
93	LIFE17 PRE/BE/000001	Land is Forever - LIFE	European Landowners Organisation	anne-sophie.mulier@elo.org	Marie-Alice	Budnoik	dspPage&n_proj_id=6638
		European Networks for Private					
94	LIFE19 PRE/NL/000003	Land Conservation ENPLC	Eurosite	info@eurosite.org	Carlıjn	Poirters	
							https://ec.europa.eu/environment/life/proj
95	LIFE05 NAT/B/000091	Dommedal	Natuurpunt Bebeer v z w	stefan verswevveld@natuurnunt he	Stefan	Versweyveld	depPage&p_proj_id=2021
		Dominedai		<u>steran.versweyveldenatdurpunt.be</u>	Steran	Versweyveld	
96	LIFE19 NAT/RE/000093	LIFE Connexions	Réserves Naturelles RNOB	xavier janssens@natagora be	Xavier	lanssens	
97	LIFE19 NAT/EE/001006	LIFE CONNECTING MEADOWS	Estonian Univesity of Life Sciences	holm.annelv@gmail.com	Annely	Holm	
98	LIFE19 CCM ES001235	Wetlands4climate	Fundacin Global Nature	edemiguel@fundacionglobalnature.org	Amanda	del Río Murillo	
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
99	LIFE15 ENV/11/000641	SOIL4WINE	Università Cattolica del Sacro Cuore	stefano.poni@unicatt.it	Stefano	Poni	dspPage&n_proi_id=5780
							https://ec.europa.eu/environment/ine/proj
100	LIFE11 NAT/RO/000823	CARPATHIA Restoration	Fundatia Conservation Carpathia	b.promberger@carpathia.org	Mihai	Zotta	depPage in proj. id=4205
							https://ec.europa.eu/environment/life/proj
			Nature Conservation Agency of the				ect/Projects/index.cfm?fuseaction=search.
101	LIFE16 NAT/CZ/000731	LIFE for Insects	Czech Republic	marketa.junova@nature.cz	Markéta	Curatolo Jůnová	dspPage&n_proj_id=6288
							https://ec.europa.eu/environment/life/proj
102		Posoato Torn	PSDR	Daniel Piec@rsph.org.uk	Danial	Rioc	ect/Projects/index.cfm?tuseaction=search.
102	LIFET4 NAT OK 000345			Daniel, necerspb.org.uk	Daniel	FIEC	https://ec.europa.eu/epvironment/life/proj
							ect/Projects/index cfm?fuseaction=search
103	LIFE 17 GIE UK 000572	Biosecurity for LIFE	RSPB	nick.folkard@rspb.org.uk	Nick	Folkard	dspPage&n_proj_id=6667
			BROZ (Regional Association for				can be found in Teams
10.4			Nature Conservation and Sustainable				
104	LIFE19 NAT/SK/001069	LIFE SYSEL	Development)	tuharska@broz.sk	Katarína	Tuhárska	
105	LIFE19 NAT/ES/001055	LIFE LYNXCONNECT	Junta de Andalucia	tranciscoj.salcedo@juntadeandalucia.es	Francisco Javier	Salcedo	
							https://ec.europa.eu/environment/life/proj
106	LIFE14 NAT/FI/000023	FRESHABIT	Parks & Wildlife Finland	viliina.evokari@metsa.fi	Vilina	Evokari	dect/Projects/Index.clini?Tuseaction=search.
							https://ec.europa.eu/environment/life/proj
107	LIEE14 NAT/ES/000196		Diputación Foral de Gipuzkoa	imendiola@ginuzkoa net	Inigo	Mendiola	ect/Projects/index.cfm?fuseaction=search.
107	LII L I T NAI/E3/000100			interfatorae gipuzkoarrot			usprade&n_proj_id=5324 https://ec.europa.eu/environment/life/proj
				lpn.cea-castroverde@lpn.pt			ect/Projects/index.cfm?fuseaction=search
108	LIFE12 NAT PT 000997	LIFE Charcos	Liga para a Protecção da Natureza	rita.alcazar@lpn.pt	Rita	Alcazar	dspPage&n_proj_id=4746
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
109	LIFE19 NAT IT 000848	LIFE PollinAction	Università Ca' Foscari di Venezia	gabriella.buffa@unive.it	Gabriella	Buffa	dspPage&n_proj_id=7631
							https://ec.europa.eu/environment/life/proj
110	LIFE15 IPE/SE/000015	LIFE Rich Waters	Länsstyrelsen Västmanlands län	david.lidertelt@lansstyrelsen.se	David	Linderfelt	ect/Projects/index.cfm?fuseaction=search.

	Project code	Project name	Coordinating Beneficiary	Contact email	First name	Last name	Web summary link
	,		y				https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
111	LIFE16 IPE/SE/000009	GRIP on LIFE	Swedish Forest Agency	gunilla.oleskog@skogsstyrelsen.se	Gunilla	Oleskog	denPage&n proj id=6525
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
112	LIFE15 IPE/DE/000007	Atlantic Region DE	Ministerium für Umwelt	Ingrid.rudolph@mulnv.nrw.de	Ingrid	Rudolph	dspPage&n_proj_id=6100
							https://ec.europa.eu/environment/life/proj
110						<u> </u>	ect/Projects/index.cfm?fuseaction=search.
113	LIFE14 NA1/ES/000699	LIFE Anillo Verde	Fundación Naturaleza y Hombre	sanchez@fnyh.org	Carlos	Sanchez	dspPage&n_proj_id=5325
			SYCOPARC -Syndicat de coopération				https://ec.europa.eu/environment/life/proj
			pour le Parc Naturel Régional des				depPage&n_proj_id=5422
114	LIFE14 NAT/FR/000290	LIFE BIOCORRIDORS	Vosges du Nord	f.chazel@parc-vosges-nord.fr	Francois	Chazel	
					3		https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
115	LIFE16 NAT/SI/000634	LIFE Linx	Slovenia Forest Service	cernerok@gmail.com	Rok	Ceme	dspPage&n_proj_id=6295
			Country Administrative Board of				
116	LIFE19 NAT/SE/000172	LIFE RestoRED	Ostergotland	Anneli.Lundgren@lansstyrelsen.se	Anneli	Lundgren	
							https://ec.europa.eu/environment/life/proj
117	LIFE17 NAT/ES/000568		Consorci Forestal de Cataluña	lioan rovira@forestal cat	Joan	Rovira	ect/Projects/index.cfm?fuseaction=search.
					Jouri	Novina	https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
			Centre de Ciència y Tecnologia				dspPage&n_proj_id=6298
118	LIFE16 NAT/ES000768	ALNUS	Forestal de Catalunya	jordi.camprodon@ctfc.es	Jordi	Camprodón	
	PROJECTS NOT AS SUITAI	BLE FOR THE THEME					
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
119	LIFE13 NAT/IE/000769	RAPTOR LIFE					dspPage&n_proj_id=4914
	LIFE17 NAT/11/000502	LIFE PALU QOP					https://ec.europa.eu/environment/life/proj
120							depPage&p_proj.id=6802
120							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
121	LIFE14 NAT/ES/001213	LIFE CONVIVE					dspPage&n_proj_id=5326
	LIFE16 CCA/IT/000060	LIFE PASTORALP					https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
122							dspPage&n_proj_id=6307
							https://ec.europa.eu/environment/life/proj
1.32							ect/Projects/index.cfm?fuseaction=search.
123	LIFE TO CCA/INL/000096						usprage&n_proj_id=6341
							ect/Projects/index.cfm?fuseaction_search
124	LIFE 16/ IPE/ES/000019	LIFE RBMP Duero					dspPage&n_proj_id=6527
			İ.				https://ec.europa.eu/environment/life/proi
							ect/Projects/index.cfm?fuseaction=search.
125	LIFE14 NAT/SK/001306	LIFE Danube floodplains					dspPage&n_proj_id=5341
	PROJECTS PREDOMINANT	LY WATER-THEMED					
							https://ec.europa.eu/environment/life/proj
100		Fish minustion & Divil 155					ect/Projects/index.cfm?fuseaction=search.
126	LIFE 16 NAT/NL/000155	FISH MIGRATION & BIRDLIFE					dspPage&n_proj_id=6359
							ncups.//ec.europa.eu/environment/life/proj
127	LIFE16 CCA/BE/000107	LIFE Sparc					dspPage&n_proj_id=6302



	Project code	Project name	Coordinating Beneficiary	Contact email	First name	Last name	Web summary link
[•	https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
128	LIFE13 NAT/FR/000506	LIFE DRONNE					dspPage&n_proj_id=5016
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
129	LIFE15 NAT/UK/000219	Unlocking the Severn for LIFE					dspPage&n_proj_id=5866
		_					https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
130	LIFE13 NAT/ES000772	LIFE CIPRIBER					dspPage&n proj id=4949
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
131	LIFE 18 NAT/SE/000268	Rivers of LIFE					dspPage&n proj id=7222
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
132	LIFE18 NAT/SE/000742	LIFE CONNECTS					dspPage&n_proj_id=7223
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
133	LIFE16 NAT/NL/000155	Fish Migration and BirdLIFE					dspPage&n_proj_id=6359
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
134	LIFE 13 NAT/ES/000237	Migratoebre					dspPage&n_proj_id=5102
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
135	LIFE14 IPE/UK/000027	Natural Course					dspPage&n_proj_id=5439
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
136	LIFE18 NAT/UK/000743	LIFE DEERIVER					dspPage&n_proj_id=7322
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
137	LIFE16 NAT/SI/000708	LIFE STRŽEN					dspPage&n_proj_id=6296
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
138	LIFE15 NAT/IT/000823	IdroLIFE					dspPage&n_proj_id=6078
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
139	LIFE 18 IPE/LV/000014	GoodWater IP					dspPage&n_proj_id=7399
							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm?fuseaction=search.
140	LIFE18 IPE/IE/000003	Water of LIFE					dspPage&n_proj_id=7403
1 / 1		PoPorN LIFE					https://ec.europa.eu/environment/life/proj
141	LILLI J NAT/ 3E/ 000092						<pre>lect/Projects/index.cfm?fuseaction=search. https://ac.europa.eu/environment/life/proj</pre>
							act/Projects/index.cfm2fuscostion_costsh
142	LIFE11 NAT/PL /000424	Blue Corridors					denPage&n_proj_id=4296
172							https://ec.europa.eu/environment/life/proj
							ect/Projects/index.cfm2fuseaction_search
143	LIEF15 NAT/IT/000823	Idrol LIFE					depPage&p_proj_id=6078
113	L. L. S IVII/II/ 0000L3						https://ec.europa.eu/environment/life/proj
							ect/Projects/index cfm?fuseaction_search
144	Llfe14 NAT/AT/000057	LIFE Stertlet					dspPage&n_proj_id=5309
							https://ec.europa.eu/environment/life/proi
							ect/Projects/index.cfm?fuseaction=search.
145	LIFE 18 NAT/IT/000931	LIFE STREAMS					dspPage&n_proj_id=7300
	2						https://ec.europa.eu/environment/life/proi
							ect/Projects/index.cfm?fuseaction=search
146	LIFE15 IPE/ES/000012	LIFE INTEMARES					dspPage&n_proj_id=6101

ANNEX 8:

LIST OF PARTICIPATING LIFE PROJECTS

LIFE18 NAT/UK/000838 LIFE18 IPC/FR/000007 LIFE14 IPE/BE/000002 LIFE18 NAT/IT/000803 LIFE12 NAT/BE/000631 LIFE14 IPE/FI/000023 LIFE17 IPE/HU/000018 LIFE16 NAT/LV/000262 LIFE20 NAT/FR/000510 LIFE16 IPE/SE/000009 LIFE17 NAT/IT/000464 LIFE17 PRE/BE/000001 LIFE12 NAT/SK/001155 LIFE17 CCA/FR/000089 LIFE18 CCA/ES/001160 LIFE16 NAT/ES/000768 LIFE18 NAT/LU/000136 LIFE12 NAT/ES/000192 LIFE18 NAT/PT/000864 LIFE14 NAT/FR/000290 LIFE11 BIO/ES/000276 LIFE17 NAT/ES/000568 LIFE18 NAT/IT/000756 LIFE15 NAT/SE/000772 LIFE18 NAT/ES/000930 LIFE19 NAT/ES/000906 LIFE12 NAT/PT/000997 LIFE19 NAT/EE/001006 LIFE19 NAT/BE/000093 LIFE19 NAT/FR/000828 LIFE13 BIO/UK/000428 LIFE16 PRE/DE/000005 LIFE10 NAT/BE/000709 LIFE19 PRE/NL/000003 LIFE16 NAT/ES/000771 LIFE14 CCM/ES/001271 LIFE17 NAT/IT/000619 LIFE18 NAT/IT/000946 LIFE13 ENV/BE/000212 LIFE16 GIE/PL/000648 LIFE16 NAT/GR/000575 LIFE16 NAT/ES/000707 LIFE14 NAT/BE/000364 LIFE17 IPE/PT/000010 LIFE14 IPE/IT/000018 LIFE16 IPE/DK/000006 LIFE18 IPE/CY/000006 LIFE15 IPE/SE/000015 LIFE14 NAT/ES/000186 LIFE14 NAT/PT/001081 LIFE16 NAT/SI/000634 LIFE17 NAT/SK/000621 LIFE15 NAT/BE/000774 LIFE18 NAT/AT/000915 LIFE14 NAT/ES/001094 LIFE18 NAT/DK/000747

100% Favourable ARTISAN **BNIP** DRYLANDS **FLANDRE** FRESHABIT LIFE IP **GRASSLAND-HU** GrassLIFE Grid4LIFE **GRIP ON LIFE IP** LIEF SAFE-CROSSING Land is Forever LIFE LIFE – Ostrovné lúky LIFE #CC #NATURADAPT LIFE Adapta Blues LIFE ALNUS LIFE Bats & Birds LIFE Bear Defragmentation LIFE BEETLES LIFE Biocorridors Life bioDehesa LIFE BIORGEST LIFE Brenta 2030 LIFE BTG LIFE CANADAS LIFE Cerceta pardilla LIFE Charcos LIFE Connecting Meadows LIFE Connexions Life Coteaux Gascons LIFE EcoCo Life ELCN LIFE Elia-RTE LIFE ENPLC LIFE FLUVIAL LIFE FOREST CO2 LIFE GREEN CHANGE LIFE GREEN4BLUE LIFE GREEN4GREY LIFE Green-Go! Carpathians LIFE IGIC LIFE IN COMMON LAND LIFE IN QUARRIES LIFE IP AZORES NATURA LIFE IP GESTIRE 2020 LIFE IP NATUREMAN LIFE IP Physis LIFE IP Rich Waters LIFE IREKEBAI LIFE LINES LIFE Lynx LIFE Microtus II Life Nardus LIFE Network Danube+ LIFE Olivares Vivos LIFE Open Woods

LIFE16 NAT/LT/000701 LIFE19 NAT/IT/000848 LIFE14 NAT/NL/000987 LIFE19 NAT SE 000172 LIFE14 NAT/PT/000855 LIFE19 NAT/BE/000054 LIFE19/CCM/ES/001235 LIFE17 NAT/PT/000554 LIFE14 ENV/SE/000047 LIFE17 IPE/CZ/000005 LIFE15 NAT/CY/000850 LIFE15 NAT/DE/000745 LIFE14 NAT/UK/000070 LIFE10 NAT/FI/000047 LIFE18 GIE/FR/001029 LIFE18 NAT/IT/000596 LIFE16 NAT/UK/000725 LIFE19 NAT/IT/000848 LIFE10 NAT/IT/000241 LIFE15 GIE/PL/000959

Life Osmoderma LIFE PollinAction LIFE RE-BISON LIFE RestoRED Life Rupis LIFE Vallées Ardennaises LIFE Wetlands4Climate LIFE WolFlux LIFE-GOODSTREAM LIFE-IP: N2K Revisited LIFE-KEDROS LIFE-Patches & Corridors MoorLIFE2020 NATNET NATURARMY ORCHIDS Pennine PeatLIFE PollinAction **TIB - TRANS INSUBRIA BIONET** TreesGreenInfra

ANNEX 9:

LIST OF PARTICIPANTS





Virtual LIFE Platform meeting 2-4 March 2021

'Lessons from LIFE on ecological connectivity towards a coherent, functional and resilient network of protected areas' PARTICIPANTS LIST

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ANNEX 10

SLI.DO ANALYTICS REPORT

1 Sli.do Day1 Plenary	2
2 Sli.do Day 1 analytics	3
3 Sli.do Day 2	4
5 Sli.do Day 3 Panels	5
4 Sli.do Day 3 Plenary	6
6 Sli.do Day 3 Final	7

Event summary report LIFE4NATURE

Active users	Questions 13		Poll votes 118	
Engagement score 202	Likes / dislikes	71 / 0	Polls created	1
Engagement per user 1.7	Anonymous rate	77%	Votes per poll	118
Popular questions		Topics		
I Inga Racinska, Latvian Fund for Nature, GrassLII Are there good examples for ecological corridors betw functioning well and without the formal protection sta	FE 0 9 6 ween Natura 2000 sites, atus assigned to them?	chal nature restor ^{force} conn place	ration ectivity natura 20	es 00 _{areas}
Anonymous Given that only 7% of N2000 sites have a management ambitious to legally protect the 30% of EU land withou funding?	0 🗣 9 🖆 t plan, isn't it too it securing proper	policy species	gical corri dear frank °°	dors data available strategies
M Mathias Brummer (XCN)	0 4 7 b	kinc	good examples pro	cesses need
between Natura 2000 and privately protected areas fo	preseen? Thank you	Influential users		
N Nestor Fernandez (iDiv)	0 🕂 7 🖆			
The 10% strictly protected goal is a key novel target in will be likely the components of the definition of "stric	the 2030 strategy. What tly" protected?	I Inga Racinska, La	tvian Fund for Nature, GrassLIFE	4 1 🗰 9
Anonymous	0 🐠 7 🖬	N Nestor Fernandez	z (iDiv)	a 1 b 7
Will there be an EC guidance on the designation and ecological corridors?	management of	M Mathias Brumme	r (XCN)	41 67
		Anonymous users	5	10 4 8

Event summary report LIFE4NATURE

Active users	Questions 18		Poll votes 121	
Engagement score 218	Likes / dislikes	79 / 0	Polls created	1
Engagement per user 1.7	Anonymous rate	83%	Votes per poll	121
Popular questions		Topics		
I Inga Racinska, Latvian Fund for Nature, GrassLI Are there good examples for ecological corridors betw functioning well and without the formal protection sta	FE 0 4 9 6 ween Natura 2000 sites, atus assigned to them?	compensate CO areas kind	natura 2000 pro nnectivity strate	science involvement
Anonymous Given that only 7% of N2000 sites have a managemen ambitious to legally protect the 30% of EU land withou funding?	0 🗭 9 🖆 at plan, isn't it too ut securing proper	species joaquim	gical corri u land _{igic-} dear f	dors rank _{landowner}
Mathias Brummer (XCN) Dear Frank and Joaquim, are there any strategies of c between Natura 2000 and privately protected areas for	0 🗣 7 🍎 oordination/governance oreseen? Thank you			nabitats
Nestor Fernandez (iDiv)	0 4 7 🖆	Influential users		
The 10% strictly protected goal is a key novel target in will be likely the components of the definition of "stric	n the 2030 strategy. What ctly" protected?	I Inga Racinska, La	atvian Fund for Nature, GrassLIFE	L 1 69
Anonymous	0 🕂 7 🖆	Nestor Fernande	z (iDiv)	4 1 🗰 7
Will there be an EC guidance on the designation and ecological corridors?	management of	M Mathias Brumme	er (XCN)	4 1 6 7
		Anonymous user	S	15 6

Event summary report LIFE4NATURE

Active users	Questions 29		Poll votes 128	
Engagement score 302	Likes / dislikes	145 / 0	Polls created	1
Engagement per user 2.3	Anonymous rate	83%	Votes per poll	128
Popular questions		Topics		
Anonymous of the different types of governance models presen evidence that one model works better for ecological	0 9 12 1 Ited by Boris is there any I corridors than others	science involve natura 2000 ^{losses} eu lanc	conservation actio	n dear frank
Anonymous From Pieter de Corte: LIFE GESTIRE2020 Question: - to implement the API plan, is their enough interest	0 • 11 • if there are no obligations to do this voluntary?	ecolog connect	gical corrie	dors compensate
Anonymous To Boris: in your experience what are the main 3 ke	0 👎 10 🗰	boris	⁵ good examples	
Inga Racinska, Latvian Fund for Nature, Grass	sLIFE 0 🗣 9 💼	Influential users		
Are there good examples for ecological corridors be functioning well and without the formal protection	etween Natura 2000 sites, status assigned to them?	I Inga Racinska, La	tvian Fund for Nature, GrassLIFE	u 1 🖬 9
Anonymous	0 👎 9 🗰	N Nestor Fernande	z (iDiv)	41 67
Given that only 7% of N2000 sites have a managem ambitious to legally protect the 30% of EU land with funding?	ent plan, isn't it too nout securing proper	M Mathias Brumme	r (XCN)	la 1 👘 7
		L Lynne Barratt		L 1 🝎 6
		B Bernhard LIFE Pa	tches&Corridors	4 1 6 3

Event summary report LIFE4NATURE

Active users 211		Questions 91		Poll votes 161		
Engagement score	729	Likes / dislikes	477 / 0	Polls created	1	
Engagement per user	3.5	Anonymous rate	55%	Votes per poll	161	
Popular questions			Topics			
F Federico Minozzi		0 👎 19 🖬	nature restoration project ^{economic} ngos national plans			
@LIFE How to ease access to LIFEfund to N2000)? Lot of nature is managed by smaresources	small entities Il bodies with	(municipalities, PAs, h limited capacities,	mr oginski	case ecological cor	ridors	
Anonymous Jamie: Corridors need a long-term vision view, which type of voluntary mechanism financing/funding?	and a continu s work best fo	0 🗣 17 🖆 ued funding. In your or longterm	eu land api plan jamie	per fundi fs life proj ^{are}	long run eas member states	
R René Meeuwis		0 🕂 15 🖬	governance	new cap payments	possible	
To Przemyslaw: How will measures in the biodiversity goals? There are quite few a biodiv strategy at the moment	CAP be evalu tive crosslink	lated on their is between CAP and	Influential users			
Marta Cálix - Rewilding Portugal		0 👎 14 🖬	F Federico Minozz	i	4 4 6 36	
For LIFE Programme: Are payments for encounter of any EU policies (the Strategy)?	cossystem ser e new CAP, the	vices at EU-level being e new Biodiversity	M Marta Cálix - Re	wilding Portugal	2 1 22	
J Jan Sliva		0 🗲 14 🖆	I Inga Racinska, L	atvian Fund for Nature, GrassLIFE	4 2 1 20	
To DG Agri and DG ENV: How efficiently t payments as result of the implementatio foster habitat/species connectivity?	ne CAP Art. 32 n of the HD, B	2, 2.b = DIRECT BD and WFD is used to	R René Meeuwis		4 3 🖬 19	
			Maria-losé Aram	buru	a 3 b 16	

Event summary report LIFE4NATURE

Active users 186	Questions 59		Poll votes 161	
Engagement score 504	Likes / dislikes	284 / 0	Polls created	1
Engagement per user 2.7	Anonymous rate	63%	Votes per poll	161
Popular questions		Topics		
René Meeuwis To Przemyslaw: How will measures in the CAP be eva biodiversity goals? There are quite few active crosslin biodiv strategy at the moment	0 🗣 15 🖆 luated on their hks between CAP and	aggregati new ca mr c quality	on costs nature restoration p oginski case areas	afs joaquim
Marta Cálix - Rewilding Portugal For LIFE Programme: Are payments for ecossystem se considered as part of any EU policies (the new CAP, to Strategy)?	0 🗣 14 🖆 ervices at EU-level being he new Biodiversity	jamie project boris project voluntary analysis ec	per fundir ife proj ^{eu l} stra	ng measure question and species different types
Anonymous Jamie: Corridors need a long-term vision and a continview, which type of voluntary mechanisms work best financing/funding?	0 👎 14 🖆 nued funding. In your for longterm	Influential users		anding
1 Anonymous	0 👎 12 🖬	M Marta Cálix - Rew	ilding Portugal	4 2 1 19
of the different types of governance models presente evidence that one model works better for ecological o	ed by Boris is there any corridors than others	R René Meeuwis		2 18
Anonymous	0 👎 11 🖬	I Inga Racinska, La	tvian Fund for Nature, GrassLIFE	4 2 1 16
From Pieter de Corte: LIFE GESTIRE2020 Question: - if to implement the API plan, is their enough interest to	there are no obligations o do this voluntary?	Maria-José Aramb	buru	4 3 1 2
		Joaquim Teodosio)	4 1 🗰 10

Event summary report LIFE4NATURE

Active users		Questions 104		Poll votes 161		
Engagement score	854	Likes / dislikes	589 / 0	Polls created	1	
Engagement per user	3.8	Anonymous rate	56%	Votes per poll	161	
Popular questions			Topics			
F Federico Minozzi @LIFE How to ease access to LIFEfu N2000)? Lot of nature is managed resources	ind to small entities by small bodies with	0 👎 19 🖬	m nature restor Connectiv funds finance connectivity	anagement member states formal provision quality snaps paym vity ecological cor	nents ridors	
Anonymous Anonymous Jamie: Corridors need a long-term vision and a continued funding. In your view, which type of voluntary mechanisms work best for longterm financing/funding? Anonymous Jamie Jamie Jamie				possible proper funding weasure jamie mr oginski life proj pafs case		
I Inga Racinska, Latvian Fund Vanessa: What role does FGN take Advisor, or a more active role, find	for Nature, GrassLII in the market initiat ing the markets and	FE 0 9 16 b tives, e.g. the lentil case? d managing the sales?	Influential users	SITY dreas new ca	di	
R René Meeuwis		0 👎 15 🖆	F Federico Minozz	i	4 1 38	
To Przemyslaw: How will measures biodiversity goals? There are quite biodiv strategy at the moment	in the CAP be evalu few active crosslink	uated on their ks between CAP and	I Inga Racinska, L	atvian Fund for Nature, GrassLIFE	4 3 🖬 36	
Marta Cálix - Rewilding Port	ıgal	0 👎 14 🖬	Marta Cálix - Rev	vilding Portugal	4 2 1 22	
For LIFE Programme: Are payment considered as part of any EU polic Strategy)?	s for ecossystem ser es (the new CAP, th	rvices at EU-level being e new Biodiversity	R René Meeuwis		4 3 🖬 19	
			M María- José Aran	nburu	4 5 🗰 17	

ANNEX 11:

SUMMARY FOR POLICY MAKERS



Virtual LIFE Platform meeting 2-4 March 2021

'Lessons from LIFE on ecological connectivity towards a coherent, functional and resilient network of protected areas'

SUMMARY FOR POLICY MAKERS



The Platform Meeting was coordinated by the NEEMO external monitoring team on behalf of the European Commission Directora te General Environment and the European Climate, Infrastructure and Environment Executive Agency

Preamble

This document presents a summary of the consolidated findings and conclusions that arose from the presentations and discussions at the LIFE Platform meeting on connectivity conservation, held online in March 2021 with over 200 participants. The participants included LIFE project managers, site managers, Horizon 2020 projects, officers from governmental, local or regional authorities, non-governmental organizations, academic and technical institutions, international organizations, CINEA, the EC, and other European institutions such as the European Investment Bank and the Joint Research Centre.

Three main areas of discussion included:

- Identification and prioritisation of ecological corridors
- Effective governance for the long-term management and protection of ecological corridors
- Ensuring funding for connectivity conservation

Each theme was examined in a series of Working Group sessions and panel discussions. The key messages and some additional policy considerations are presented below.

Overarching Messages

The most important cross-cutting messages across all the different themes and subthemes were identified as follows:

- Stakeholder engagement is the key to unlocking connectivity conservation
- Developing a long-term vision/strategy on ecological corridors is necessary
- There is a need for clarifying and strengthening the EU policy framework on connectivity
- Connectivity issues should be integrated into land planning
- Continuity of funding is crucial to long-term sustainability of connectivity management
- There is a strong need for developing evidence-based monitoring schemes to assess connectivity measures
- Data collecting and sharing needs to be widespread and open

A more detailed synopsis of the findings across the themes is shared below.

Stakeholder engagement

- Stakeholder engagement is crucial to effective governance, in both public and shared governance models. There is a need to assess all trade-offs, adapt the argument to local circumstances (biodiversity argument is often not sufficient), and find "mutual gain" solutions. It is important to devote sufficient time and resources to stakeholder engagement.
- Enable shared governance models in settings where there are many stakeholders and across international boundaries. Current main challenges faced by the practitioners regarding connectivity issues are related to the governance of connectivity conservation sites, and more specifically the successful and effective

engagement of stakeholders. However, there is no fit-for-all governance model in corridors as they often involve a complex matrix of lands with their own powers, responsibilities and governance processes. Solutions must be tailored and adapted to the local context. Multiple levels of governance often exist in corridors, sometimes governance processes are "nested" in other larger ones.

- There is a need for improving technical capacity of municipalities and authorities regarding connectivity for a better uptake of connectivity plans and strategies by authorities.
- Promote innovation and creativity in public participation and stakeholder engagement mechanisms and tools.
- Stakeholder engagement is crucial to effective governance, in both public and shared governance models. There is a need to assess all trade-offs, adapt the argument to local circumstances (biodiversity argument is often not sufficient), and find "mutual gain" solutions.
- Raise more awareness on the importance of ecological connectivity to the public and relevant stakeholders (mainly private land owners to get them on board).

Developing a long-term vision/strategy in corridors

- Develop a long-term strategy and key objectives for ecological corridors.
- Ensure continuity of governance, management and funding in the medium and long-term.
- The lack of continuity of conservation initiatives and projects is a real challenge; it can have a strong impact on the effectiveness of conservation measures and on the engagement of stakeholders over the long-term.

Clarifying and strengthening the EU policy framework on connectivity

- The meeting called for giving a more ambitious place to connectivity in the EU conservation and restoration agenda. Connectivity conservation deserves more attention at all levels (local, regional, EU, etc).
- There is a need to develop common tools and a harmonised conceptual framework for connectivity at EU level.
- The guidance on the selection of additional areas of conservation value under the EU Biodiversity Strategy should include precise and framed reference to the need for establishing, restoring and maintaining ecological corridors between protected areas.
- Establish a framework/legal basis for transboundary cooperation on ecological corridors/protected and conservation areas at EU level.
- Legislators, public authorities and practitioners should be reminded that Article 6.3 of the EU Habitats Directive is a strong tool to prevent damage of surrounding areas of Natura 2000 sites and to maintain ecological corridors.
- Foster the co-creation of policy and management plans to promote inclusivity at an early stage.
- Establish incentives for private land owners and stakeholders to involve them in connectivity conservation actions.
- Target small farms in the CAP.
- There is a need to fine tune EAFRD measures to have practical use for biodiversity conservation.

Integration into land planning

- Foster active integration of connectivity measures into the spatial planning frameworks (top-down). Involve people who are emotionally, financially, legally invested in the corridor to be involved in the co-management from the beginning (bottom-up).
- Ideally, connectivity should be included in national and regional land planning from the start but this is done in very few places.
- Ecological connectivity should be addressed in the CAP strategic plans.
- Need for recognising connectivity as an essential aspect of nature conservation and land planning.
- Ideally, connectivity to be embedded in policy, national laws and sectoral policies.

Continuity of funding

- Encourage use of RDPs and the upcoming CAP eco-schemes (especially for small scale farmers).
- Evolve the financial support system to include market solutions.

Monitoring and assessing connectivity

- There is a need to implement rigorous monitoring schemes to assess the impact of practical measures on connectivity values and objectives.
- There is a strong need of developing evidence-based assessment of connectivity assets: defining, measuring and assessing connectivity indicators.

Open data collection and sharing

- Promote the use of the EU biogeographical process (or equivalents) as a platform for sharing best practice.
- Promote open access for spatial data at EU level, as this is currently one of the main challenges. Need to synthesize and homogenize connectivity mapping also at EU level and link it with mapping at other scales (local, national, regional).
- Promote sharing of good practices and successful examples of connectivity conservation and management across the EU. Practitioners demand references and practical knowledge.
- Encourage the compilation of a list of available tools/guidelines relevant for connectivity conservation at EU level.



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