LIFE Project Number

LIFE16 NAT/SI/000634

Final Report

Covering the project activities from 01/07/2017[1] to 31/03/2024

Reporting Date[2]

30/06/2024

Updated on 16/12/2024

LIFE PROJECT NAME or Acronym

LIFE Lynx

"Preventing the extinction of the Dinaric-SE Alpine lynx population through reinforcement and long-term conservation"

Data Project

Project location:	Parts of Slovenia, Italy, Slovakia, Romania, all regions of Croatia
Project start date:	01/07/2017
Project end date:	31/03/2024
Total budget:	€ 6,829,377
EU contribution:	€ 4,081,404
(%) of eligible costs:	59,76

Data Beneficiary

Name Beneficiary:	Zavod za gozdove Slovenije/Slovenia Forest Service
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Project Website:	https://www.lifelynx.eu/

[1] Project start date

[2] Include the reporting date as foreseen in part C2 of Annex II of the Grant Agreement

This table comprises an essential part of the report and should be filled in before submission

Please note that the evaluation of your report may only commence if the package complies with all the elements in this receivability check. The evaluation will be stopped if any obligatory elements are missing.

Package completeness and correctness check	
Obligatory elements	**✓ or N/A**
Technical report	
The correct latest template for the type of project (e.g. traditional) has been followed and all sections have been filled in, in English *In electronic version only*	✓
Index of deliverables with short description annexed, in English *In electronic version only*	✓
Mid-term report: Deliverables due in the reporting period (from project start) annexed Final report: Deliverables not already submitted with the MTR annexed including the Layman's report and after-LIFE plan Deliverables in language(s) other than English include a summary in English *In electronic version only*	✓
Financial report	
The reporting period in the financial report (consolidated financial statement **and** financial statement of each Individual Beneficiary) is the same as in the technical report with the exception of any terminated beneficiary for which the end period should be the date of the termination.	✓
Consolidated Financial Statement with all 5 forms duly filled in and signed and dated *Electronically Q-signed or if paper submission signed and dated originals* and in electronic version (pdfs of signed sheets + full Excel file)*	✓
Financial Statement(s) of the Coordinating Beneficiary, of each Associated Beneficiary and of each affiliate (if involved), with all forms duly filled in (signed and dated). The Financial Statement(s) of Beneficiaries with affiliate(s) include the total cost of each affiliate in 1 line per cost category. *In electronic version (pdfs of signed sheets + full Excel files) + in the case of the Final report the overall summary forms of each beneficiary electronically Q-signed or if paper submission, signed and dated originals**	✓
Amounts, names and other data (e.g. bank account) are correct and consistent with the Grant Agreement / across the different forms (e.g. figures from the individual statements are the same as those reported in the consolidated statement)	✓
Mid-term report (for all projects except IPs): the threshold for the second pre-financing payment has been reached	
Beneficiary's certificate for Durable Goods included (if required, i.e. beneficiaries claiming 100% cost for durable goods) *Electronically Q-signed or if paper submission signed and dated originals* and in electronic version (pdfs of signed sheets)*	✓
Certificate on financial statements (if required, i.e. for beneficiaries with EU contribution ≥750,000 € in the budget) *Electronically Q-signed or if paper submission signed original and in electronic version (pdf)*	✓
Other checks	
Additional information / clarifications and supporting documents requested in previous letters from the Agency (unless already submitted or not yet due) *In electronic version only*	✓
This table, page 2 of the Mid-term / Final report, is completed - each tick box is filled in *In electronic version only*	✓

**signature by a legal or statutory representative of the beneficiary / affiliate concerned*

Instructions:

Please refer to the General Conditions annexed to your grant agreement for the contractual requirements concerning a Mid-term/Final Report.

Both Mid-term and Final Technical Reports shall report on progress from the project start-date. The Final Report must be submitted to the Agency no later than 3 months after the project end date.

Please follow the reporting instructions concerning your technical report, deliverables and financial report that are described in the document Guidance on how to report on your LIFE 2014-2020 project, available on the LIFE website. Please check if you have the latest version of the guidance as it is regularly updated. Additional guidance concerning deliverables, including the layman's report and after-LIFE plan, are given at the end of this reporting template.

Regarding the length of your report, try to adhere to the suggested number of pages while providing all the required information as described in the guidance per section within this template.

1. Table of contents

Table of figures

Tables

2. List of key-words and abbreviations

AB – Associated beneficiary
ACDB – Association for the Biological Diversity Conservation
BIOM – Association BIOM
CB – Coordinating beneficiary
CFS – Certificate on the Financial Statement
CINEA – European Climate, Infrastructure and Environment Executive Agency
CUFAA – Arma dei Carabinieri – Comando unità forestali, ambientali e agroalimentari
EASME – Executive Agency for Small and Medium-sized Enterprises
EC – European Commission
EIA – Environmental Impact Assessment
EU – European Union
FACE – European Federation for Hunting and Conservation
FVM – Faculty of Veterinary Medicine, University of Zagreb
HAS – Hunters Association of Slovenia
LC – Large Carnivores
LCG – Local Consultative Groups
MOP – Ministry of the Environment and Spatial Planning of the Republic of Slovenia (changed the name in 2023 to MNVP – Ministry of Natural Resources and Spatial Planning of the Republic of Slovenia)
MR1 – Midterm Report no. 1
MR2 – Midterm Report no. 2
PA – Partnership Agreement
PLI – Progetto Lince Italia
PR1 – Progress Report no. 1
PR2 – Progress Report no. 2
SFS – Slovenia Forest Service
TUZ – Technical University in Zvolen
UL – University of Ljubljana
UL BF – University of Ljubljana, Biotechnical Faculty
VUKA – Karlovac University of Applied Sciences
ZRSVN – Institute of the Republic of Slovenia for Nature Conservation

3. Executive Summary

On behalf of the LIFE Lynx project team, we are pleased to report that we have prevented the extinction of the Eurasian lynx in the Dinaric Mountains and South-eastern Alps. Our joint effort brought 11 project partners from across 5 countries together to find common purpose in this one-in-a-lifetime opportunity to make history. Thanks to the dedication of our team and the amazing partnerships that we fostered, lynx will not be a forest ghost relegated to memory, but these big cats will stay as an integral part of the ecosystems across the Dinaric and SE Alpine Mountains.

The project objectives, although ambitious, were all achieved. The project leader, Mr. Rok Černe, managed the project competently over multiple years with the help of the project monitor, Mr. Mitja Kaligarič. We are proud to report the project's achievements and present the deliverables and other outputs that, hopefully, will make a significant impact on nature conservation. Deliverables and other outputs of the project are accessible on the project website.

Within the preparatory actions (A1–A8), all tasks were accomplished by the project team.
We gathered crucial data about the population's viability through monitoring (camera trapping, snow-tracking, and collecting non-invasive genetic samples) in Slovakia and Romania (A1, A2). These data served as a basis for determining micro-locations for live captures and the numbers of animals that could be safely removed from each area without compromising these important source populations in Slovakia and Romania.
The use of questionnaires verified the presence of a lynx in hunting clubs from Slovenia, Croatia and Italy and based on the results, camera traps and hair traps were set in the field in A3. We prepared camera-trapping guidelines, instructions for collecting non-invasive genetic samples, instructions for proper installation of hair traps, and distributed sampling material. Based on the data collected, we prepared the Map of sex-specific distribution of lynx territories, the Report on the Eurasian lynx (*Lynx lynx*) monitored with camera traps in Slovenia in 2018–2019 and the Report on baseline demographic status from the SE Alpine and Dinaric lynx population (baseline value was identified between 72–82). As a result of the genetic analysis of the collected samples, the Baseline (pre-reinforcement) genetic status report of the SE Alpine and Dinaric Lynx population was made. We also successfully upgraded laboratory methods (A3).
Based on the literature regarding specific case studies of past relocations, we developed the Guidelines for reinforcement within A4. To determine the optimal time and to identify suitable habitats, we wrote the Population Level Reinforcement plan and three Regional Reinforcement Plans were developed, for the Croatian and Slovenian Dinaric areas and for the Alpine area after the determination of the exact micro-location for lynx releases.
In A5, we focused on strategic documents - Common guidelines for Dinaric-SE Alpine population-level lynx management represent the foundation for the national strategic documents. Based on these, the preparatory expert group prepared the action plan for lynx in Slovenia, but it has not yet been adopted by the government despite the group's constant support. (After the project's end, on 21st November 2024, the Government of the Republic of Slovenia adopted the Strategy for the Conservation and Sustainable Management of the Eurasian Lynx (*Lynx lynx*) in Slovenia and the Action Plan for the Conservation and Sustainable Management of the Eurasian Lynx (*Lynx lynx*) in Slovenia for the period 2024–2033.) In Croatia, the management plan was adopted, with great input from the Croatian project partners, who additionally prepared the Guidelines for the management of lynx orphans, which was used for the project's duration. In Italy, the Interregional Management Plan was prepared as promised in the proposal; the adoption is at will of the Conferenza Stato-Regioni.
The report on the habitat suitability and spatial connectivity for lynx and Report on dispersal probability and potential connectivity between Swiss Alpine, Dinaric/SE Alpine and other neighbouring lynx populations are the basis for two scientific articles (A6) that were submitted are currently under review in peer-reviewed journals.
Through surveys we found that most respondents in all three countries involved in lynx recovery had favourable opinions about the effort, including translocations from other countries (A7).

The project group used the project communication plan regularly to provide consistent internal and external communication, and the plan itself was regularly updated (A8).

The backbone of the project, the C actions (C1–C11), provided the structure that enabled efficient management and implementation of project objectives. These actions were thoroughly planned and carefully implemented, and we delivered and exceeded our expected outcomes.
All necessary official permissions for live capture and translocation were obtained for project activities in Slovakia and Romania, and box traps were activated for 4 trapping seasons in Slovakia and 5 in Romania (C1, C2). In Slovakia, the experienced team captured 10 lynx and translocated 8 of them. Two males were collared and released for further monitoring.
In Romania (C2), the team started with little knowledge of lynx and worked hard to build their competencies. Our project partners helped teach the Romanians how to capture lynx, set a network of camera traps, and prepare box traps. They showed great success, with 12 lynx trapped in 5 seasons, 2 released with collars, and over the course of the project, 10 lynx were translocated to Slovenia and Croatia. Both teams were enthusiastic and well organised, facing challenges but never giving up.
Soft-release enclosures were built in the Dinaric part of Slovenia, and official permissions for lynx release in Slovenia and Croatia were obtained. Twelve animals were released in the Dinaric part of the project area with the help of a local hunting club in Slovenia and four national parks, one nature park and one hunting ground (Rewilding Velebit) in Croatia. The first and final report evaluated the success of lynx releases and assessed the impact of the translocated lynx on the Dinaric lynx population (C3).
In the SE Alpine region, one local hunting club and Triglav National Park provided external assistance, built five enclosures, and helped with the communication activities with local stakeholders. The establishment of a 'stepping stone' population started in 2021 with the successful release of 5 animals (3 females and 2 males). In the first year, the pair on the Jelovica plateau reproduced; in 2022, three litters were confirmed, and two litters in 2023 (C4).
We monitored the reinforcement mainly with camera traps, that were maintained by over 200 hunters. During the winter, intensive snow-tracking was performed and non-invasive genetic samples were collected and analysed. Due to inconsistent snow conditions, we had to adapt – the Croatian team showed a high level of innovation and lured lynx in rocky areas of Velebit to mark their presence and leave their genetic sample on the man-made stone pyramids. The first estimates of population density for the Dinaric lynx population (0.83 lynx/100 km2 with 95% CI: 0.60-1.16) were reported in the second annual report of the action C5 (2021) and in the form of a scientific publication in 2023. By the end of the project we could confirm that lynx densities substantially increased to 1.24 lynx/100 km2 (95% CI: 0.98-1.56), highlighting the success of the translocation efforts. The cooperation with hunters was the backbone of the field work. Expanding this cooperation to the Slovenian Alps was an important step forward in building acceptance of lynx by hunters who have been willing to continue camera trap monitoring—further testament to the success of the project.
For the adjustment and upgrade of the MBase database (C6) as a continuation of the legacy from the LIFE DINALP BEAR project, we created the newly-planned modules for the database. The database is the main tool for data exchange among partners. The database ended up housing an impressive amount of information: more than 50,000 lynx records collected in five project countries prior to and during the project; almost 100 data entries in the Biometry module (records of dead and live-captured lynx); more than 300 records of damages to human property; 4 intervention events in cases of conflict between lynx and humans; more than 900 genetic samples; more than 10,000 records in the Systematic Camera-Trapping and Opportunistic Signs of Presence modules; and more than 40,000 locations of GPS-tracked, radio-collared lynx.
EIA guidelines will assist spatial planners in designing safe passages for lynx and other wildlife to cross transportation infrastructure with concrete proposals based on the latest best practices for establishing habitat corridors. At the meta-population level, guidelines for establishing connectivity could be one of the most important solutions. Through the LIFE Lynx project, we addressed the issue of landscape connectivity corridors in Slovenia and included study's results (corridors) in forest and game management plans adopted by the Government (C7).
Cooperation with the Slovenia Police (C8) resulted in 48 police officers receiving training and gaining new skills regarding the persecution of illegal wildlife killings. HAS prepared two versions of a protocol with detailed procedures in cases of suspected illegal killing; one was adapted to the needs and internal

procedures of the Slovenia Police, and the other is intended for field staff (hunters, foresters) who are usually the first to detect these cases. This version was distributed to all Slovenian hunters via the magazine "Lovec" in 21,000 copies.
Livestock protection equipment was purchased and distributed on the field as a prevention measure or kept by project partners, as intervention kits. In cooperation with the Chamber of Agriculture and Forestry of Slovenia, SFS organized a seminar on the topic of Livestock protection on pastures against large carnivores (C9).
We successfully improved the management of key prey species for the lynx in Slovenia. The Guidelines 'Consideration of large carnivores in the management of wild ungulates' were incorporated into the strategic document for the management of the wild game populations in Slovenia, namely 'The Guidelines for game management in Slovenia in the period 2021–2030' (C10).
In C11, five art workshops and one art colony for professional artists resulted in 8 art exhibitions and 28 digitalised artworks. In Italy, a lynx art contest and a painting workshop were organized, and the best works were printed as a calendar. The Lynx walk is suitable for the enthusiasts (almost 100 km of mountain routes) and is also adjusted for cyclists. Two lynx trails (one in Slovenia and one in Italy) allow visitors to explore the habitat and immerse in nature. The thematic Lynx trail in Slovenia, equipped with didactic material and supported by an activity booklet (in Slovenian and English), was recognised by the Slovenian Tourist Association as the best thematic trail in Slovenia in 2023.

The results of the D actions (D1–D6) present the synthesis of this work and show strong potential for being replicated in future projects.
Fieldwork in Slovakia and Romania provided the basis for the D1 report, which established that the captures and removals of lynx for reintroduction and reinforcement had no negative effect on the population's viability of the source population in the survey areas.
The reports from D2 confirmed that the main goal of preventing the extinction of the Dinaric-SE Alpine population was fully achieved, with the effective inbreeding coefficient decreasing from 0.32 to 0.19 (excluding translocations to the Alps) or even to 0.08 (including Alpine translocations). The data collected and analysed within this and C5 action were used to produce several additional scientific publications, providing valuable knowledge and experiences to other researchers and conservationists.
In D3, an individual-based genetic demographic computer model of the lynx population was developed and later updated using the empirical data gained during the project, including genetic and demographic data. With the Guidelines for Ensuring Long-term Viability and Vitality of Lynx in the Dinaric Mountains and South Eastern Alps, we developed the efficient strategies for future population management under various conditions.
We documented 2,586 media clips, of which 1,761 mentioned the LIFE Lynx project, overall, in a positive way. Both public surveys were completed, with most respondents in Slovenia, Croatia, and Italy supporting lynx conservation, including translocations from other countries (D4).
Annual assessments and reports for 2018, 2019, 2020, 2021, and 2022 were prepared in D5/D6, along with final assessments and reports in 2024. Additionally, three infographic posters summarized the project's progress: from 1/7/2017-31/8/2018, from 1/7/2017-31/12/2021, and the entire project duration.

The communication actions (E1–E7) were the foundation of the project.
In Slovenia, we exceeded the number of local consultative groups (LCGs) we proposed to develop and ended up establishing six instead of four. As planned, two LCGs were established in Croatia. The successful establishment of LCGs and subsequent collaborations resulted in numerous new project outputs: schools received skull replicas and new information boards, four field days were organized for pupils, a soundboard of forest animals was given to a local hunting club, and a collection of games was prepared and distributed. Two manuals helped the project team and LCG members communicate effectively about the lynx. Annual dinners expressed our gratitude for their dedicated work (E1).
Prior to developing this project, we knew that hunters were key stakeholders. To address this important group for the LIFE Lynx project, an entire communication action (E2) was designed to cultivate and develop their partnership. Our efforts proved successful with hunter participating in greater numbers than expected in many aspects of the effort, from planned presentations, seminars, and articles. In April 2022, a Hunter's Day highlighted lynx conservation, featuring a national TV article and a Goldhorn

bulletin issue. A press conference on preventing illegal wildlife killing emphasized that such practices are unacceptable in Slovenia. With strong support from FACE, a two-day international lynx conservation conference titled 'Hunters and lynx conservation in Europe' took place in March 2023, with speakers from six European countries. The book of abstracts was produced in January 2024.
In E3, the first film, "Path of the Lynx", showcased the conservation efforts of hunters in the 1973 lynx reintroduction to Dinaric Mountains and was well received. The second film, "Together for Lynx", won Best Slovenian Film at the Bovec Outdoor Film Festival. Both films were screened on Slovenia national TV. We additionally produced a short cartoon based on "The Mighty Lynx" book - the cartoon was a hit with children, presenting fun facts about lynx biology and ecology (E3).
Educational school kits will help teachers present lynx information in the future. Young Lynx Guardians actively expressed their concern for lynx preservation, receiving bookmarks and T-shirts as tokens of appreciation (E4).
Communication activities included 102 presentations, 21 events for journalists, 13 for NGOs, 13 press conferences, and 73 presentations at networking events, surpassing all expected metrics. Networking with 12 LIFE projects offered valuable learning opportunities. In 2022, we hosted foreign experts from seven countries to showcase Slovenia's best practices (E5).
General communication support included producing and distributing project handout, four bulletins, and a brochure about lynx. Over 20 notice boards will remain long after the project's end, and the Layman's report presented project highlights to the public. Our project website and social media were successful, with over 530,000 unique page views, 9,760 Facebook followers, 11,370 followers on 'LIFE Lynx – hrvatski terenski blog,' and 3,705 Instagram followers. We published 26 press releases and 44 popular articles in various media. We are proud of our additional outputs that will inspire the next generation of nature conservationists: two children's books about lynx, "The Mighty Lynx" and "Max, the Bravest Lynx," written by famous Slovenian writers and translated into English (E6).
Collaborating with Slovenian hockey player Anže Kopitar, we produced six short video clips about the LIFE Lynx project. Peter Prevc, a World Cup Ski Jumper, attended a press conference on preventing illegal killing and opened a lynx enclosure in the Alps. Ms. Desa Muck, a renowned children's book writer, is a lynx ambassador and a major fan of Max, the star of her children's book (E7).

The F actions ran smoothly, with efficient implementation of project activities (F1) and no administrative or financial issues. Regular steering group meetings (13 total, including three online) with all partners' representatives and seven meetings with the project monitor (one with the project officer from CINEA) were held to monitor and evaluate project outcomes and indicators (F2). The After-LIFE (F3) is a bridge to the future, with high hopes for long-term recovery of the lynx population in the Dinaric-SE Alpine area

The project's achievements are a testament to our dedication, expertise, innovative thinking, and unwavering commitment to excellence. By combining strategic planning, quality work, and effective communication, we have not only achieved but exceeded the goals set forth in the project. We take pride in our work and remain dedicated to pushing the boundaries of nature conservation.

Identified deviations, problems and corrective actions taken in the period
Most of the changes in the LIFE Lynx project were the result of the overachievements not planned in the project proposal. Below, we expose some difficulties that we encountered during the project's implementation.

We asked for and were given 9-months extension of action A3 due to the technically demanding and time-intensive upgrading of the laboratory method. All deliverables were achieved and the action finished successfully in the end of 2019.
Within the action A4, the third Reinforcement plan was developed in 2020, together with the confirmation of locations for lynx release in the Alpine region.
Regarding the management documents planned in A5, the Croatian partners revised the document published by the Ministry in December 2021 and submitted comments and updates. As an additional output, Guidelines for Management of Lynx Orphans were prepared and adopted by the Ministry in May 2023. In Slovenia, the expert group prepared the document based on the common guidelines and

tailored to the national conditions and needs, and submitted it to MNVP in December 2023. After that, the continuation of the adoption process was in the Ministry's scope of competence. In June 2024, the strategy and action plan were published on the ministry's website for mandatory public comment. (After the project's end, on 21st November 2024, the Government of the Republic of Slovenia adopted the Strategy for the Conservation and Sustainable Management of the Eurasian Lynx (*Lynx lynx*) in Slovenia and the Action Plan for the Conservation and Sustainable Management of the Eurasian Lynx (*Lynx lynx*) in Slovenia for the period 2024–2033.)
Both scientific articles in A6 were submitted but not yet published during the timespan of the project. They derive their content from the reports foreseen in this action, and with the slight delay of the reports, the preparation of the articles started later than foreseen.

Due to the opposition from a specific group of environmentalists, the procedures for obtaining the permits and implementing the lynx capture by TUZ in Slovakia were extended until December 2019 (C1). Nevertheless, the milestone (7 animals translocated) was reached and surpassed by the end of the project.
In Romania, poor roads and a lot of field work have resulted in the failure of the project vehicle, that was properly repaired (C2). Since in the first season of translocations (2018/2019) no project car was authorised for the transport of wildlife, ZOO Ljubljana and ZOO Zagreb transported the animals. Further transports (in 2020 and consequent years) were running smoothly.
Hunters from local hunting clubs were actively involved in the soft releases in Slovenia – they decided to preserve parts of the enclosures for educational purposes. The enclosures were removed from the forest and parts of them restructured as educational facilities with information boards (C3 and C4).
We encountered some technical problems with the equipment bought, namely with the telemetry collars (C5). Regarding the Iridium system and its use in Croatia, the satellite technology was sensitive to dense forest cover, therefore the communication with the collar was low and irregular. As for the GPS/GSM system, some of the telemetry collars failed earlier than planned.
Within the asked prolongation for the testing phases of the new software, we successfully implemented the activities foreseen in the action C6.
HAS educated additional police officers due to the large interest of the Slovenia Police in May 2022 (C8). The revised protocol on standard procedures in cases of detected illegal killing was printed in 21,000 pcs as an additional output of the project and distributed to all Slovenian hunters via the national hunting magazine "Lovec".
In addition to consider the impact of lynx predation on the management of wild ungulates in C10, the document 'Consideration of large carnivores in the management of wild ungulates' also considered the impact of wolf predation and thus increased acceptance of carnivores and optimises management solutions.

The actual number of scientific publications produced within the LIFE Lynx project is considerably higher as planned (mainly reported in C5, D2, and D3). In addition, we included data from other conservation projects conducted at the same time in the LIFE Lynx project area to increase the sample sizes and provide a more complete picture of the lynx conservation efforts in the region.
Regarding the D5 action, we amended the Baseline indicator: Distribution of lynx/km^2, from 6000 km^2 in total to 8500 km^2. Instead of the indicator "Level of economic satisfaction for damage prevention method adopted" we decided to use "Fear of financial damage due to lynx presence" - the change was made in 2019 Assessment and Report and in the following reports.

In time of the coronavirus 19, the project activities in E actions were mostly rescheduled to a later period, and some of them carried out online. With the normalisation of the situation, the delays with the preparation of publications were all rectified, and the normal mode of meetings was restored.
Costs meant for travel reimbursement for LCG members in Slovenia were used to finance the ideas from the members themselves – additional outputs were various and well-accepted (additional field days for schools, notice boards, replicas from lynx, wolf and bear skulls, sound board; E1).
Due to Covid-19 restrictions, HAS was unable to organize Hunter's Day in the foreseen time. Consequently, there was also a delay in delivering the Goldhorn Bulletin issue dedicated to lynx conservation as most of the articles in the bulletin were based on the lectures from Hunter's Day.

Nevertheless, the issue was prepared in printed and electronic versions and distributed among relevant stakeholders (E2).
We postponed the due date for PART II film about the LIFE Lynx project activities, because we wanted to present our activities through the whole project period (E3).
The project team extended the final project conference for an additional day and merged it with the annual Eurolynx meeting that brought together numerous lynx experts from across Europe. More than 150 participants from 20 countries attended the event, at which all major project results were presented (E5).

With the results of the project showing already during the first years, some of the partners managed to secure additional co-financing not foreseen in the proposal: FVM, BIOM, TUZ, HAS, PLI, CUFAA and ACDB.

4. Introduction

In Europe's spatially diverse regions and ecosystems, maintaining high levels of biodiversity for future generations is important. Large carnivores play an important role in structuring and regulating many ecosystems. The Eurasian lynx (*Lynx lynx*), one of the most charismatic large carnivores in the Dinaric-SE Alpine part of Europe, was on the verge of extinction.
One of the most important goals for the conservation and management of lynx is transboundary cooperation, reduction of the inbreeding and monitoring of successfulness of the integration of translocated lynx into the existing population and basing further lynx translocations based on the collected data. Collaboration among different EU member states that have lynx present, improving population connectivity for lynx, and developing science-based management tools for strategic planning are key actions to ensure long-term viability of the lynx population.
The need to reinforce the lynx population was foreseen and addressed in this project by introducing additional, healthy animals from the viable source population in the Carpathians. We aimed to create an effective population 'stepping stone' between the Dinaric and Alpine subpopulations that would help ensure the long-term connectivity of populations and the spread of lynx to other Alpine populations in Switzerland and Austria.

The project had five main objectives:

1. **To rescue the Dinaric-SE Alpine lynx population from extinction**

The main objective was to rescue and prevent the extinction of the Eurasian lynx in the project area and to safeguard the population well into the 21st century. The main goals of socially acceptable and science-based reinforcement from the viable source of the Carpathian population were to reduce inbreeding to an acceptable level and to reverse the population decline.

2. **To conserve and manage the lynx population through international collaboration**

The vision to conserve and manage the lynx population at the transboundary-population level started with the development of an international collaboration across all EU countries sharing this population. The important goal was to develop and implement a standardized and systematic approach to ensure long-term viability of the reinforced lynx population.

3. **To develop a stakeholder-supported reinforcement process to sustain lynx recovery**

Partnerships with core stakeholders, established and developed in order to provide broad public acceptance for lynx conservation, were at the core of the project and the prerequisite for other objectives. Ensuring social, political and management landscape is necessary for long-term lynx recovery.

4. **To develop science-based management tools for strategic planning to ensure long-term viability of lynx**

To ensure the long-term viability of the lynx, we developed different scientific tools. By establishing an internet-based monitoring geo-data base and with genetic/demographic computer models long-term predictions of population development will be provided. Based on scientific data and different tests of management scenarios, the best scientific information would be incorporated into management plans. This science based tool-set will readily be able to transfer and replicate for other reinforcement efforts in the region and beyond.

5. **To improve population connectivity for lynx**

Population connectivity would improve by creating the 'stepping stone' in the SE Alps. This would increase chances of gene flow of the lynx and generate a new population nucleus further west of the

current Dinaric population. Such a meta-population of the lynx would help to reduce negative impacts of habitat fragmentation.

SITES: The project area involved five countries: Slovakia, Romania, Slovenia, Croatia and Italy. In Slovakia and Romania, it covered part of the Carpathian Mountains. The Carpathians contain extensive semi-natural habitats. In the other three countries, the project area included the Alpine part of Slovenia, part of the Alpine region in Italy, and the Dinaric region of Slovenia and Croatia. The Dinaric project area is one of the European biodiversity hot-spots and covers almost the entire area of Slovenia and Croatia with lynx presence. The Slovenian part of the Dinaric range, Kočevska and Notranjska, together with neighbouring Gorski Kotar, Lika in Croatia, are part of the largest unfragmented forest complex in Central Europe. The Alps are one of the great mountain ranges of Europe, stretching approximately 1,200 kilometres across eight Alpine countries; two of them (Italy and Slovenia) were included in the project. The Alps are habitat for 30,000 species of wildlife, and represent a suitable habitat for lynx.

Target species: Eurasian lynx (*Lynx lynx* Linnaeus, 1758, order Carnivora, family Felidae)

Main conservation issues being targeted (threats):

- Inbreeding depression
- Lack of conservation and management response to lynx population decline, mostly:
    - Lack of national and transnational management response
    - Underdeveloped partnerships with stakeholders to support lynx recovery
    - No systematic transboundary surveillance of lynx population trend, distribution and health status
    - A poor understanding of the population viability drivers of the Dinaric-SE Alpine lynx population
- Loss of Population Connectivity for Lynx

Socio-economic context:
Collaboration among project beneficiaries and stakeholders who come from different backgrounds that traditionally do not collaborate provides an extraordinary opportunity for the different actors to develop social networks and relationships that are expected to positively impact nature conservation. Building social capital among a diversity of stakeholders will serve lynx conservation and add tremendous capacity to grapple with many other environmental challenges well into the future. There will be direct economic benefits with better handling of livestock damages, which will have a positive increase in the quality of life for local residents. Throughout considerable media exposure of the project activities and raising people's awareness of the lynx as one of the most charismatic large carnivores, different opportunities for eco-and-nature-oriented tourism will be created. These close-to-market activities, based on the high natural value of landscapes and the presence of large carnivores, will generate income for local economies. In times when nature conservation is sometimes perceived as an obstacle to development, we will improve the public perception of wildlife and preserved nature as something to be cherished and conserved, not only to ethical reasons, but also for reasons of improvement of local economy and quality of life.

Expected longer term results (as anticipated at the start of the project)

Improved lynx conservation status:

- Reversed population decline of Dinaric-SE Alpine lynx population.
- 9 lynx integrated into the Dinaric population.
- Established a new lynx subpopulation in the Alpine area, releasing at least 5 animals.
- Lynx distribution range increased by at least 2,000 km2.
- At least 12 new territories (males and females present) established.
- The inbreeding coefficient decreased from over 0.30 to below 0.18, with a corresponding expected ~25% population fitness increase.

Improved transboundary stakeholder-supported management:

- Population guidelines, Action plan for SLO, Expert study for CRO and Interregional Mng. Plan for Italy by stakeholders. In SLO, action plan adopted by authorities by the project end.
- Guidelines established to maintain habitat permeability Dinaric-SE Alpine region.
- Transboundary geo-database baseline established for transboundary lynx management.
- Scientific monitoring and evaluation of the reinforcement established and maintained after project ends.
- Police investigation unit established to reduce illegal killing of wildlife.

Improved cooperation with key stakeholders:

- Close cooperation established with SLO, CRO and IT hunters in at least 100 hunting clubs; 30,000 hunters reached.
- Close cooperation established with at least 10 local communities; 6 functional local consultative groups established.

Increased lynx awareness:

- Knowledge about lynx (50 % increase), support for lynx conservation (15% increase), and overall project support (80 % increase).
- Events/outputs: project events (min. 4,000 participants), school events (min. 3,000 children, 30 teachers), 9 popular publications and posters (64,350 copies), 17 technical reports, 2 documentaries (2,650 copies), 3 video clips, promotional materials (14,520 pcs.), project web-page (avg. 50,000 views/year) and Facebook (min. 3,000 likes).
- Intensive media coverage: min. 89 popular articles, min. 21 press releases, 8 press conferences, 8 field trips for journalists.
- Cooperation with at least 10 related LIFE projects established.

Increased capacity for close-to-market-solutions:

- Min. 2 ecotourism packages developed and introduced to the market. Min. 70 tourists involved in the project actions. Min. 2 educational seminars for tourism sector.
- 2 thematic educational trails developed. Transboundary hiking trip developed to promote lynx conservation.

5. Administrative part

The project partnership consisted of 11 partners: 1 CB and 10 AB. By December 2017, all Pas were signed (Annex 1_PR1), prepared based on the Commission's Provisions and Guidelines. In February 2018, a co-financing agreement was signed with MOP for the Slovenian partners, and by May 2018, all co-financers' agreements for the Croatian partners have been signed (Annex 2_PR1). Due to the co-financing agreement with MOP, annexes to the PA were signed in August 2018 with Slovenian partners to define the distribution of co-financer's funds and the timeline (Annex 3_PR1). Some of the partners obtained additional co-financing for project activities after the start, and we notified CINEA in the MR2. The co-financers and the amounts of the co-financing are also visible from the Individual Cost Statements of the ABs.

Three Letters of Amendment changed the following articles of the Grant Agreement:
1. Easme.b.3 (2018) 3792227 dated 16/08/2018 regarding the ARTICLE II.19.2 (a) (i) – Eligible direct costs – Costs of personnel – Natural persons, ARTICLE II.19.2 (h) – Eligible direct costs – VAT, and ARTICLE II.23.2 (d) – Certificate on the financial statements,
2. Ref. Ares(2020)3605065 – 08/07/2020 regarding the bank account details in Article I.5,
3. Ref. Ares(2023)945735 – 09/02/2023 modifying Forms A1 and A5, changing CB's legal representative, the name of the AB CUFAA and the address of the AB BIOM.

During the first steering group meeting, organised in Slovenia on September 7, 2017, the CB presented the project's financial and administrative rules. The roles of the AB were outlined, and the task table for the project activities was established.
Partners met regularly, with 13 steering group meetings till the end of the project. We hosted the external monitor of the project Mr. Mitja Kaligarič seven times: in January 2018 (1st monitoring visit), in Ravna Gora, Croatia, in November 2018 for the second meeting, in April 2020 (an online meeting due to COVID-19) for the third visit, and in May 2021 (also an online meeting) for the fourth visit. We met in person in May 2022, in the Alpine part of Slovenia, for the fifth monitoring visit. In April 2023, we hosted the sixth monitoring visit along with the representative of CINEA, Ms. Anita Fassio, with a meeting in Tarvisio (Italy) and a field day on the Jelovica plateau (Slovenia) for the release of lynx Lukaš. The last, seventh monitoring visit in January 2024, focused on the final supervision of the project and instructions for the wrap-up and preparation of the final report. At every meeting, a full project presentation was prepared and carried out. The monitor also presented technical and financial rules of the project and checked the financial documents of all partners, gathered and prepared by CB. The monitor regularly sent all notifications from EASME/CINEA; CB prepared quarterly technical reports and sent them to the monitor to evaluate the progress of the project. After the installation of the LIFE Helpdesk, also this feature has been used.

The scheme for internal reporting to the CB was set in the PA: AB sent the financial tables electronically and all supporting documents (timesheets, salary slips, travel orders and travel reports, copies of invoices – sent in copies by ground mail) to the CB every three months. The CB carefully checked all documentation and sent comments/request for clarifications/updates to each AB if needed. ABs were also contacted regularly by CB to provide input for the periodic technical reports to the EASME; based on this, CB could detect any deviations from the planned progress.

The project manager, Mr. Rok Černe, and project administrators, Mrs. Nina Šivec Novak and Mrs. Bojana Lavrič, had full control of the work plan, implementation of the project activities, and finances of the project. Communication with AB was running smoothly via e-mails or phone.

The partnership was well-balanced, and despite the large number of partners spread across Europe, there was a common dedication to the project. This resulted in a high level of cooperation, dedication, and enthusiasm to carry out this important project. The staff chart below represents the wide partnership needed for the successful implementation of the project activities.

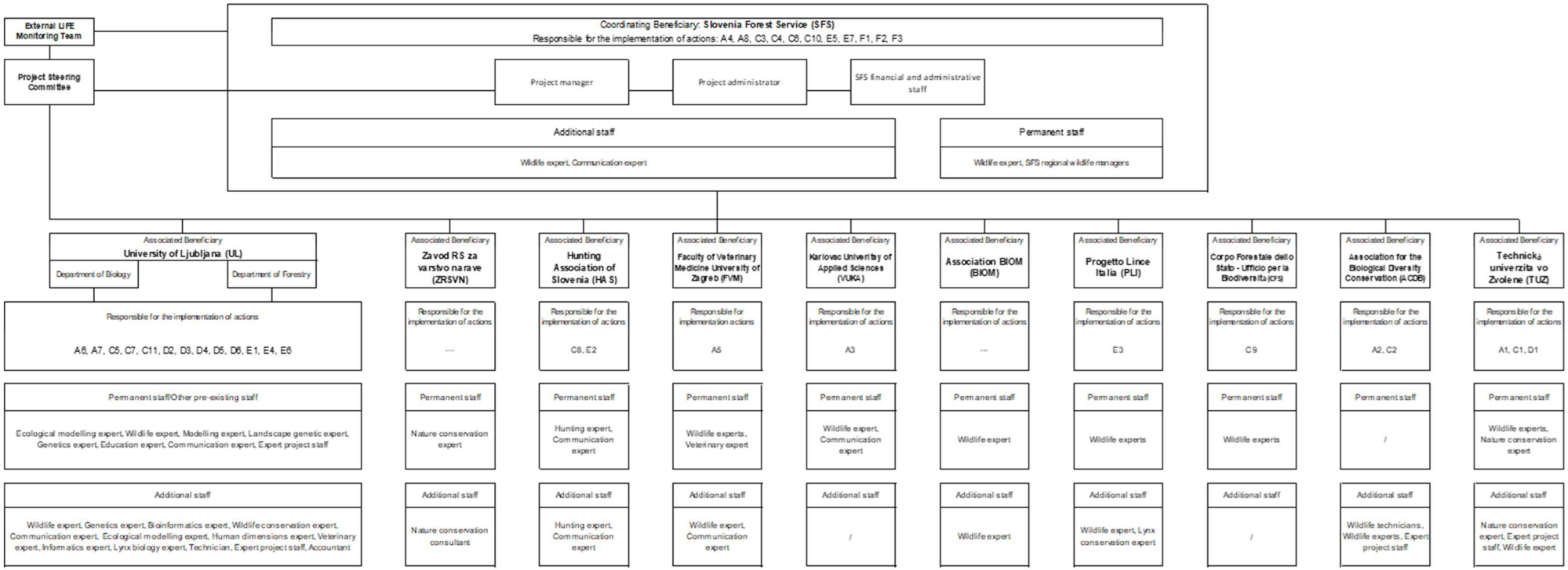

Figure 1: Staff chart LIFE Lynx

6. Technical part

6.1. Technical progress, per Action

ACTION A.1: Assessment and selection of sites and lynx for live-capture from the Carpathian source population in Slovakia

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	July 2017	September 2020	September 2020

The survey activities started by TUZ in 2017 were conducted in three project areas in the Slovak Carpathians: Vepor Mountains, Vtáčnik Mountains, and Volovec Mountains. Data on lynx distribution, abundance, movements, activity, and favourable capture areas/micro-locations were collected using opportunistic (year-round) camera trapping (20 camera traps), non-invasive genetic sampling, and snow tracking. During the opportunistic surveys, project field team members regularly visited the field locations to check camera traps, exchange the batteries and SD cards, download the data and maintain personal communication with rangers, hunters, foresters and the local public (monitoring network), to ensure their engagement and participation in the project.

A deterministic (systematic) survey using camera traps was implemented by TUZ in collaboration with the administrations of the State Nature Conservancy of the Slovak Republic (Muránska Planina National Park administration, Ponitrie Protected Landscape Area, Štiavnica Mountains PLA, and Cerová vrchovina PLA) and with local foresters, hunters and/or volunteers. Camera stations (composed of 2 camera traps positioned opposite each other) were placed within the study area in 28 locations with the highest probability of lynx detection. The results obtained through these systematic and robust surveys (1.20 ± 0.49 lynx per 100 km^2 of suitable habitat in the Vepor Mts., 1.18 ± 0.08 lynx per 100 km^2 of suitable habitat in the Vtáčnik Mts., and 1.80 ± 0.39 lynx per 100 km^2 of suitable habitat in the Volovec Mts.) realized within LIFE Lynx project, together with other former surveys, allow us to estimate the average lynx population density in the Slovak Carpathians at 1.15 (± 0.29) lynx per 100 km^2 of suitable habitat, with an overall population size of 323 adult individuals. Based on our results, we found evidence that the lynx population in the surveyed areas can be evaluated with a favourable status. The favourable lynx status enables us to conclude that the Slovak lynx population can be a source for the reintroduction/reinforcement efforts in the Dinaric Mountains and South-eastern Alps.

Furthermore, Technical Reports on lynx abundance and population density in survey areas were written and published in June 2019, September 2020 and December 2021 respectively (Annex 4_MR1, Annex 3_MR2, Annex 4_MR2).

Milestone	Foreseen due date	Status
Preliminary map of the favourable capture areas and micro locations	July 2018	Achieved
Final Map of the favourable capture areas and micro locations produced	May 2019	Achieved
Report on lynx abundance and population density written.	June 2019	Achieved

Deliverable	Foreseen due date	Annex

A1: Survey protocol for the Slovak lynx source population	September 2018	5_PR1
A1: Preliminary map of the favourable capture areas and micro locations	September 2018	6_PR1
A1: Final Map of the favourable capture areas and micro locations produced (**not public**, live document)	May 2019	3_MR1
A1: Report on lynx abundance and population density written.	June 2019	4_MR1, 3_MR2, 4_MR2
A1: At least 30 genetic samples of resident lynx collected.	June 2019	Collected and analysed, in the report A3 (Annex 12_MR1)

Variations/complications/delays: /

ACTION A.2: Assessment and selection of sites and lynx for live-capture from the Carpathian source population in Romania

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	September 2017	June 2021	June 2021

Within the first 12 months of the project, the associated beneficiaries from ACDB, PLI, SFS, and UL participated in two meetings organised in Romania. During those meetings, participants discussed the plans and specific protocols for field work and lynx capture. ACDB prepared the Monitoring protocol for the Romanian source population (Annex 7_PR1).

ACDB hired four wildlife experts within the project (two full-time positions, and two fixed-term positions). Additionally, five ACDB members and twelve volunteers have supported the team during fieldwork. Several partners visited Romania five times (once per project year, between 2017–2021) and supported ACDB in the preparation of the capture sites.

ACDB purchased the planned field equipment (50 camera traps, two handheld GPS devices, and one laptop) by March 2021.

As planned, ACDB implemented three monitoring techniques (camera trapping, snow-tracking, and non-invasive DNA analysis) to collect data on lynx distribution, abundance, movement, and activity. The monitoring activity was implemented between November and April to make better use of resources. Within these months, between 2017 and 2021, ACDB surveyed over 4,200 km of transects and activated 205 (non-simultaneous) camera trapping stations, totalling 17,537 trapping days. It was a high effort for obtaining the baseline status of the lynx population in Romania for the first time within the study areas, combined with knowledge transfer from other partners (especially UL, PLI, and SFS) with visits at the start of the trapping seasons. During snow-tracking, ACDB collected 79 non-invasive samples of DNA material that were sent to the UL for analysis (at least 30 samples initially planned).

By the end of Action A2 (June 2021), the team monitored (either intensively or opportunistically) five areas with surfaces ranging from 200 to 900 km2 (Lepșa, Bacău, Dărmănești, Tarcău, Vintileasca – Annex 5_MR2). Four study areas were deemed suitable and subsequently used for the live-capture of lynx (one area more than the three initially planned). We identified 69 potential trapping microsites. Based on the final assessment of accessibility, collaboration with the game managers, and disturbance levels, 17 of these locations were established to be favourable for trapping (reaching the goal of at least 15 micro-locations planned) and 19 box traps were set in the field (some stations with two box-traps).

The continuous monitoring (between 2017–2021) of the study areas provided sufficient data to confirm that removing 1–3 lynx/year from the population will not compromise the local population. At least one of the methods employed confirmed the presence of 1–2 females with kittens (after translocations occurred) in each of the study areas/year and several males. The data collected in this Action will support the estimation of the effects of lynx removal on the local population (Action D1).

With the capacity building of the team in Romania through knowledge transfer and considerable effort from the employees, the team became an important partner for future lynx translocation projects in Europe. ACDB will use the monitoring and capture protocols developed within this action in future projects involving the study of the lynx population in Romania and translocation projects for the reinforcement of lynx populations within the EU. Moreover, the methodologies were transferred to other Romanian authorities involved in wildlife management and conservation (such as RNP Romsilva) and they will help improve the data on the Romanian lynx population.

Milestone	Foreseen due date	Status
Final Map of the favourable capture areas and sites	May 2019	Achieved

Deliverable	Foreseen due date	Annex
A2: Monitoring protocol for the Romanian source population	September 2018	7_PR1
A2: Final Map of the favourable capture areas and sites produced (**not public**)	May 2019	5_MR1
A2: Report on lynx abundance and population density	June 2021	5_MR2

Variations/complications/delays: The main issues were related to the weather and the low level of snow cover, which made track identification less reliable and increased the effort required during fieldwork. Nonetheless, all necessary information was gathered. The number of cameras still functioning/available was dropping during the project's durations due to technical malfunctions, thefts or damage caused by bears. Although ACDB had difficulties ensuring enough camera traps for trapping (C2) and monitoring (A2), all necessary data for implementing action C2 were collected.

ACTION A.3: Pre-reinforcement survey of the potential release sites and the genetic and demographic status of residual lynx

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	September 2017	December 2018	December 2019

The data for the current genetic status, abundance, and sex-specific territorial distribution of lynx in potential release areas that were gathered in this action has allowed us to pinpoint optimal release sites as lynx exclude individuals of the same sex from their territory but allow overlap with individuals of the opposite sex. This information is essential for preparing the reinforcement plan (A4) and guiding the first phases of the reinforcement (C3), maximizing the chances for survival and facilitating reproduction of the released lynx. This action consisted of 4 activities that were necessary to reach the goal:

1) SFS has sent 224 questionnaires about signs of lynx presence which were reported back from hunting clubs and regional forest services in Slovenia (Annex 10_PR1). In Croatia, questioning was conducted by telephone and personal interviews. Thus, data about lynx presence was collected for 92 hunting clubs and protected areas (Annex 10_PR1) and first contacts with some hunting clubs and other owners of hunting rights were established. In Italy, the distribution of questionnaires was not conducted as hunters and foresters preferred personal contact. The results of the questionnaires are illustrated on the map (Annex 6_MR1).

2) Based on information from questionnaires and previous knowledge, camera traps and hair traps (active – springs and passive - hair pads) were set in the field. In cooperation with hunters, we have placed 237 camera traps in the field (Annex 7_MR1). We also installed 98 hair traps (Annex 8_MR1). To ensure the proper use of camera traps, SFS and VUKA, with the contributions of other partners, produced Lynx camera trapping guidelines in 2 languages – English and Croatian (Annex 12_PR1). BIOM held a workshop for 55 volunteers on 6th February 2018 to improve the quality of the fieldwork effort (Annex 13_PR1). Snow tracking sessions were conducted in Slovenia, Croatia and Italy. UL developed instructions for properly installing hair traps and collecting hair samples for genetic analysis, along with two different sampling kits specifically designed for collecting material from hair traps. One hundred ninety-six sampling kits for passive hair pad and 474 sampling kits for spring coils were produced and distributed in Slovenia, Croatia and Italy. To ensure proper sampling of genetic materials, UL prepared an instruction manual for collecting lynx non-invasive samples in 3 languages – English, Croatian and Italian (Annex 14_PR1) and provided sampling material for collecting scat, urine, hair and saliva samples. Sampling material was distributed in all countries involved in this project. As a result of camera trapping research in 2018/2019, a map of the sex-specific distribution of lynx territories was made (Annex 9_MR1). Slovenian researchers had written a report on Eurasian lynx (*Lynx lynx*) monitoring with camera traps in Slovenia in 2018–2019 (Annex 10_MR1). Combining questionnaire results, camera trapping data and the latest genetics results, the Report on the baseline demographic status of the SE Alpine and Dinaric lynx population (Annex 11_MR1) was made in which overall, 102 lynx were identified – 71 adults and 31 kittens.

3) UL has analysed 47 tissue samples, six buccal swab samples and 225 non-invasive lynx samples (hair, scat, urine, saliva) from Slovenia, Croatia, Bosnia and Herzegovina and Italy. Of those, 83 samples were successfully genotyped using established method, while others had to be discarded due to DNA deterioration and other reasons. From the inception of the project, 147 genetic samples were collected before July 1st, 2019, of which nine samples were invasive and 138 were non-invasive. Of those, 80 samples were successfully genotyped, while the remaining 67 had to be discarded because of poor quality. Microsatellite genotyping identified 32 individuals - 15 females and 17 males (multiple samples were collected from the same animal, a total of 54 male samples and 26 females). As a result of the complete analysis of samples from Romania, Slovakia and the Dinaric mountains, both historical

and recent, a baseline (pre-reinforcement) genetic status report of the SE Alpine and Dinaric Lynx population was made (Annex 12_MR1).

4) Laboratory methods have been upgraded by testing microsatellite genetic markers developed for domestic cats, and the use of MHC (main histocompatibility complex) markers were explored. Since the use of the best available science is especially important in a small and inbred populations, we decided to further upgrade the methods with a recently published set of SNP (single nucleotide polymorphism) markers that were developed for Eurasian lynx. These markers performed very well in the identification of individuals and population genetic structure (Förster et al., 2018). Implementing this cutting-edge method for our population considerably improved our ability to identify individual lynx to accurately build pedigree reconstructions, which is particularly difficult in inbred populations.

Outside LIFE
We have shared our knowledge of camera trapping methods with the French NGO Observatoire des Carnivores Sauvages, which works on lynx monitoring and conservation in the Vosges mountains area. They have translated LIFE Lynx camera trapping guidelines into French to facilitate their work and to help other French-speaking researchers, wildlife managers, hunters and other volunteers in their fieldwork with camera traps. Guidelines in French: Directives pour le piégeage photographique du lynx.

Milestone	Foreseen due date	Status
Preparation of map with sex-specific distribution of lynx territories	December 2018	Achieved

Deliverable	Foreseen due date	Annex
A3: Camera trapping guidelines	December 2017	12_PR1
A3: Instructions for collecting non-invasive genetic samples	December 2017	14_PR1
A3: Report on baseline demographic and genetic status of SE Alpine and Dinaric lynx population (electronic version)	December 2018	11_MR1, 12_MR1
A3: Map of sex-specific distribution of lynx territories (electronic version)	December 2018	9_MR1

Variations/complications/delays: We requested and were granted a 9-month extension of action A3, that enabled us to take effort in genetic sampling and camera trapping data collection analysis which has given us better insights into the lynx population for preparation of the baseline (pre-reinforcement) genetic status report of SE Alpine and Dinaric Lynx population. Together with the report on the baseline demographic status of SE Alpine and Dinaric lynx population, the two reports (Annexes 11_MR1 and 12_MR1) represent the required deliverable in this action. The action was finished in December 2019. BIOM, CUFAA, VUKA, FVM needed additional person-days, field equipment, material costs for field work and shipping DNA samples, since the amount of field work and costs were underestimated, and a computer to process all data gathered from camera traps (BIOM) that was bigger than predicted.

ACTION A.4: Elaboration of plans for reinforcement of the Dinaric – SE Alpine population and for creation of new "stepping stone" population

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	July 2017	March 2019	December 2020

1) Guidelines for Reinforcement: Best Practices for Mammalian Reintroductions
The report titled "Lessons Learned from Past Reintroduction and Translocation Efforts with an Emphasis on Carnivores" has been completed by SFS (Annex 15_PR1). The report synthesized important lessons from biological and social factors from historic mammalian translocation efforts. The report relied on extensive peer-reviewed literature and specific case-studies that involved Eurasian lynx reintroductions and other large carnivores. The findings and lessons highlighted in the report helped the LIFE Lynx Project team members continue to follow the IUNC 2013 Guidelines for Reintroductions with additional knowledge that enhanced context-specific planning, effective project implementation, and a comprehensive management approach that coordinates lynx recovery and conservation efforts in Slovenia, Croatia, and Italy.

2) Population Level Reinforcement plan
The goal of this plan was to identify suitable habitats for lynx releases in Slovenia and Croatia and determine optimal scenarios for timing lynx releases across suitable areas. This plan is one of the primary documents in our project (Annex 13_MR1). It is also an important public document that provides vital information about the early stages of planning and implementation of the lynx reinforcement process and illustrates how we are closely following the IUCN Guidelines.

3) Regional reinforcement plans
These plans aimed to identify macro-locations of potential lynx release sites and present differences in the proposed methods of lynx releases for Slovenia (soft release) and Croatia (hard release). We developed three lynx-reinforcement plans: for the Dinaric region (Croatian; Annex 14_MR1 and Slovenian; Annex 15_MR1) and for the Alpine region (Slovenian; Annex 6_MR2). Lynx releases followed the reinforcement plans.

Milestone	Foreseen due date	Status
Guidelines for reinforcement elaborated	March 2018	Achieved
Population-level reinforcement plan written	September 2018	Achieved
Regional reinforcement plans (3) written	February 2019, postponed to December 2020	Achieved

Deliverable	Foreseen due date	Annex
A4: Guidelines for reinforcement	March 2018	15_PR1
A4: Population-level reinforcement plan	September 2018	13_MR1
A4: Regional reinforcement plans (3)	February 2019, postponed to December 2020	14_MR1, 15_MR1, 6_MR2

Variations/complications/delays: The third reinforcement plan was not possible in the initial time frame because we did not have the exact micro-location for lynx releases in the Alpine region. This plan was completed in December 2020 as proposed in the MR1.

ACTION A.5: Management documents for Slovenia, Croatia and Italian central/eastern Alps

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
January 2021	January 2020	March 2024	March 2024

1. Common Guidelines for Dinaric – SE Alpine Population-level Lynx Management (Annex 7_MR2) were prepared by a working group of project staff, and published on the project web page according to the deadline. National authorities were notified about the document. Additionally, the document was presented to the experts from Austria and managing authorities from Bosnia and Herzegovina, who were consulted during the process. The Guidelines then served as a foundation for the preparing national management documents to ensure transboundary population-level synchronized management.

2. In Slovenia, national management documents were prepared and submitted to the authorities. Representatives of SFS, MOP/MNVP, UL BF, HAS, and ZRSVN participated in five workshops and prepared two documents - Action plan for conservation and management of lynx Slovenia (Annex 1a_FR) and Strategy for conservation and management of lynx Slovenia (Annex 1_FR). The document was submitted to the MNVP in December 2023 and published on the ministry's website for purposes of mandatory public comment in June 2024. (After the project's end, on 21st November 2024, the Government of the Republic of Slovenia adopted the Strategy for the Conservation and Sustainable Management of the Eurasian Lynx (*Lynx lynx*) in Slovenia and the Action Plan for the Conservation and Sustainable Management of the Eurasian Lynx (*Lynx lynx*) in Slovenia for the period 2024–2033.)

3. In Italy, three workshops were organized (in Udine, Belluno and Trento) for the participation of diverse interest groups in the preparation of the Interregional Management Plan for Italy (Annex 2_FR). A very tense political climate negatively influenced the third meeting due to the killing of a person by a bear. A summary of the work made during the three participatory meetings served as a draft, which was then available for further comment to all interest groups. This process has been defined by many of the participants and institutions involved as a "good practice" to follow for conservation work related to other species.
In this sense, this process and document provide an important precedent and tool for the management of lynx and the conservation of Italian fauna in general. The CUFAA submitted the document's final version to the Ministry of the Environment as the last step required in the scope of the project.

4. In Croatia, there were modifications to the implementation of this action. In 2015/2016, when the LIFE Lynx project proposal was drafted, the Croatian Ministry of Economy and Sustainable Development planned to prepare and adopt a new lynx management plan for 2017/18–2022/23. Thus, the Croatian project partners and the Ministry agreed that the LIFE Lynx project would provide an expert background study for the next 5-year management period (2023–2028). However, the Ministry initiated the preparation of a new management plan with a significant delay in 2018, and LIFE Lynx partners (FVM, VUKA, BIOM) were hired to prepare the expert study (outside the scope of the LIFE Lynx project). A series of round tables and workshops with representatives of all stakeholders were organized and the final version of the expert study was finished in August 2019. In December 2021, the Ministry published the document online for mandatory public comment. Then, the Croatian LIFE Lynx project staff revised the document and submitted comments and updates according to the Common Guidelines for Dinaric – SE Alpine Population-level Lynx Management and the latest findings from the LIFE Lynx project; this document accounted for the deliverable. In March 2024, the Ministry adopted the new national Lynx Management Plan for Croatia (Annex 3_FR).

Since the preparation of new lynx management plans for Croatia did not develop according to the situation planned in the project proposal, we proposed to prepare another management document instead of the initial expert background study for the revision of the Croatian lynx management plan. We

proposed preparing one of the documents listed as necessary to be produced in the 2019 expert background study - Guidelines for Management of Lynx Orphans. During the previous five years, three lynx orphans were found in Croatia and the foreseen procedure was not appropriate, this is a critical conservation topic for our population. The preparation of the lynx orphan guidelines was approved in the MR2. Guidelines were prepared in cooperation with authorities and experts, and the Ministry finalized and adopted the document in May 2023 (Annex 4_FR). Guidelines were already used six months later when a male orphan kitten was found in Gorski Kotar. According to the Guidelines, rehabilitation was not possible in Croatia, so the lynx was sent to ZOO Bojnice and finally released in Italy within the UlyCa 2 project (see C.5 for further details). This was the first example of trilateral cooperation in handling lynx orphans and a positive example for future orphan cases. These guidelines were used again in 2024 to manage three cases of lynx orphans, so they proved useful.

Milestone	**Foreseen due date**	**Status**
Two meetings of project partners for preparation of Common Guidelines	June 2021	Achieved
Management Plans task groups assembled	September 2021	Achieved
8 workshops (3 in Slovenia and Italy, 2 in Croatia) for preparation of National management documents carried out	September 2022	Achieved
Proposals of National management documents or background in each of the participating country prepared	December 2022	Achieved
Management Plans presented to the public	December 2023	Achieved
Action plan for Slovenia approved by authorities	March 2024	Not achieved/Achieved after the project's end

Deliverable	**Foreseen due date**	**Annex**
A5: Common Guidelines for Population-level Lynx Management (electronic version)	February 2022	7_MR2
A5: Expert background study for next revision of the Croatian lynx management plan (electronic version)	April 2023	8_MR2
A5: Interregional Management Plan for Italy (500 pcs)	April 2023	2_FR
A5: Action Plan for Slovenia (500 pcs)	April 2023	1_FR 1a_FR
A5: Guidelines for management of lynx orphans in Croatia (additional deliverable)	April 2023	4_FR

Variations/complications/delays: For Croatia, the deviations are described above. In Slovenia, the expert group prepared the document based on the common guidelines and tailored to the national conditions and needs, with the MNVP representatives actively involved in the group. After submitting the document to MNVP in December 2023, the project team members involved in the expert group expressed their willingness to help with the final procedure and reminded MNVP of the importance of its adoption. However, the continuation of the adoption process is in the Ministry's scope of competence and cannot be guided by the project team involved in the expert group anymore. In June 2024, the strategy and action plan were published on the ministry's website for purposes of mandatory public comment. (In November 2024, both documents were adopted by the Government of the Republic of Slovenia.)

ACTION A.6: Assessing the spatial connectivity of the Dinaric-SE Alpine lynx population and isolation with other populations for long-term spatial planning

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	September 2017	December 2023	March 2024

We defined areas (patches) of suitable lynx habitat within the project area and at the regional scale to determine the locations critical for connectivity using habitat suitability modelling based on available data from the literature on lynx, VHF and GPS telemetry location data, and information on dispersal and lynx movements.

We used these preliminary analyses and literature material to participate in an EIA seminar for spatial planners organized within the LIFE DINALP BEAR project (LIFE13 NAT/SLO/000550) to achieve synergistic effects for both LIFE projects. The seminar was held on 9th April 2019 in Ljubljana with 41 participants (within action C7). Main principles and areas crucial to lynx habitat connectivity have been presented as part of synergistic cooperation with LIFE Lynx. A discussion session at the end of the seminar was facilitated. Attendees evaluated the seminar as very useful since it covered many gaps in their knowledge of this topic, and two additional seminars were carried out in the autumn of 2019, hosted by the Slovenian Nature Protection Agency and Interreg project Carnivora Dinarica.

We organised an International Ecological modelling online workshop on 30th March 2022 (Annex 9_MR2). Within the workshop, we determined key environmental variables for habitat connectivity modelling and the study extent. We determined data management options, discussed different modelling approaches, and selected the most useful methodologies. These options and approaches were used in the process of developing tools for data analysis and preparation of connectivity models for lynx at various spatial scales to be implemented in guidelines for spatial planning (Action C7).

In the frame of VI. Eurolynx meeting, Zadar 27–29 September 2023, we held a presentation and working group workshop on ecological modelling of HSM, dispersal and connectivity on lynx populations in Europe.

A popular magazine article about spatial connectivity for lynx in the South-eastern Alps and Dinaric mountains was prepared in Slovene. The articles were adapted and also published in Croatian hunter's magazine Dobra kob (1 article) and in Italian nature-focused magazines (3 articles). All articles are presented in Annex 5_FR.

A report about the habitat suitability and spatial connectivity for lynx and movement and/or geneflow across habitat patches and comparatively across the borders of the three countries was written by UL in March 2023 (adapted final version in June 2023; Annex 6_FR).

UL wrote the technical report on dispersal probability and potential connectivity between Swiss Alpine, Dinaric/SE Alpine and other neighbouring lynx populations and their consequent effect on their mutual viability from methodological perspective (Annex 7_FR).

Status of the scientific articles foreseen in the project (Annex 9_FR):
- Scientific article: Kuralt et al. (submitted, Goldhorn Bulletin ISSN 2232-6499): Landscape permeability along the Ljubljana – Koper highway for Dinaric lynx and SE Alpine stepping stone population,
- Scientific article: Sanchez Arribas et al. (submitted, J App Ecol; 24.1.2024): Need for joint action: relocations support local but not regional connectivity in a large carnivore.

Milestone	Foreseen due date	Status
Preparation expert material (literature review) for lectures at 1st seminar for Spatial (EIA) planners within LIFE DINALP BEAR project	December 2017	Achieved
1. workshop for ecological modelling/wildlife experts	March 2022	Achieved, 9_MR2
2. workshop for ecological modelling/wildlife experts	June 2023	Achieved

Deliverable	Foreseen due date	Annex
A6: Scientific Review article on lynx dispersal and habitat movement abilities in Europe (peer reviewed journal)	December 2018	10_MR2
A6: Habitat suitability and connectivity models for lynx between and within the South-eastern Alps and Dinaric Mountains area done (4 maps in electronic (GIS) format)	November 2022	8_FR
A6: Three popular magazine articles about spatial connectivity for lynx in the South-eastern Alps and/or Dinaric mountains written (one in each of the country concerned).	January 2023	5_FR (1 in Slovenia, 1 in Croatia, 3 in Italy)
A6: Report about habitat suitability and spatial connectivity for lynx, and movement and/or geneflow across habitat patches and comparatively across the borders of the three countries produced	March 2023	6_FR
A6: Report on dispersal probability and potential connectivity between Swiss Alpine, Dinaric/SE Alpine and Balkan lynx populations and their consequent effect on their mutual viability written	September 2023	7_FR
A6: Two scientific papers about connectivity within and between the SE Alps and Dinaric populations as well as conservation/viability consequences for lynx in the Alps and Balkan (in peer reviewed j.)	December 2023	9_FR (2 submitted)

Variations/complications/delays: The milestone was reached with a delay (April 2019) caused by the conflicting dates with the LIFE DINALP BEAR project. The scientific review article was published in July 2020 (Annex 10_MR2). The second workshop, held in Zadar with the Eurolynx association, was delayed (September 2023) to take advantage of many European lynx experts' presence and to simplify travel and accommodation logistics.
Both scientific papers about connectivity have been submitted for publication, however, the time the papers are published is highly variable and difficult to predict. The time between writing, submitting, and publishing a scientific paper is often prolonged due to several critical steps that are crucial for maintaining the quality and integrity of scientific literature but contribute to the lengthy time frame from submission to publication as is the case in these papers. The planned time frame was tight since both articles derive their content from the reports foreseen in this action, and with the slight delay of the reports, the preparation of the articles started later than foreseen. Nevertheless, their contribution to the dissemination of the knowledge and best practices of the project (their original purpose) will not be threatened by the delayed publishing.

ACTION A.7: Assessment of public attitudes toward lynx and lynx conservation

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	July 2017	September 2019	July 2021

Implementation of the action started as planned. The questionnaire was discussed and agreed upon (Annex 16_PR1).

UL, BIOM and PLI surveyed 1,241 inhabitants of the project area (605 in Slovenia, 400 in Italy, and 236 in Croatia). Of those, 130 hunters and 246 sheep/goat owners were involved. The majority of respondents in all three countries supported lynx conservation, including translocations from other countries. The greatest support for the translocations and greatest opposition were documented in Slovenia, indicating a growing social conflict. The opposition was almost entirely documented among farmers who fear economic loss to lynx. Many respondents (around 40 % in Slovenia and Croatia and 8 % in Italy) already knew the LIFE Lynx project. Over 70 % of hunters already knew the LIFE Lynx project before completing the questionnaire.

National reports were produced (Annex 17_MR1), and a joint report in English was prepared by UL (Annex 18_MR2). Popular articles in national languages were produced and submitted (Croatian and Slovenian, Annex 19_MR1; Italian in July 2021 – Annex 11_MR2). Another article about the assessment of attitudes toward the illegal killing of wildlife was published in the summer of 2020 in "Lovec", the magazine for hunters in Slovenia.

Deliverable	Foreseen due date	Annex
A7: Final report of the action, electronic version	September 2019	18_MR1
A7: Popular articles prepared and submitted (3x)	June 2019/July 2021	19_MR1 (Cro and Slo), 11_MR2 (It)
A7: National reports prepared (3x), electronic versions	June 2019	17_MR1

Variations/complications/delays: Since the data analysis took more time than foreseen, the national and final reports were prepared early spring 2020. The articles in Croatia and Slovenia followed the 2020 reports. A popular article in Italian was subsequently published in the summer of 2021.

ACTION A.8: Development of the Project Communication Plan

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	July 2017	December 2018	December 2018

The communication plan is an internal document that provides all project members with a framework and protocol for consistent internal and external communication during the project. The plan was prepared on time and was approved by the steering group (Annex 17_PR1), the first plan update was prepared in December 2019 (Annex 20_MR1 – version 2 of the Project communication plan), and then regularly updated each year. The latest version, V4, was prepared in 2022 (Annex 12_MR2 – version 4) and this was also the plan's final version. As an annex to the Plan, a list of important project events for each year was prepared and shared with project partners at least once per year at steering group meetings.

UL provided a two-day communication training for all project employees, which Dr. Alistair Bath facilitated in Slovenia on December 19 and 20, 2018 (Annex 21_MR1).

Milestone	Foreseen due date	Status
Project Communication Plan approved by steering group	June 2018	Achieved
Communication training carried out	December 2018	Achieved

Deliverable	Foreseen due date	Annex
A8: Project Communication Plan (V4)	June 2018/ May 2022 (V4)	12_MR2

Variations/complications/delays: For the two-day training, PLI had to shift some travel costs to cover the overnight stay.

ACTION C.1: Live-capture and translocation of lynx from the Carpathian population in Slovakia for reinforcement of the Dinaric-SE Alpine population

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	July 2017	June 2023	April 2023

Implementation of this action started at the beginning of the project in 2017 via field visits with interested groups and consultations with different stakeholders or during the monitoring activities conducted within A1 Action. In June 2019, the Ministry of Environment of the Slovak Republic granted official permission (including actions A1 and D1) for the implementation of the project activities.

After TUZ finished the deterministic (camera trapping) surveys in 2019–2021 and confirmed the viability of the local source populations in the Vepor Mountains, Vtáčnik Mountains and Volovec Mountain, they built box traps at favourable capture areas and micro-locations (identified and selected within action A1, while surveyed and uploaded in action D1).

The TUZ project team conducted lynx captures in collaboration with the National Zoological Garden (NZG) Bojnice, the State Nature Conservancy of Slovak Republic, and local foresters/hunters in all survey areas from December 2019 to April 2023, using box traps and foot snares at identified lynx kill sites.

In August 2019, an injured adult male lynx Max was captured in the Poľana Protected Landscape area (central Slovakia) in collaboration with TUZ, the NZG Bojnice and the State Nature Conservancy of SR. This animal was immediately given medical aid and was placed in the quarantine and rehabilitation station (NZG Bojnice). Due to his successful recovery, and by mutual agreement with the project partners, Max was successfully released in the Dinaric Mountains of Slovenia on June 23, 2020. A similar approach (with orphans) was successfully used in the alike LIFE Luchs Pfälzerwald project (LIFE13 NAT/DE/000755).

In 2020, the first two lynx for the project were captured in the Slovak Carpathians. A male cub named Timo (age ten months) was collared and released in March 2020. An adult male named Pino (age 5+) was transported to quarantine in the NZG Bojnice. On July 14, 2020, Pino was released into the forests of Štirovač in the border area between the Northern Velebit National Park and the Velebit Nature Park (Croatia).

At the beginning of 2021, another three lynx were captured in Slovakia. A female named Julija (age 3-4) and a male named Emil (age 3+) were caught in the Vepor Mountains, while a female named Lenka (5+) was captured in the Vtáčnik Mountains. After quarantine (NZG Bojnice), the male named Emil was released on May 14, 2021 in the Nature Park Velebit (Croatia). Both females, Julija and Lenka were released in the Triglav National Park (Slovenia) on April 28, 2021.

Furthermore, in 2022, two more lynx, males Midas (age 3) and Ľubomír (age 5+), were caught in the Vepor Mountains and Volovec Mountains respectively. Male Midas was collared for further monitoring in Slovakia and released, whereas Ľubomír (quarantine in NZG Bojnice) was released in the Velebit Mountains (Croatia) on June 14, 2022.

Also in 2023, two lynx were caught, male Lukáš (age 3-5 years) and female Sneška (age 5). Both animals originated from the Volovec Mountains and were translocated to Slovenia. Male Lukáš was released in Jelovica on April 4, 2023, while female Sneška was released in Snežnik on April 26, 2023.

Milestone	Foreseen due date	Status
Improved protocols for the lynx capture, tranquilization, quarantine and transport for future reinforcement programs and projects	March 2018	Achieved
Live-capture of at least 7 lynx.	March 2023	Achieved (8 lynx translocated)
Successful transport of captured lynx to the Dinaric - SE Alpine lynx population.	March 2023	Achieved (8 lynx transported)

Deliverable	Foreseen due date	Annex
C1: Improved protocols for the lynx capture, tranquilization, quarantine and transport for further programs and projects dealing with translocations of lynx	March 2018	18_PR1
C1: Report on the quarantine of all captured lynx in Slovakia.	April 2023	10_FR

Variations/complications/delays: The social conflict with a radical environmental organisation influenced the schedule for obtaining the permits and implementing the lynx captures, which could only be started in late December 2019. This delay did not impact the planned number of the translocated lynx.
TUZ purchased three spare batteries for the GPS/GSM collars to ensure their longevity after placing them on the animals for monitoring purposes.

ACTION C.2: Live-capture and translocation of lynx from the Carpathian population in Romania for reinforcement of the Dinaric-SE Alpine population

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	November 2017	March 2023	March 2023

Field vehicles and alarm transmitters were purchased, and all box traps were finished in time for the first capture season. The quarantine was developed, as planned, in the existing authorised ACDB Wildlife Rehabilitation Centre, and could contain three individual lynx simultaneously. Quarantine maintenance has been ensured throughout the project (disinfection after each lynx and repair of damaged parts).

The Capture, Quarantine and Transport protocol (Annex 19 _PR1) was developed (as specified under the IUCN 2013 Guidelines) before the start of the capture activities. This protocol served as a framework for ensuring the project team's capacity to avoid common mistakes that can lead to low capture success and to prevent injuries to the captured lynx and to the people involved in the action.

ACDB obtained the Ministerial Order for derogation at the national level (valid until 2024) and the local permits (from Environmental Protection Agencies) for lynx capture for the specific trapping seasons (these permits are valid only for one year and need to be issued before the start of each trapping season). ACDB also signed agreements for trapping with four game managers, including the Romanian Forest Administration RNP Romsilva, which is manages game units across Romania. Three other contracts have been signed with game managers/hunters to monitor and manage the capture micro-sites to minimize any external threats or risks.

In the first trapping season (December 2018–April 2019), ten box traps were activated (another three were not used due to bear presence and logging activity) and two lynx individuals (males) were trapped and then relocated to the Dinaric region (one in Croatia - Doru and one in Slovenia - Goru). In the second trapping season (December 2019–April 2020), 11 box traps were activated and three lynx individuals (males) were trapped and then relocated to the Dinaric region (one in Croatia – Alojzije and two in Slovenia – Catalin, Boris). In the third trapping season (January–April 2021), nine box traps were activated and five lynx individuals (four males, one female) were trapped. Three lynx (Tris, Aida, and Zois) have been translocated in the Alpine region (Slovenia). Two males (RO07 and RO08) were equipped with radio collars and released in situ. Five box traps were activated during the fourth trapping season (January–April 2022). One lynx (RO11_Blisk) has been trapped in the Neamț study area (24/2/2022) and then relocated to the Dinaric region (Slovenia). In the fifth trapping season (January–March 2023), the team of ACDB captured one male (19 January 2023) named Kras – he was relocated to Croatia, Plitvice National Park, and released in March 2023.

During the quarantine period in Romania, each of the captured lynx was monitored by a team member, and individual reports on behaviour, feeding schedule, and any veterinary interventions were kept as planned.

ACDB obtained the permits from the Veterinary Authority (including registration in TRACES data base) for each translocated lynx.

Milestone	Foreseen due date	Status
Full functional capacity of the quarantine centre	September 2018	Achieved

At least 7 lynx captured and transported to Slovenia and Croatia	March 2023	Achieved - 10 lynx captured and transported

Deliverable	**Foreseen due date**	**Annex**
C2: Protocols for capture, quarantine and transport	March 2018	19_PR1
C2: One report about the behaviour of each lynx kept in quarantine	April 2023	10 reports (Annex 22_MR1, 13_MR2, 11_FR)

Variations/complications/delays: Field equipment was under planned in the proposal and only after starting the work, the team could set a list of items necessary (satellite communicator, tranquilising gun) and buy them with spare funds. Due to the cost of the alarm transmitters for the box traps, only 13 units were bought, thus limiting the number of box traps used in the field. Also, the experience of the first season showed that the optimal number of box traps to be managed during trapping season is a maximum of ten, considering the limited accessibility, quality of the roads, distribution of the box traps in different areas, bear presence during winter and fake alarms, etc. The team's mobility was higher with 2 bought cars instead of one, but often reduced by the repair of the cars affected by the road conditions. This was a constant issue during the implementation of the LIFE Lynx project, and constant repairs were required. Sharing the experiences with the Romanian team meant higher travel costs for some of the other partners (PLI, SFS). Due to weak communication with the veterinary authorities at the beginning of the project, the transport of the lynx was delayed, and ZOO Ljubljana and ZOO Zagreb ensured the transport of the first two lynx in 2019, with help from FVM (additional travel costs occurred) and SFS. For the season 2019–2020, this problem was solved, ACDB got all permits for the transport car at the beginning of 2020 (to fulfil all conditions and to have a vehicle ready for long transports, an amount of 4,000 EUR was requested and used from other budget lines). The lynx that was planned to be sent for Croatia in 2019 (Doru) tested positive for parvovirus, and the time of the quarantine was prolonged. Costs for veterinary analysis were not budgeted. Therefore, the costs were shared between partners ACDB, SFS, and FVM.

In the third season (January–April 2021), some of the box traps were damaged and malfunctioned due to the harsh winter condition. In October 2021, the team monitored the status of the box traps in the field and with the help of the Slovenian team, repaired or replaced some of the box traps. In the fourth season (January–April 2022), some of the traps that had previously produced strong results in terms of lynx visitation and capture had not been activated. This occurred because some of the box traps were no longer visited by lynx (n = 2 box traps), while others trap sites were in areas with high human disturbance, mainly due to logging (n = 2 box traps). Nevertheless, the capture session was performed successfully, capturing an adult male from the northernmost study area (Neamț).
For efficiency reasons (we observed that lynx activity at the box traps intensifies towards the end of January) and to avoid unnecessary exposure and damage to the box traps (due to bear activity until late in December), the trapping season was postponed until January during the last three years of capturing lynx.

ACTION C.3: Genetic reinforcement of the Dinaric population

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2018	May 2018	March 2024	March 2024

The planning of this action started before the timeline proposed in the project. We started discussions with the hunting ground managers to agree on soft-release enclosures sites in Slovenia. In 2018, we finished the construction of the first soft-release enclosure. The release sites in Croatia were agreed upon with four national parks, one nature park and one hunting ground (Rewilding Velebit). We secured official permissions to release lynx in Slovenia and Croatia. In 2019, second soft-release enclosure was finished in Slovenia. Two lynx were translocated from Romania and released in the Dinarics. The first lynx, named Doru, was released in National Park Risnjak in Croatia (hard release). The second lynx, named Goru, was released in the Hunting Club Loški Potok in Slovenia (soft release). Both lynx were fitted with GPS-GSM collars, enabling us to monitor their movements. Goru and Doru established territories in Slovenia, but no more GPS data was received from Doru's collar after some months.

In 2020, another three lynx were translocated from Romania. Two of them (Catalin and Boris) were released in the Slovenian part of the Dinaric Mountains, and one named Alojzije was released in the National Park Paklenica in Croatia. Two lynx were translocated from Slovakia to Slovenia and Croatia: Maks was released in the Special Hunting Ground Jelen, and Pino was released in Gorski Kotar, Croatia. All translocated lynx were fitted with GPS-GSM collars. Alojzije established his territory near Paklenica in Croatia and lynx Catalin on the Menišija plateau in Slovenia. Boris moved from Slovenia and established his territory in Croatia. We lost the signal and data of movement for lynx Pino and Maks.

In 2021, we translocated lynx Emil from Slovakia to Croatia and released him on Velebit. After exploring northern and central Velebit, he moved southward and established his territory in the area of Baške Oštarije, located on the border of central and southern Velebit.

In 2022, another two lynx were translocated. Blisk was caught in Romania and released in the Special Hunting Ground Jelen, Slovenia, where he established his territory in the Northern Javorniki. The second lynx, Lubomir (from Slovakia), was released in Velebit (Croatia) and he established his territory in Ramino Korito.

In 2023, we released two more animals. Lynx Kras (from Romani) was released in Plitvice (Croatia) and established his territory in Gorski Kotar. Female lynx Sneška (translocated from Slovakia) was released in the Snežnik area of Slovenia as the final translocated lynx, on April 26, 2023. She established her home range on the Rakitna plateau.

Altogether, twelve lynx were translocated and released in the Dinaric part of the project area - six in the Slovenian part of the Dinaric Mountains: Goru, Catalin, Boris, Maks, Blisk and Sneška; and six animals in the Croatian part: Doru, Alojzije, Pino, Emil, Lubomir, and Kras. Monitoring of the translocated animals is ongoing; Catalin, Blisk, Sneška, Lubomir and Kras are still transmitting GPS telemetry data, and we are seeking ways to extend this monitoring period.

With the data collected, we can confirm that nine lynx were successfully included in the Dinaric lynx population.

Milestone	Foreseen due date	Status
4 animals released	July 2021	Achieved

All animals released and their tracking completed	February 2024	Achieved

Deliverable	**Foreseen due date**	**Annex**
C3: First report about the success of the releases	March 2018	14_MR2
C3: Final report about the success of the releases	February 2024	12_FR

Variations/complications/delays: As an added value for the project, and with the acknowledgment of the CINEA, the Hunting Club Loški Potok removed the enclosure from the forest, but located one part near the club's premises and equipped it with information boards, thus transforming it into an educational facility. In this way, the hunters can include information about the lynx and the project in their guided tours (and present the equipment used) and thus explain the joint efforts for lynx conservation in Slovenia to the visitors (school children, tourists). The interest in nature conservancy and thematic paths/trails in Slovenia is rising, and we were very keen to support the hunters in their endeavours to educate and transfer knowledge. The second enclosure in the Special Hunting Ground Jelen was also removed from the forest.
SFS purchased box-traps and trap-transmitters in addition to foot snares to recapture lynx in a faster and more efficient way for monitoring purposes, and also bought additional telemetry collars for monitoring of residential animals. To obtain the permit for the transport of live animals, SFS bought additional equipment for the project car.
FVM adapted the type of camera traps and bought a larger number of conventional camera traps instead of MMS, together with additional field equipment for recaptures of translocated animals (VHF receiver, antenna, satellite alarm, extra telemetry collar, binoculars) and for storing of camera traps pictures (hard disk). The costs for shipping genetic material and collars, for collar subscription and travel costs for frequent monitoring of kill sites and potential reproductions, were under planned and reallocated during the project.

ACTION C.4: Establishment of a population "stepping stone" in the SE Alpine area

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2018	July 2018	March 2024	March 2024

The planning of this action started before the timeline proposed in the project. We started the discussions with the hunting ground managers to agree on soft-release enclosure sites in the Alpine region of Slovenia. In 2020, we finished the construction of two soft-release enclosures. The first was built in Triglav National Park on the Pokljuka plateau, and the second one was in the Hunting Club Nomenj Gorjuše on the Jelovica plateau. Five lynx were translocated from Romania and Slovakia to the Alpine region of Slovenia in 2021. Male Zois and female Aida, translocated from Romania, were released from the enclosure on the Jelovica plateau. Male Tris, translocated from Romania, and females Julija and Lenka, translocated from Slovakia, were released from the enclosure on the Pokljuka plateau. After the releases, all lynx stayed near the release locations and established their territories there.

At the end of 2021, the GPS collars of lynx Lenka and Tris stopped working, and subsequently we were unable to record movement data for these two lynx. In April 2022, the GPS collar of lynx Zois stopped working, so we don't have any data on his movement after this date. Despite that some of the collars did not work, we confirmed the presence of lynx Tris and Lenka with photo traps as part of the action C.5.

In April 2023, we released one more male lynx from Slovakia; Lukaš who was translocated to the Jelovica area. Unfortunately, Lukaš went to the area between the Karavanke Mountains and the Kamniško Savinjske Alps, where we lost his GPS signal in August 2023, and his presence was not detected even through the VHF antenna.

The goal of this action was to create an effective population "stepping stone" between the Dinaric and Alpine lynx sub-populations by releasing at least five lynx into this intermediate unoccupied habitat at the junction of the SE Alps and the northernmost edge of the Dinaric Mountains. We can confirm that the introductions were successful, as all the introduced lynx except Lukaš have established their territory in the Slovenian Alps and have successfully mated, which means that together with their offspring they are creating a newly established "stepping stone" population in the Alps.

Milestone	Foreseen due date	Status
At least 5 animals released in the "stepping stone" area	July 2023	Achieved

Deliverable	Foreseen due date	Annex
C4: Report about the success of the releases in the "stepping stone" area	January 2024	13_FR

Variations/complications/delays: For one of the enclosures in the Alpine part of Slovenia (from the Hunting Club Nomenj Gorjuše), we asked to translocate part of the enclosure from the forest to a more accessible area next to a road reserved for cycling and open it to the general public. The converted enclosure is equipped with information boards so tourists are informed about the LIFE Lynx project, the participation of hunters in the project and the reintroduction of lynx into the Alps. Thus, the part of the enclosure now commemorates hunters' work and the Alpine region's success in the project. The rest of the enclosure was removed from the forest, as was the other enclosure in Triglav National Park. A large amount of field work resulted in some additional costs: UL subscribed to the service Garmin SOS because of the remote locations in the Alps and bought an additional telemetry collar for the

offspring. SFS reallocated some funds for the repairs of the enclosures and box traps that were out in the open throughout the year.

ACTION C.5: Surveillance and directed management of the reinforcement process

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
January 2019	January 2019	June 2023	March 2024

The action started as expected and was finished by the end of the project. All reports were finalized (Annex 15_MR2, Annex 16_MR2, Annex 14_FR, Annex 15_FR). While the LIFE Lynx project provided most of the funding for surveillance of the reinforcement process, additional data from other sources (e.g., national monitoring programs, national parks, NGOs and research projects; see acknowledgement sections of all C5 reports) were included in the C5 reports with an aim to present the status of the Dinaric – SE Alpine lynx population between 2019 and 2023 in a most complete and comprehensive way. There were almost 200 people actively involved in the surveillance of lynx by the final year of the C5 action, who represented almost 100 different organizations (hunting clubs, NGOs, public institutions, etc.). Such intensive high-effort surveillance enabled us to evaluate the success of each translocation and comprehend the changing status of the Dinaric – SE Alpine lynx population across its range in Italy, Slovenia, and Croatia. The activities of the C5 action were crucial to inform the decisions about the following translocations on an annual basis.

1. The amount of opportunistic data, which was obtained through the engagement of stakeholders (e.g., hunters) and the general public, increased over the course of the project (>300 % increase in the number of verified (i.e., C1 category) as reflected in records collected between 2019 and 2023; Table 1 in Annex 17_FR). The constant feedback of the data with those who helped produced it, enhanced the involvement of the interested public. These opportunistic data were important for understanding the distribution of the Dinaric – SE Alpine lynx population and guided the efforts for other systematic surveillance methods, i.e., non-invasive genetic sampling and camera trapping, so that they could be implemented in the most effective way. Together with other verified data about the lynx presence indicated an >150 % increase in the distribution of lynx over the Dinaric Mountains and SE Alps during the reinforcement process, with the biggest change following the successful creation of the Alpine stepping stone subpopulation and its expansion towards the West (Figure 1 in Annex 17_FR). In 2019–2020, the lynx distribution was estimated across 8,850 km^2 in Slovenia and Croatia, while in 2023, the lynx was present in an area of 14,700 km^2 across three neighbouring countries (Italy, Slovenia, and Croatia).
2. Data from coordinated transnational camera trapping was used to assess the basic demographic parameters, i.e., the density, abundance, and reproduction of the lynx in the Northern Dinaric Mountains at a transboundary level. The network of camera traps was continuously operated by hunters, protected area rangers, and other volunteers. The project staff met with them annually to choose new camera trapping locations to optimize and expand the camera trapping grid. Special focus was given to holding informative meetings with hunters, which aimed to start or enhance their project involvement (Annex 18_FR). As the distribution of the lynx population increased over the years, so did the size of the camera trapping grid (from approximately 10,000 to 13,000 km^2, Table 1 in Annex 17_FR), being one of the highest reported in any camera trapping surveys. To increase the number of lynx records on camera traps, we adjusted roughly a third of the camera trapping locations every survey year using the experience from the previous years (see also Annex 18_MR2). The optimization of the camera trapping resulted in lynx being recorded at 60 % of all locations in the last survey year (2022–2023; Annex 15_FR), compared to 45 % at the start of C5 action (Annex 15_MR2). Additionally, we invented artificial marking sites for lynx in the Mediterranean habitats, i.e., “stone pyramids”, which attracted lynx. Without these sites, detection of lynx would have been difficult. To improve the individual identification of lynx and detect animals with cross-border territories, Slovenian and Croatian partners uploaded all identified lynx photos to the Whiskerbook.org online platform (www.whiskerbook.org) with an artificial intelligence

algorithm for automatized individual identification of animal species. With this software, we improved the camera trapping data processing process of and created a tool that can be used in future transnational surveillance efforts.

3. To obtain data for assessing the genetic status of the inbred lynx population in the Dinaric Mountains, we coordinated intensive snow-tracking activities each winter to collect non-invasive genetic samples in the snow (scats, urine, hair, saliva on prey). A smaller proportion of samples were retrieved from hair traps (Annex 11_MR1, Annex 12_MR1). Hunters, rangers, outdoor enthusiasts, NGO volunteers, and students were involved in these activities. However, the number of collected samples depended strongly on the snow conditions and was notably decreasing over the years, indicating the effect of climate change on the genetic surveillance of lynx. For example, over 2,500 km and 150 hours of searching (by car or on foot) were needed to collect a total of 40 samples in the Dinaric Mountains in winter 2022–2023 (Annex 15_FR). Thus, innovative approaches to improve the genetic surveillance of lynx were implemented. The combination of i) the development of a new sampling method with close cooperation with the Laboratoire d'Ecologie Alpine (LECA) (study visit within E5 action) and the University of Lausanne and ii) new genetic markers developed for high-throughput sequencing method and the final laboratory protocol being optimized, resulting in individual genotyping of lynx from tracks in the snow (Annex 19_FR). Nevertheless, the total amount of collected samples was sufficient to assess the impact of translocations on the genetic status of the lynx population (see D2 action for further details).
4. To understand the success of translocations and the process of home range establishment of translocated lynx and their offspring, as well as their interaction with the remnant lynx and their ecological role, we tracked all translocated animals (n=18), as well as their offspring and some of the remnant lynx (n=21, including lynx collared within other projects), using GPS telemetry tracking. Together with local hunters, we field-checked more than 400 lynx kill sites to understand the ecological roles that lynx play in this ecosystem. With a high number of collared lynx over the course of C5 action, we obtained data for the final evaluation of the success of the translocation process and performance of translocated animals within action D2.
5. Very few lynx mortalities were reported; however, these provided us valuable insights into the health status of the remnant lynx. Roughly, 50 % of mortality cases were related to human activity (roadkill being the prevalent cause). Moreover, indications of death due to health issues were detected in 5 cases (31.25 %), suggesting that congenital heart defects and heart failure were the prevalent causes of natural death. This sheds some light on the possible effects of inbreeding depression on individual lynx (Annex 16_FR).

This action was the main source of information about the lynx in the Dinaric Mountains and the Alps, which was used for various communication purposes, as well as other activities and deliverables of this project, including the final evaluation of the translocation success (C, D and E actions). We were providing timely feedback to the network of collaborating hunters through personal contact (Annex 18_FR), closed Facebook groups, popular articles in hunting magazines, educational seminars, presentations, local events and conferences, and others. Moreover, the data was published in the Monitoring Database (for details, see C6) and made available to the collaborators and the general public. In Slovenia, the commitment of hunters in the surveillance of lynx, mostly camera trapping, resulted in the prolongation of camera trapping after the end of the 2022–2023 season in 90 % of the hunting clubs, yielding additional data on the performance of lynx in the reinforced population and the stepping stone area. We expressed special gratitude to them with lynx badges and diplomas.

In Croatia, project partner FVM won the Croatian Ministry's tender for national monitoring of lynx. To be able to apply, experts had to prove their experience with lynx monitoring, and working on LIFE Lynx helped them achieve maximum points. The 4 seasons of camera trapping gave them valuable insight into what methods work in Croatian circumstances. The new (and first) national monitoring guidelines will thus be largely based on the knowledge and skills learned from LIFE Lynx project, with additional opportunities to fine tune methods as part of this new project (full project name: „Usluga razvoja programa praćenja za vrste i stanišne tipove od interesa za EU" u sklopu OPKK projekta „Razvoj sustava praćenja stanja vrsta i stanišnih tipova"; Grupa 6: Izrada i razvoj programa praćenja za

velike zvijeri s jačanjem kapaciteta dionika sustava praćenja i izvješćivanja). The goal is to propose a national monitoring program for lynx and to test it. There is no overlapping of activities and double financing regarding the LIFE Lynx project, but the replicability and transferability of the project will support the national monitoring scheme. FVM has set a network of camera traps in reference areas to test the methodology. LIFE Lynx benefitted from this as all collected data was used to monitor the success of the repopulation.
Similarly, the SFS will produce a Plan for future lynx monitoring, which will provide specific guidelines on how to continue surveillance of the lynx at a national level.

In Italy, the camera trap monitoring effort involving hunters was demonstrated by their diligent and accurate awareness-raising work that ultimately led to the creation of a working group comprised of hunting associations. The group approved the "ULyCA2" project, where the collaboration of hunters was decisive in releasing an additional five lynx in the Italian Julian Alps.

Additionally, we included lynx samples from the Dinaric population in Europe-wide scientific research (Mueller et al., 2022; Annex 17_MR2). This research focuses on broad patterns of genetic diversity and inbreeding (ROH-runs of homozygosity), and samples from all reintroduced populations in Europe were compared with natural populations. The results have shown that recent inbreeding is most severe in populations with the lowest number of founding individuals, the Dinaric population being one of them. The results have broad implications for lynx conservation and further underline the importance of the reinforcement efforts in the LIFE Lynx project.
Due to the extensive database of annotated camera trapping records from all the recorded species (large carnivores, ungulates, small game, etc.), we were able to share our camera trapping data with other international studies assessing e.g. wildcat densities across different populations in Europe (Nogueira, 2021), the impact of COVID-19 lockdown on worldwide wildlife activity patterns (Burton et al,, 2022 in prep.), the ecological traits of Balkan lynx and the neighbouring populations (Melovski et al. 2022). Moreover, we joined in the efforts of Eurolynx and Euromammal network to develop AI solutions for individual lynx recognition and contribute to the European library of annotated camera trapping records (EuroCam). We have engaged international and national students to use camera trapping data for their Bachelor and Master's thesis, producing estimates of the lynx density and abundance in Croatia (Bedouet 2022), assessing differences in lynx detectability across different camera trapping sites (Kibbelaar 2021) and unravelling temporal activity patterns among lynx and its prey (Predalič 2022). Telemetry data and data from kill site surveys are shared with the Eurolynx network and are available to MSc or PhD students as well as other specific studies, which contribute data from the Dinaric region to European-level research.

Milestone	**Foreseen due date**	**Status**
Surveillance of the reinforcement process completed	June 2023	Achieved

Deliverable	**Foreseen due date**	**Annex**
C5: Camera-trapping guidelines (250 pcs)	June 2019	12_PR1, 18
C5: 1st annual report on the progress of reinforcement process and genetic status of the lynx population with plan for further releases in the following year	December 2020	15_MR2
C5: 2nd annual report on the progress of reinforcement process and genetic status of the lynx population with plan for further releases in the following year	December 2021	16_MR2
C5: 3rd annual report on the progress of reinforcement process and genetic status of the lynx population with plan	December 2022	14_FR

for further releases in the following year (electronic version)		
C5: Report on lynx health status with results of analyses of dead lynx (electronic version)	June 2023	16_FR
C5: Final report on the progress of reinforcement process (electronic version)	June 2023	15_FR

Variations/complications/delays: The guidelines were erroneously planned twice as a deliverable, in the A3 and C5 action (with finances for printing in the C5 action), but they were not needed twice and were un-listed as a deliverable for the C5 action. Instead, we translated the guidelines into Slovenian, combined them with the instructions for the non-invasive genetic sampling and designed them into a user-friendly format which was printed in Slovenian and English (Annex 18_MR2).
There were minor (1 month) delays in publishing the annual reports online due to the considerable effort needed to process large amounts of data after the completion of annual fieldwork. Due to an increased amount of data to be processed for the final report and the additional analyses undertaken to better illustrate the changes in the population's status, the final report of the action was finalized and published in March 2024.
We encountered some technical problems with the telemetry collars. The Iridium system is sensitive to dense forest cover, making communication with the collar irregular (the collar's success in sending locations when programmed is only about 20 % successful) and reduced opportunities for project members to check fresh kill sites. On the other hand, the issues connected to GPS-GSM collars were mostly collar failure, even though we used the best available manufacture of such collars within the EU (Vectronic Aerospace, Germany). Nevertheless, using the complementary methods described above, we were able to follow the success of the translocations despite the inconveniences met by the telemetry tracking. A change in finances for this action was needed to enable us to pay for the expenses of transmitting GPS data from collars directly to us on a regular basis.
During most of the project, lynx were rarely found in the Italian project area. Therefore, only one lynx was captured and equipped with a radio collar until March 2024. The other collar will be used in after LIFE, as efforts will continue in capturing as many lynx as possible. This is an important activity to document the further expansion of the population.
Some adaptations of the purchase of equipment were necessary: UL bought a notebook computer instead of the tablet to perform the analysis, box-traps and satellite alarms for the captures of residential lynx, transmission of data from the collared animals. For the laboratory work, UL financed consumables needed for the genotyping. SFS purchased additional camera traps and housings to have a bigger network. CUFAA purchased technical clothing and equipment for the project car.
Some of the ABs needed excessive fieldwork to follow the reproductions and dispersions of the lynx and get the non-invasive samples; travel costs were higher for UL (both for personnel and for student work), VUKA, BIOM, and the FVM volunteer who helped with the field work.
SFS extended cooperation with hunters from A3 to C5 to help with collecting genetic samples and camera trapping – for their help, SFS prepared a badge with a lynx motif. Hunters also helped with the recaptures of the lynx. With more data from the camera traps, also the need for student work was bigger.

ACTION C.6: Internet-based, population level monitoring geo-database

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	September 2017	March 2024	March 2024

The upgraded, adjusted and expanded geo-portal MBase (https://portal.mbase.org) is a free and open-source software
(- https://gitlab.com/mbase2/source-code;
- https://gitlab.com/mbase2/source-code/-/wikis/home;
- https://gitlab.com/mbase2/source-code/-/wikis/pages;
- https://github.com/iljubin/mbase2l),
that has become a main repository for lynx data storage, visualisation, filtering, and sharing, both for the project and, in the case of SFS, institutionally. The architecture of MBase follows a modular design, with its modules functioning both as independent online applications for data entry, filtering and visualisation, as well as building blocks for providing different types of data to a common data query builder through a user-friendly query map (https://gitlab.com/mbase2/docs/-/wikis/pages).

Common project database contributed to lynx data harmonisation, rapid data exchange and visualisation of geo-referenced lynx data. It also served as a data-quality control, as it channels the otherwise extremely plastic and user-friendly data-import process through controlled steps of data upload. At the end of the project, the MBase hosted more than 50,000 lynx records, collected in five project partner countries, both during the project and previously in the past. There were almost a hundred data entries in the "Biometry" module (records of dead and live-captured lynx), more than 300 records of damages on human property, 4 intervention events in case of conflict between lynx and human, more than 900 genetic samples, more than 10,000 records in the "Systematic camera trapping" and "Opportunistic signs of presence" modules, and more than 40,000 locations of GPS-tracked radio-collared lynx.

Data on the MBase portal is instantly available to all project partners, wildlife managers, and experts. MBase also serves as a medium for public data promotion and for sharing information with the public. We have published news on the project website and social media
(- https://www.lifelynx.eu/lynx-data-available-in-mbase-an-online-database/
- https://www.lifelynx.eu/lynx-images-available-in-online-browser/)
to notify the public about this tool at their disposition when they want to search for and visualise lynx data on a population level. Additionally, we added a predefined query of the lynx data to other relevant news on our web page and social media (e.g., camera trap photos of translocated lynx, movement of telemetrically tracked lynx). At the end of the project, almost 300 user accounts were registered on the MBase portal, including accounts of data-sharing institutions and project partners, maintenance staff, external experts, NGOs, and the interested public.

Although the web portal guarantees free access for enhanced sharing of information, the access is strictly controlled through user accounts and user roles. The first visit to the portal requires a registration, after which a successive log-in with one's user account guarantees that the general public can see georeferenced data in grids (not exact points) and with a limited number of data attributes (the entire data set is not publicly available). The complete dataset and download are accessible only to data-sharing partners. User role hierarchy is applied in each of the modules with defined sets of user rights for accessing certain MBase functionalities.

Data-contributing partners have signed a "Data-sharing agreement", which defines the data-sharing process and terms of data use. Data ownership remains unaltered at all times: each data entry is linked to its respective owner and terms of use.

From MR2 onward, we finished upgrading the module for genetic samples, telemetry data, and the biometry and mortality module. For processing data from camera traps, the project team used the software "CAMELOT" enabling the "Systematic camera trapping" module to automatically import lynx photos to the MBase application.

Besides developing MBase software and upgrading its modules and functionalities, we also turned our attention to the hardware issues. Being aware that expanding the portal will need a long-term infrastructure, more security, and better hardware properties and that hiring the second IT contractor will also require more hardware capacities, we secured additional capacities and migrated the entire system to diversified servers. New servers have much higher capacities, speed, and fulfil stricter IT protocols for software development. We secured separate spaces for various programming environments (development, test, preproduction, and production) that host different sets of data. By doing this, we enhanced not only database and portal capacities, but also system security.

In parallel, additional IT enabled a new environment for hosting/ performing users administration, as the previously used programming framework from LIFE DINALP BEAR system ceased its IT support and security updates. We then installed new tools to all MBase modules and migrated MBase code lists and user administration into a new environment (from Drupal to Laravel) and readjusted common portal functionalities to the new system (e.g., query map functionalities, batch imports, filtering on several places throughout the portal, exports from modules and query map).

Being free and open-source, modular, easy to upgrade and extremely flexible, the MBase portal and/or its building blocks can now provide an excellent foundation for replication and transferability to other projects, initiatives, institutions, and countries.

In order to promote MBase beyond the project as a flexible IT solution for sharing and storing lynx and other data, we participated in external meetings and workshops. For example, in November 2021, we participated in a meeting of the LIFE NARCis project, where we introduced the functionalities of the MBase portal, presented the data import process, and discussed public access to certain data types. Also, in November 2021, we were invited to present the MBase to a larger audience of international authorities on large carnivore management and conservation in the frame of Dinaric Regional Platform on Large Carnivores gathering. We presented the process of using a common database construction in the frame of two LIFE projects, treatment of shared data, MBase functionalities, our vision for further development, and possibilities for replication and transferability beyond current partnership.
In parallel, data-contributing partners were able to share data for the lynx project and also joined the pan-European bottom-up initiative Eurolynx, a collaborative initiative on lynx research, data- and knowledge sharing within and beyond Europe. The project staff participated regularly in the Eurolynx annual meetings from October 2019 onward, either online due to the pandemic or in person in recent years. The last, sixth annual meeting was in Zadar in September 2023. The initiative already achieved far-reaching results in expanding lynx research and a collaborative spirit, publishing several publications where LIFE Lynx data were processed well beyond target populations.

Milestone	**Foreseen due date**	**Status**
Fully operational geo-database	December 2020	Achieved

Deliverable	**Foreseen due date**	**Annex**
C6: Lynx monitoring geo-database software	December 2020	https://gitlab.com/mbase2/source-code

Variations/complications/delays: /

ACTION C.7: Integration of potential lynx habitat connectivity and suitability into national and international spatial planning

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	September 2017	March 2024	March 2024

Partners participated in the EIA seminar on habitat connectivity organized within the LIFE DINALP BEAR (LIFE13 NAT/SLO/000550) project in Slovenia, which was held in April 2019 in Ljubljana (Annex 25_MR1). LIFE Lynx personnel participated in the seminar and contributed important data related to lynx habitat connectivity. The delay did not hinder the implementation of any C7 activity.

We have written the Environmental Impact Assessment (EIA) Guidelines regarding lynx habitat connectivity. The handbook (guidelines) was produced in three languages (Slovenian was printed in June 2023, and the Italian and Croatian versions have been prepared in online versions; Annex 20_FR).

Seminars for Spatial (EIA) planners focused on lynx movement/habitat specific were held in Slovenia (April 2023) and in Croatia (December 2023).

The International Guidelines for Establishing meta-population connectivity of lynx populations in the Alps, Dinarics and Balkan handbook was written in March 2024, based on the international meeting of European scientists at the Eurolynx meeting in Zadar in September 2023 (Annex 21_FR).

In addition to the planned activities in this action, SFS implemented official protection of corridors which enable spatial connectivity for large carnivores and ungulates in SLO. Before the start of the LIFE Lynx project, corridors enabling landscape connectivity were not protected in Slovenia. Through the LIFE Lynx project, we addressed this issue by conducting an additional analysis and implemented the outcomes on the national level in Slovenia - we included study's (corridors) results in forest and game management plans adopted by the Government.

Milestone	Foreseen due date	Status
Participation in 1st seminar for Spatial (EIA) planners within LIFE DINALP BEAR project	December 2017	Achieved
2. seminar for Spatial (EIA) planners focused on lynx movement/habitat specifics	March 2023	Achieved; another seminar in Croatia
International meeting of managers and scientists from countries in the Alps and western Balkan under auspices of LCIE and GO of involved countries	December 2023	Achieved

Deliverable	Foreseen due date	Annex
C7: Environmental Impact Assessment (EIA) Guidelines with respect to the Lynx habitat connectivity" handbook guidelines	December 2022	20a_FR: SI 20b_FR: CRO 20c_FR: IT
C7: International Guidelines for Establishing meta-population connectivity of lynx populations in the Alps, Dinarics and Balkan	January 2024	21_FR

Variations/complications/delays: The EIA Guidelines concerning the lynx habitat connectivity were published with a delay in April 2023 due to the need for additional data gathering. International Guidelines for Establishing meta-population connectivity of lynx populations in the Alps, Dinarics and Balkan handbook were prepared with a delay in March 2024 due to the need for additional data from additional experts and additional methodologies. In addition to the planned activities in this action, SFS implemented the first official protection of corridors within the forest and game management plans.

ACTION C.8: Establishment of a specialized police investigation unit and other supporting activities for more efficient persecution of illegal killings

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
January 2018	January 2018	December 2022	March 2023

The overall goal of this action was to establish a specialized police investigation unit and other necessary conditions to effectively persecute potential illegal killing of lynx and other protected wildlife. While the direct purpose of the action was to improve sanctioning, the ultimate goal of improved persecution was to reduce the likelihood of illegal killings of all wildlife. In April 2019, we organised the first three-day educational seminar for police officers where the project staff and other lecturers emphasised the importance of prosecuting the illegal killing of lynx (and other protected wildlife) as each illegally killed lynx presents a great loss for the long-term viability for the Dinaric-SE Alpine lynx population.

To raise awareness about the importance of lynx conservation among hunters, we designed T-shirts with a "fight against wildlife crime" motive (Annex 31_MR1) that were distributed among hunters, foresters, game wardens, and professional hunters. We acknowledged that it was crucial for field personnel and police officers to follow proper procedures when dealing with wildlife crime. That is why we developed a Handbook (Annex 29_MR1) and Leaflet (Annex 30_MR1, delivered to the subscribers of the Slovenian magazine for hunters, "Lovec" in 2020) for investigation of poaching that was distributed among police stations within the project area and hunters, respectively. Both deliverables were prepared in English and Slovenian language.

HAS prepared two versions of a draft protocol with detailed procedures in cases of suspected illegal killing, one intended only for police members and the other for the field staff that is usually the first to detect the cases of potential illegal killing of wild animals (gamekeepers, professional hunters, foresters, regional wildlife managers). The first protocol passed all legal checks of the Ministry of Internal Affairs and will influence the procedures of the Slovenian Police in that field, thus changing also the national policy. It will be an internal act of the Slovenian Police, not shared with the public.

In May 2022, we organised an additional three-day educational seminar for police officers that was attended by 23 police officers (Annex 21_MR2). A group of experts gave lectures to the established police group about various issues relevant to the efficient persecution of illegal wildlife killing. An important and significant step forward in the long-term persecution and sanctioning of illegal killing was that the seminar was attended by the supreme state prosecutor, who gave a lecture about standard procedures and problems their institution faces whilst persecuting such illegal actions. He also showed great interest in future cooperation with the police and HAS.

Based on the knowledge gained throughout the duration of the project and the identified institutions of interest, we organised another one-day meeting attended by the above-mentioned police officers who were present at the educational seminars, state prosecutors and the Slovenian hunting inspection service. The meeting was organised in September 2022 with the aim of identifying the common bottlenecks in the field of wildlife crime as well as room for improvement with collaboration between relevant institutions.

Throughout 2022, 11 educational meetings for field personnel (game wardens, professional hunters, rangers) were organized in the project area in Slovenia (Annex 22_FR). The purpose of this was to guarantee that these personnel had the appropriate knowledge and expertise to use proper procedures upon finding a carcass of a wild animal that was potentially poached. In total, over 625 participants attended the meetings and gained new knowledge in the field of wildlife crime. Upon arrival, the

participants received a T-shirt with the fight against wildlife crime motive and pencils and notebooks (Annex 31a_MR1).

The bottlenecks and areas identified for improvement in the field of wildlife crime during the one-day repetition meeting were taken into consideration when preparing the electronic version of the revised protocol on standard procedures in cases of detected illegal killing found in the Handbook for investigation of poaching (Annex 23_FR). The handbook was shared widely with 21,000 copies being made for dissemination via the national hunting magazine "Lovec" to raise awareness on the issue of wildlife crime among Slovenian hunters. Furthermore, the revised protocol was translated into English and will serve as a best practice example for international institutions and field personnel faced with cases of illegal killing of wildlife.

Furthermore, the topic of wildlife crime and lynx conservation was incorporated into the national license education for gamekeepers – an online course where gamekeepers have the possibility to renew their license every 5 years. Here, gamekeepers were obliged to read through a PPT developed within the LIFE Lynx project and afterward answer questions related to the topic of wildlife crime and lynx conservation. Overall, over 1,000 gamekeepers from Slovenia (also outside the project area) attended the course.

Milestone	**Foreseen due date**	**Status**
Police investigation unit for persecution of illegal killing of wild animals established	August 2019	Achieved, additional personnel educated: Annex 21_MR2
Repetition meeting of police investigation unit and experts carried out	June 2022	Achieved September 2022
Educational meetings for hunters, foresters and other relevant groups carried out	December 2022	Achieved: Annex 22_FR

Deliverable	**Foreseen due date**	**Annex**
C8: T-shirts with "fights against wildlife crime" motive	June 2019	31_MR1
C8: Protocol on standard procedures in cases of detected illegal killing	December 2019	29_MR1
C8: Leaflet for hunters, foresters and other field personnel with protocol description in cases of detected illegal killing	June 2020	30_MR1
C8: Revised protocol on standard procedures in cases of detected illegal killing (electronic version)	December 2022	23_FR

Variations/complications/delays: Due to Covid-19 restrictions, HAS was not able to implement the additional three-day educational meeting for police officers before May 2022. Consequently, HAS faced a minor delay with the repetition meeting of the police investigation unit and experts, but it was carried out soon after the Midterm reporting period, at the beginning of September 2022. The action was prolonged for 3 months. The additional (not foreseen) three-day educational meeting for police officers resulted in 23 extra police officers with increased in-depth knowledge of proceedings in illegal wildlife killing cases. To be able to organise this, HAS reallocated some of the savings from the first training. Furthermore, the protocol 'Handbook for investigation of poaching' that was primarily distributed to police stations, was revised and additionally printed in 21,000 copies and sent to all Slovenian hunters via the magazine "Lovec" (savings were used to finance this additional output).

ACTION C.9: Livestock protection

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2018	July 2018	March 2024	March 2024

In autumn 2019, SFS carried out an educational seminar in cooperation with the Chamber of Agriculture and Forestry of Slovenia in Ljubljana. The purpose of the seminar was livestock protection in pastures located in large carnivore habitat. Through the lectures on effective preventive measures, 47 participants, SFS damage inspectors and consultants from the Chamber of Agriculture were able to increase their knowledge on the topic. The theoretical part of the meeting was followed by a field trip to the farm, which uses high electric fences and livestock guarding dogs to protect their flock against large carnivores. The topic was presented and discussed again in March 2024 to renew SFS damage officials' knowledge.

Within the project, SFS and CUFAA distributed 14 sets of electric fences (out of 12 foreseen) and have 3 sets at their disposal as emergency kits. Each set consisted of 300–400m of high electric netting (170 cm of height), an energizer, a battery, a voltmeter, and three grounding rods – the set is ready to use immediately. The CUFAA purchased three sets of electric fences in Italy to serve as emergency kits.
Project staff and SFS damage officials regularly checked all the distributed fences in Slovenia to monitor the use of the equipment and ensure proper installation and use. The results of the use of electric fences were very positive, as none of the farmers who received the equipment experienced damages.
Before the first translocation of lynx to Slovenia in 2019, there were, on average, 2.9 damage cases and 6.11 killed animals per year (2010–2018). After the population was reinforced, lynx depredated four (4) animals. The average of damage cases decreased to 0.6 cases, and the number of killed animals dropped to 0.8 per year. Moreover, the distributed equipment has also proved effective in deterring wolves and bears found in the area. Lynx have never been reported causing any damage in Friuli Venezia Giulia and Veneto regions (Italy) during the last 15 years. All the data about the use and effect of electric fences, prepared within this action, were summarized in the report (Annex 24_FR).

Despite not causing major conflicts within farming communities, depredations must not be undervalued or overlooked. To prevent the repetition of such events, SFS and CUFAA have an informed and educated staff ready to help farmers with knowledge and expertise, as well as electric fence intervention kits.

Milestone	Foreseen due date	Status
Educational seminar for SFS damage inspectors about effective communication with farmers and about different protection measures carried out	July 2019	Achieved
12 sets of electric fences distributed to livestock breeders in Slovenia	October 2023	Distributed 14 sets
3 sets of electric fences distributed to livestock breeders in Italy	October 2023	Three sets purchased and available as emergency kits

Deliverable	Foreseen due date	Annex
C9: Report about the use and effect of electric fences	December 2023	24_FR

Variations/complications/delays: /

ACTION C.10: Improving management of key prey species for lynx

Status of the action: in progress

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
October 2020	October 2019	June 2023	March 2024

As planned, we included all key stakeholders (especially hunters) in the development of the guidelines from the beginning of the action. In October 2019, we collected hunters' opinions and suggestions about developing new guidelines for ungulate management plans in Slovenia. In December 2019, the first working meeting was organized for SFS managers (Annex 34_MR1) to discuss possible changes, review collected hunters' suggestions for management plans, and prepare a detailed plan for workshops with hunters.

At the beginning of 2020, between February and July, we organized four (4) workshops with Slovenian hunters from four (4) different regions (Annex 22_MR2) to understand and collect their expectations on how to best incorporate the presence of lynx and wolf (included in the discussions as added value) into wildlife management plans. A total of 121 participants attended workshops, mostly representatives of hunting clubs from all four regions, and we gathered several suggestions on how to develop and upgrade the guidelines and how to improve the management of key species.

After four workshops, in February 2021, a working meeting was held with HAS representatives, leading wildlife researchers, and SFS managers (Annex 23_MR2), where possible solutions and proposals given by hunters were discussed. In May 2021, a working meeting was held to incorporate guidelines into management plans (Annex 24_MR2).

In May 2022, Guidelines 'Consideration of large carnivores in the management of wild ungulates' (Annex 25_MR2) were completed and published on the project website. The preparation of guidelines was carried out concurrently with the preparation of long-term and short-term hunting management plans for Slovenia. The guidelines were incorporated into the strategic document of the SFS for the management of the wild game populations in Slovenia, namely 'The Guidelines for game management in Slovenia in the period 2021–2030'. This strategic document has also been approved by the Government of the Republic of Slovenia and provides the technical basis for the long-term hunting management plans for the period 2021–2030; these form the basis for short-term management plans. This action had an important policy implication effect on lynx and wolves.

Milestone	Foreseen due date	Status
Working meeting held for SFS managers to prepare a detailed plan for workshops with hunters	December 2020	Achieved
4 workshops with hunters (hunting ground managers and hunting management district's representatives) held	December 2021	Achieved, Annex 22_MR2
Working meeting for HAS representatives, leading lynx researchers and SFS wildlife managers held	May 2022	Achieved, Annex 23_MR2
Working meeting for implementation of produced guidelines into annual management plans held	December 2022	Achieved, Annex 24_MR2

Deliverable	Foreseen due date	Status
C10: Guidelines how to respect the presence of lynx in ungulate management plans written	December 2022	25_MR2

Variations/complications/delays: The document considers the impact of lynx and wolf predation on the management of wild ungulates. Lynx and wolves, as the most important predators of wild ungulates in Slovenia, both directly impact their prey and indirectly impact the ecosystem as a whole. At the same time, a sufficient abundance of wild ungulate populations is an important factor for the existence of wolves and lynx in the environment.
The attitude of hunters towards the wolf as a predator is also important and indirectly strongly influences the hunters' acceptance of lynx. Adapted management of wild ungulates, which also considers the impact of wolves, increases acceptance of carnivores and optimises management solutions.

ACTION C.11: Implementation of lynx-based tourism to provide benefits for local communities and lynx conservation

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
January 2018	December 2017	March 2024	March 2024

1.) Within this action, we developed two lynx-based tourist packages (Annex 22_PR1 and Annex 25_FR). A leaflet for the promotion of a new lynx-related package was prepared and will be used to promote the program after the end of the project. Moreover, five art workshops and an art colony for professional artists were organized, resulting in 8 art exhibitions (Annex 26_MR2). A special leaflet to promote painting holidays and a new set of artists with in-depth knowledge about lynx conservation was prepared (Annex 35_MR1). Professional photographers were hired to take photos during art events, and 28 artworks produced during both events were digitalised (Annex 36_MR1). Photos and electronic versions of artworks were used to develop promotional posters (Annex 27_MR2). In Italy, one lynx art contest was organized, a calendar (2021) was produced (Annex 28_MR2), a painting workshop was held for school children and another calendar (2024) was produced as a gift for participants and collaborators (Annex 26_FR).
2.) Lynx walk: A transboundary long-distance walking trail called Lynx Walk was launched in May 2020 (Annex 38_MR1), with guide translated into Croatian as well. An info board was set up at the beginning of the lynx walk in Mašun, Slovenia (Annex 29_MR2), and an additional board was set up at the beginning of the lynx walk in Risnjak, Croatia, within action E6. The walk was promoted on the project website and "Outdoor active" platform. In 2022, we started cooperation with the cycling community gravgrav (Action E5). They adjusted the trail to be suitable for cyclists, and an event for the promotion of the trail within the biking community was held. Leaflets and posters to promote the use of trails among bikers were designed (Annex 27_FR) and will be used for promotion after the end of the project as well, along with the promotion on webpages and platforms dedicated to outdoor living.
3.) Thematic lynx trails: In Slovenia, a workshop with the local public was held to agree on the specific location of the lynx thematic trail and the content of the info boards (Annex 30_MR2), and interpretive signs were designed (Annex 31_MR2). The press conference was held at the opening of the trail on the 24th of September 2021. A brochure with a map in the form of a treasure hunt to provide additional value to families was produced (Annex 32_MR2 – in Slovenian; Annex 28_FR in English). After the approval to produce an additional didactic tool, an additional quiz board was set up instead of using parts of the release enclosure (Annex 33_MR2). The trail is promoted on the "Discover Dinarics" webpage and local tourism organization website. Agreement for the maintenance of the trail after the end of the project was signed by relevant institutions, and the trail will be maintained and promoted by local tourism organization after the end of the project. E-lessons were produced: https://www.lifelynx.eu/interactive-e-lessons/. The trail, supported with the activity booklet (in Slovenian and English), was recognised by the Slovenian Tourist Association as the best thematic trail in Slovenia in 2023.
Another lynx trail was set up in Italy, near Tarvisio (Annex 34_MR2). The official opening was held on 8th of June, 2022, and a brochure to promote the trail was prepared (Annex 29_FR). The trail in Italy will be maintained by CUFAA after the end of the project.
4.) In April 2022, two education seminars were organized online for Slovenia and Croatia (Annex 30_FR); UL and BIOM hired external lecturers for the online educational seminars as an added value for the participants.
5.) A study tour for journalists in Slovenia was organized in 2023 (Annex 31_FR).

Outside LIFE
Due to the high appreciation of tourists and the local public for the lynx trail in Italy, the community council of Tarvisio replicated the idea by producing a bear trail.

Milestone	Foreseen due date	Status
First lynx-based tourism package published on ecotourism portal	November 2018	Achieved
Local art exhibition organized	October 2019	Achieved, Annex 26_MR2
Workshop with local public for the development of "Lynx trail" carried out	February 2021	Achieved, Annex 30_MR2
Educational seminars (2) organized	March 2021	Achieved, Annex 30_FR
Lynx trails set up	May 2022	Achieved, Annex 31_MR2, 33_MR2, 34_MR2, 35_MR2
Thematic study for journalists carried out	June 2023	Achieved, Annex 31_FR

Deliverable	Foreseen due date	Annex
C11: Electronic versions of paintings available (at least 16)	November 2019	36_MR1
C11: Electronic guidebook for the transboundary "Lynx walk" hiking tour	May 2020	38_MR1
C11: Promotional posters produced (1500 pcs)	May 2022	27_MR2 (SLO), 28_MR2 (IT)
C11: Lynx trail brochure produced (1000 pcs)	May 2022	32_MR2 (SLO), 28_FR (EN), 29_FR (IT)
C11: E-lessons with didactic guide for the Lynx trail produced	September 2022	https://www.lifelynx.eu/interactive-e-lessons/

Variations/complications/delays: Due to COVID restrictions, PLI organised an art contest instead of a painting workshop in 2020, from which the twelve best ranking paintings were used to produce the calendar. In 2024, PLI and CUFAA prepared another calendar instead of posters. CUFAA had higher expenses than foreseen for purchasing additional information boards and the lynx silhouettes and maintaining the lynx trail.
UL upgraded the Discover Dinarics (LIFE DINALP BEAR) portal with lynx content but also merged it with the portal of the LC centre DINA Pivka to ensure better visibility and promotion of LC-related tourist products created within LIFE projects. Also, the maintenance and regular updates of the website are thus ensured. The visibility of the LIFE Lynx project and of the LIFE program is also ensured.

ACTION D.1: Monitoring the effects of lynx removal for translocations on the source populations

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
October 2020	October 2020	June 2023	March 2024

From November 2020 to April 2021, the ACDB team covered four study areas in Romania (Lepşa, Bacaŭ, Darmaneşti, and Tarcaŭ). Over 1,533 km of transects were surveyed, and 75 camera trapping stations were activated. A total amount of 449 videos/photos of lynx during the camera trapping activity and 158 signs of lynx were collected during the ground survey activity. ACDB collected 12 samples for genetic analysis during the snow-tracking survey and sent them to UL.

From November 2021 to August 2022, the ACDB team covered three of the planned study areas (Lepşa, Bacău, and Tarcău). Over 613 km of transects were surveyed, and 62 camera trapping stations were activated. A total amount of 132 signs of lynx were collected during the ground survey activity. During the snow-tracking survey, ACDB collected 23 samples for genetic analysis that were sent to UL.

As a result of the monitoring activity 2021–2022, a minimum number of six lynx were identified in Lepşa study area, four lynx in Bacău and four in Tarcău study area.

Moreover, two GPS-collars not foreseen in the original planning were placed on two individuals captured in an area where the translocation capacity was reached (Bacău). Starting in January 2021, the movement of the males is being monitored, and eleven kill sites were checked to collect information about their feeding habits. Such data on lynx movement is currently lacking in Romania and the information gathered will provide new insights into lynx territory size and use in the Romanian part of the Carpathian lynx population.

Implementation of this action in Slovakia started by TUZ in October 2020 in all three project areas: Vepor Mountains, Vtáčnik Mountains, and Volovec Mountains, as a continuation of systematic surveys conducted within action A1. The survey of local populations in the project areas (and Slovak Carpathians), their size, demography, and trend were ensured as a combination of systematic camera trapping, opportunistic genetic monitoring, and GPS telemetry. These surveys were implemented continuously and annually together with members of the monitoring network and local stakeholders (nature conservation, hunters, foresters, etc.) and will be applied after the end of the LIFE Lynx project actions/activities.

These results indicate that the minimum number of resident animals has not changed over the years due to removals, and the long-term fluctuation of lynx is mostly caused by anthropogenic mortality or other factors. Based on the obtained data, it is possible to state that the captures and removals of lynx for the purpose of their reintroduction and reinforcement (both LIFE Lynx project and Luchs Pfälzerwald project - LIFE13 NAT/DE/000755) had no negative effect on the viability of the population in the survey areas.

Such an approach is in accordance with the objectives of the Management plan for the Eurasian lynx in Slovakia, with the Council Directive No. 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive), the Key Actions for Large Carnivores in Europe, the Recommendations for reintroductions and further translocations of species for conservation purposes, and the Bonn Recommendations for the conservation and management of Eurasian lynx in Europe.

Milestone	Foreseen due date	Status
Final report on effects of lynx removal for translocation purposes on the source populations completed	December 2023	Achieved

Deliverable	Foreseen due date	Annex
D1: Final report on effects of lynx removal for translocation purposes on the source populations (electronic version)	December 2023	32_FR

Variations/complications/delays: The action was prolonged to gather as much data as possible. Although many camera traps were stolen/stopped functioning in Romania (ACDB), all necessary data for the final report on the effects of lynx removal on the source population was collected during the previous seasons. Moreover, between December 2020 – September 2022, in Lepșa study area, ACDB collected additional information on lynx presence during a camera trapping survey developed within another project in which ACDB was a partner (funded by the University of Bucharest). A total of 43 camera trap stations were active for over 18,000 days (n.days x n.CTstations), and over 500 lynx photos were obtained. This data, together with the two males monitored in Bacău study area, improved the quality of the data gathered in the study areas in Romania.
TUZ faced some challenges in the COVID19 pandemic (curfew, quarantine of internal personnel) and later, and had to integrate a higher number of local external experts for deterministic monitoring, resulting in higher External Assistance costs.

ACTION D.2: Monitoring of the impact of population reinforcement

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
January 2023	January 2023	March 2024	March 2024

The goal of this action was to evaluate and understand the overall effectiveness of the lynx translocations on the Dinaric-SE Alpine lynx population and share this information in the form of scientific publications for the benefit of the broader scientific community and conservation practitioners to learn from the experiences and knowledge we gained during the LIFE Lynx project.

The action started as expected and was completed at the end of the project. All reports and scientific manuscripts were finalized, including the population-level report (Annex 33_FR), individual-level report (Annex 34_FR), and two scientific manuscripts about the success of the reinforcement process (Annex 35a_FR, submitted to the scientific journal) and the population expansion (Annex 35b_FR, written and ready for submission). Besides these two final scientific publications, we used large amounts of data provided by the project to publish additional scientific papers to share our insights with the broader scientific community (see below for details).

We used data collected within the A and C actions (A3, C1, C2, C3, C4, and C5), analysed them, and used results for the final, comprehensive evaluation of the translocation process as part of the reinforcement of the Dinaric subpopulation and creation of a new stepping-stone subpopulation in the Julian Alps. Besides individual monitoring of all released lynx to determine their performance (also in comparison with the remnant lynx), special attention was given to quantifying the population-level impacts of the translocations on the demographic and genetic status of the lynx population.

The main conclusions about the measured impact of lynx translocations are the following:

1. Among the 18 translocated lynx within the LIFE Lynx project, 14 lynx were successfully integrated into the population and reproduced. Additionally, one out of five lynx translocated within the "ULyCA2" project (see C.5 for details) were integrated into the Alpine stepping stone population by the end of the LIFE Lynx project. Within the LIFE Lynx project, we detected 24 litters and 53 kittens with presumed or confirmed translocated parent(s). Compared to the remnant lynx, the litters of translocated lynx were 34 % larger. Survival was the highest for the offspring of the translocated lynx, intermediate for the translocated lynx, and the lowest for the remnant lynx. Importantly, we did not detect any morphological defects or mortalities that might be linked to inbreeding among the translocated lynx or their offspring, while the remnant lynx suffered considerably from these defects, which also caused a significant part of their mortality. We regularly monitored translocated lynx through video cameras deployed at their kill sites and did not detect any visible health problems.
2. Most of the released lynx became quickly integrated into the local ecosystems and their kill rates were almost identical to the remnant population. This indicates that they successfully adapted to novel environments and did not experience any problems with hunting prey. By field checking more than 400 lynx kill sites, we found that the main prey of lynx, regardless of their origin, was roe deer. We also documented 19 species of scavengers, including several protected species (e.g., golden eagle, white-tailed eagle, European wildcat, grey wolf, and brown bear), benefiting from kills of the translocated lynx, indicating the important ecological role of these animals.
3. We partnered with local hunters and rangers to conduct a multi-year transboundary camera trapping and non-invasive genetic monitoring over 12,000 km^2. Results indicate that the decline of the Dinaric population, which was taking place before the start of the LIFE Lynx project, was stopped and reversed, as the lynx density increased by 44 % during the translocation process (2019–2023; Table 1 in Annex 17_FR). The improvement of the population status was

additionally reflected in more than 40 % higher number of detected females with kittens in the 2022–23 survey season, compared to the 2019–20 season.
4. In parallel with the substantial increase in population size, we observed a dramatic improvement in the genetic parameters (Figure 2 in Annex 17_FR), which was the main threat to this population before the project. The effective inbreeding decreased from 0.32 to 0.19 (if not considering the translocations to the Alps) or even 0.08 (if Alpine translocations are included), which corresponds to a 2- to 4-times increase in expected fitness and fulfils our goal to reach the inbreeding level below 0.15.

Overall, the results of these analyses indicate that the main goal of preventing the extinction of the Dinaric-SE Alpine population was fully achieved. Furthermore, the establishment of a new stepping-stone subpopulation in the Julian Alps represents an important step towards the long-term vision of restoring Central European metapopulation, which will positively affect lynx conservation on a pan-European level.

Besides the two manuscripts of the scientific papers that were planned in this action (see above), we used the data collected and analysed within this and C5 action, to produce several additional scientific publications, which provide important knowledge and experiences to other researchers and conservationists, including:

1. Scientific paper on the results of the first transboundary camera trapping survey of the Dinaric population conducted within the LIFE Lynx project in season 2019–2020, which includes the first robust density estimate for this population; in the same publication, we also demonstrated the efficiency and importance of using a novel approach to focus camera trapping on the lynx scent-marking sites and include this as additional covariate when building spatial capture-recapture models (Fležar et al. 2023 Biodiversity and Conservation).
2. Scientific paper on lynx space use and selection of kill sites with respect to the risk of bear kleptoparasitism with comparison between the experienced, established lynx on one side and the translocated and dispersing lynx on the other (Oliveira et al. 2023 Global Ecology and Conservation).
3. Short scientific communication about the first documented case of golden jackals feeding on prey remains of Eurasian lynx with an assessment of the potential impact of expanding jackal population on lynx in Europe (Krofel et al. 2023 Global Ecology and Conservation).
4. Scientific paper on preliminary results and experiences with releasing lynx in the Dinaric Mountains and their post-release movements (Topličanec et al. 2022 Journal of Vertebrate Biology).
5. Scientific paper on lynx habitat selection in the Dinaric mountains with a special focus on karstic depressions (Čonč et al. 2022 Remote Sensing)
6. Scientific paper on selection of daytime resting sites and impact of human disturbance in the Dinaric Mountains (Hočevar et al. 2021 Behavioral Ecology and Sociobiology)
7. Scientific paper on frequencies of lynx coat patterns in the Dinaric lynx population, showing the effect of inbreeding on this morphological trait and including the development of a quantitative approach to analysing lynx coat patterns (Topličanec et. al 2021 Zoologischer Anzeiger).

Besides these papers produced by our team, we collaborated with several other researchers and shared data collected within the LIFE Lynx project to address several pressing large-scale or global conservation and ecological questions. This resulted in numerous additional scientific papers, including two papers on the impact of COVID-19 lockdown on worldwide wildlife activity and movement patterns (Tucker et al. 2023 Science, Burton et al. 2024 Nature Ecology & Evolution), evaluating the performance of large carnivore translocations across the world (Thomas et al. 2023 Biological Conservation), mapping of Eurasian lynx habitat at the continental scale across Europe (Oeser et al. 2023 Diversity and Distributions), functional response in the lynx habitat use in respect to human pressure across Europe (Oeser et al. 2023 Landscape Ecology), estimating timing and synchrony of lynx births across Europe (Mattisson et al. 2022 Ecology and Evolution), evaluating expert-based

habitat suitability information of terrestrial mammals with data from GPS-tracking (Broekman et al. 2022 Global Ecology and Biogeography), the comparative ecological traits of three Eurasian lynx populations (Melovski et al. 2022 Mammalian Biology), and exploring habitat selection and effect of human disturbance on lynx across Europe (Ripari et al. 2022 Biological Conservation,).

Moreover, we are currently joining with data collected within the LIFE Lynx project in the efforts of Eurolynx and EuroMammal network to develop AI solutions for individual lynx recognition and contribute to the European library of annotated camera trapping records (EuroCam). We have also engaged international and national students to use camera trapping and GPS-telemetry data obtained through the LIFE Lynx project for their Doctoral, Bachelor, and Master theses. This covered relevant topics for lynx conservation and ecology, such as understanding the spatial and foraging ecology of lynx across Europe (Oliveira 2024), analysing movement patters of female lynx during denning (Dalpiaz 2023), obtaining some of the first insights into lynx vocal communication (Gorenc 2023), discovering wildlife use of the over- and underpasses in the A1 highway in Slovenia (Seidl 2023), providing an overview of systematic and non-systematic lynx monitoring (Caimi 2023), interactions between female and male lynx (Črtalič 2023), producing estimates of the lynx density and abundance in Croatia (Bedouet 2022), unravelling temporal activity patterns among lynx and its prey (Predalič 2022), recording scavengers using lynx kill sites and their impact on lynx (Centa 2022), analysis of lynx reproduction (Bakaran 2022), assessing differences in lynx detectability across different camera trapping sites (Kibbelaar 2021), and monitoring of lynx population size on mountain Velebit, Croatia (Blašković 2019). GPS-telemetry data, data from kill site surveys, and mortality data are also shared with the Eurolynx network to make them available for additional students, as well as other specific studies, importantly contributing data from the Dinaric region to European-level research.

Milestone	**Foreseen due date**	**Status**
Final reports about the reinforcement process written	March 2024	Achieved

Deliverable	**Foreseen due date**	**Annex**
D2: Final report about the development of the population and impact of reinforcement program with experiences gained and recommendations for future lynx reinforcement projects (electronic version)	March 2024	Annex 33_FR
D2: Final report of monitoring of survival, movement, reproduction and predation of translocated lynx and other lynx equipped with GPS collars (electronic version)	March 2024	Annex 34_FR
D2: Two manuscripts of scientific publications about the reinforcement process and population expansion (electronic version)	March 2024	Annex 35a_FR, Annex 35b_FR

Variations/complications/delays: We did not experience any major complications or delays in this action. The only important differences from the originally planned work are that the actual number of scientific publications produced within this action is considerably higher and that we also included data from other conservation projects conducted at the same time in the LIFE Lynx project area to increase the sample sizes and provide a more complete picture of the lynx conservation efforts in the region.
PLI hired an external expert for professional help with modelling the expansion of the population.

ACTION D.3: Monitoring of the project impact on viability of lynx in the Dinaric Mountains and South Eastern Alps, and establishing of Guidelines for Ensuring Long Term Viability

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
January 2021	January 2021	March 2024	March 2024

The initial phase of the action was completed in 2021 and included the development of an individual-based genetic demographic computer model of the lynx population. The outcomes of the modelling were used to formulate long-term management scenarios, described in detail in the report »Optimal management scenarios for ensuring the viability of lynx in the Dinaric mountains and SE Alps« (Annex 37_MR2). The strategies were integrated into the Common guidelines for Dinaric – SE Alpine population level lynx management (action A5).

The modelling results were presented regularly to the partners at the steering group meetings. An updated model was presented at the LIFE Lynx International Conference: „Together for Lynx“, held in Zadar (26–29 of September 2023, Annex 36_FR).

In the subsequent phase, the model was updated using the empirical data gained during the project, including genetic and demographic data (actions C5, D2). The results were presented at the Joint conference of the Alpine and Carpathian Conventions to exchange practices on managing large carnivores (Brdo, Slovenia, 7–8 March 2024). Also, a scientific manuscript “Genetic Rescue of the Dinaric lynx population: insights for Conservation from genetic monitoring and individual-based modelling” was written and submitted, and is currently under review (Annex 37_FR).

The established stepping stone was implemented in the model, and we investigated the influence of the Dinaric - SE Alpine population connectivity to inbreeding, a major threat to the Dinaric lynx population. The results formed the basis of the Guidelines for Ensuring Long-term Viability and Vitality of Lynx in the Dinaric Mountains and South Eastern Alps (Annex 38_FR), aimed to provide effective strategies for future population management under various conditions. Continued population monitoring would provide valuable data for model optimization and insights into the future management for ensuring the long-term population viability of the lynx population.

Milestone	Foreseen due date	Status
Results of stochastic population development models presented to the partners at a steering group meeting.	September 2023	Achieved, Annex 36_FR
Guidelines for Ensuring Long-term Viability and Vitality of Lynx in the Dinaric Mountains and South Eastern Alps produced and presented to the competent authorities	March 2024	Achieved

Deliverable	Foreseen due date	Annex
D3: Optimal management scenarios for ensuring viability of lynx in the Dinaric mountains and South eastern Alps	October 2021	37_MR2
D3: Guidelines for Ensuring Long-term Viability and Vitality of Lynx in the Dinaric Mountains and South Eastern Alps (document)	March 2024	38_FR

Variations/complications/delays: /

ACTION D.4: Project visibility and public acceptance of lynx and lynx conservation

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
January 2018	September 2017	March 2024	March 2024

Implementation of the action has started earlier as planned. Project team members set up a protocol for recording media clips and implementing an ad hoc content analysis of the media (media clipping: https://goo.gl/znMygs). During the reporting period, 2,586 media clips were documented, and 1,761 mentioned the LIFE Lynx project. Overall, the project was mentioned positively (average mark 1.76 on a scale ranging from -5 to +5).

Both public surveys were completed during this action. A modified version of the questionnaire already developed in A.7 action was used. The number of inhabitants of the project area surveyed (by UL, BIOM, and PLI) per country in 2021 was 1,059 for Slovenia, 582 for Italy, and 681 for Croatia. In 2023, the number was 859 for Slovenia, 661 for Italy, and 719 for Croatia. Most respondents in all three countries support lynx conservation, including translocations from other countries. The greatest level of support for the translocations was documented in Slovenia. Fear of economic loss due to lynx and opposition to bringing new lynx were documented primarily among livestock breeders. Fear of lynx reducing their opportunities to hunt ungulates was documented among hunters. Support for translocations has decreased slightly, especially in Italy. Many respondents (around 55 % in Slovenia, 12 % in Italy, and 27 % in Croatia) were familiar with the LIFE Lynx project as were hunters (75 %).

UL, BIOM, and PLI produced national reports (Annex 38_MR2, Annex 39_FR), and UL prepared a joint Intermediate report in English (Annex 39_MR2) and Final report (Annex 40_FR).

Deliverable	Foreseen due date	Annex
D4: 3 national reports (electronic)	September 2021	38_MR2
D4: Intermediate report (electronic)	December 2021	39_MR2
D4: 3 national reports (electronic)	December 2023	39_FR
D4: Final report of the action (electronic)	December 2023	40_FR

Variations/complications/delays: Since the data gathering and analysis took longer than foreseen, the national and final intermediate reports were prepared in January 2022. The extension did not impact other project actions. Also, the national final report for Slovenia and the final report of the action were late (finished in March 2024); however, this did not impact other project actions.
CUFAA needed to increase the size of the sample for the Italian questionnaires to enhance the number of hunters, resulting in higher costs of the research. BIOM, for the Croatian survey, changed the mode of operation – telephone survey was carried out by a market research agency. UL faced an increase in the prices of printing and postal services; reallocations were needed to cover the costs.

ACTION D.5: Assessment of socio-economic impacts of the project actions on local economy and communities

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	September 2017	March 2024	March 2024

A provisional list of indicators was developed at UL and discussed and finalized at a project steering group meeting (Annex 23_PR1). News about the list of indicators was also published on the project web site: https://goo.gl/qnUfk7.

Annual assessments and reports for 2018 (Annex 39_MR1), 2019, 2020, 2021 (Annex 40_MR2) and 2022 (Annex 41_FR) were prepared, and short news summaries sharing the findings were published on the project web page. In addition to the foreseen activities, three infographic posters summarizing the progress of the project from 1/7/2017-31/8/2018 (Annex 40_MR1), 1/7/2017-31/12/2021 (Annex 41_MR2) and 1/7/2017-31/3/2024 (Annex 42_FR) were prepared and shared on the project web page and social media.

A final assessment and final report of the indicators were prepared in 2024 (Annex 43_FR). In individual cases, the predicted values for an indicator were not achieved. However, most of the predicted values were achieved, and many of them were also surpassed by much higher values than were predicted at the beginning of the project.

Deliverable	Foreseen due date	Annex
D5: List of indicators	July 2018	23_PR1
D5: Report on socio-economic impacts of the project actions on local economy and communities	March 2024	43_FR

Variations/complications/delays: In the MR2, we notified the change in the baseline indicator distribution of lynx/km2 (8,500 km2 instead of 6,000 km2).
Instead of the indicator "Level of economic satisfaction for damage prevention method adopted", we used "Fear of financial damage due to lynx presence". This change was made in the 2019 Assessment and Report and in the following reports.

ACTION D.6: Assessment of project's impacts on ecosystem functions

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	September 2017	March 2024	March 2024

A provisional list of indicators was developed at UL, and they were discussed and finalized at a project steering group meeting (Annex 23_PR1).

Annual assessments and reports for 2018 (Annex 39_MR1), 2019, 2020, 2021 (Annex 40_MR2) and 2022 (Annex 41_FR) were prepared, and a short news report summarizing the findings were published on the project web page. In addition to the foreseen activities, three infographic posters summarizing the progress of the project from 1/7/2017-31/8/2018 (Annex 40_MR1), 1/7/2017-31/12/2021 (Annex 41_MR2) and 1/7/2017-31/3/2024 (Annex 42_FR) were prepared and shared on the project web page and social media.

The final assessment and final report were prepared in 2024 (Annex 43_FR). All the predicted values for the indicators were achieved (inbreeding coefficient, successfully translocated animals), and most of them were greatly exceeded (estimated number of individuals in the population, functional territories, annually confirmed reproductions, lynx population distribution, and genetic samples).

Deliverable	Foreseen due date	Annex
D6: List of indicators	July 2018	23_PR1
D6: Final report of the action	December 2023	43_FR

Variations/complications/delays: For the indicator "Number of documented breeding events of the translocated animals", we also counted the kittens born within the territories of the translocated males, since the translocated males are highly likely their fathers.
From 2022 on, the indicator "Effective population size" was derived from genetic data and the number of successfully integrated translocated lynx (it was impossible to estimate precisely just from genetic data because of the translocations).
The value of the indicator "Inbreeding" was estimated for 2023, including the Alpine stepping stone population under different assumptions of gene flow with Dinaric Mts.

ACTION E.1: Promotion of the lynx population reinforcement and long-term conservation through local consultative groups

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
January 2018	February 2018	March 2024	March 2024

Six local consultative groups (LCG) were established in Slovenia (four in the Dinaric part, two in the Alpine part – Gorenjska region) and three in Croatia (Gorski Kotar, Lika and Public institutions).

Five meetings were held in Croatia: LCG Gorski Kotar - 2, Lika and northern Dalmatia - 2, and public institutions in Lika and northern Dalmatia - 1. All were carried out in person. The first LCG meeting was held in March 2019, prior to the release of the first lynx in the Gorski Kotar region. The second and third groups were formed in December 2019, with one gathering representatives of stakeholders from Lika and North Dalmatia regions, while the other only representatives from public institutions from Lika and Velebit.

In Slovenia, 22 meetings were organised with 516 participants, some of them online due to Covid restrictions. In the Notranjska Regional Park (Dinaric part of Slovenia), we joined LIFE Stržen project council as a stakeholder group. We had a chance to present and discuss project activities with all key stakeholders from the area in 5 meetings. A number of meetings with other groups: Loški Potok - 5, Kočevsko - 4 (plus the film event within E2), Pivško - 5, Gorenjska - 3 (joined with meeting for LCG severna Primorska). Annual events were organised in February 2020 (Annex 46_MR1), May 2022 (Annex 42_MR2), October 2022 and two in November 2023 (in Dinarides and Alps).

At least 205 emails about important project news were sent to more than 425 contacts of the LCG members in Slovenia and Croatia. Sixteen reports (brief action plans) were prepared (Annex 41_MR1, Annex 43_MR2), together with the final report about best practices (Annex 43_FR).

In addition, the project group made an on-line list of “Most Frequently Asked Questions” about the lynx reinforcement effort to communicate the goals and actions of the project for all target groups. Project team members prepared a document in EN, SI, HR and IT language (Annex 44_MR2) and printed it (310 copies in SI, 148 in EN, 1,000 copies in HR and 20 copies in IT). The document aimed to provide up-to-date information about the project and lynx to LCG members and other project participants.

The Communication manual was prepared in PDF form (Annex 45_MR2). This enabled project team members to have more structured communication with three key interest groups and provided a theoretical example on how to prepare for communication with other interest groups and evaluate success afterwards.

Project postcards in SI, HR, EN and IT language (Annex 43_MR1) with information about two translocated lynx Goru and Doru and key project messages were printed in 1200 copies (all languages together). The remaining number of postcards were printed with lynx Maks, Tris, and Lenka, bearing the key project messages (SI 2,850, IT 400, HR 400), and we exceeded the foreseen number of pieces (SUM: 4,850 pcs in all languages in both orders; Annex 46_MR2).

All foreseen promotional materials were produced according to the project graphics and distributed to LCG members, hunters, project staff, and other interested individuals. Additionally, together with the predicted promotional materials from the C5 (1,600 T-shirts for those helping with the lynx monitoring), we’ve ordered extra cotton bags and buffs (700 pcs) with project logo and T-shirts (500 pcs) for Young Lynx Guardians (Annex 44_FR).

Project team members prepared 24 popular articles foreseen for the local media of the lynx release sites (Annex 45_FR).

In Croatia, the LCG Public institutions of Lika and Northern Dalmatia had the exclusive opportunity to receive the project film (dissemination through email) and use it to promote their work in lynx conservation in Croatia before its public promotion through social media.

Milestone	**Foreseen due date**	**Status**
Local consultative groups (LCG) for release sites established in Slovenia (4) and Croatia (2)	March 2019	Achieved
1st local consultative event with round-table meeting organized and brief action plan prepared (Slo and Cro)	June 2019	Achieved
1st annual dinner for LCG organized	December 2019	Achieved, Annex 46_MR1 and 42_MR2

Deliverable	**Foreseen due date**	**Annex**
E1: T-shirts: 1000 (Slo), 400 (Cro), 400 (Ita); 400 caps (Slo), 100 baseball caps (Cro), 100 winter caps (Cro), 120 backpacks (Slo), 800 notepads (Slo), 1000 pencils (Slo), 400 cotton bags (Cro)	March 2019	47_MR1, 45_FR
E1: Communication manual - Slo (150), Cro (30), Ita (20), Eng (50)	June 2019/delayed, just PDF	45_MR2, 44_MR2 (additional deliverable)
E1: Project postcards - Slo (4000), Ita (500)	June 2019	43_MR1 and 46_MR2
E1: 1st consultation report for specific release site prepared (Slo and Cro)	September 2019	41_MR1, 43_MR2
E1: Final consultation report with the best practice recommendations for working with stakeholders	March 2024	44_FR
E1: Min 2 articles in SLO, 1 article in CRO published in the local media for each of the lynx release sites	March 2024	46_FR

Variations/complications/delays: The preparation of the communication manual was delayed because of the changed structure of the deliverable—instead of one, UL prepared two outputs: a communication manual (pdf) for the project team members and a simple booklet with FAQ (printed in 458 pcs) for LCG members to help them build their capacity and provide up-to-date information regarding the project and Lynx.
Costs meant for travel reimbursement for LCG members in Slovenia were used to finance the ideas from the members themselves. Three notice boards were produced for the schools, as well as replicas from lynx, wolf and bear skulls. This way, the pupils can understand differences in these species' diet, their ecological needs and why some are more conflictive than others – which are the main messages to give for preserving the lynx. Another additional result of this collaboration is the board with 20 sound records of (forest) animals. The soundboard stands within the "Nature house" of the Hunting Club Loški Potok, where they guide school- and other groups. A special treat is the collection of games "Let's play with the lynx!" for children, gathered in a PDF which is easy to print and prepare board games out of. Additional 4 field days for schools were organised, mostly carried out by the society Dinaricum, with which UL has been collaborating through the years. In Croatia, costs for reimbursement for LCG members were used to acknowledge the extensive work of some LCG members who continuously

promoted the LIFE Lynx project, shared the results through local media, prepared popular and educational articles about lynx, took over the responsibility of a certain number of camera traps, and gave the LIFE Lynx project lynx photographs with their authorship.
BIOM under planned travel costs for the LCG meetings, due to large distances in Croatia, and also reallocated some funds for the foreseen promotional materials and print of the Q&A deliverable.

ACTION E.2: Hunter participation through partnerships

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
January 2018	March 2018	March 2024	March 2024

This action focused on active hunter participation throughout the evolution of the project. For regular communication, outreach, mutual learning and establishing trust with key stakeholders, presentations and workshops at a local and regional level were organised. Overall, HAS organised/produced:

- 27 presentations for the general public, with the first presentation in June 2019; foreseen 17.
- 49 presentations for hunters, with the first presentation in April 2018 (Annex 49_MR1); foreseen 38.
- 7 educational seminars for gamekeepers, with the first one in April 2019 (Annex 51_MR1); 6 foreseen.
- 500 hats (Annex 31_PR1), 500 T-shirts (Annex 55_MR1) and 1100 keychains (Annex 56_MR1) with LIFE Lynx motive.
- 30 longer articles (19 foreseen) and 28 short news (18 foreseen) about the project.
- 77 one-on-one meetings with hunters. It is important to stress that the project staff communicated with hunters from the project area daily and that the true figure of one-on-one unformal meetings is much higher than the one reported here.
- a press conference about preventing the illegal killing of lynx and other wildlife in May 2019.

In April 2022, HAS organised Hunter's Day – an event dedicated to Slovenian hunters and other interested public about the importance of lynx conservation (Annex 47_MR2). Lecturers from Slovenia and Croatia provided extensive knowledge and information about lynx. Upon attending the event, the listeners got a book of abstracts (Annex 48_MR2). As a result of the event, the Goldhorn bulletin issue dedicated to lynx conservation was produced in electronic and printed versions in March 2024 (Annex 47_FR) and distributed among regional hunting organisations, project partners, authors etc. The electronic version is also published on the project and HAS official websites.

With strong support and collaboration of the FACE for our conservation actions, a two-day international lynx conservation conference titled 'Hunters and lynx conservation in Europe' was conducted in March 2023 (Annex 48_FR). Speakers from Austria, Croatia, Germany, Italy, Slovenia, and Switzerland gave an in-depth view of different lynx populations across Europe and their current conservation status and the issues concerning lynx, from reintroduction efforts, to stakeholders' involvement, fighting illegal killing of lynx and other wildlife and the importance of hunter participation in several conservation activities. In total, FACE members from nine different countries joined the conference and contributed with their experience. The conference participants received a T-shirt (Annex 49_FR). The speakers compiled the topics of their talks into abstracts; the book of abstracts was produced in January 2024 (Annex 50_FR). The LIFE Lynx project has generated extensive knowledge and field knowledge needed for effective lynx monitoring and is willing to share it with hunters outside the project's scope. Therefore, at the conference venue, the president of Styrian Hunters Association, the president of HAS and the director of SFS signed a networking agreement of the exchange of knowledge with Austrian hunters who are eager to learn about this topic.

Milestone	Foreseen due date	Status
First presentation for general public and local communities organized	June 2018	Achieved
First presentation/workshop for hunters conducted	December 2018	Achieved

First press conference organised	June 2019	Achieved
First educational seminar for gamekeepers held	June 2019	Achieved
Hunter's day dedicated to lynx conservation organized in Slovenia	September 2021	Achieved, Annex 47_MR2, 48_MR2
International conference on lynx conservation organised	June 2023	Achieved. Annex 48_FR

Deliverable	**Foreseen due date**	**Annex**
E2: 500 hats with LIFE Lynx motive for hunters	July 2018	31_PR1
E2: Key chains with lynx conservation motive (1000x Slo, 100x Cro)	September 2019	56_MR1
E2: 500 T-shirts with fight against wildlife crime motive for hunters	March 2020	55_MR1
E2: Goldhorn bulletin issue dedicated to lynx conservation	June 2022	47_FR
E2: 200 T-shirts for the conference participants	June 2023	49_FR
E2: Book of abstracts from the international conference on lynx conservation	December 2023	50_FR

Variations/complications/delays: Due to Covid-19 restrictions, HAS was unable to organize Hunter's Day in the foreseen time. Consequently, there was also a delay in delivering the Goldhorn Bulletin issue dedicated to lynx conservation as most of the articles in the bulletin were based on the lectures from Hunter's Day. Nevertheless, the issue was prepared in printed and electronic versions and distributed among relevant stakeholders, with some reallocations needed to cover the costs of proofreading, design, and printing that were not foreseen in the project.
For the organisation of the two big events for hunters, the finances in the proposal were inadequately planned; HAS reallocated spare funds for the external lecturers, for travel costs of the HAS personnel, badges for participants, print of the book of abstracts and for the refreshments at both events. VUKA used the remaining funds in the travel costs to be able to come to the Hunter's Day (and present the work of the conservationist – hunter).

ACTION E.3: Documentary film series: the role of hunters as conservationists, lynx reinforcement, and short video clips on project activities

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	September 2017	December 2023	March 2024

The first film "Path of the Lynx" premiered in Slovenia and Croatia in June and July 2018 respectively (Annex 32_PR1). The film traces the historical role that Slovak, Slovenian, and Croatian hunters played in the 1973 lynx reintroduction efforts to the Dinaric Mountains. The film has been screened in more than 30 venues, on Slovenia National Television (101,000 views) and is also available online with English (https://vimeo.com/317960027), Croatian, Slovenian, Italian, Romanian and German (additionally) subtitles (Annex 58_MR1). The film has been well received by Slovenian and Croatian hunters, the main audience for the film, and has been an excellent way to introduce local communities to the project and to foster discussions and motivation to become involved in the project through LCG (Action E1). Hard copies of the Part I film were produced. Additionally, 460 hard copies of the film were produced as USB flash drives keychains within E2 action (Annex 56_MR1).

Part II of the film showcased the efforts of the LIFE Lynx project team through collaboration among hunters, scientists, managers, and LIFE Lynx-associated beneficiaries to rescue lynx in the Dinaric Mountains and the SE Alps. The initial due date was postponed as we wanted to capture most of the project activities and their conservation impact. The film premiered at September 11, 2023 in Slovenia with a press conference and on the 10th International Congress of Veterinary Science and Profession in Croatia; up to date, more than 20 screenings followed. It was screened on the Slovenia National Television and is planned for screening on RAI, later this year (Agreement signed). The film is available online (https://youtu.be/mEtSekXFpAA) with English, Croatian, Slovenian, Italian, Romanian and German (additionally) subtitles. Besides the screenings, the film was distributed through hard copies on USB drives (Annex 51_FR), through posting on the LIFE Lynx YouTube channel (LIFELynx), and in Croatia, via email to all of the public institutions cooperating with the project. The film was screened at two film festivals in Slovenia (BOFF - Bovec Outdoor Film Festival and Festival Gorniškega Filma); at the BOFF, the film also received a public's choice award for best Slovenian Film. The film will also be screened in June at the Lynx Festival in Romania.

In addition to the two-part films, PLI produced a video clip about the history of the Dinaric-SE Alpine lynx population, its present settings, and why reinforcement is needed, and a video clip about lynx monitoring in Italy (published on LIFELynx, progettolinceitalia YouTube channels).

All video material produced has made a great contribution to the dissemination of information and public involvement and will continue to do so!

Additional: The project team decided to produce 20 professional short video clips in addition to the two movies to capture all project activities and share up-to-date information about project activities with the public. More than 40 other amateur video clips were produced, mostly using camera trapping footage, showing lynx and its interactions with other forest wildlife.

A short cartoon based on the motives of the book The Mighty Lynx (E6) was produced to promote lynx amongst the younger audiences. The cartoon was screened on Slovenian TV (Planet TV) and presented to more than 2,400 pre-school and school children at events. The cartoon is available with Slovenian and English subtitles and was additionally dubbed in the Croatian language.

All video clips are available online on the project's YouTube channel and on the project's webpage. Project LIFE Lynx also has its VIMEO account – please check: LIFE Lynx (vimeo.com)

Outside LIFE
In collaboration with Northern Rockies Conservation Cooperative, and Trust for Mutual Understanding, we produced an additional 6 video clips (Lynx the Hunter, Lynx through Time, Lynx Trappers, In Memoriam of Alojzije Frković, In Memoriam of Janez Čop and Legendary Maks) using new footage and the video material filmed but not used in the Part I film – Interviews with hunters. These clips are used to promote hunters' role in lynx conservation in the project area. Some have been translated into English, Slovenian, Italian, and German.

In Croatia, an independent filmmaker followed the team of Croatian partners (FVM, BIOM, VUKA) from the beginning of the project, filming sporadically the events and progress of the team. The film team obtained financing from the Croatian national TV and a 50-minute documentary was finalised in March 2024, but broadcasting will take place during After LIFE. The filmmaker will also organise a premiere and participate in film festivals with this documentary, showing the LIFE Lynx project as a best practice example to a wider public.

The Large Carnivores Visitor Center in Stara Sušica, Croatia, adopted the Part II film to be screened regularly as part of its visitor offerings.

Milestone	**Foreseen due date**	**Status**
Part I film released	December 2018	Achieved
Part II film released	December 2021	Achieved
Press conference organised	March 2022	Achieved

Deliverable	**Foreseen due date**	**Annex**
E3: Hard copies of part I film (400x Slo, 250x Cro, 50x Ita)	March 2019	59_MR1
E3: Hard copies of part II film (600x Slo, 500x Cro, 150x Ita, 300x Sk, 300x Ro)	June 2022	51_FR

Variations/complications/delays: The due date for the Part II film was postponed to July 2023, with the premiere taking place in September 2023. Consequently, the deliverable Hard copies of part II film and press conference were also postponed.
As the DVDs as foreseen media for the film are technically obsolete, SFS put both films on USB flash drives. The Croatian partner FVM also put the film on USB flash drives which were produced in fewer copies than planned for the DVDs (100x) based on the real number of individuals cooperating on the project and public institutions involved. The movie was also shared through email and distributed via YouTube, which was more efficient for distribution and had a wider outreach in Croatia than sharing it exclusively on USB drives.
For the video clip, PLI purchased unforeseen music and a professional narrator.

ACTION E.4: Targeted education campaign about lynx conservation through active involvement of local schools

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2020	May 2018	March 2024	March 2024

The first educational presentation about lynx and the project in Italy was organized in Tarvisio in May 2018. In Croatia, two educational workshops for school children were held in March 2019 (in Senj and Krasno) and all materials were left for future use by school teachers (Annex 62_MR1).

In Slovenia in 2020, nine Young Lynx Guardians programmes ("adopt an animal") were developed with primary school teachers and two gymnasiums. UL held a workshop at each school, as well as a field day and an open-door day. The latter was meant for the pupils to present what they learned within the project to others - younger pupils, parents or others. At the Primary school Žužemberk, they organised two field days by themselves (DINA centre (with our presence) and Lynx trail), necessitating that UL organise an additional workshop for them. UL gave the teachers involved in the program confirmation of their collaboration and contribution to the project.

Schools carried out additional activities within the programs, like videos from photo-traps, a comic, lynx clay relief, etc. In addition, school children named the three translocated lynx: Boris (by Primary School Sodražica), Tris (by Community of Schools of the Julian Alps Biosphere Reserve) and Blisk (by Primary School Dragotin Kette Ilirska Bistrica).

In May 2023, UL organised a press conference with the Primary school Davorin Kette Ilirska Bistrica. UL presented the work of all schools within the Young Lynx Guardians programme and played videos, produced from photo-traps recordings. There was also an exhibition of the "lynx" artworks created by students.

Six teacher seminars were conducted: two online, two in the Large Carnivore Centre DINA, and two on the Lynx trail near Kočevje (Annex 50_MR2). Twenty-eight educational school kits were distributed at these seminars, where UL presented a teachers' manual about lynx (Annex 51_MR2), that UL produced in an online form as promised. Educational kits were prepared in the electronic form, on an USB key, and comprised of:

- Teachers' manual about the lynx (print and web version) – Annex 52_FR (updated version in Slovene)
- selected videos from camera traps and action E3
- Q&A from the action E1
- Project brochure about the Lynx
- Project bulletin 2019 and 2020.

The educational kit's content has been translated into English to enable project partners to produce it in their languages. Based on this, an Italian version of the teacher's manual was also produced (Annex 52a_FR).

For the open-door days in schools within the programme, UL printed 13,500 bookmarks (3,000 planned) with the lynx guarded by pupils (Annex 52_MR2).

Milestone	Foreseen due date	Status
1st school lecture about lynx organized (Ita)	November 2021	Achieved
6 seminars for biology teachers prepared and carried out (Slo)	May 2021	Achieved, Annex 50_MR2

1st programme “adopt an animal” implemented in local school (Slo)	July 2022	Achieved
1st "open door" day organized in Slo and Cro	December 2022	Achieved, Annex 49_MR2
Press conference implemented by the local school students and LCG members	November 2023	Achieved

Deliverable	**Foreseen due date**	**Annex**
E4: 30 educational school kits with teacher’s handbook about lynx prepared (Slo)	October 2020	51_MR2, 52_FR (updated Slo), 52a_FR (It)
E4: 3000 specially designed bookmarks for school children	November 2022	52_MR2

Variations/complications/delays: When Covid epidemic occurred, we paused these activities and brought some of them online. We believe we’ve reached more participants through the online seminars, while seminars, carried out live, were more convenient and convincing.

We organised many additional events (lectures/workshops/etc.):

- Seminar for teachers in a forest (Kamnik, Mekinje, UL BF) - May 2019
- Gymnasium Jesenice, online (UL BF) - March 2021
- Emil release with Primary school Krasno (FVM) - May 2021
- Taborniški feštival in Ljubljana (UL BF) - May 2021 (online), April 2022 and 2023
- Biotechnical centre Naklo (UL BF) - September 2001 and December 2022
- Workshop at the kindergarten and primary school in Petrinja (VUKA) - February 2022
- Primary school Bohinjska Bistrica (UL BF and SFS) - February 2022
- Primary school Pivka (UL BF) - March 2022
- A lecture in Primary school in Tarvisio (PLI) - March 2023
- Primary school Šmarje Sap (UL BF) - April 2023
- A stand at a Festival of Soča trout in Tolmin (UL BF) - April 2023
- A stand at a Festival about health in Kobarid (UL BF) - June 2023
- Gymnasium Ledina (with exchange students from France; UL BF) - June 2023
- Workshop in a primary school in Flaibano (CUFAA) - June 2023
- Workshop in a primary school in Sedegliano (CUFAA) - June 2023
- Workshop in a primary school in Camporosso (PLI) - July 2023
- A film (Together for lynx) and a school play of Mighty lynx (UL BF, Primary school Dragotin Kette and Municipality Ilirska Bistrica) - November 2023
- Workshop in a kindergarten in Preddvor (UL BF) - November 2023
- Workshop after a Swiss film “Lynx” in Kinodvor (cinema; UL BF) - November 2023 and February 2024

In collaboration with National Park Risnjak, we produced materials for teachers to learn more about the park and the lynx. Teachers and pupils can also check their knowledge through the online quiz!

ACTION E.5: Active Engagement of Stakeholders and Target Groups through Customized Events, Personal Communication and Networking

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	July 2017	March 2024	March 2024

For the long-term acceptance of the lynx, it is important to gain and maintain the support of the most important stakeholders and target groups (local hunters, journalists, environmentalists, local communities, etc.). Throughout the project, we were actively involved with different stakeholders through a variety of events and activities, reaching more than 8,600 people with different public events organized by the project. All told, we estimate that events focused on lynx recovery have reached more than 19,300 people. The number of all events conducted by country is listed in Annex 53_FR in Tables 1-5. Descriptions of all events are listed in Annex 54 _FR. Project deliverables and milestones with deadline until the end of the project are listed in Table 1.

In addition to planned activities, we had many networking activities with various projects and organizations like Interreg 3Lynx, Balkan Lynx Recovery Program, InterMuc, Lifescape project (UK), European Rewilding Network, bikepacking community gravgrav (to raise awareness on lynx conservation among cyclists), and the Blackfoot Challenge (Montana, USA). The project was also presented at many more networking events than planned; updates were regularly presented at Eurolynx and Linking Lynx meetings. At different networking events, we have reached more than 2,000 people (Annex 54 _FR). Project staff were invited by EASME to present our communication activities in an online communications webinar, which was watched by more than 300 people. The project was also presented at many more networking events than planned, from which we would emphasize the presentation held in 2022 for the Turkish delegation working on the Endangered species project, co-financed by the EU and the Republic of Turkey, with emphasis on the preparation of the management documents, either on the population level or national. In 2022, we also welcomed foreign experts from 7 countries and showed them our best practices.

Sub-action E5.1 – Public events with presentations about the project, lynx conservation, LIFE programme and Natura 2000

From July 2017 until the end of the project, we held 102 presentations on lynx conservation and the LIFE Lynx project (50 were planned in the proposal) for different groups of stakeholders. We reached more than 7,190 participants from the general public, students, hunters, foresters, NGOs, and others (Annex 54 _FR, Table E.5.1 Public events).

Sub-action E5.2 – Events for environmentalists and journalists

From July 2017 until the end of the project, we organized 21 events for journalists (7 were planned in the proposal), and 13 events for NGOs (9 were planned in the proposal) (Annex 53 _FR, Tables E.5.2 Events for journalist, E.5.3 Events for NGOs). We also organised 13 press conferences at major project events; six were done in E5 (three were planned). All major national media were present at the conferences and reported about the events (this is recorded in media clipping) (Annex 54 _FR, Table E.5.4 Press conferences).

Sub-action E5.3 – Networking with other LIFE and non-LIFE projects

We were successful in sharing information with other EU projects. LIFE Lynx project held 73 presentations at different events around Europe and in the USA (14 were planned in the project

proposal) (Annex 54_FR, Table E.5.5 Networking presentations). Some of the most important networking events are listed below:
- In October 2018, a networking visit to the LIFE Luchs project (LIFE 13 NAT/DE/000755) provided an opportunity for the LIFE Lynx team to exchange experiences, debate the open questions, and learn some new things regarding the translocation and monitoring of lynx from the German and French colleagues (Annex 65_MR1).

- Among others, LIFE Lynx was presented by FVM at the fair organized under the LIFE conference in Croatia in February 2019 and by SFS on an information workshop for applicants for LIFE funding in Ljubljana, Slovenia, in May 2018. On both occasions, experiences gained from within the project were shared with the future applicants of the LIFE program.

- In September 2018, PLI was invited to present the lynx conservation actions and the LIFE Lynx project at the Biodiversity Conference in Rome, which Carabinieri Forestali organized, to an audience of more than 250 people.

- Networking also happened with other (LIFE) projects, in July 2017, when a networking workshop was organized by the LIFE WOLFALPS project in Val Masino, Italy, to discuss different ecotourism initiatives developed by LIFE and other projects. As a result, a roadmap was created with focus points.

- In Slovenia, we established connections with LIFE Stržen (presenting the results of our project to their council members) and LIFE NATURAVIVA.

- Networking with Interreg CE project 3lynx resulted in the presentations of SFS in Šumava National Park in May 2018 and a comparison of best practices.

- LIFE Lynx partners visited Greek wildlife (mostly bear) projects in May 2019 and presented the project to representatives of several Greek LIFE projects (LIFE PRIMED, LIFE ForOpenForests, LIFE NATURA THEMIS, LIFE AmyBear, LIFE SAFECROSSING).

- An additional visit was conducted by project partners in October 2021 to Spain, Andalusia, to meet with one of the most successful lynx reinforcement projects in Europe, LIFE Iberlince projects that have already finished and the ongoing LIFE LynxConnect project, which is trying to create stepping-stones areas to connect the separated Iberian lynx populations.

- In September 2021, Ukraine hosted an exchange of experiences regarding lynx monitoring in the scope of the LIFE EuroLargeCarnivores project. The topic was the population's connectivity in the future. A representative of our project was present.

- Our best practices were presented at the European Rewilding Network's gathering in the Apennines in November 2021 and at the Dinaric platform's meeting in Northern Macedonia in March 2022.

- In September 2022, five members of the project team visited the Blackfoot Challenge in Montana, USA, and shared the best practices regarding communication techniques, conservation efforts, and best practices with diverse audiences in Montana – ranchers, NGOs, and college and high school students.

In the scope of all visits, we shared lessons learned in the LIFE Lynx project. Active cooperation with the Eurolynx initiative resulted in a presentation at the 5th meeting in Germany in October 2022 and at the online meeting in May 2023. For the Balkan Lynx Recovery Program, best practices from the communication team were presented online in November 2022 and in the field (in Slovenia) in May 2023. The project's goals and results were presented in November 2022 for the LIFE Croatia contact point. Hunters' involvement and communication were of interest to the IUCN and LIFE Lynx team members were happy to present online in March 2023. For the WWF Switzerland, an online presentation took place in January 2024.

A three-day International Communication Experience Exchange Workshop was organized in collaboration with LIFE DINALP BEAR (LIFE13 NAT/SI/000550) in April 2018 in Ljubljana. 47 participants from Europe and North America attended. The workshop proceedings are available in Annex 38_PR1. The Project communication plan also included relevant parts of the proceedings (Action A8).

We organized and attended a study visit (one person for one month and two persons together for three weeks) to a genetics research group at LECA Institute in Grenoble and a visit to the Naturhistorisches Museum Wien.

In September 2023, we organized the Final project conference, in Zadar, Croatia. More than 150 participants from 20 countries attended the event, at which all major project results were presented and the film Together for Lynx was screened.

Milestone	**Foreseen due date**	**Status**
First public event with presentation about the project organized	April 2018	Achieved
Communication workshop held	May 2018	Achieved
First event for environmentalists or journalists organized	June 2018	Achieved
Visit of Palatinate Forest, Germany (LIFE13 NAT/DE/000755) carried out	December 2018	Achieved
International conference carried out	December 2023	Achieved

Deliverable	**Foreseen due date**	**Annex**
E5: Communication workshop proceedings	July 2018	38_PR1
E5: International conference proceedings (electronic version)	December 2023	55_FR

Variations/complications/delays: Soon after the start of the project, the invitations to various meetings of different European initiatives/programs/projects started. All ABs recognised the added value of networking and some of them asked for reallocations to be able to share the knowledge and best practices of the LIFE Lynx project: ACDB, SFS, and FVM. PLI, ZRSVN, UL used surplus funds from other actions and activities to cover the costs of the additional networking with the Spanish LIFE projects. Besides the previously listed additional activities, the project team extended the final project conference for an additional day and merged it with the annual Eurolynx meeting that brings together many lynx experts. Due to the increased volume of the conference but also an increase in the price of the conference cost, we reallocated surplus funds from other activities for several partners (BIOM, FVM, SFS) for the implementation of the conference, promotional material and travel costs of project personnel.

ACTION E.6: General communication support for lynx reinforcement and importance of Natura 2000 network

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	July 2017	March 2024	March 2024

All planned activities were implemented, with one extra which resulted in an additional positive impact.

Sub-action E6.1 – Promotional and educational publications

The project handout was produced in Slovenian (1,500 copies + 6,000 copies distributed to 120 supermarkets around Slovenia within the company Kraš marketing campaign), Slovakian (1,600 copies), Croatian (2,230 copies, but not foreseen) and English language (750 copies, but foreseen only in electronic version) and has been distributed (Annex 39_PR1).

The first project bulletin was printed in Slovenian, Croatian, Italian and Slovakian (Annex 66_MR1). The second bulletin was printed additionally in English for dissemination purposes (Slovenian 800 copies, English 200 copies, Croatian 400 copies, Italian 200 copies, Slovakian 400 copies; Annex 55_MR2). The Italian version was printed in smaller numbers since the next (3rd) issue covered topics that were more relevant and useful locally. Therefore, the 3rd issue was printed in higher numbers to catch the difference (1,200 pcs). The printing numbers of the following issues were thus: 1,000 (SI), 200 (EN), 400 (HR), 1,200 (IT), 400 (SVK) for the 3rd bulletin (Annex 56_FR) and 1,000 (SI), 200 (EN), 400 (HR), 800 (IT), 400 (SVK) for the 4th bulletin (Annex 57_FR). All the issues in all languages were regularly published online.

In October 2020, we produced the brochure “Eurasian lynx - biology, threats and translocations from Carpathians to Dinarides” in Slovenian (9,000), Croatian (5,000), English (1,000; additionally, from the quota for Slovenian), Slovakian (1,600) version - Annex 56_MR2. For the Italian public, we produced another brochure “Attenzione alla lince”, which focuses more on activities in the Alps (Annex 58_FR).

Sub-action E6.2 – Notice boards, project website and Layman’s report

The project website and FB page were released as planned. The website functions in all project languages (Slovenian, Croatian, Italian, Romanian, Slovakian) and English. In total, 445 articles were published on the project website, which had 536,298 unique page views (Annex 59_FR). On project FB, 861 posts were published (app 3 per week) and had 9,760 followers until March 2024 (Annex 60_FR). An additional (not planned) FB profile named “LIFE Lynx - hrvatski terenski blog” was created and it serves as a Croatian field blog. It has 11,370 followers and is linked to the official FB “LIFE Lynx”. A project Instagram profile "LIFE Lynx" was created which has 3,705 followers. A project YouTube channel was also created, where more than 100 videos were published, including documentaries produced in action E3 and the Mighty Lynx Cartoon.

Eight notice boards with content in SI and EN were produced in Slovenia (Annex 58_MR2 – map of locations, photos of boards info, and boards mounted). The last board was produced in autumn of 2023 and was set in Osilnica near the village centre, in collaboration with the local municipality and hunting club. In Croatia, two boards were produced (for NP Risnjak and NP Paklenica), one in Romania (the board was set at a location near Lepsa, at a touristic point which has a lot of visitors: Cascada Putnei) and one in Italy (the board is mounted in Tarvisio/Udine). The graphic design of all boards can be seen

in Annex 59_MR2 and Annex 61_FR. The Slovakian board was set in a university forest area next to the popular tourist trail.
Additional notice boards were produced in Slovenia; one was financed by Kraš d.o.o. and was placed in ZOO Ljubljana, near the lynx enclosure. Nine notice boards were produced in cooperation with local hunting clubs where lynx were released (3 in Loški Potok and 6 in Nomenj Gorjuše). At the initiative of the members of local consultative groups (E.1) additionally 3 notice boards and one sound board were produced for schools and local hunting club. One notice board was also placed in Mašun, at the beginning of the Lynx Walk trail, established in the scope of the Lynx-based Tourism action (C.11).

The Layman's report (Annex 62_FR) documented all major project outputs. It was produced and printed in four languages (Slovenian, Italian, Croatian, and English). The report was distributed among all partner countries to key project stakeholders (hunters) and other participants at different project events. The first public presentation of the report was in Ribnica on 27 March 2024.

Sub-action E6.3 – Press releases and popular articles

Twenty-six press releases were published (Annex 61_MR2 and 63_FR) and project team members prepared 42 popular articles that were published in different media (22 in SI, 12 in HR, and 8 in Italy; Annex 60_MR2 and 64_FR).

Milestone	**Foreseen due date**	**Status**
Project website and Facebook profile set up and working	December 2017	Achieved
Layman's report presentation carried out	March 2024	Achieved

Deliverable	**Foreseen due date**	**Annex**
E6: Project handouts: 2000 (Slo), 1600 (Svk)	March 2018	40_PR1
E6: Project bulletin - 1st issue 1000 (Slo), 400 (Cro), 800 (Ita), 400 (Svk)	December 2018	66_MR1
E6: Brochure about lynx: 10000 (Slo), 5000 (Cro), 2000 (Ita), 1600 (Svk)	November 2019/delayed to October 2020	56_MR2
E6: Project bulletin - 2nd issue 1000 (Slo), 400 (Cro), 800 (Ita), 400 (Svk)	December 2020	55_MR2
E6: 13 notice boards produced and set up	May 2022/October 2023	58_MR2, 59_MR2, 61_FR
E6: Project bulletin - 3rd issue 1000 (Slo), 400 (Cro), 800 (Ita), 400 (Svk)	December 2022	56_FR
E6: Project bulletin - 4th issue 1000 (Slo), 400 (Cro), 800 (Ita), 400 (Svk)	January 2024	57_FR
E6: Popular articles published (20 in SLO, 6 in ITA, 8 in CRO)	January 2024	60_MR2, 64_FR
E6: Press releases (at least 5 in SLO, 6 in ITA, 5 in CRO) prepared	March 2024	63_FR
E6: Layman's report produced	March 2024	62_FR (in EN)

Variations/complications/delays: One of the boards that was produced was a bit too large for the location at Glamping Bloke, Slovenia. We moved that table to Sodražica as within action E1 (LCG

means) and produced a smaller board for Bloke. In Sodražica, the municipality and the Primary School Dr. Ivana Prijatelja suggested producing another board, which we did. SFS ordered a 3D scan and print of a lynx skull as an added value for the educational activities with schools.

Additional: We collaborated with two famous Slovenian writers, Desa Muck and Boštjan Gorenc - Pižama, to produce two children's books about lynx. Both books were first written in Slovenian language ("Huda risinja" and "Pogumni Maks") and were later translated into English (The Mighty Lynx, Max, the Bravest Lynx). The books were distributed mostly to Young Lynx Guardians and other interested schools, organisations and other individuals connected with the project (at lynx release, to national parks, libraries, and educational centres…). Combined with screening events of the cartoon The Mighty Lynx (Action E.3), we distributed 100 books to 40 schools and kindergartens who organised more than 50 events with screenings of the cartoon. English books were distributed to project partners, collaborators, and other individuals or institutions working on lynx conservation (Annex 65_FR).

ACTION E.7: Targeted lynx conservation awareness with celebrity ambassadors

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	September 2017	December 2023	March 2024

At the beginning of the project, we established a collaboration with two project celebrity ambassadors, Mr. Anže Kopitar, the most famous Slovenian hockey player, Captain of the L.A. Kings NHL ice hockey team and a member of the Slovenian national team, and Mr. Peter Prevc, World Cup Ski Jumper. The video clips produced with Mr. Anže Kopitar were promoted on different project events and online (YouTube, Vimeo, Facebook). Mr. Peter Prevc was present at two press conferences; the first one was about the prevention of illegal killing of lynx and other wildlife, organized by HAS in May 2019 in Ljubljana; the second was at the release of three lynx in the Triglav National Park, Slovenia, in June 2021, where he opened one of the enclosures to release the lynx. He also endorsed our project with an interview for EASME in May 2020. Both ambassadors promoted the project through their social media accounts (Annex 66_ FR). Later, we established a collaboration with another celebrity ambassador in Slovenia, Mrs. Desa Muck, a renowned children's book author who agreed to promote the lynx through a book for teenagers, staring with the individual lynx that were translocated in the scope of our project (Goru, Maks, Catalin). She promoted the project through interviews she gave for different media and with a short statement in the second project film, Together for Lynx.

Milestone	Foreseen due date	Status
Established partnership with celebrity ambassador	September 2018	Achieved
Short video clip with celebrity ambassador recorded	June 2019	Achieved

Deliverable	Foreseen due date	Annex
E7: Short video clip with celebrity ambassador	June 2019	70_MR1

Variations/complications/delays: /

Additional: The project also involved other ambassadors – online influencers who helped promote lynx and the LIFE Lynx project. In Croatia, these were: Croatian Mountain Rescue Service, journalist Nevena Rendelli (60,000+ followers), stand-up comedian and TV host Ivan Šarič, nature photographer and travel blogger Domagoj Sever and the Instagram account Hiking Croatia (53,000+ followers). In Slovenia, we connected with a hiker and an Instagram influencer, Daniela Čeligoj (11,000+ followers) and a writer and stand-up comedian, Boštjan Gorenc - Pižama (21,000+ followers).

ACTION F.1: Coordination and administration of the project by the coordinator and the project steering group

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2017	July 2017	March 2024	March 2024/May 2024

Effective and consistent project management and leadership ensured the timely and efficient implementation of project activities. The project manager, project administrator and technical staff were employed at SFS. Each partner had staff dedicated to financial administration and technical implementation of activities that also ensured that project activities and financial accounting was carried out effectively. Continuous communication between SFS and associated beneficiaries, along with advice and guidance ensured correct and timely implementation of project actions.

An online table of the entire project's expected results, milestones and deliverables with deadlines has been established. It is accessible to all partners and regularly checked and updated by the project manager.

Project steering group meetings were held more frequently than originally planned to ensure the smooth management of the project. As of December 2019, four meetings were held in Slovenia, one in Croatia and one in Italy. In 2020, two meetings were held on-line, and one in 2021 (due to COVID-19). In September 2021, partners met again in person in Romania, in spring 2022 in Slovenia, and in Italy a year later, in April 2023. The last steering group meeting was held in January 2024 in Slovenia to conclude the activities and prepare for the project's wrap-up. Current and planned activities were presented at the meetings, and possible problems and complications were discussed. Until the end of the project, 13 steering group meetings were held to ensure efficient administration of the project.

The first annual assessment was completed as planned (indicator assessment: https://goo.gl/wz9FXn). A short news article summarizing the findings was published on the project web page (https://bit.ly/2Oea74n).

Milestone	Foreseen due date	Status
4 steering group meetings organized	March 2020	Achieved
8 steering group meetings organized	June 2022	Achieved
11 steering group meetings organized	January 2024	Achieved

Deliverable	Foreseen due date	Annex
F1: LIFE project performance indicators table updated for 1st progress report	November 2018	Not presented
F1: LIFE project performance indicators table updated for 1st mid-term report	May 2020	Achieved
F1: LIFE project performance indicators table updated for 2nd progress report	October 2021	Not presented
F1: LIFE project performance indicators table updated for 2nd midterm report	November 2022	Not presented

F1: LIFE project performance indicators table updated for final report	February 2024/June 2024	Achieved; 67_FR
F1: Audit report done	March 2024/June 2024	Achieved; Financial annexes
F1: All reports for EU Commission	March 2024/June 2024	Achieved

Variations/complications/delays: Some of the partners inadequately planned travel costs for attending steering group meetings and monitoring visits – reallocations were done for BIOM and PLI.

ACTION F.2: Assessment of project contribution to the overall objectives of the LIFE programme

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
July 2018	July 2018	March 2024	March 2024

Project outcomes are regularly monitored and evaluated (and are reported in this report) within D5 and D6 actions. Several of those indicators are relevant for the assessment of our project to the overall objectives of the LIFE programme. Final evaluation of the indicators was carried out as planned in the KPI tool.

Milestone	Foreseen due date	Status
Qualitative and quantitative outcome indicator table fulfilled for Progress report	November 2018	Achieved
Qualitative and quantitative outcome indicator table fulfilled for Mid-term report	May 2020	Achieved
Qualitative and quantitative outcome indicator table fulfilled for 2nd Progress report	October 2021	Not presented
Qualitative and quantitative outcome indicator table fulfilled for 2nd Mid-term report	November 2022	Not presented
Qualitative and quantitative outcome indicator table fulfilled for Final report	February 2024	Achieved

Variations/complications/delays: /

ACTION F.3: After-LIFE Plan

Status of the action: completed

Foreseen start-date	Actual start-date	Foreseen end-date	Actual end-date
January 2024	January 2024	March 2024	March 2024

In collaboration with all project partners, we prepared an After-LIFE conservation plan in which we assessed the project's impact using a comprehensive SWOT analyses focusing on the main project objectives. Based on the prepared transboundary management document 'Common guidelines for Dinaric-SE Alpine population-level lynx management' together with national strategic documents, we defined the institutions involved and the activities that will continue to be carried out (i.e., population surveillance, stakeholder involvement, international collaboration, etc.) in the timeframe of 5 years after the project's conclusion on a population level.

Milestone	Foreseen due date	Status
After-LIFE Conservation Plan prepared in Slovenian, Croatian, Italian, Slovakian, Romanian and English language in electronic format	March 2024	Achieved

Deliverable	Foreseen due date	Annex
F3: After-LIFE Plan	March 2024	68_FR

Variations/complications/delays: /

Table of deliverables

Annexes already submitted with the First Progress Report are marked with: _PR1, with the First Midterm Report: _MR1 and with the Second Midterm Report: _MR2.

Deliverables	**Foreseen due date**	**Annex**
A1: Preliminary map of the favourable capture areas and micro-locations	Sep 2018	6_PR1
A1: At least 30 genetic samples of resident lynx (report)	June 2019	Collected and analysed, in the report A3 (Annex 12_MR1)
A1: Report on lynx abundance and population density	June 2019	4_MR1
A1: Survey protocol for Slovak lynx source population	Sep 2018	5_PR1
A1: Final map of the favourable capture areas and micro-locations	May 2019	3_MR1, NOT PUBLIC
A2: Monitoring protocol for the Romanian source population	Sep 2018	7_PR1
A2: Final map of the favourable capture areas and sites produced	May 2019	5_MR1, NOT PUBLIC
A2: Report on lynx abundance and population density	Jun 2021	5_MR2
A3: Camera trapping guidelines (250 pcs)	Dec 2017	12_PR1
A3: Instructions for collecting non-invasive genetic samples (300 pcs)	Dec 2017	14_PR1
A3: Map of sex-specific distribution of lynx territories electronic version)	Dec 2018	9_MR1
A3: Report on baseline demographic and genetic status of SE Alpine and Dinaric lynx population (electronic version)	Dec 2018	11_MR1, 12_MR1
A4: Guidelines for reinforcement	Mar 2018	15_PR1
A4: Population-level reinforcement plan	Sep 2018	13_MR1
A4: Regional reinforcement plans (3)	Feb 2019	14_MR1, 15_MR1, for the Alps 6_MR2
A5: Common guidelines for population-level lynx management (electronic version)	Feb 2022	7_MR2
A5: Expert background study for next revision of the Croatian lynx management plan (electronic version)	Apr 2023	8_MR2
A5: Action plan for Slovenia (500 pcs)	Apr 2023	1_FR (Strategy), 1a_FR (Action plan)
A5: Interregional management Plan for Italy (500 pcs)	Apr 2023	2_FR
A5: Guidelines for management of lynx orphans in Croatia (additional document)	April 2023	4_FR
A6: Scientific review article on lynx dispersal and habitat movement abilities in Europe (peer reviewed journal)	Dec 2018	10_MR2

A6: Habitat suitability and connectivity models between and within the SE Alps and Dinaric mountains	Nov 2022	8_FR
A6: Three popular magazine articles (I, SLO, CRO) about spatial connectivity for lynx in the SE Alps and/or Dinaric mountains	Jan 2023	5_FR
A6: Report about habitat suitability and spatial connectivity for lynx and movement and/or gene flow across habitat patches and comparatively across the borders of the three countries	Mar 2023	6_FR
A6: Report on dispersal probability and potential connectivity between Swiss Alpine, Dinaric/SE Alpine and Balkan lynx populations and their consequent effect on their mutual viability	Sep 2023	7_FR
A6: Two scientific papers about connectivity within and between the SE Alps and Dinaric populations as well as conservation /viability and their consequences for lynx in the Alps and Balkan (in peer review journals)	Dec 2023	9_FR
A7: 3 popular articles submitted	Jun 2019	19_MR1 (Cro and Slo), 11_MR2 (Italy)
A7: 3 national reports	Jun 2019	17_MR1
A7: Final report on this action (electronic version)	Sep 2019	18_MR1
A8: Project Communication Plan (electronic version)	Jun 2018	20_MR1, 12_MR2 (NOT PUBLIC)

Table 1: Table of deliverables A actions

Deliverables	**Foreseen due date**	**Annex**
C1: Improved protocols for the lynx capture, tranquilisation, quarantine and transport for further programs and projects dealing with translocation of lynx	Mar 2018	18_PR1
C1: Report on the quarantine of all captured lynx in Slovakia	Apr 2023	10_FR
C2: Protocol for capture, quarantine and transport	Mar 2018	19_PR1
C2: One report about the behaviour of each lynx kept in quarantine	Apr 2023	Ongoing (10 reports, Annex 22_MR1, 13_MR2, and 11_FR)
C3: First report about the success of the releases	Jul 2021	14_MR2
C3: Final report about the success of the releases	Feb 2024	12_FR
C4: Report about success of the releases in the "stepping stone" area	Jan 2024	13_FR
C5: First annual report on the progress of reinforcement process and genetic status of the lynx	Dec 2020	15_MR2

population with plan for further releases in the following year (electronic version)		
C5: Second annual report on the progress of reinforcement process and genetic status of the lynx population with plan for further releases in the following year (electronic version)	Dec 2021	16_MR2
C5: Report on lynx health status with results of analysis of dead lynx (electronic version)	Jun 2023	16_FR
C5: Camera-trapping guidelines (250 pcs)	Jun 2019	12_PR1, 18_MR2 Unlisted as a deliverable for C5
C5: Third annual report on the progress of reinforcement process and genetic status of the lynx population with plan for further releases in the following year (electronic version)	Dec 2022	14_FR
C5: Final report on the progress of reinforcement process (electronic version)	June 2023	15_FR
C6: Lynx monitoring geo-database software	Jun 2020	19_MR2
C7: "Environmental Impact Assessment Guidelines with respect to the lynx habitat connectivity" - handbook guidelines in three languages (900 pcs, 300 each language)	Dec 2022	20a_FR: SI 20b_FR: CRO 20c_FR: IT
C7: "International Guidelines for Establishing meta population connectivity of lynx populations in the Alps, Dinarics and Balkan" - handbook (150 pcs)	Jan 2024	21_FR
C8: Revised protocol on standard procedures in cases of detected illegal killing (electronic version)	Dec 2022	23_FR
C8: T-shirt with "fight against wildlife crime" motive	Jun 2019	31_MR1
C8: Protocol on standard procedures in cases of detected illegal killing	Dec 2019	29_MR1
C8: Leaflet for hunters, foresters and other field personnel with protocol description in cases of detected illegal killing	Jun 2020	30_MR1
C9: Report about the use and effect of electronic fences	Dec 2023	24_FR
C10: Guidelines how to respect the presence of lynx in ungulate management plans	Dec 2022	25_MR2
C11: At least 16 electronic versions of paintings	Nov 2019	36_MR1
C11: Guidebook for the transboundary "Lynx walk" hiking tour (electronic version)	May 2020	38_MR1
C11: Promotional poster (1500 pcs)	May 2022	27_MR2, 28_MR2
C11: "Lynx trail" brochure (1000 pcs)	May 2022	32_MR2, 28_FR, 29_FR

C11: E-lessons with didactic guide for the lynx trail	Sep 2022	https://www.lifelynx.eu/interactive-e-lessons/

Table 2: Table of deliverables C actions

Deliverables	**Foreseen due date**	**Annex**
D1: Final report on effects of lynx removal for translocation purposes on the source	Apr 2023	32_FR
D2: Final report about the development of the population and impact of reinforcement program with experiences gained and recommendations for future lynx reinforcement projects (electronic version)	Mar 2024	33_FR
D2: Two manuscripts of scientific publications about the reinforcement process and population expansion (electronic version)	Mar 2024	35a_FR, 35b_FR
D2: Final report of monitoring survival, movement, reproduction and predation of translocated lynx and other lynx equipped with GPS collars (electronic version)	Mar 2024	34_FR
D3: Optimal management scenarios for ensuring viability of lynx in Dinaric mountains and South Eastern Alps (report)	Oct 2021	37_MR2
D3: Guidelines for ensuring long-term viability and vitality of lynx in the Dinaric Mountains and South eastern Alps (document)	Mar 2024	38_FR
D4: Three national reports - part I (electronic version)	Sep 2021	38_MR2
D4: Intermediate report (electronic version)	Dec 2021	39_MR2
D4: Three national reports - part II (electronic version)	Dec 2023	39_FR
D4: Final report of the action D4 (electronic version)	Dec 2023	40_FR
D5: List of indicators of action D5	Jul 2018	23_PR1
D5: Report on socio-economic impacts of the project actions on local economy and communities	Mar 2024	43_FR
D6: List of indicators of action D6	Jul 2018	23_PR1
D6: Final report of the action D6	Dec 2023	43_FR

Table 3: Table of deliverables D actions

Deliverables	**Foreseen due date**	**Annex**
E1: T-shirts: 1000 (Slovenia); 400 (Croatia); 400 (Italy); 400 caps (Slovenia); 100 baseball caps (Croatia); 100 winter caps (Croatia); 120 backpacks (Slovenia); 800 notepads (Slovenia), 1000 pencils (Slovenia); 400 cotton bags (Croatia)	Mar 2019	47_MR1, 45_FR
E1: Project post cards (4000 in Slovenia; 500 in Italy)	Jun 2019	43_MR1, 46_MR2

E1: Communication manual - Slovenian (150); Croatian (30); Italian (20); English (50)	Jun 2019	Two documents prepared: Q&A for the LCG members (Annex 44_MR2) and Communication manual for the project team (Annex 45_MR2)
E1: First consultation report for specific release site prepared (Slovenia and Croatia)	Sep 2019	41_MR1, 43_MR2
E1: Final consultation report with the best practice recommendations for working with stakeholders	Mar 2024	44_FR
E1: At least two articles in Slovenia, one in Croatia, published in the local media for each of the lynx release sites	Mar 2024	46_FR
E2: 500 hats with LIFE lynx motive for hunters	Jul 2018	31_PR1
E2: Key chains with lynx conservation motive (1000 pcs in Slovenia; 100 pcs in Croatia)	Sep 2019	56_MR1
E2: 500 T-shirts with "fight against wildlife crime" motive for hunters	Mar 2020	55_MR1
E2: "Goldhorn" Bulletin issue dedicated to lynx conservation	Jun 2022	47_FR
E2: 200 T-shirts for the conference participants	Jun 2023	49_FR
E2: Book of abstracts from the international conference on lynx conservation	Dec 2023	50_FR
E3: Hard copies of part I film (400 pcs in Slovenia; 250 pcs in Croatia, 50 pcs in Italy)	Mar 2019	59_MR1
E3: Hard copies of part II film (600 in Slovenia, 500 in Croatia, 150 in Italy, 300 in Slovakia, 300 in Rumania)	Jun 2022/December 2023	51_FR
E4: 30 educational school kits with teacher's handbook about lynx (Slovenian)	Oct 2020	51_MR2, 52_FR (updated version in Slo), 52a_FR (It)
E4: 3000 specially designed bookmarks for school children	Nov 2022	52_MR2
E5: Communication workshop proceedings (70 pcs)	Jul 2018	38_PR1
E5: International Conference Proceedings (electronic version)	Dec 2023	55_FR
E6: Project handouts (leaflets): 2000 (Slovenia); 1600 (Slovakia)	Mar 2018	40_PR1
E6: Project Bulletin - 1st issue: 1000 (Slovenian); 400 (Croatian); 800 Italian); 400 Slovak	Dec 2018	66_MR1
E6: Brochure about lynx: 10.000 (Slovenian); 5000 (Croatian); 2000 (Italian); 1600 (Slovak)	Nov 2019	56_MR2
E6: Project Bulletin - 2nd issue: 1000 (Slovenian); 400 (Croatian); 800 Italian); 400 Slovak	Dec 2020	55_MR2

E6: 13 notice boards	May 2022	58_MR2, 59_MR2, 61_FR
E6: Project Bulletin - 3rd issue: 1000 (Slovenian); 400 (Croatian); 800 Italian); 400 Slovak	Dec 2022	56_FR
E6: Popular articles (20 in Slovenia; 6 in Italy; 8 in Croatia)	Jan 2024	64_FR
E6: Project Bulletin - 4th issue: 1000 (Slovenian); 400 (Croatian); 800 Italian); 400 Slovak	Jan 2024	57_FR
E6: Pres releases (at least 5 in Slovenia, 6 in Italy, 5 in Croatia)	Mar 2024	63_FR
E6: Layman's report	Mar 2024	62_FR
E7: Short video clip with celebrity ambassador	Jun 2019	70_MR1

Table 4: Table of deliverables E actions

Deliverables	**Foreseen due date**	**Annex**
F1: LIFE project performance indicators table updated for 1st progress report	Nov 2018	Not presented
F1: LIFE project performance indicators table updated for 1st mid-term report	May 2020	Achieved
F1: LIFE project performance indicators table updated for 2nd progress report	Oct 2021	Not presented
F1: LIFE project performance indicators table updated for 2nd mid-term report	Nov 2022	Not presented
F1: LIFE project performance indicators table updated for the final report	Feb 2024	Achieved, 67_FR
F1: Audit report	Mar 2024	Financial annex
F1: All reports for EU Commission	Mar 2024	Achieved
F3: After LIFE Conservation Plan	Mar 2024	68_FR

Table 5: Table of deliverables F actions

6.2. Main deviations, problems and corrective actions implemented

The project officially started in summer months of 2017, but some of the actions that were initially planned for the beginning of the project, started in early autumn. All possible delays have been made up for in the first year of the project.
Due to the technically demanding and time-intensive upgrading of the laboratory method, the action A3 was extended for 9 months. All deliverables were achieved and the action finished successfully in the end of 2019. Cooperation with Croatian hunters required more effort at the beginning than foreseen, resulting also in higher costs for personnel and travel, but several hunting clubs were afterwards actively involved in monitoring and gained new knowledge and experiences that facilitated lynx reinforcement in Croatia. At the end of the project, we can confirm that hunting clubs were of vital importance in Croatia and Slovenia regarding field work.
Within the action A4, the third Reinforcement plan was developed in 2020, when the locations for lynx release in the Alpine part were determined.
Regarding the management documents planned in A5, the Croatian partners revised the document published by the Ministry in December 2021 and submitted comments and updates according to the Common Guidelines for Dinaric – SE Alpine Population-level Lynx Management and the latest findings from the LIFE Lynx project. As and additional output, Guidelines for Management of Lynx Orphans were prepared and adopted by the Ministry in May 2023 and already used in the project. In Slovenia, the expert group prepared the document based on the regional guidelines developed within the project and tailored to the national conditions and needs, and submitted it to MNVP in December 2023. After that, the continuation of the adoption process was in the Ministry's scope of competence and could not be guided by the project team involved in the expert group anymore. In June 2024, the strategy and action plan were published on the ministry's website for purposes of mandatory public comment. (After the project's end, on 21st November 2024, the Government of the Republic of Slovenia adopted the Strategy for the Conservation and Sustainable Management of the Eurasian Lynx (*Lynx lynx*) in Slovenia and the Action Plan for the Conservation and Sustainable Management of the Eurasian Lynx (*Lynx lynx*) in Slovenia for the period 2024–2033.)

Delay in action A6 was linked with activities from LIFE DINALP BEAR project where seminar for spatial planners was erroneously planned for 2017. The milestone has been reached with a delay in April 2019. Both scientific articles planned for the end of the project were submitted but not yet published during the timespan of the project. They derive their content from the reports foreseen in this action, and with the slight delay of the reports, the preparation of the articles started later than foreseen.
In the action A7, the analysis of the data was longer than foreseen so the national reports and the final report of the action were prepared in early spring 2020. Consequently, the national articles were prepared with delay, not affecting the other actions or activities. The reports provided very useful data for the public communication of the project and continuation of activities with the stakeholders.

Due to opposition from a specific group of environmentalists, the procedures for obtaining the permits and implementing the lynx capture by TUZ were extended until December 2019 (C1). Nevertheless, first success was achieved in 2020 by capturing two lynx; the milestone of the action was reached in exceeded with 8 lynx translocated by the end of the project.
In Romania, field work, especially snow tracking and collecting non-invasive genetic samples, is often conditioned by weather, thus greater input to achieve the tasks set is often needed (A2). Poor roads and a lot of field work have resulted in the failure of the vehicles, that were properly repaired. This was a constant issue during the following years of the project, so ACDB asked for the reallocation of money for the repairs of the project cars (C2). Since in the first season of translocations (2018/2019) no project car was authorised for the transport of wildlife, the problem was resolved by ensuring the transport by ZOO Ljubljana and ZOO Zagreb. Further transports (in 2020 and consequent years) were running smoothly. The number of cameras bought for the project and still functioning/available was dropping during the project's durations due to technical malfunctions, thefts or damage caused by bears. Although ACDB had difficulties ensuring enough camera traps for trapping (C2) and monitoring (A2), all necessary data for implementing actions C2 and D1 were collected. In third season (January–April

2021), some of the box traps, due to the harsh winter condition, reported damages and malfunctioning problems but were refurbished/replaced with new ones in October 2021. In the fourth season (January–April 2022), some of the traps that had previously produced promising results in terms of lynx attendance and animal capture had not been activated because some of them had not been visited by lynx anymore while others had a high human disturbance, mainly logging. Nevertheless, the capture session was performed successfully with the capture of one adult male. For efficiency reasons (lynx activity at the box traps intensifies towards the end of January) and to avoid unnecessary exposure and damage to the box traps due to bear activity until late in December, the trapping season was postponed until January during the last three years of captures.
Actions C3, C4 and C5 required high level of involvement of project personnel in field work that was not adequately planned for some of the partners, either in person-days, travel costs, external assistance, or equipment needed to perform field activities. To enable the implementation at the pace and scope foreseen, ABs and CB reallocated some of the funds.
We encountered some technical problems with the equipment bought, namely with the telemetry collars (C5). Regarding the Iridium system and its use in Croatia, the satellite technology was sensitive to dense forest cover, therefore the communication with the collar was low and irregular. As for the GPS/GSM system, some of the telemetry collars failed earlier than planned. We recaptured some of the animals and replaced their collars with new ones.
The testing phases of the new software can considerably prolong the period of the delivery of the final project. In LIFE Lynx, we adapted the MBase (LIFE DINALP BEAR) to the lynx data. Within the asked prolongation for the testing phases of the new software till December 2020, we successfully implemented the activities foreseen in the action C6.
The preparation of both guidelines in the C7 action required additional data gathering, resulting in delays for both deliverables, but ensuring high quality outputs.
Within C8, due to the large interest of the Slovenia Police, HAS organised an additional educational meeting for 23 police officers in May 2022. Consequently, the repetition meeting was carried out with a small delay, in the beginning of September 2022. The revised protocol on standard procedures in cases of detected illegal killing was printed in 21,000 pcs as an additional output of the project and distributed to all Slovenian hunters via the national hunting magazine “Lovec”, during the prolonged duration of the action.
In addition to consider the impact of lynx predation on the management of wild ungulates in C10, the document ‘Consideration of large carnivores in the management of wild ungulates’ also considers the impact of wolf predation. The attitude of hunters towards the wolf as a predator is important, and indirectly has a strong influence on the acceptance of the lynx by hunters as key stakeholders. Adapted management of wild ungulates, which takes into account the impact of the wolf, thus increases acceptance of carnivores and optimises management solutions.
In C11, the Discover Dinarics (LIFE DINALP BEAR) portal was updated with lynx content but also merged with the portal of the LC centre DINA Pivka to ensure better visibility and promotion of LC-related tourist products created within LIFE projects. Also, the maintenance and regular updates of the website after the end of the project LIFE Lynx, are thus ensured.

Since the data gathering and analysis took longer than foreseen, the national and final intermediate reports for D4 were delayed. Also, the national final report for Slovenia and the final report of the action were late (finished in March 2024); however, this did not impact other project actions. Some variations in the implementation of the activities were required: CUFAA needed to increase the size of the sample for Italy, resulting in higher costs of the research; BIOM, for the Croatian survey, changed the mode of operation; UL faced an increase in the prices of printing and postal services.
Regarding the D5 action, we amended the Baseline indicator: Distribution of lynx/km2, from 6000 km2 in total to 8500 km2. Instead of the indicator “Level of economic satisfaction for damage prevention method adopted” we decided to use “Fear of financial damage due to lynx presence” - the change was made in 2019 Assessment and Report and in the following reports.

In time of the coronavirus 19, the project activities in E actions were mostly rescheduled to a later period, and some of them carried out online. Meetings and workshops with hunters and other stakeholders were rescheduled, and the pace was accelerated after the easement of the measures to

restart the communication and cooperation and the normal mode of meetings was restored. With the normalisation of the situation, the delays were all rectified.

Costs meant for travel reimbursement for LCG members in Slovenia were used to finance the ideas from the members themselves – additional outputs were various and well-accepted (additional field days for schools, notice boards, replicas from lynx, wolf and bear skulls, sound board; E1). UL prepared two outputs instead of one: a communication manual and a simple booklet with FAQ.
Due to Covid-19 restrictions, HAS was unable to organize Hunter's Day in the foreseen time. Consequently, there was also a delay in delivering the Goldhorn Bulletin issue dedicated to lynx conservation as most of the articles in the bulletin were based on the lectures from Hunter's Day. Nevertheless, the issue was prepared in printed and electronic versions and distributed among relevant stakeholders (E2).
We postponed the due date for PART II film about the LIFE Lynx project activities, because we wanted to present our activities through the whole project period (E3).
Soon after the start of the project, the invitations to various meetings of different European initiatives/programs/projects started. Some ABs reallocated funds to be able to share the knowledge and best practices at these additional networking events. The project team extended the final project conference for an additional day and merged it with the annual Eurolynx meeting. Due to the increased volume of the conference but also an increase in the price of the conference cost, we reallocated surplus funds from other activities for several partners (BIOM, FVM, SFS) for the implementation of the conference, promotional material and travel costs of project personnel (E5).

Six of the actions started earlier as planned by AB (A5, C3, C10, C11, D4, E4), either because of the interest of the stakeholders involved (hunting clubs for C10, teachers for E4) or reasons stated by the AB (lengthy procedures for the adoption of national management documents for A5, time needed for the preparation of the first soft release enclosure for the lynx in C3, in-time preparation of the tourist products in C11, monitoring of public visibility and acceptance from the beginning of project activities in D4).

The struggle of NGOs regarding the co-financing (PLI and ACDB) resolved. PLI managed to sign the co-financing agreement with WWF Deutschland for the LIFE Lynx activities, and ACDB secured the contracts with EURONATUR. Also, FVM, BIOM, TUZ, and HAS secured additional co-financing not foreseen in the project proposal, thus enabling the quality implementation of the project activities.

6.3. Evaluation of Project Implementation

- **<u>Methodology</u> applied.**

From the start of this project, we have consistently adopted current scientific methodologies and well-tested approaches to carry out this translocation effort. Throughout our work, we have been well informed about the newest developments in conservation work to maximize our contributions to the project's results and long-term impacts. Additionally, we have pioneered several new methodological and technological advancements (see details below). Our skilled project team ensured the use of cutting-edge technology and methodologies, successfully integrating various approaches into an effective framework. Overall, the project was a success and we exceeded the majority of expectations and planned outcomes originally set forth in the proposal. In many cases we surpassed our original project objectives, furthering the positive impacts of this effort. We attribute this success and cost-efficiency to factors such as strong project management, visionary leadership, motivated and effective team members, extensive knowledge and expertise, and, above all, strong collaboration across a host of diverse institutions, stakeholders, and countries that worked closely together to achieve our goal of lynx recovery.

A critical aspect of our success was the emphasis on knowledge exchange across partner institutions and with various LIFE- and non-LIFE projects and networks within and outside the EU. We reached

at least 2,000 people at different networking events. We ensured efficiency and long-term impact by learning from best practices, considering lessons learned elsewhere, employing the best available methodologies, and leveraging data from established field methods. This project is also characterized by a strong scientific outreach. We have actively disseminated our new knowledge through numerous channels, including presenting our findings at various scientific conferences and meetings (17). Additionally, we have contributed significantly to the scientific community by publishing our research in a variety of prestigious peer-reviewed journals (over a dozen; 5 scientific articles were planned in the project). These efforts have ensured that our advancements and insights reach a broad audience, fostering further research and collaboration in the field of conservation. These efforts have had significant positive consequences for our future work in nature conservation.

This project was the first to explore opportunities to source lynx for the translocation effort from populations found in the Carpathian Mountains of Romania. Our Romanian partners have joined in the collaborative effort and shown extreme dedication to testing, evaluating and implementing new methodologies in their region, including camera trapping and non-invasive genetic sampling to study the lynx and, ultimately, select appropriate capture sites. Advice and experience from other project partners through intensive capacity-building visits and rich local knowledge of the collaborating hunters and rangers crucially supported the lynx capture efforts. During the project, the knowledge and skill set of the project team increased dramatically, resulting in the resulting in captures of 12 lynx, 10 of which were translocated to reinforce the Dinaric-SE Alpine lynx population, and 2 were equipped with GPS collars and released back to their original habitat, providing telemetry data for lynx in Romania. The monitoring and capture protocols developed in Romania (Action A.2) will be used by ACDB in future projects involving the study of the lynx population in Romania and translocation projects for the reinforcement of lynx populations within the EU. Moreover, the methodologies were transferred to other Romanian authorities involved in wildlife management and conservation (such as RNP Romsilva), and they will help improve the data on the Romanian lynx population.

We developed and evaluated appropriate field methods for effective and robust transboundary surveillance to address the challenge of no available transboundary population estimate prior to the LIFE Lynx project. The most complex set of methodologies was used to produce data, which allowed us to refine the translocation process and develop a suite of science-based management tools for strategic planning to ensure the long-term viability of lynx. A set of actions contributed to producing results, namely A.3, C.5, D.2, D.3 with the support of C.6 and E.2. Large scale and transboundary surveillance is challenging issue not only due to the spatial scale, but to differences in site specific habitats found across participating nations that have different wildlife management practices. As a result, we produced the first assessment of the baseline status of the receiving lynx population using a combination of available methodologies: questionnaires, opportunistic data, opportunistic non-invasive genetic sampling, and camera trapping. For a thorough, detailed insight into lynx population dynamics, data from the LIFE Lynx project was merged with data shared (and obtained) by other institutions (e.g., national parks, national large carnivore management schemes, other non-LIFE projects) and jointly presented in annual LIFE Lynx reports (see C.5 for details).

Large-scale camera trapping was the most innovative and intensive methodology implemented for assessing lynx population abundance, distribution, and reproductive capacity. Despite having minimal prior experience with this methodology, we successfully implemented a transboundary camera trapping initiative over five years. This achievement was marked by exceptional international coordination, continual optimization and expansion, the production of a high-quality dataset, and robust results, which enabled an objective evaluation of lynx population dynamics during the reinforcement process.

Additionally, our approach was distinguished by the incorporation of "citizen science" in the coproduction of data. The direct and voluntary involvement of hunters, who are crucial stakeholders in lynx conservation, was unprecedented in the region. This collaboration made such a large-scale effort feasible, fostered trust in the data collected on lynx, and strengthened the relationship among project team members and collaborating hunters.

Moreover, due to the extent of the range of the Dinaric lynx population, we had to adapt and optimize the approaches to camera trapping in different habitats (e.g., the Alps, Dinaric karstic forest, and Mediterranean shrub) to obtain a sufficient number of photos of lynx. While general guidelines for effective camera trapping set up were straightforward for forested habitats, recording lynx in the Mediterranean shrub habitat proved to be an especially difficult task. Thus, the project team invented stone pyramids that attracted the curious lynx and improved the detection of this elusive animal with the camera trap. Finally, we used the latest and most advanced analytical tools to convert the lynx photos into robust estimates of lynx abundance, i.e., the spatial capture recapture modelling. This approach ensured that the observed reversal in the decline of the Dinaric-SE Alpine lynx population by the end of the project was grounded in rigorous scientific assessment (Actions C.5, D.2). A similar methodology was used in Slovakia that enabled team members to conclude that this population was robust enough to act as a source for lynx to be translocated to the Dinaric Mountains and Alps (Action A.1). In Romania, three monitoring techniques were implemented (camera-trapping, snow-tracking, and non-invasive DNA analysis) to collect data on lynx distribution, abundance, movement, and activity (Action A.2). The standards for monitoring the Dinaric SE-Alpine lynx population developed during the project represent the framework for an effective population-level camera trapping in the future, as predicted in the strategic documents and guidelines for population-level management (Action A.5).

At the onset of intensive demographic surveillance of the lynx population, we simultaneously harmonized, analysed, and re-evaluated all existing genetic data in the Dinaric-SE Alpine project area. This effort established an indisputable baseline (Action A.3) for measuring the impact of the reinforcement measures implemented in the field. Over the years, we have worked diligently to collect a sufficient amount of non-invasive genetic samples, which represented the core data for obtaining information about the inbreeding levels, population fitness, effective population size and pedigrees of the lynx in the Dinarics and SE Alps (Action C.5, D.2). To address the challenges posed by climate change, which hinder effective snow tracking due to reduced and inconsistent snowfall, we developed innovative methodologies for individual genotyping of lynx from snow tracks, instead of scats, hair or urine found in snow. This breakthrough was made possible through the creation of new sampling methods and genetic markers. Achieving this significant scientific advancement involved collaboration with colleagues from the University of Lausanne, representing one of this project's most fruitful non-LIFE collaborations. Furthermore, laboratory methods have been upgraded by testing new microsatellite genetic markers, including the MHC (main histocompatibility complex) markers. Since using the best available science is especially important in small and inbred populations, we decided to further upgrade the methods with a recently published set of SNP (single nucleotide polymorphism) markers that were developed for Eurasian lynx. Implementing this cutting-edge method for our population considerably improved our ability to identify individual lynx to accurately build pedigree reconstructions, which is particularly difficult in inbred populations.

Lastly, leveraging the empirical data collected through our successful transboundary monitoring program and utilizing advanced bioinformatics tools, we constructed an individual-based genetic demographic computer model of the lynx population (Action D.3). This model provides valuable insights into the future development of the reinforced lynx population and suggests effective strategies for prospective population management under various conditions. The model outputs represent the main management tool for developing any future national or international lynx management strategies in the Dinaric-SE Alpine region. The scenarios of further conservation measures formed the basis of the Guidelines for Ensuring Long-term Viability and Vitality of Lynx in the Dinaric Mountains and South Eastern Alps, and were incorporated in the national management documents (Action A.5).

We have upgraded the monitoring database "MBase" with specific modules for hosting all data obtained about the lynx to produce a tool for lynx data harmonisation, rapid data exchange and visualisation of geo-referenced lynx data (Action C.6). In the process, we needed to accommodate an array of software and hardware developments to safeguard the portal's main characteristics: free and open-source, modular, easy to upgrade and extremely flexible, with potential for replication and

transferability to other projects, initiatives, institutions and countries. MBase supported efficient data sharing among the project partners and other institutions, LIFE projects and international scientific communities, the main one being Eurolynx, the core European initiative for lynx research. Telemetry data from our unique study areas contributed to ground-breaking research on lynx ecology, habitat needs, and behaviour. These data facilitated the development of innovative scientific methodologies, including the use of machine learning to predict lynx kill sites. These advancements enabled a profound understanding of lynx feeding ecology and its impact on prey species. Notably, our study on lynx predation provided guidelines for optimal telemetry collar scheduling for kill site detection. This led to surveying over 400 kill sites, offering unprecedented insights into the lynx's role in the ecosystem, as detailed in project deliverables (Action C.5, D.2) and additional unforeseen peer-reviewed publications. The knowledge on lynx predation was essential in designing meaningful guidelines for the management of wild ungulates, which account for the presence of lynx and its impact on the prey species (C.10). Furthermore, lynx camera trapping data collected in the Dinaric Mountains enabled the development of individual identification of lynx using artificial intelligence algorithms, speeding up the photo processing and reducing the bias of the human eye. The AI solution developed by Whiskerbook.org for lynx identification holds immense potential for the application of this tool for other research efforts on Eurasian lynx.

New habitat suitability and landscape connectivity maps improved local knowledge about lynx (Action A.6). By employing the latest statistical tools in landscape modelling, we analysed environmental data and GPS locations of lynx to conduct a comprehensive analysis of spatial connectivity across the entire distribution of the focal population, as well as the meta-population range (the Alps, Dinarics, and Balkan). The implementation of these advanced methods was crucial for developing guidelines for environmental impact assessments and meta-population connectivity. Integrating these recommendations into national impact assessment processes ensures systematic application of the guidelines and secures long-term benefits for lynx conservation and expansion (Action C.7). To enhance the effectiveness of Action A.6, we meticulously examined the main ecological corridors identified for Slovenia, strategically located at the junction of two geographic regions: the Alps and the Dinarics. We conducted on-site inspections and consulted the corridors with regional foresters. These corridors were then integrated into long-term forestry management plans and represent Slovenia’s first official protection of habitat corridors. By combining scientific analysis with practical evaluation and direct management impact, we achieved results that offer both immediate and long-lasting benefits for preserving landscape level connectivity in a significant area for the Dinaric-SE Alpine lynx population.

We introduced additional novel methods for effective lynx conservation, including new protocols for combating wildlife crime. One protocol guides police officers in handling suspected illegal killings, while another educates field personnel like hunters and foresters to recognize potential wildlife crimes, specifically illegal poaching (Action C.8). Recognizing the need for broader involvement, we expanded educational workshops to include state prosecutors and personnel from inspection services. Though improvements are ongoing, these efforts mark significant progress in combating illegal lynx killings.

Additionally, we produced a new guidelines focused on the management of lynx orphans, which was a threat not directly addressed by the project, presenting an important conservation aspect with increasing relevance (Action A.5).

We have also used a participatory approach to involve hunters in the preparation of long-term wildlife management plans, that include new guidelines for the consideration of lynx (and wolf) in the management of wild ungulates (Action C.10). The main purpose of the guidelines is to contribute to the preservation of viable populations of ungulates through “adapted game management”, to ensure a permanently available food source for large carnivores, which is a prerequisite for their long-term conservation, including maintaining the hunters' tolerance toward the presence of lynx and other predators. Finally, a thorough examination of the health status of inbred remnant lynx during live captures by highly skilled veterinarians revealed shortcomings in existing immobilization protocols

(Action C.5). By identifying the origins of specific health issues, such as heart murmurs, and understanding the effects of drug cocktails and medical treatments that the lynx received during anaesthesia, we made significant enhancements to the sedation protocols for lynx. These improvements have resulted in greater stability during immobilization, accelerated recovery times, and enhanced survival rates following the invasive live capture procedure. We have shared our findings with the wider scientific and expert community at various networking events (especially with Linking Lynx and Eurolynx group).

We were extremely successful at implementing diverse communication strategies for appropriate and efficient communication with the public as well as the crucial stakeholder groups. For example, we have used a personal, one-on-one conversations to build trusting and credible relationship with over 200 hunters who, in turn, reliably collaborated in data collection over a 5-year period. Some hunters became even more involved in the project activities, especially through lynx translocations. Consequently, with their first-hand experience in these concrete conservation actions, they became important communicators of lynx conservation in their own local communities. For example, these hunters were highly visible members of the "local consultative groups" (E.1), which were created to build strong partnerships within the local environments where lynx translocations occurred. We used a participatory approach to involve a wide array of hunters in the adaptation of game management plans in Slovenia through a series of workshops tailored to the specifics of the regions (i.e., the main game species present) where they were organized. We also used a participatory approach to involve this key stakeholder group in drafting the core management documents in Italy, which was recognized as a transferrable method for similar processes in other protected species.

To engage a broader audience and elevate awareness through inventive methods, we crafted alternative tourism experiences (Action C.11). We involved professional artists who created lynx-inspired artworks, which have been digitized and showcased at several exhibitions. We also organized art workshops for amateur artists using inspiration from local settings within lynx habitat. Transnational hiking and cycling routes were established across Dinaric forests, highlighting the large scale of effort needed for effective lynx conservation. We created a Young Lynx Guardian program (E.4) involving specialized lynx-focused activities for children. We employed a new method to increase public attention involving celebrities as lynx ambassadors (E.7), which helped us gain prominent recognition for special project events (e.g., releases of lynx in the Alps, where world-renown ski jumper Peter Prevc attended and commented on the event). Lastly, we've reached over a million people through our compelling visual content on our YouTube channel and social media platforms, along with screenings of documentary films and even a children's cartoon inspired by one of the two books based on the real-life stories of the LIFE Lynx's lynx (Action E.6).

From the outset, we approached the project with a strategic mindset, carefully analysing how to optimize the use of our resources. Our meticulous planning and adaptive methodologies allowed us to identify opportunities for enhancement and improvement throughout the project. As a result, we delivered a project that not only fulfilled the original scope but surpassed our anticipated results and produced additional, unforeseen benefits made possible by reallocating resources towards areas that added extra value to the project.

Furthermore, our proactive communication and collaboration with stakeholders played a crucial role in this accomplishment. By maintaining transparent and continuous communication with key stakeholders like hunters, we ensured that any potential issues were swiftly addressed and that the project remained aligned with evolving needs and expectations. This collaborative approach fostered a sense of shared purpose and collective responsibility, driving us to go above and beyond the initial project requirements.

- Compare the <u>results</u> achieved against the objectives and expected results foreseen in the proposal and described in section 4.

Objective 1 – To rescue the Dinaric-SE Alpine lynx population from extinction. The main goals of this project are to rescue and prevent the extinction of Eurasian lynx and safeguard the population well into the 21st century. We will implement a reinforcement response that is socially acceptable and scientifically based. We will reinforce the Dinaric-SE Alpine population with lynx from the viable source population in the Carpathians and maintain high public support while fine-tuning the reinforcement with the best available data to reach the ultimate indicator of success – reducing inbreeding to an acceptable level and reversing the population decline (Threat 1).

We succeeded in preventing the extinction of the Dinaric-SE Alpine lynx population through a carefully planned reinforcement process, including 14 healthy lynx in the Dinaric-SE Alpine lynx population. Scientific evaluation of the ongoing activities and strong stakeholder support have accompanied the lynx translocations over a 5-year period in the contrasting landscapes, culture and traditions of the Dinaric Mountains and the Alps. 9 healthy Carpathian lynx have successfully integrated into the inbred Dinaric population and dramatically improved the genetic and demographic status of the lynx, increasing fitness 2-4-fold, and the abundance and reproduction by over 40 %, respectively. The effective inbreeding decreased from 0.32 to 0.19 (if not considering the translocations to the Alps) or even 0.08 (if Alpine translocations are included). Furthermore, the 5 animals included in the Alps have established a strong stepping stone, producing over 10 lynx cubs since. A consistently positive atmosphere and high public support in the receiving countries have been the signature characteristics of the lynx population rescue. Finally, despite capturing lynx for 5 years in the Carpathians, that lynx population has remained viable and shows no negative response to such intervention, remaining a strong and valuable source of healthy lynx for similar efforts in the future.

Objective 2 – To conserve and manage the lynx population through international collaboration. We are developing an international collaboration and vision to conserve and manage lynx at the transboundary-population level. We will collaborate across all EU countries sharing this population to develop and implement a standardized and systematic approach to ensure the long-term viability of the reinforced lynx population (Threats 2, 2a).

The scale of international collaboration in this project has been extensive despite the challenges that transnational partnerships present. One of the most important outcomes of this collaboration was developing the capacity and skills among our Romanian partners such that they were able to effectively capture lynx for this translocation effort. Previously our Romanian colleagues did not have these skills and through participation in the project, the Romanians ended up capturing 10 lynx for translocation between 2019 and 2023, earning the team continent-wide recognition for their performance. In Slovenia, Italy, and Croatia, we have designed, optimized, and coordinated a transboundary lynx surveillance program at the largest scale reported in the realm of Carpathian lynx, producing high-resolution datasets that could be used for a rigorous assessment of the annual status of the endangered lynx population and at the same time, to refine the reinforcement process. The project partners in the Dinaric-SE Alpine area have created strategic international and national documents that guide and define future international efforts needed for continued coordinated management of the shared lynx population. Moreover, we have expanded our international collaboration with active membership in networks and communities dealing with lynx research, conservation and management in Europe (Eurolynx, Linking Lynx). To enhance international involvement, we organized several networking visits to other LIFE and non-LIFE projects in European and non-European countries to increase the expertise of project team members, expand capacity building, and to exchange best practices. A special highlight of the project was signing a networking agreement between the president of the Styrian Hunters Association, the president of the Hunters Association of Slovenia and the director of SFS for the exchange of knowledge with the Austrian hunters who are eager to learn about lynx monitoring and hunter involvement in lynx conservation. LIFE Lynx's case of best practice was presented to the LIFESCAPE project from the UK – the initiative proposing to reintroduce lynx back to the United Kingdom.

Objective 3 – To develop a stakeholder-supported reinforcement process to sustain lynx recovery. We will work closely with core stakeholders to establish or further develop partnerships and to ensure broad public acceptance of lynx conservation (Threat 2b).

The hunters were the first and foremost core stakeholders, collaborators, and allies of the LIFE Lynx project. From sharing their local knowledge to successfully monitor and capturing lynx in the Carpathians to releasing the translocated animals in their hunting grounds in the Dinarics and the Alps, hunters have been an indispensable partner in saving the lynx from extinction. Hunters were critical for data collection, managing hundreds of camera traps annually and helped capture lynx for telemetry studies. Hunters were also instrumental for surveying lynx kills and providing the first documentation of lynx presence in new areas. Above all, hunters represented a strong voice for communicating the importance of preserving the lynx in the natural environment within their local communities. For example, both hunting clubs involved in lynx releases, i.e. the Hunting Club Loški Potok in the Dinarics and the Hunting Club Nomenj Gorjuše in the Alps, transformed a part of their lynx enclosures into an educational facility and into a commemoration of the work of hunters and the project in the Alpine region for visitors and tourists, respectively. The interest in nature conservation and thematic paths/trails in Slovenia is rising, and we were keen to support the hunters in their endeavours to educate and transfer knowledge. With a transparent and timely exchange of information about lynx, mostly through personal communication, we have created a trusting relationship with over a hundred hunters. This achievement represents one of the key qualitative outcomes of our multi-year collaborative process. In Italy, the involvement of the hunters in lynx conservation, as well as the overall support among the general public, and especially farmers, resulted in additional lynx releases in the SE Alps through a non-LIFE project (ULyCA2). Lastly, hunters have demonstrated dedication to addressing the existing threats to the long-term conservation of lynx by training the police to combat the illegal killing of wildlife in Slovenia, a topic that received little attention until the LIFE Lynx project. Besides working closely with hunters, we have carefully and regularly provided targeted information to the wider public over the entire project lifespan and gained popularity which was evident with constant media reports, visits to online content and attendance at organized events. Specifically, we have addressed the interest of local residents who have consistently been engaged in the project. We have collaborated with local businesses, schools, celebrities, and artists in many project actions, some of them resulting in long-lasting products, such as artworks, books, teaching practices, and alternative touristic offers.

Objective 4 – To develop science-based management tools for strategic planning to ensure the long-term viability of lynx. Bringing in new lynx to the Dinaric-SE Alpine region will save the population from extinction. To ensure the long-term viability of lynx, we will use computer modelling based on data from the project to understand how to genetically and demographically manage the population in the long term. This scientific information will be incorporated into management plans (Threats 1, 2c, 2d).

The LIFE Lynx project tackled a complex biological issue: the decline of the lynx population due to high levels of inbreeding. While the necessary science and methods for solving the issue was clear from the start, we needed to gain an understanding of how to ensure that such a grim biological outlook for lynx does not happen again. The globally renown scientists who were part of the diverse LIFE Lynx team have thus built an "individual-based genetic demographic computer model" of the lynx population, which was first based on theoretical models but was later built on empirical data collected during the project. This will enable more efficient and biologically sound management scenarios that should be acknowledged for the long-term conservation of the Dinaric-SE Alpine lynx population. The results formed the basis of the Guidelines for Ensuring Long-term Viability and Vitality of Lynx in the Dinaric Mountains and South Eastern Alps, and were incorporated in the prepared national management documents, highlighting the importance of continued population monitoring for ensuring long-term population viability of the lynx population. To ensure broad dissemination and replicability of this scientific tool for other reinforcement projects in the region and beyond, we are in the process of publishing the results in a peer-reviewed scientific paper, which will add to the extensive peer review publications (>70 scientific articles) generated during the LIFE Lynx project.

Objective 5 – To improve population connectivity for lynx. We will directly increase the chances of natural gene flow of lynx by creating a population "stepping stone" to generate a new population nucleus further west of the current Dinaric population, thus bringing the SE Alpine nucleus closer. This will help eliminate the need to take reactive steps such as the "fireman" approach of moving single individuals in the future. Such a metapopulation of lynx will help reduce negative impacts of habitat fragmentation (Threat 3) and will slow genetic deterioration across entire Dinaric-SE Alpine population.

Creating the population stepping stone was one of the greatest challenges of the project. However, we succeeded and exceeded our expectations. First, in 2021, the Slovakian and Romanian teams managed to capture a female lynx, which had not happened in the first two capture seasons. Second, besides officials from Triglav National Park who supported the reintroductions to the SE Alps from the beginning, a local hunting club in the Alps expressed their wish to release a pair of lynx within their hunting ground in a neighbouring area. Their intention demonstrated how Slovenian hunters value lynx as their natural heritage and as an important component of the forest ecosystem, even in areas where it was absent at the time of translocations. After a soft release, all 5 lynx established their territories in the vicinity of the release sites, with the first reproduction occurring shortly thereafter. Intensive monitoring has allowed us to document the successful growth of the stepping stone population, with the additional releases in the Italian part of the SE Alps further enhancing its stability and growth.

We developed new lynx habitat models and incorporated them into guidelines for their application in EIA spatial planning to secure the consideration of lynx in any future infrastructure planning. Additionally, ecological corridors for lynx became protected under forest management plans in Slovenia. A final challenge for ensuring sufficient habitat connectivity for lynx will be the future construction of a planned wildlife pass over the biggest barrier between the Dinaric and Alpine biogeographic region; the Ljubljana-Koper highway. The establishment of a new stepping-stone subpopulation in the Julian Alps represents an important step towards the long-term vision of restoring a Central European metapopulation, which will support on lynx conservation at the pan-European level.

Foreseen in the revised proposal	Achieved	Evaluation
Reversed population decline of the Dinaric-SE Alpine lynx population	Achieved and exceeded. The lynx population decline was indubitably reversed; we confirmed a 44 % and 42 % increase in lynx density and abundance, respectively, in the Dinaric Mountains. Moreover, at the level of the entire Dinaric Mountains and the SE Alps, we detected a 40 % increase in the number of detected females with cubs.	Intensive surveillance program involving a strong network of almost 200 local hunters and rangers was combining modern technological tools, i.e., camera trapping, genetic sampling, and telemetry, for obtaining robust data about lynx distribution, abundance, reproduction, survival, and genetic status at a population-level. Furthermore, the state-of-the-art scientific methods were used for rigorous data analyses, ensuring their objective and transparent interpretation. While the LIFE Lynx project itself already unlocked a possibility for data collection beyond any past efforts, the collaboration and data sharing with other organizations (e.g., protected areas, ministries, NGOs and GOs) further increased the amount and resolution of data about lynx being available annually.

Foreseen in the revised proposal	Achieved	Evaluation
		Using this joint effort, we could reliably assess the lynx status at a scale without comparison within Central Europe and beyond, i.e., at an over 12,000 km^2 for a consecutive 4-year period.
9 lynx integrated into the Dinaric population.	Achieved. 9 lynx were successfully integrated in the Dinaric lynx population between 2019 and 2023. We have confirmed their regular reproduction, and even detected successful reproduction of the first generation of offspring.	With all means of monitoring (telemetry, camera traps, non-invasive genetic samples), we confirmed that 9 out of 12 translocated lynx were integrated into the Dinaric lynx population, i.e., 7 have reproduced by 2023, producing 17 litters of 35 kittens in total, and the last two lynx released in 2023 have established a home range within a territory of a remnant animal of opposite sex, indicating high potential for future reproduction. Even though the majority of translocated animals to the Dinaric population were males, their specific behaviour enhanced the successful insertion of new genes into the inbred population. They did not only reproduce with the one or more females within their territories, but exhibited typical extra-territorial mating excursions, sometimes crossing the national borders, potentially yielding additional healthy offspring.
Established new lynx subpopulation in the Alpine area with the release of at least 5 animals.	Achieved and exceeded. Five lynx have established their territories in the vicinity of the release sites, and six reproductions were confirmed by 2023, with at least four additional independent lynx being detected in the area since 2022. Thus, the population stepping stone has been successfully established and is growing.	In total, 6 animals (3 females, 3 males) were released at two sites in the Slovenian Alps between 2021 and 2023. Five were simultaneously released in 2021 and have all established a home range and reproduced, which means we have achieved the target immediately after executing the first and foremost activities connected to the creation of the Alpine subpopulation. With intensive surveillance in the region, we followed how the established stepping stone has further developed and confirmed its continuous growth through yearly reproductions (n=6 between 2021 and 2023, resulting in at least 10 kittens) and detected at least two new independent lynx (presumably offspring of the translocated lynx) occurring in the Alpine area. Moreover, the positive atmosphere developed during the translocations to the Slovenian Alps activated the stakeholders in Italy to express public support for

Foreseen in the revised proposal	Achieved	Evaluation
		additional lynx translocations, which were organized within a non-LIFE project, ULyCA2. At least one translocated lynx successfully integrated into the existing stepping stone, which further increased the genetic diversity of lynx and enhanced the persistence of the Alpine stepping stone population. After reproducing twice, one male disappeared from the stepping stone population in 2022, so a new male was translocated to the area in order to replace it. However, it established a home range in the Karawanken region, where we had no information about lynx presence, as well as we could not confirm the presence of this male by the end of the project.
Lynx distribution range increased by at least 2,000 km2.	Achieved and exceeded. Lynx distribution range in the Dinaric Mountains and the SE Alps increased for 6,200 km2, meaning that this result was highly exceeded.	The distribution of the population is one of the core parameters used for status assessment and despite a detected population decline after the 2000s, the exact range of the Dinaric – SE Alpine population was not well known. Based on all available information, it was estimated at 8,500 km2 in 2017. During the project, we intensified the surveillance of lynx and regularly assessed the population distribution via all available reliable data sources (systematic camera trapping, genetic sampling and verified opportunistic records). The resolution of data during the project was thus substantially higher than before the project, e.g. the number of opportunistic records grew by 300 %, and the number of camera trapping sites recording a lynx grew from 45 % to 60 %. At the end of the project, we could thus confirm lynx presence at an area of 14,700 km2, which represents an increase of 73 % larger area of confirmed distribution compared to the start of the project.
At least 12 new territories (males and females present) established.	Achieved and exceeded. Eight translocated males and one female established their territories in the areas with the presence of a resident lynx of opposite sex in the Dinarics and five lynx translocated to the Alps established their territories in the Alps. In total, we thus documented 14 new	During the entire reinforcement process, 18 lynx were translocated to the Dinaric Mountains and SE Alps, and only 4 of them were not confirmed to have integrated in the population. With a good surveillance system, we could detect these failures at the right time to act, and translocate additional animals which would replace the missing ones in due

Foreseen in the revised proposal	Achieved	Evaluation
	territories established in the whole project area, which exceeds the expected result. Additionally, at least two offspring of the translocated lynx established their territories in the Dinarics.	time. Due to a strong commitment of the project partners, we managed to replace all unintegrated lynx. The integrated lynx are well distributed along the population distribution range, thus effectively mixing with the remnant lynx. Despite the ambitious project objective, it has been exceeded.
Inbreeding coefficient decreased from over 0.30 to below 0.18, with corresponding expected ~25% fitness increase	Achieved. The effective inbreeding of the lynx population at the level of the entire Dinaric – SE Alpine range decreased from 0.32 to 0.08. The corresponding fitness increase was up to 4-times.	In parallel with the substantial increase in population abundance and distribution, we observed a dramatic improvement of the genetic parameters, which was the main threat to this population before the project. The effective inbreeding decreased from 0.32 to 0.19 (if not considering the translocations to the Alps) or even 0.08 (if Alpine translocations are included), which corresponds to 2- to 4-times increase in expected fitness and fulfils our goal to reach the inbreeding level well below the expected threshold.
Population guidelines, Action plan for SLO, Expert study for CRO and Interregional Mng. Plan for Italy by stakeholders. In SLO, action plan adopted by authorities by project end.	Partially achieved. Common Guidelines for Dinaric – SE Alpine Population-level Lynx Management were prepared and the document was presented additionally to the experts from Austria and managing authorities from Bosnia and Herzegovina. In Croatia, the Ministry adopted the new national Lynx Management Plan in March 2024, with the Croatian members of the project team contributing to the draft version with their expert knowledge. In Slovenia and Italy, national management documents were prepared and submitted to the authorities. However, the action plan was not adopted by the authorities in Slovenia by the end of the project. (The strategy and action plan were adopted in November 2024.)	We outreached the scope of the common guidelines, expanding their reach to Austria and Bosnia and Herzegovina. It outlines the crucial threats for lynx in the region and defines the management measures needed to tackle them. Used as a basis for the preparation of national action plans/strategies, it is one of the most important deliverables of the project. Countries have followed a participatory approach for drafting the national documents, successfully producing and submitting them to the respective authorities. Despite some changes in the foreseen activities for Croatia, the country has successfully adopted the national Lynx management plan, which is based on the expert study, involving the main findings of the LIFE Lynx project. Moreover, another crucial document for long-term lynx conservation was created; the “Guidelines for management of lynx orphans“, which has already seen four cases of its successful practical implementation. In Slovenia, the expert group prepared the document based on the common guidelines

Foreseen in the revised proposal	Achieved	Evaluation
		and tailored to the national conditions and needs, with the MNVP representatives actively involved in the group. After submitting the document to MNVP in December 2023, the project team members involved in the expert group expressed their willingness to help with the final procedure and reminded MNVP of the importance of its adoption. However, the continuation of the adoption process is in the Ministry's scope of competence and cannot be guided by the project team involved in the expert group anymore. In June 2024, the strategy and action plan were published on the ministry's website for purposes of mandatory public comment. (Both documents were adopted by the Government of the Republic of Slovenia in November 2024.)
Guidelines established to maintain the habitat permeability of the Dinaric-SE Alpine region	Achieved and exceeded. Two sets of guidelines were produced; i) the Environmental Impact Assessment guidelines for Eurasian lynx habitat connectivity (in 3 languages) and the Guidelines for meta-population connectivity of lynx populations in the Alps, Dinarics and Balkan. Moreover, the protection of the most important ecological corridors for lynx (and other mammals) in Slovenia is included in the core national forestry management plans, meaning the land use of the corridors (forest) should not be changed.	The guidelines were produced as foreseen, building on the expertise gained during the LIFE DINALP BEAR project and using the data obtained throughout the LIFE Lynx project. They have been presented to the crucial stakeholders and published in all relevant national languages. As Slovenia lies at a strategic location where the Dinaric and the Alpine region meet, the additional acknowledgement of the knowledge gained within this action, i.e., the protection of the ecological corridors for lynx in the core management documents at national level, has an important impact nationally and internationally.
Transboundary geo-database baseline established for transboundary lynx management.	Achieved. The upgraded, adjusted and expanded geo-portal MBase (https://portal.mbase.org) has become a main repository for lynx data storage, visualisation, filtering and sharing for a transboundary lynx management. Camera trap photos, opportunistically collected records, biometric, genetic and GPS telemetry data of lynx are available to any registered user under strictly controlled, yet free, access.	The database offers us the main tool for the international exchange of data that is now carried out with no obstacles, which is necessary for successful transboundary cooperation and support in population-level monitoring and decision-making. At the end of the project, the MBase hosted more than 50,000 lynx records, collected in five project countries, both during the project and previously in the past. It enabled a faster, simplified process of processing opportunistic data and created an easy way to identify lynx occurring in neighbouring countries, preventing double

Foreseen in the revised proposal	Achieved	Evaluation
		counting of lynx at the population level, and detecting dispersal.
Scientific monitoring and evaluation of the reinforcement established and maintained after project ends	Achieved and exceeded. We have used state-of-the-art scientific methods to establish a comprehensive, rigorous system of reinforcement process evaluation. What is more, we have developed new techniques which allowed us to use the collected data and an even greater efficiency and accuracy, creating new knowledge in the international scientific community. The optimized monitoring created during the project will be used also after the end of the project. All reported aspects of the significant improvement of the genetic and demographic status of the Dinaric SE-Alpine lynx population are thus based on best available scientific methodology, indisputably proving the success and positive impact of the LIFE Lynx project.	To ensure a scientific monitoring and evaluation, the project team involved competent scientists from different fields, as well as created some new lynx experts with specialist knowledge. Throughout the data collection process, we were continuously in contact with other lynx experts, exchanging best practice and creating new collaborations. To assess the effect of reinforcement on the genetic status of the inbred population, we extensively upgraded the genetic analyses with the use of a new set of new genetic markers and the development of a new sampling method, resulting in individual genotyping of lynx from tracks in the snow, which represents a technological advance at a global level. We have learnt from best practice examples in Europe to design an international population-level camera trapping program, but adjusted its design to fit the specifics of our system (involving hunters and rangers, finding best sites in a rugged karstic and alpine landscape). We've upgraded the spatial capture-recapture models to accommodate the specifics of our design and produce unbiased estimates of population abundance and density over a course of 4 years. Finally, our expertise in lynx movement ecology allowed us to define an optimal schedule for lynx GPS collars to monitor lynx impact in the ecosystem through kill site surveys, which enabled us to visit and monitor over 400 kill sites. The scientific contribution of this project can already be seen in over 70 published scientific papers, with many more yet to come.
Police investigation unit established to reduce illegal killing of wildlife.	Achieved. In total, 48 police officers from the Slovenian Police were trained for tackling illegal killing of wildlife.	The trained police officers gained new knowledge regarding the procedures for effective persecution of illegal wildlife killing, which was a largely overlooked topic in Slovenia before the start of the LIFE Lynx project. The awareness that

Foreseen in the revised proposal	Achieved	Evaluation
	We prepared two protocols for tackling potential cases of illegal wildlife crime, one for the internal use of the police and the other one for field personnel, which has been distributed to 21,000 hunters, and beyond.	each individual lynx represents a great potential in improving the genetic condition of the population should be the drive behind a policeman's conduct in the field. Increasing the stakeholders' knowledge contributes to increased general wildlife awareness and gives a solid pre-condition for reducing any illegal treatment of wildlife. This is why we promoted the unacceptability of illegal killing widely through various communication tools, including 11 seminars for field personnel, online courses for hunters, a press conference, popular article in a hunting magazine, and project presentations. Additionally, we organized a meeting involving police, the state prosecutors and the Slovenian hunting inspection service to further promote the importance of battling wildlife crime among the crucial institutions responsible for such illegal actions.
Close cooperation established with SLO, CRO and IT hunters in at least 100 hunting clubs; 30,000 hunters reached.	Achieved and exceeded. In total, we established a close cooperation with 200 hunting clubs; 63 in Slovenia (including 5 state hunting grounds), 36 in Croatia and 99 in Italy. We regularly published articles about the project and the lynx in the most popular hunting magazines from the project area, having a reach of over 21,000 in Slovenia and 50,000 in Croatia, and additionally 30,000 in Austria ("Der Anblick"). We held 56 presentations/seminars for hunters, organized the national "Hunter's Day" about lynx with 98 participants, followed by a special issue of a professional journal for Slovenian hunters, and an international conference about lynx, hosting over 50 participants from 9 different countries with high support of the FACE for our conservation actions and with their collaboration.	We overreached the aim of closely cooperating with 100 hunting clubs – twice as much hunting clubs are involved in this fruitful and mutually beneficial cooperation, which gives us confidence in long-term advantages, as it paves the road for broadening and maintaining the relationship in the long-term, transferring it also outside this project for other nature conservation activities. Our publications in hunting magazines issued in different countries within and outside the project area, presentations, posts of the web page and Facebook profile have reached several thousand hunters. Both project documentary films (Path of the lynx and Together for lynx), as well as many video clips, were included in many presentations for hunters and broadcasted on national TV in Slovenia and Croatia. The films were translated in 5 different languages, which gives it even a greater reach. We are also active on some hunters' Facebook pages with a few thousand members.

Foreseen in the revised proposal	Achieved	Evaluation
Close cooperation established with at least 10 local communities; 6 functional local consultative groups established.	Achieved and exceeded. We are cooperating with 24 local communities; we established 6 local consultative groups (LCG) in Slovenia and 3 in Croatia. All important news about the project were regularly shared with local communities and members of LCG.	We believe a successful leadership of local consultative groups to be a crucial step towards reaching overall project objectives. We carried out 27 events for the members and sent more than 200 emails to more than 425 members of LCGs. When organizing an event within one of the communities, we always invited the neighbouring ones, too, to enable the widest possible reach. A mutual goal of maintaining the support for lynx conservation resulted in the creation of a set of additional beneficial project outputs; e.g. a FAQ booklet for communicating the purpose and goals of the project to wider public, information boards, games and didactic materials for schools, and a soundboard for an educational facility established by a hunting club in Slovenia.
Knowledge about lynx (50 % increase), support for lynx conservation (15 % increase) and overall project support (80 % increase)	Partially achieved.	Overall, the level of knowledge increased for 8.5 %, however it's important to highlight some key figures. In all countries, hunters as the crucial stakeholders for lynx conservation, had the highest level of knowledge (over 60 %). For example, in Slovenia, where the knowledge was the highest (over 80 %), we did not expect any significant improvement, but surprisingly still achieved a 2.3 % increase. In Italy, where the starting knowledge level was the lowest, we observed the highest increase (19 %), especially among the farmers (48 %). Thus, we believe that it is important that the knowledge didn't show any significant drops and that the positive change occurred where it was most meaningful. It needs to be stressed that the core of the project communication focused on the project results and how we addressed the main threat to the lynx; the inbreeding. For example, only one project publication was fully dedicated on lynx biology/ecology, while these topics were mostly incorporated in online project content (webpage, social media, etc). Topics concerning lynx ecology/biology were highlighted mostly in various activities with hunters and schools, where we

Foreseen in the revised proposal	Achieved	Evaluation
		exceeded the foreseen activities; we organized 56 educational presentations for hunters (44 foreseen) and hundreds of personal meetings, and involved 81 schools with 114 teachers (30 planned) and 3,850 children (3,000 planned) reached. Public support for lynx conservation was expected to increase, however we found that the support in Croatia, Italy and Slovenia was already very high in the first public opinion survey of the project and remained high throughout the project (85.7 % in 2019 and 85.3 % in 2023). Importantly, a shift occurred where the support of lynx was the lowest (among farmers in Italy); at the end of the project, they showed a substantial increase in support of lynx conservation (over 40 %), while people's perception of lynx as a threat remained low throughout the project (<10%). The overall support of the project was evident among different stakeholder groups and the general public through the project lifespan, which is indicated by a myriad of social indicators. Specifically, in the first year of the project, 57 % of all media articles were positively reporting about the project, while in the last year, this share increased to 65 %. Over 750 independent organizations (or projects) expressed their support with direct involvement with the LIFE Lynx project, and local communities were highly involved in the project through various activities.
Events/outputs: project events (min. 4,000 particip.), school events (min. 3,000 children, 30 teachers), 9 popular publications and posters (64,350 copies), 17 technical reports, 2 documentaries (2,650 copies), 3 video clips, promotional materials (14,520 pcs.),	Achieved and exceeded. There were 8,627 participants and visitors at public events organized by the project. In schools, 3,850 pupils and students, and 114 teachers participated at our workshops and events. We produced 135 publications concerning project activities (leaflets, brochures, reports, guidelines etc.) in 5 different languages. From these, 25 were	Besides the extensive outreach of our communication activities, which surpassed all our expectations, we produced several additional outputs which we believe, made our project one of the most recognized and positively accepted large carnivore project in the recent past. Two children's books about lynx were written by popular Slovenian authors, translated to English and distributed to various target audiences. 20 professional short video clips and 40 amateur clips, using mostly camera trapping footage, about the project and the lynx, were produced. A short cartoon was

Foreseen in the revised proposal	Achieved	Evaluation
project web-page (avg. 50,000 views/year) and Facebook (min. 3,000 likes).	produced as popular publications, printed in 111,508 copies. We produced 36 technical reports of the project achievements. Two documentary films were created and distributed through 2,550 hard copies. Project web page registered 536,298 unique views, with more than 100,000 views per year on average. LIFE Lynx Facebook profile has 9,740 followers and LIFE Lynx - hrvatski terenski blog Facebook profile has 11,370 followers.	also produced based on the one of the children's book, which was viewed by more than 2,400 children at 42 screenings. All the video content is uploaded to the project YouTube channel, which is an additional communication channel of the project. Altogether (online, TV, events), we recoded over 900,000 cumulative views of video materials until the end of the project. Due to the increased popularity of Instagram and the strong visual content of our project, we additionally created the Instagram profile "LIFE Lynx", which has 3,705 followers representing a different audience than other social media channels. Finally, besides the two foreseen documentary movies, another 50-minute documentary movie was produced by the Croatian national TV and was broadcasted just after the end of the LIFE Lynx project. Also, other foreign filmmakers visited the project and prepared longer or shorter films mentioning LIFE Lynx project (ARTE; Naturjuwele Sloweniens, Viasat Nature: European Wilderness - Season 1).
Intensive media coverage: min. 89 popular articles, min. 21 press releases, 8 press conferences, 8 field trips for journalists.	Achieved and exceeded. We produced 126 popular articles and 36 press releases. We organized 13 press conferences and 21 field trips for journalists.	Due to the positive story of collaboration and engagement of various people, which our project was representing, and the charisma of the lynx, the media was eager to publish lynx related content throughout the entire project lifetime. We overachieved the number of all media coverage, which helped deliver objective and transparent project news to the general or specific public, regaining their interest and support for conservation of lynx. Additionally, 13 trips were organized for NGOs and 102 presentations carried out for different groups of stakeholders.
Cooperation with at least 10 related LIFE projects established.	Achieved and exceeded. We cooperated with 12 related LIFE projects (additionally, also with Interreg and other projects). In total, the project was presented at 73 different events in 10 different countries outside the project area within Europe and in the USA.	In our experience, this is very important for knowledge-exchange, best-practice sharing and capacity building. We've created a tight network involving several institutions, organizations and people which are dealing with similar questions regarding the conservation of large carnivores and nature in general.

Foreseen in the revised proposal	Achieved	Evaluation
		We've shared our achievements with LIFE and non-LIFE projects over the entire range of the Carpathian lynx and beyond. Our team members have remained or became active members of expert groups which guide the future effort in lynx conservation in the region or beyond (Alpine and Dinaric large carnivore platforms, Eurolynx, Linking Lynx, Large Carnivore Initiative Europe, IUCN Cat Specialist group, and others), where the activities of our project have been regularly transferred.
Min. 2 ecotourism packages developed and introduced to the market. Min. 70 tourists involved in the project actions. Min. 2 educational seminars for tourism sector.	Achieved and exceeded. Three different ecotourism packages (ecotourism package art holiday in nature, ecotourism package art in nature, art workshops) were developed, reaching over 700 tourists. They were introduced to the market through website Discover Dinarics (established within the LIFE DINALP BEAR project and used within the LIFE Lynx), through website of local tour operators, they were promoted through Facebook, leaflets and through the educational seminars for tour guides and study tour for foreign journalists and tour operators organized by the project. Moreover, guided walks on lynx educational trails produced in Italy and Slovenia are also part of the local tourism offer.	We are very satisfied with the results, as beside raising lynx conservation awareness among naturalistic artists, we gained a lot of benefits for project overall success with the amateur and professional artists' art colonies. The professional art colony overreached the foreseen activities in many aspects; it produced i) 7 additional exhibitions as great interest for hosting artwork exhibition was expressed by many institutions in Slovenia already during the project, ii) the digitalised artwork for further promotion of ecotourism activities and project and iii) a brochure where lynx artists are introduced. More than 70 representatives of the tourism sector and protected areas were educated about the opportunities created by the lynx presence.
2 thematic educational trails developed. Transboundary hiking trip developed to promote lynx conservation.	Achieved and exceeded. A thematic educational trail developed in Slovenia and Italy. A transboundary hiking trail between Slovenia and Croatia was developed (Lynx walk), as well as adjusted for cyclists by the gravgrav community.	We've created two popular educational trails in Slovenia and Italy, which are very well accepted by the local communities. In Slovenia, the trail was awarded by the Tourist Association of Slovenia as the best thematic trail in 2023, while the community council of Tarvisio replicated the idea by producing an additional trail for the brown bear. Additionally, the transboundary hiking trail was upgraded into the cycling route, which allowed us to reach one more target groups (cyclists). A leaflet and a poster

Foreseen in the revised proposal	Achieved	Evaluation
		were designed together with the gravgrav to promote the new cycling adventure.

Table 6: Comparison of the results achieved against the objectives

– **Indicate which project results have been immediately visible and which results will only become apparent after a certain time period.**

While monitoring the Dinaric-SE Alpine lynx population, we established close cooperation with 200 hunting clubs. Besides developing a valid, scientific-based monitoring protocol with high quality results, we believe this process had an immediate effect on hunters' knowledge and experience that resulted in a positive conservation outlook improving their values, beliefs, and attitudes toward lynx. Hunters who were not directly involved in monitoring activities were reached through presentations, seminars, conferences, and articles published in the most popular hunting magazines, reaching over 21,000 hunters in Slovenia and 50,000 in Croatia.

We put extensive effort into maintaining close and trusting relationships with hunters that resulted in successful monitoring seasons (immediately visible result) and of benefits for nature conservation (long-lasting cooperation transferred to other projects and other wildlife species in the long-term). The local municipality also recognized the cooperation of hunters in the Alpine region of Slovenia and their efforts to help save the lynx, acknowledging their contributions with a Municipality award, presented to them by the President of the Republic of Slovenia. Lynx monitoring implemented through the active cooperation of hunters was also a finalist for the first Slovenian Natura 2000 Award. A long-term result of trustful and transparent cooperation through involvement in project actions by hunters is the willingness of many hunting grounds to continue monitoring lynx with camera traps, even after the project's conclusion. Moreover, the involvement of hunters in the LIFE Lynx project in Slovenia was widely promoted at the traditional "Hunters' Day" conference, hosting close to 100 participants. Hunters' contribution to lynx conservation was also visibly recognized by the international hunters' community, especially through the participation of more than 50 hunters from 9 European countries at the international lynx conference "Hunters and Lynx Conservation", organized by HAS and supported by the FACE. Finally, at the conference, an agreement between HAS, SFS, and Carinthia Hunting Association was signed, promising new opportunities for an effective transboundary conservation of the Dinaric – SE Alpine lynx population.

Our work has also been recognized widely by the two main expert international lynx platforms: "Eurolynx" (the scientific network of lynx experts) and "Linking Lynx" (the network of lynx conservationists providing guidance for lynx reintroduction programs). In these networks of scientists, managers, and other lynx experts, we have shared a large amount of lynx data and have led the way in extensive knowledge on the transfer of best practices that characterized a successful translocation effort. Additionally, we contributed to European-scale studies of lynx ecology and shared our expertise and experience in the preparation of international protocols regarding future lynx conservation practices.

Police officers with additional knowledge about the illegal killing of wildlife perform their tasks in the field daily, thus representing immediate results, also in terms of the produced, approved, and implemented Police protocol for standard procedures in case of illegal killing of wildlife. On the other hand, we expect the aim of reducing the illegal killing of wildlife in general to be visible only in the long term.

Protected corridors for ecological connectivity have been officially delineated in Slovenia through forest and game management plans adopted by the Government. Knowledge about this was disseminated at two seminars for spatial planning officers. Therefore, the foundations for the immediate visibility of the project's output have been laid.

We increased the project's immediate visibility through a variety of communication activities (Young Lynx Guardians programme, Celebrity ambassadors, ...) and communication channels (online communication, presentations, field trips, printed media, …), which were carefully selected for each of the stakeholder group in our communication plan. The numbers of stakeholders who reached out via webpage, Facebook, Instagram, YouTube, and Vimeo are impressive.

Local communities embraced thematic educational paths in Slovenia and Italy and the Lynx Walk hiking path. These paths are part of the project's communication efforts, and their results will be visible many years after the project's end. They educate people about lynx and the LIFE Lynx project while also presenting an opportunity for economic gain for the local communities.

Besides the extensive outreach of our communication activities, which surpassed all our expectations, we produced several additional outputs with significant added value: two children's books written by renowned Slovenian authors, Ms. Desa Muck and Mr. Boštjan Gorenc Pižama, received immediate attention of the media and their primary target group (schools) and will continue to present the project's objectives and results well beyond its end (also in English). The cartoon, founded on one of these books, has strong educational value and tremendous reach.

We expect the dissemination and awareness-raising activities to have visible results well after the end of the project, as people's change in beliefs and attitudes requires time. The same goes for awareness-raising in schools, where we have targeted the long-term attitudes of future wildlife managers, decision-makers, and stakeholders in the nature conservation process.

The long-term benefits of adding individual lynx to the Dinaric-SE Alpine population will become evident over time as reproduction occurs, inbreeding coefficients continue to decrease, and the population range expands.

– **Describe the results of the replication efforts.**

The project actively promoted and encouraged opportunities for replication and transfer of knowledge outside the project. Through a variety of networking opportunities, we have established connections with different projects and organizations. We presented our experience from the LIFE Lynx to the UK Lifescape project, which started an initiative called The Missing Lynx, in the scope of which they are trying to bring lynx back to the UK. Some of the LIFE Lynx project outputs will be used as a basis for preparing the starting documents for this initiative.

Personnel trained within the LIFE Lynx project have already joined another translocation project in Thuringia, Germany. Project staff visited the area and shared their experiences from the LIFE Lynx project. The captures have already started, with the animals being released in 2024.

Some of the project outputs have already been used in other European countries. For instance, "Camera-trapping guidelines" were translated into French and "Non-invasive genetic sampling guidelines" were used to prepare a veterinary handbook in Austria.

Materials filmed for the documentary "Path of the Lynx" were used to prepare six short films titled "Hunters' stories", funded by American foundations. These short films promote hunters' involvement in lynx conservation in Europe. Originally, they were produced in Slovenian and English, but are already being translated into Croatian, Czech, German, and Italian.

The Lynx thematic educational trail in Tarvisio was replicated by the Tarvisio community council which produced an additional trail for the brown bear.

– **Indicate the effectiveness of the dissemination activities and comment on any major drawbacks.**

As shown by the high number of visits to the project webpage (>530,000), the number of Facebook followers (>21,000), and numerous presentations both within and outside the project area, the project had high visibility. We are confident, based on all our indicators, that the project was and still is widely recognized.

The project's Instagram, YouTube, and Vimeo accounts were created to broaden our online communication reach. Different project publications (e.g., handouts, bulletins, postcards) and promotional materials (T-shirts, keychains, caps, notepads) were produced and distributed to different stakeholders, target groups, and interested parties. Most of these materials were distributed at different project events (e.g., presentations), at local consultative groups meetings, and to our key stakeholders, hunters. Due to high demand, we have produced more copies of bookmarks, posters, bulletins, and project handouts.

Moreover, we are satisfied with the high levels of media coverage for the project. Project staff prepared 36 press releases and organized 13 press conferences (C.11, E.2, E.4, and E.5). An additional 9 press releases were published by ZOO Bojnice, disseminating the project results and activities also in Slovakia (not foreseen). In the reporting period, we recorded 1,761 media clips that mentioned our project and were also assessed as positive (average mark 1.76 on a scale ranging from -5 to +5). Also, media such as National Geographic, Arte, Viasat, Kodami, N1 and all national TVs reported about the LIFE Lynx project

We produced two documentary films; the first one titled "Path of the Lynx", had more than 104,000 views (television and online) by the end of the project and the second one, "Together for Lynx" had more than 116,000 views and was shown at two film festivals (BOFF and Festival Gorniškega Filma in Slovenia) and will be screened at Lynx Festival in Romania in June 2024 and on RAI Television. Both films were also distributed via USB keys, so the numbers of views is likely higher. The Mighty Lynx Cartoon, an additional product of the project, was seen by more than 14,500 people (also on Slovenian National TV); out of this, 2,400 children saw this cartoon at events organized by 42 local schools and kindergartens. The output made it possible to reach younger audiences and introduce them to one of the most mysterious animals living in our forests. In addition, different video clips, showing lynx releases, camera trapping images, sand haring important messages of the project (habitat connectivity, preventing illegal killing of wildlife, hunters' involvement in the project) were produced with more than 603,000 views (television and online). Both films, the cartoon, and short videos were effectively promoted through cooperation with our celebrity ambassadors and other project supporters.

In collaboration with the Interreg CE 3Lynx project, we started celebrating International Lynx Day (June 11), already in the first year of establishment of this event (2018), with the premiere of our first documentary film, "Path of the Lynx" and we continued with celebrations in all the following years. Later, we connected with other EU countries and, at our initiative, prepared common maps of all events organized in the scope of this day dedicated to lynx. Each year more countries have decided to join; in 2024 partners from ten European countries (France, Belgium, Switzerland, Slovenia, Italy, Romania, UK, Czech Republic, North Macedonia, and Kosovo) will organize more than 60 events in their respective countries.

– **Policy impact**

The LIFE Lynx project delivered significant results that provided added value to the EU. We developed, applied, and demonstrated best practices to prevent the extinction of a large carnivore in a biogeographically important part of the EU, directly implementing the Habitats Directive and Natura 2000 regulations.

Our achievements contribute to several targets of the Union Biodiversity Strategy 2020. Intense stakeholder involvement has been crucial: hundreds of hunters are actively cooperating in lynx monitoring, thousands have been subjected to awareness-raising efforts, police officers have been educated with procedural protocols, and schools have received targeted workshops and lectures. Local inhabitants have been engaged through the careful leadership of local consultative groups. Additionally, we achieved another project target by developing ecotourism packages that actively promote local services, goods, and producers.

Population-level management is essential, especially for small countries with shared wildlife populations. To address this, we followed the Guidelines for Population Level Management Plans for Large Carnivores developed by the Large Carnivore Initiative for Europe and funded by the European Commission. We prepared and implemented these guidelines into the draft or adopted national lynx management strategic documents in Croatia, Slovenia, and Italy.

Our results contribute not only to lynx conservation but also to the preservation of entire ecosystems. Maintaining an apex predator enhances complexity, biodiversity, and resilience. Actions such as the creation of a specialized police investigative group, protection of landscape connectivity, and awareness-raising campaigns support long-term nature conservation.

Policy impact of the LIFE Lynx project on national legislation:

The LIFE Lynx project influenced 4 national policy implementation documents:

1. Before the start of the LIFE Lynx project, corridors enabling landscape connectivity for large carnivores, ungulates, and other species were not identified nor protected in Slovenia. Through the LIFE Lynx project, we addressed this issue by conducting an analysis and implementing the outcomes at the national level, protecting the corridors through forest and game management plans that were adopted by the government. Additionally, many spatial planning officers attended the seminar on habitat connectivity for bears and lynx. This knowledge was later disseminated beyond the project as the seminar was hosted by an Interreg project. Official protection of these corridors will enhance the functionality of the Natura 2000 network in Slovenia.
2. Specialized training was carried out for the members of police forces to enable the Slovenian Police to react efficiently to wildlife crime. This direct project influence on a public body has led to capacity building, policy adjustments, and efficient investigations of nature conservation and hunting law violations. We prepared a confidential “Protocol on procedures in cases of suspected illegal lynx and other wildlife killing,” legally reviewed by the Ministry of the Interior and officially recognized as an internal act of the Slovenian Police.
3. Within the LIFE Lynx project, we developed guidelines for considering lynx and wolf’s impact in Slovenia’s ungulate management planning. These guidelines were incorporated into government-adopted ungulate management plans. Through broader debates and workshops during the development of the guidelines, we made significant progress toward greater acceptance of lynx and wolf by hunters and incorporated their considerations connected with the presence of large carnivores into ungulate management planning.
4. Common Guidelines for Dinaric – SE Alpine Population-level Lynx Management were prepared by a working group consisting of project staff and experts from Austria, with participation from managing authorities in Bosnia and Herzegovina. These guidelines were implemented into the adopted lynx management plan in Croatia and are included in the draft strategic documents for Slovenia and Italy, which are still under adoption. We recognize that the lengthy process of government adoption of these strategic documents is a significant barrier to lynx management, despite collaborating with the responsible ministry during the development of these documents and their active participation in all stages of the procedure.

Achievement of results foreseen in the Grant Agreement form B3 "EU ADDED VALUE OF THE PROJECT AND ITS ACTIONS"

The project has already delivered results that create EU-added value. We developed, applied and demonstrated best practices to prevent the extinction of a large carnivore from a biogeographically important part of the EU, thus directly implementing **Habitats Directive** and **Natura 2000** regulation.

Integrating 9 new individuals into the Dinaric part of the population contributes to reversing the decline of the Dinaric-SE Alpine lynx population, and 5 animals reproducing in the Alpine part of Slovenia present the start of the stepping-stone population. With new animals included in the population, we confirmed the substantial increase in population abundance and distribution, and we observed a dramatic improvement in the genetic parameters, which was the main threat to this population before the project. The effective inbreeding decreased from 0.32 to 0.19 (if not considering the translocations to the Alps) or even 0.08 (if Alpine translocations are included), which corresponds to a 2- to 4-times increase in expected fitness and fulfils our goal to reach the inbreeding level well below the expected threshold. With the development of an individual-based genetic demographic computer model of the lynx population, we used an innovative science-based approach to suggest the management actions that would ensure the viability of the lynx population in the long term.

Our results contribute towards reaching the target of the **EU Biodiversity Strategy for 2030,** to show a positive trend in the conservation status of the lynx in Slovenia and Croatia. Ecological corridors, protected through forest and game management plans adopted by the Government of Slovenia, will allow for lynx (and other species) migration and thus help prevent genetic isolation. The possibility of enhanced gene flow and a healthier population directly result from the established stepping-stone population in the Slovenian Alps.

Knowledge exchange, together with intense stakeholder involvement, reached the highest potential in this project: hundreds of hunters were intensely cooperating in lynx monitoring, thousands of them being subjected to awareness raising through numerous seminars, events, workshops, and articles published in hunters' and popular magazines, police officers educated and their procedures to tackle wildlife crime formally established, schools and high-schools receiving targeted workshops and lectures, local inhabitants gathering around the project actions through careful leadership of local consultative groups.

Our results so far do not contribute solely to lynx conservation; preserving an apex predator also improves the entire ecosystem's complexity, biodiversity, and resilience. Moreover, the project achieved another target, as we successfully developed ecotourism packages (targeted towards tourists and other consumers) that actively promote local services, goods providers and producers.

6.4. Analysis of benefits

1. Environmental benefits
    a. Direct / quantitative environmental benefits:

We contributed to implementing the **HD;** the main objective was to improve the conservation status of lynx, a species of Community Interest listed in Annexes II, IV, and V of the HD (92/43/EEC). Project activities also targeted the **Natura 2000** sites designated for this species in Slovenia, Croatia, and Italy and provided direct input for the Natura 2000 biogeographical seminars. Both priorities are set out in Annex III of the LIFE Regulation.

With regards to the **Union Biodiversity Strategy 2020,** which was in force during the first half of the LIFE Lynx, our project directly contributed towards reaching **Target 1 – "Fully implement the Birds and Habitats Directive"** as it directly addressed a species of Community interest through actions aiming to improve conservation status of the species, improving management both on national and

population level, cross-border collaboration in management of the species, stakeholder involvement and awareness, enforcement of legislation, and carefully monitored and reported the progress. In the project, we adhered to the best practice of similar projects within the EU and also demonstrated some new aspects of recovering a large transboundary carnivore population. First, we used a population-level approach to conservation (C.3, C.4), monitoring (A.3, C.5, C.6, D.2), and management (A.5, A.6, C.7), addressing the conservation goals at a meaningful level and adapt local and national management to fit these goals, creating a vision for a large-scale population level management and conservation across the diverse EU nations. Second, we provided scientifically based population development scenarios to form a foundation for the long-term strategy for ensuring the viability and vitality of the reinforced population, which can be used at an EU level for planning management of other reintroduced populations and increasing their chances for long-term survival. Lastly, our project demonstrated the possibility of improving the persecution of illegal actions towards wildlife through the involvement of the crucial stakeholder group, i.e., the hunters (C.8), representing a much-needed advancement in confronting the increasing levels of large carnivore poaching in Europe.

Our project significantly improved the conservation status of an apex predator, contributing to **Target 2 – "Maintain and restore ecosystems and their services."** We increased ecosystem complexity, biodiversity, and resilience to climate and other changes by rescuing a large carnivore from extinction in a biogeographically significant EU region. Specifically, we reversed the decline of the Dinaric-SE Alpine lynx population by integrating 9 healthy Carpathian lynx into the Dinaric part of the population and establishing a "stepping stone" in the Alpine part of the population with 5 animals establishing their territories there. Through an intensive, targeted monitoring program, reproduction was confirmed for most (12) of the translocated animals by the end of the project. The positive trend for the status of lynx at a population level is indisputable; we have documented a 42 % increase in population density and abundance, a 6,200 km^2 increase in the distribution range. The enhanced presence of lynx in the Dinaric area and its restoration in the Alps directly benefitted the local ecosystem through increased food availability. The direct benefits were observed mostly in the scavenger community, including species with protected status, such as golden eagles, white-tailed eagles, brown bears, and others. Therefore, the conservation of lynx is of far greater importance than single-species conservation. Besides improving the knowledge about and the potential of regulatory ecosystem services related to the Eurasian lynx, our project also promoted its cultural ecosystem services, primarily those related to education, tourism, recreation, aesthetics, and inspiration. Our project involved hunters, local communities, school children, tourists, artists, cyclists, and even celebrity authors and sportsmen. Finally, under Target 2, our project contributed towards maintaining functional connectivity of the Dinaric – SE Alpine lynx population range and in a wider EU scale in relation to the other Central European lynx populations. The Alpine lynx population, in particular, directly profited from the expansion of the gene pool and the increased distribution range of the Dinaric – SE Alpine lynx population. In close collaboration with lynx experts from the entire range of lynx in Europe, we have established International Guidelines for Establishing meta-population connectivity of lynx populations in the Alps, Dinarics and Balkan (C.7), which can serve as a practical tool for future spatial planning procedures through informing the EIA procedures and at a local, national or international level. Finally, we have secured the functionality of the Natura 2000 sites in Slovenia by identifying and protecting the ecological corridors of lynx in the long-term forest and game management plans adopted by the Slovenian Government.

Even though the lynx is the species of large carnivore with the least associated conflicts, it was nevertheless important to implement effective measures for preventing any potential damage that could be caused by lynx to support **Target 3 – "Increase the contribution of agriculture and forestry to biodiversity".** We actively worked with farmers to further adjust their farming practices to be less conflicting with large carnivore conservation in general. Specifically, we successfully distributed electric nets for livestock protection and observed a high improvement in the attitude of farmers towards lynx conservation in Italy. Secondly, the long-term Slovenian Forest Management Plans, which already include provisions related to game species management, were improved through a participatory approach with local hunters to acknowledge lynx (and wolf) presence and adjust the hunting quotas for the main prey species.

Lastly, the project contributes towards achieving **Target 6 – "Step –up action to tackle the global biodiversity crisis"** mainly through actively promoting local services, goods, and producers in the project's actions that targeted tourists and other consumers. We have created innovative eco-touristic packages (art workshops), novel nature-friendly outdoor solutions (hiking and cycling routes), and customized experiences regarding lynx and lynx conservation (guided walks, educational facilities in hunting grounds, and didactic materials for schools). In addition, our project directly contributed towards reaching the objectives of other relevant policy-related documents, namely: **"Guidelines for Population Level Management Plans for Large Carnivores in Europe"** and **"Key actions for Large Carnivore populations in Europe"** as these documents represented the baseline for the creation of the national lynx management strategic documents in Croatia, Slovenia, and Italy.

b. Qualitative environmental benefits

LIFE Lynx project has succeeded in saving the Dinaric-SE Alpine lynx population from extinction, reaching the project's ultimate goal and directly eliminating "**Threat 1- Inbreeding depression**". Over the course of seven years, we successfully integrated 14 lynx from the Carpathians to the Dinarics and SE Alps, effectively addressing the issue of inbreeding depression and yielding positive outcomes. We enriched the remnant lynx population and shifted the inbreeding depression trend, which was evident through active and directed surveillance of the lynx viability at population and individual level (actions D.2 and D.3). We established a population stepping stone in the SE Alps through reintroductions (C.4), while further enhancement of its stability was assured by additional lynx releases in Italy (ULyCA2 project). This will facilitate long-term connectivity between the Dinaric population and other populations in the Alps while also enhancing the overall genetic viability of the population. With a myriad of positive social and ecological indicators showing the project's overall success, we can conclude **the outlook of the lynx in the Dinaric-SE Alpine area is positive**, with **increasing trends** showing a high potential for future growth, expansion, and status improvement. However, with the SE-Alpine stepping stone expansion and growth, lynx will soon reach Austria, where hunter's acceptance of lynx is lower. That may create a new threat, which should be addressed promptly and effectively, as it could negatively affect the stability and growth of the stepping stone and hinder the long-term conservation of lynx at a meta-population level. While not foreseen in the project, we have taken some positive steps with Austrian hunters – the most important being the signature of the networking agreement between the Styrian Hunters Association, HAS, and SFS to share knowledge with Austrian hunters who are eager to learn about the lynx and the role of hunters in the conservation of this species. The documentary film "Together for Lynx" was translated into German and was already presented at the event for Austrian hunters visiting Slovenia, and an article about the project and the role of the hunters in it was published in the hunters' magazine "Der Anblick", reaching 30,000 readers.

To address **"Threat 2 - Lack of conservation and management response to lynx population decline",** we combined national and international approaches to improve the management of the Dinaric – SE Alpine lynx population **(Threat 2a),** developed close partnerships with crucial stakeholders to support lynx recovery **(Threat 2b),** established a rigorous systematic transboundary surveillance program combining state of the art scientific methods **(Threat 2c**) and unravelled the drivers of lynx population viability to inform the long-term management decisions for lynx conservation **(Threat 2d).**

Recognising the need for transnational population-level management of a species with high spatial requirements, such as the lynx, motivated us to develop 'Common guidelines for Dinaric - SE Alpine population-level lynx management', providing the basis for national management documents. Furthermore, all three nations sharing the Dinaric-SE Alpine lynx population produced drafts of national or regional (Italy for the Alps) strategic management plans for long-term lynx conservation and delivered them to the responsible authorities (action A.5). This eliminated **Threat 2a** to a great extent. However, the relevant Ministry in Slovenia has yet to adopt the lynx management plan. Thus, it is possible that the timeframe for continued population monitoring may not align between Slovenia and Croatia, which could diminish the reliability of results regarding lynx abundance at the cross-border

level. To continue the fruitful collaboration between the project partners, competent institutions must regularly cooperate within the existing international networks and strengthen the collaboration on a meta-population level.

An important qualitative outcome of the LIFE Lynx project is the partnerships created with crucial stakeholders. We used several communication tools to involve and educate hunters, mitigate lynx conflicts with livestock breeders, and create information hubs and innovative revenue opportunities for local communities. Importantly, the hunters, as the key stakeholder group, were directly engaged in key conservation activities, including battling wildlife crime, adjusting the game management plans, and participating in translocations and population surveillance. The support for lynx conservation remained high throughout the project, indicating a successful elimination of **Threat 2b**. The policemen educated through project activities became a new force dedicated to the persecution of wildlife crime, the electric fences will continue to be used by the receiving livestock breeders in the future, and the newly adopted game management plans acknowledging lynx (and additionally wolf) presence will help maintain the tolerance for large carnivores in Slovenia. With the population recovery, however, public support for additional translocations may decrease, and with increased lynx densities, hunters' tolerance may decrease, possibly resulting in an aversive attitude towards lynx conservation. Thus, a diverse set of activities will continue to actively involve all key stakeholder groups in lynx conservation, especially in areas where lynx are newly present, such as engaging with media, regular information, education and training of hunters, providing up-to-date information to the general public, improving understanding for the reasons for illegal killing and raising awareness about the topic, responding to lynx-caused damages in a timely manner, and others.

We have established **systematic transboundary surveillance of lynx population trends, distribution and health status, eliminating "Threat 2c".** For the first time, rigorous health monitoring was implemented on translocated, captured and individuals found dead, which provided the first insights into the health status of the inbred lynx population. Through the deterministic deployment of camera traps across optimal lynx habitats and close collaboration with local hunting clubs and protected areas rangers, we successfully computed robust estimates of lynx density and abundance at the population level and revealed positive trends of the lynx in the Dinaric Mountains. In parallel, the number of opportunistic signs of lynx presence, which inform the distribution of lynx, significantly increased because of intensive educational campaigns, cooperation with interest groups, and presence in the media. We plan to repeat the surveillance program for lynx population status (abundance, distribution, and health) assessment every 2 years, involving interest groups (hunters) and providing regular feedback. We plan to sustain the international data exchange through the MBase database for the next 5 years and conduct a public opinion poll again in 2028.

We have provided management strategies to ensure the long-term viability of lynx in the Dinaric mountains and SE Alps (Action D3), which has eliminated **Threat 2d**. We estimated the minimum number of animals needed to be translocated to the Dinaric population for different year intervals between the translocations (3–20 years) to keep the inbreeding below the 0.15 threshold. It is important, however, that the actual movement of animals between the Dinaric and SE Alpine part of the population remains under study, and the management decisions should be based on the less optimistic scenario to prevent the increase of inbreeding.

To improve the preservation of the ecological connectivity within the Dinaric - SE Alpine population and between its neighbouring populations and thus tackling **Threat 3**, we determined (forest) patches with optimal habitat for lynx in the project area, identified patches of suitable habitat in combination with linear barriers (i.e., fenced highways), and detected bottlenecks that hinder sufficient gene flow and dispersal of juvenile individuals (action A.6). With the knowledge obtained, we developed a handbook for spatial planners, organized a workshop and even incorporated the most important ecological corridors for lynx in the Slovenian forest management plans. That should ensure the EIA procedures acknowledge the habitat needs of the lynx. The remaining major improvement of connectivity remains a wildlife pass over the main linear barrier between the Dinaric and the Alpine area, i.e., the Slovenian Ljubljana-Koper highway. While the budget for the construction of the wildlife

pass should be secured by the state budget in Slovenia, the recent rapid and regular national budget changes might cause a delay in the construction of this pass, further hindering effective expansion and connection between the lynx in the Dinaric and the Alps.

While we have outlined certain measures and conservation actions that need to continue to ensure and safeguard the long-term conservation of the lynx in the project area and beyond, the detailed description of the remaining threats and the foreseen actions are presented in the After-LIFE Conservation Plan (action F.3). It relies on the 'Common guidelines for Dinaric-SE Alpine population-level lynx management' and strategic national management plans for lynx conservation in project countries, sharing the Dinaric - SE Alpine lynx population. Drafts of these strategic documents were prepared and sent to the responsible Ministries in Croatia, Slovenia, and Italy. However, until the end of May 2024, the lynx management plan was only adopted in Croatia, whereas in Slovenia and Italy, they remain to be adopted.

2. Economic benefits

Large carnivores are considered a symbol of pristine nature, and the project areas in all involved countries received considerable media exposure, both nationally and internationally. Through the project's implementation, we witnessed the positive effects of media reporting. The thematic Lynx trail in Slovenia, equipped with didactic material and supported with the activity booklet (in Slovenian and English), was recognised by the Slovenian Tourist Association as the best thematic trail in Slovenia in 2023. After the end of the project, the management of the lynx trail goes to the local tourist association, where they can use it as an opportunity for eco-and-nature-oriented tourism. Two lynx-based tourist packages were prepared and promoted, also aimed at an audience that is not traditionally connected with nature conservation (the artists' colonies). Income from these packages goes to the local economy, and is generated by the service itself, as well as the high value of preserved landscapes and presence of large carnivores. Tourists are more and more open to new concepts of services and experiences. Combining the experience of the wild and how this influences the creativity in every single person can be a new, exciting tourist offer that positions conservation in the front row.

Although lynx is a very low-conflict species, we provided means to prevent the potential damages caused by lynx and thus created direct economic benefits for the livestock owners. With effective damage prevention, the quality of life for local residents achieved through these measures improved.

An important economic benefit of the project is also job creation. Between 2017 and 2024, project LIFE Lynx provided employment for 132,37 FT (average of additional employment 16,77 FT per year); 32 non-additional employees were contracted in public bodies and 69 additional employees were hired within public or private organizations. Among the additional employees, we tried to contract people who have already shown their expertise and skill through external contracts or voluntary work. The profiles of our project personnel were diverse, from high-ranking scientists to skilled lab workers, field technicians, and others holding various types of expertise. The project has enabled us to promote the collaboration between SFS and UL and within HAS and SFS with part-time contracts, which efficiently bridged the scientific and practical aspects of work related to the surveillance of the population reinforcement process, thus increasing the quality of work at all three institutions. Finally, the project enabled a high-quality knowledge exchange and capacity building by employing a professional conservation biologist with more than a decade of experience in large carnivore conservation and human-carnivore coexistence.

The administrative and financial tasks of the project work were performed by five employees, while employees who were hired primarily for other professional tasks provided a significant support for administration and finances at the level of smaller partners. We have collaborated with 758 public /private organizations (or projects) that are not partners. With effective communication among project partners, we shared the good experience with contractors and, if possible, reduced the costs by ordering items from the same suppliers.

The project's economic benefits are also reflected in businesses directly tied to the project activities; UL has upgraded its laboratory methods to optimize the genetic analyses (next generation sequencing), saving time and money for future lab work. The updated individual-based genetic model offers the possibility to simulate different long-term genetic management scenarios and help plan the optimal ones based on economic feasibility. The project is creating revenue in other sectors, especially public institutions that are responsible for preparing national or international level strategic plans for the management and conservation of protected species (lynx). By directly collaborating with representatives of more than 63 hunting clubs in Slovenia and supporting their efforts on the field with minimal cost, we also contributed to their economy and received the best value-for-money services from their site (e.g., information about best locations for camera trapping).

3. Social benefits

Many of the main actors in the project include project beneficiaries and stakeholders who come from different backgrounds that traditionally do not necessarily collaborate (e.g. hunters and environmental NGOs). Our project provided an extraordinary opportunity for the different actors to develop social networks and relationships that are expected to positively impact nature conservation beyond the direct outputs and results of the project. To ensure the social acceptance of lynx reinforcement and to generate a long-term positive climate for lynx conservation, we successfully involved, consulted, and learned about a diverse group of local residents and stakeholders in indirect and direct activities throughout this project (actions A.7, A.8, C.3, C.4, C.5, C.6, C.8, C.11, D.4, D.5, D.6, all E actions). Since large carnivores attract public attention, we used this opportunity to increase awareness at the local level in and around the Natura 2000 areas where it is needed the most, providing direct benefits for the protection and restoration of ecosystem functions. By organizing specialized seminars or training for spatial planners, schoolteachers, damage inspectors, police inspectors, and other professionals, we were boosting the cross-sectoral collaboration and increasing the social capital provided by the project.

Our experiences from a previous Life+ projects SloWolf (LIFE08 NAT/SLO/00244) and LIFE DINALP BEAR (LIFE13 NAT/SLO/000550) helped us communicate about lynx in an effective way that attracted extensive media attention. Also, most of the project team members were involved in communication training to improve their communication skills. We worked closely with the public and the media, and our activities gained significant attention. Our communication efforts have undoubtedly increased the visibility of our work even in other unrelated sectors and contributed to the public awareness of the urgency of proactive conservation activities. One of the most notable examples is the campaign of the Croatian Ožujsko beer company, which has issued a special edition of beer labels that promoted the conservation of endangered species, including lynx, by donating a share of sold labelled beer bottles to the project partner BIOM, for enhanced lynx conservation status surveillance.

Lynx-based tourism activity exceeded our expectations in many areas—from raising lynx conservation awareness among naturalistic artists to sharing the benefits of the project's overall success with the amateur and professional artists' art colonies. The professional art colony produced i) 7 additional exhibitions for hosting artwork by different institutions in Slovenia already during the project, ii) the digitalised artwork for further promotion of ecotourism activities and project, and iii) a brochure where lynx artists are introduced, which was also translated in English to reach a foreign audience. More than 70 representatives of the tourism sector and protected areas were educated about the opportunities created by lynx presence. The Lynx Walk Trail was recognized by the Austrian cycling community gravgrav as a way of raising awareness among the cycling community in Europe. In connection with cyclists' apparel designer from the Netherlands, IRIS, gravgrav designed T-shirts to promote lynx and gave some of the profit from selling these T-shirts to local communities to continue promoting lynx in their region.

We use every opportunity to promote the importance of Natura 2000 sites and the LIFE programme in all five countries involved. We believe that communicating the importance of conserving protected natural areas and their keystone species will also attract people to visit these areas and engage in healthy

outdoor activities. All of the above is expected to positively influence the understanding and appreciation of the ecosystem services related to the Eurasian lynx, primarily its value as a keystone species.

Throughout the project implementation, gender representation was about equal; an average of 50,9 % for female FTE and an average of 51,8 % for female Euro earned.

4. Replicability, transferability, cooperation

The LIFE Lynx project serves as an emerging prototype for other areas and projects, where endangered species can be saved by reinforcement processes in the future. On one hand, we exchanged best practice examples among participating countries within the project group on all levels in all actions, and on the other hand, we were also in regular contact with wildlife managers outside the project area, as explained in the E.5 networking action.

The whole lynx **reinforcement process** was closely monitored, and experience was shared within the project and with other projects and organizations interested in this activity. Detailed annual reports were produced, beginning in January 2021. The project contributed towards enhancing and promoting transferable best practices through utilizing population level approach in addressing a conservation threat and an inclusive stakeholder approach (E.1, E.2). "Lessons Learned from Past Reintroduction and Translocation Efforts with an Emphasis on Carnivores" has been completed in A.4, synthesizing important lessons from biological and social factors from historic mammalian translocation efforts. This is a must-use document for future projects on reintroduction and translocation to check the red flags that might hinder the process. Based on this overview of peer-reviewed literature and specific case studies, a Population-level reinforcement plan was prepared (A.4), which can be used as a model for other cross-border population reinforcements.

Our efforts of actively **involving key stakeholders** in the lynx reinforcement process were also presented in the Stewardship Booklet of the LIFE WOLFALPS EU project, as an example of best practice and in the final report of the E.1 action with the best practice recommendations for working with stakeholders – the output with great replicability potential. In Italy, the stakeholders' participation in the process of preparing the national management document (A.5) was defined by many of the participants and institutions involved as a good practice to follow for conservation work related to other species. The cooperation with **hunters** as the key stakeholder group reflected their skills and local knowledge that was vital for monitoring and for the reintroductions themselves (preparing the enclosures for soft releases in Slovenia, taking care of the animals, cooperating in the captures of resident lynx and offspring), and in preparation of the guidelines (C.10), 'Consideration of large carnivores in the management of wild ungulates'. In this document planned as an output of the project to help the hunters accept the presence of lynx (and also wolf) in their hunting grounds and manage the populations of wild ungulates accordingly, the expectations and proposals of hunters were taken into account to the largest extent possible. These activities are confirmed to be a great showcase of cooperation needed in the field for the successful implementation of project activities, with many of them having great replicability potential.

The project used cutting-edge science, especially in **conservation genetics** (A.3/C.5), which supports long-term conservation planning for management of small populations. In collaboration with the Laboratoire d'Ecologie Alpine (LECA) laboratory from Grenoble (France) and the University of Lausanne (Switzerland) we developed a novel approach that utilizes next-generation sequencing techniques for rapid and efficient genotyping of Eurasian lynx. Innovative approaches to improve the genetic surveillance of lynx were implemented. The combination of i) the development of a new sampling method with close cooperation with the LECA (study visit within E5 action) and the University of Lausanne and ii) new genetic markers developed for high-throughput sequencing method and the final laboratory protocol being optimized, resulted in individual genotyping of lynx from tracks

in the snow. The method has considerable potential to be used in other studies of Eurasian lynx and can possibly also be extended to other felid species.

As free and open-source software, the upgraded, adjusted and expanded **geo-portal MBase** (C.6; https://portal.mbase.org) is easy to upgrade and extremely flexible. The portal and/or its building blocks can provide an excellent foundation for replication and transferability to other projects, initiatives, institutions, and countries. The modular structure, overseeing a long-lasting back end, facilitates the addition of new data models, making it a valuable and comprehensive tool for storing wildlife data globally. It already accepts data in several languages, and with a user-friendly interface, administrators can also translate code lists by themselves.

The project actively promoted and encouraged opportunities for replication and transfer of knowledge outside the project. Some of the project outputs are already being used in other European countries. (A.3) **Camera trapping guidelines** were translated into French and used by a French NGO Observatoire des Carnivores Sauvages, which is working on lynx monitoring and conservation in the Vosges mountains area. (A.3) **Non-invasive genetic sampling guidelines** were used by the Research Institute of Wildlife Ecology of Vetmeduni Vienna in preparation of Veterinary Handbook Health, Husbandry and Management of Eurasian lynx (*Lynx lynx*).

As shown by the number of visits to the **webpage** (E.5) and the number of **Facebook** followers and numerous presentations of the project within the project area and outside, the project had high visibility and was and still is recognized as a best practice example in many fields. The LIFE Lynx webpage was also presented in the LIFE communication presentation as a good example for setting up a project webpage. So, potentially, another LIFE project could replicate our framework and structure.

The project **handout** (E.6) was reprinted twice, once in cooperation with company Kraš and ZOO Ljubljana. 6,000 copies were distributed in all Kraš stalls in Slovenian supermarkets. Materials filmed for the film **Path of the Lynx** (E.3) were used in preparing an additional six documentary films titled "Hunters Stories", funded by American foundations. These short films promote hunter involvement in lynx conservation in Europe. Originally, they were produced in Slovenian and English, and later translated into Croatian, Czech, German, and Italian. The story of the first translocated lynx, Goru, was included in the documentary film Back from the Brink, produced by eight European national televisions. Dreid.at filmed Wild Slovenia and produced a documentary film "Naturjuwele Sloweniens" screened at ARTE.

Wildlife/large carnivore managers from other countries such as Switzerland, Germany, France, Czech Republic, Austria, Romania, Greece, Spain, Turkey, North Macedonia, Albania, Italy, the UK, Iran, and Latvia **visited the project area** and learned about lynx reinforcement process and lynx conservation in the Dinarics. In the scope of three events (2019, 2022, and 2023), we co- hosted foreign wildlife managers, hunters, foresters, and participants from other projects (altogether app 140 participants) with an agenda of one week, combining both presentations of projects and discussion, field trips to lynx habitat, release locations, meetings with local hunters and foresters. We are also planning to keep this format of visits in the future.

Innovative **lynx-based tourist packages** (C.11) were produced. Unique painting holidays programs were established to promote lynx conservation through arts. Tourism activities based on large carnivores, which provide direct benefits for locals, are one of the possible steps to achieve higher local acceptance. These tourism packages based on painting in lynx habitat include lectures about lynx by experts and are a product of collaboration with tourism agencies, local artists, and lynx experts. We published two of these programs on the online portal discoverdinarics.org, so locals can use and implement them after the LIFE Lynx project. Another output was an exhibition of art works created during these tourism programs. There was and still is a lot of interest among the locals for the art exhibition Let's Save the Lynx and the opening events were well attended. The exhibition is a great opportunity to promote the project and lynx conservation because the exhibition also addresses an

audience that is not so close to lynx conservation. This activity is highly visible and can be used for commercial applications. The exhibition catalogue was additionally translated into English to reach an even broader audience. Another long-lasting tourism product, the Lynx Walk trail was upgraded to a Lynx Cycling trail by the gravgrav community, showcasing how conservation can be introduced to additional audiences, who are sometimes neglected, but spend a lot of time in nature and are eager to learn more about the wildlife of the forests they visit. A shorter lynx trail in Tarvisio, Italy was replicated by the community council of Tarvisio, who produced an additional trail for the brown bear.

With **additional possible replication opportunities**, such as the Guidelines for management of lynx orphans (A.5), the Guidelines for Ensuring Long-term Viability and Vitality of Lynx in the Dinaric Mountains and South Eastern Alps (D.3), The Mighty Cartoon (E.3) and the program Young Lynx Guardians (E.4), we evaluate the likelihood of replication of the LIFE Lynx project to be high. The sensitive issue of a reinforcement (or reintroduction) of an animal species (let alone a large carnivore) by means of a project is policy dependent and requires stable political will and well-prepared strategic documents. The conservation efforts for large carnivores nowadays rely on social acceptance, working on a project like the LIFE Lynx means working with people and ensuring the foundations for the reintroduction/translocation/reinforcement of an animal species. The more controversial the animal, the heavier the work load. With lots of focus on the stakeholders, the benefits for them, either material or non-material, are substantial and represent the greatest added value of the project. Since most of the activities are related to work costs, the cost-effectiveness might differ from the country of replication.

5. Best Practice lessons

LIFE Lynx applied best practices currently available in the field of large carnivore conservation globally by incorporating the most appropriate, cost-effective, and cutting-edge approaches and methods to achieve our goals and objectives. These include:

1) building on existing past experience for effective genetic reinforcement of an inbred population,
2) improving molecular genetics and developing new bioinformatics tools to support the population augmentation,
3) adjusting the existing and developing novel wildlife monitoring techniques,
4) creating novel communication activities adapted to different stakeholder groups,
5) transferring habitat connectivity knowledge into practice.

1. Experiences from past and present large carnivore reintroductions/reinforcements were incorporated into our activities by reviewing additional case studies and networking with worldwide experts on **reintroduction efforts** within the action A.4, where detailed population- and state- level reinforcement plans were prepared. When designing the translocations, we built upon previous best practice experiences of reintroducing lynx in Europe and closely followed IUCN Guidelines for Reintroductions and Other Conservation Translocations. We used animals from the Carpathian lynx population, which is the recommended choice for translocations between populations of Carpathian lynx (*Lynx carpathicus*). Not only have we sourced the animals from a viable Slovakian part of the population, which is a traditional stronghold for lynx translocation projects, but we have created an additional highly promising source of healthy Carpathian lynx in Romania. With first-ever and highly successful lynx captures for translocation purposes in Romanian forests and simultaneous careful surveillance of the viability of that population, we have shown that Romania can serve as a novel sustainable source of wild-born lynx for any future reinforcement or reintroduction projects regarding Carpathian lynx in Europe. In fact, our Romanian partners became involved in another such project before the LIFE Lynx's end, capturing lynx for translocations to Germany.

2. We were extensively using **molecular genetics** to support population augmentation each step of the way. We have developed new methods to utilize the latest technological developments in DNA sequencing and produced a set of bioinformatics tools that allow for reliable, rapid analysis of obtained sequence data. This allowed us to keep a constant tap on the genetic status of the population, as well as

its development in the face of introductions of new animals. We learned that implementing this cutting-edge method for our population considerably improved our ability to identify individual lynx to accurately build pedigree reconstructions, which is particularly difficult in inbred populations. Additionally, we used the genetic data and the sophisticated bioinformatics tools to form a foundation for the long-term viability of the Dinaric-SE Alpine lynx (D.3), providing management scenarios for future translocation planning. We believe that this approach will become a best practice example for the EU level for planning management of other reintroduced populations and for increasing their chances for long-term survival.

3. Different **wildlife monitoring techniques** were used in the scope of surveying the reinforcement process (C.5). We established an extensive network of local hunters and rangers involved in camera trap monitoring, enabling high-quality population-level demographic surveillance. Hunter involvement in the project enabled increased acceptance amongst this key stakeholder group for the overall goals of the project. We learned that direct, active involvement of key stakeholders (hunters) in practical conservation actions, such as camera trapping or collection of genetic samples, and a personal, one-on-one approach to communication, can have both qualitative (trust in the data, multi-year collaboration) and quantitative (high-quality population-level datasets) results. Our experiences were collected in a report on "Development of the population and impact of the reinforcement program with experiences gained and recommendations for future lynx reinforcement projects" (D.2) We are confident that this approach will support similar future projects and thus contribute to large carnivore conservation at the global scale.

We have developed new techniques that allowed us to use the collected data more efficiently and accurately (e.g., DNA extraction from lynx snow tracks), creating new knowledge in the international scientific community. The demographic and genetic data are presented in an internet-based population-level monitoring database (C.6) and were the required input for fine-tuning the translocations (C.3, C.4) and tracking the demographic recovery (C.5, D.2), as well as informing the analyses of landscape connectivity (A.6) and future genetic viability models (D.3).

The optimized monitoring created during the project was included as the future standard in proposals for national documents for lynx management and in the After Life plan. The transnational monitoring of the shared population of lynx between Slovenia and Croatia with a focus on the transboundary coordination of camera trapping is an example to be transferred into European and worldwide practice of wildlife monitoring.

4. **Local Consultative groups** (LCG) were established to gather local stakeholders interested in lynx-related issues. Through workshops, we asked the participants to share their views of our project activities and recommendations for the area. Through regular communication with them, we informed them about our activities, events, and the life of the translocated lynx. LCG members were an active part of the project, contributing their ideas and opinions. Lessons learned were gathered in a final report (action E.1), which is available for future projects that want to actively involve stakeholders in their activities. With the help of **celebrity ambassadors** (E.7), we promoted the lynx conservation and reinforcement process through their social media channels and short promotional video clips. We have reached younger audiences with two children's books about lynx; one was written by one of the project's celebrity ambassadors. Lynx were almost non-existent in children's literature in Slovenia, so this is one of the bigger contributions to the long-term education of children about lynx.

5. As Slovenia lies at a strategic location where the Dinaric and the Alpine region meet, the additional acknowledgement of the knowledge gained within the preparation of the Guidelines to maintain habitat permeability of the Dinaric-SE Alpine region is the **protection of the ecological corridors for lynx** in the core management documents at national level (forestry management plans in Slovenia), which has an important impact nationally and internationally.

6. Innovation and demonstration value

We have used innovative approaches in the project:

a.) **Efficient transboundary surveillance** of a large carnivore species like the lynx. We have designed and implemented a trans-national approach, sharing camera trapping, telemetry and other relevant data types among the three countries that share the Dinaric SE-Alpine lynx population (Croatia, Italy, and Slovenia). We have been efficiently sharing telemetry data of translocated and resident lynx through specialized desktop applications and timely personal communication. By sharing the collar IDs, every partner involved in telemetry can monitor the collared lynx in real time on a desktop application, regardless of whether they are moving in Croatia or Slovenia. Moreover, the SLO-CRO partners have been coordinating the transboundary camera trapping, optimizing the selection of camera trapping sites and sharing the data for large-scale scientific assessment of the population status. We used the same software for camera trapping data processing (Camelot), simplifying the data exchange and guaranteeing their comparability. All the genetic samples collected in all partnering countries are analysed at the Biology Department, UL, ensuring standardized and timely genotyping using the upgraded lab technologies. Finally, the Internet-based geo-database "MBase" was upgraded to allow for efficient data sharing and browsing, helping communicate and exchange all lynx-related data among project partners and the general public.

b.) **Population-level conservation and management:** with large spatial requirements and low population densities of lynx and other large carnivores, standard management and conservation practices within the national or even regional borders are recognised as inadequate. The population-level approach to conservation, management, and monitoring is now confirmed within the Common Guidelines for Dinaric – SE Alpine Population-level Lynx Management that identifies threats and conflicts, and sets the common visions and objectives. Additionally, the document was presented to the experts from Austria and managing authorities from Bosnia and Herzegovina, and they were consulted during the process to ensure the complementarity of the document in a bigger area. It sets the framework for national strategic documents with concrete activities, responsible authorities, and expected results.

c.) **Development of individual-based genetic demographic computer model of lynx population:** we used an innovative science-based approach to suggest the management actions that would ensure the viability of the lynx population in the long term. We first defined the baseline genetic and demographic status of the population, as it was on the verge of collapsing, and then closely monitored the contribution and effects of each newly included individual and the formation of the stepping-stone population. We used the collected data and gained knowledge to simulate the future population's genetic and demographic development under different scenarios and devised science-based long-term population management guidelines. The final assessment showed us the genetic rescue of the population was a great success, and this project can be a good practice example for future reinforcement projects. Among the first in the world, we demonstrated that we can use environmental DNA for individual genotyping. The new method (greatly aided by the newly developed genetic markers) has a vast potential to complement genetic monitoring and advance eDNA-based studies.

d.) **A strong network of hunters** who are the most influential stakeholder group. They were directly and intensively included in relevant conservation actions, including lynx captures, translocations, and surveillance (A.3, C.5). We developed a strong network of hunters who support the project and represent an important voice in local communities. This resulted in conservation capacity that will serve as another best practice that benefits long-term lynx recovery and future nature conservation efforts.

e.) **Training of police investigation units** (C.8): we addressed the problem of limited training and expertise of the law enforcement officials through an educational seminar for police officers where the project staff and other lecturers emphasised the importance of prosecution of illegal killing of lynx (and other protected wildlife). The document with detailed procedures in cases of suspected illegal killing, intended only for police members, passed all legal checks of the Ministry of Internal Affairs and will influence the procedures of the Slovenian Police in that

field, thus changing also the national policy. Additionally, the handbook for the field personnel (hunters and other field personnel who are usually the first to find the carcasses) establishes and facilitates collaboration in investigating illegal wildlife crime. This action built a new capacity to have trained personnel focus on wildlife crime and help ensure that reintroduced lynx survivorship is maximized. By adding the state prosecutors, we built the capacity of the institutions responsible both for detecting and persecuting illegal actions. Moreover, with a strong campaign of awareness raising, we have increased the consciousness of the hunting community. As one case of suspected lynx killing was detected and investigated during the project lifetime, we learnt that the topic of poaching is understood and acknowledged but will need further attention in the future.

f.) **Innovative communication methods** through establishing a close cooperation with **celebrity ambassadors (E7)** who helped promote lynx conservation and reinforcement process through their social media channels and short promotional video clips.

7. Policy implications

The LIFE Lynx project significantly contributed to implementing the **Habitats Directive** by focusing on the long-term conservation of the lynx, a species of Community interest listed in Annexes II and IV of the HD (92/43/EEC). The project also targeted **Natura 2000** sites for lynx in Slovenia, Croatia, Slovakia, Romania, and Italy, aligning with priorities in Annex III of the LIFE Regulation.

HAS successfully led efforts to prevent illegal killing, impacting both prosecution and policy. We trained 48 police officers on anti-poaching measures, with officials from SFS and HAS also gaining crucial knowledge on responding to illegal activities. Two national protocols were established in Slovenia: an internal protocol for the police and a public protocol for hunters, foresters, and wildlife managers, detailing procedures before police arrival. These documents connect the efforts of all involved institutions and significantly contribute to implementing of the Habitats Directive in Slovenia.

Within the forest and game management plans adopted by the Government of Slovenia, we protected spatial connectivity corridors for large carnivores and larger mammals, which is crucial for the long-term conservation of Natura 2000 species and sites.

Predators and prey are interconnected in ecosystems, yet management is often divided among different ministries and public bodies. We addressed this issue in Slovenia by preparing guidelines on how to account for the presence of lynx and wolves in ungulate management plans. These guidelines were implemented into ungulate management plans and adopted by the Government.

Population-level management is crucial, especially in small countries with shared wildlife populations. The Large Carnivore Initiative for Europe developed Guidelines for Population Level Management Plans for Large Carnivores. Following these guidelines, we prepared population management guidelines for lynx. We implemented these guidelines into the national lynx management strategic documents in Croatia, Slovenia, and Italy, which have been adopted or are in the process of being adopted by national authorities. We believe that our approach can serve as a best practice model for future transnational strategic management of protected species.

7. Key Project-level Indicators

Within this chapter, we provide an analytical comparison with the targets set at the beginning of the project. We entered the indicator values of the project in the online KPI database (https://webgate.ec.europa.eu/eproposalWeb/kpi). We compared the data between the initial indicator values which are noted in the exported data, file: kpi_project data_snapshot_export_11_06_2024 (1)(1), and our final entry of the indicator values into the online KPI database. We provide the comparison of the end values (initially reported estimated value at the end and real values at the end) in the table below. Whenever there was a mismatch between the initial indicators and the indicators within the final entry, we noted that down in the column "Comment". We considered a mismatch if an indicator was deleted or added. In a column titled "Deviation," we noted if the deviation was positive, negative, no change, or not applicable (N/A).

Indicator; Context; Descriptor	**Unit**	**Initially reported estimated values**			**Real values**			**Deviation**	**Comment**
		Start value	**End value**	**Beyond value**	**Start value**	**End value**	**Beyond value**		
1.5.; Lynx reinforcement area; Partial reduction …	ha	0	3000769	3000769	N/A	N/A	N/A	N/A	Deleted ; Here we report per country
1.5.; Lynx conservation in Croatia; Conservation …	km²	N/A	N/A	N/A	6500	8700	10130	N/A	Added
1.5.; Lynx conservation in Slovenia; Conservation …	km²	N/A	N/A	N/A	2250	5500	7070	N/A	Added
1.5.; Lynx conservation in Italy; Conservation …	km²	N/A	N/A	N/A	100	500	800	N/A	Added
1.5.; Lynx reinforcement area; Conservation …	ha	0	3000769	3000769	N/A	N/A	N/A	N/A	Deleted: Real indicator values are reported under indicator 7.1
1.6.; Awareness; Persons	N	0	3500	3500	0	1494613	1771300	Positive	
1.6.; Lynx conservation in Italy; Persons	N	N/A	N/A	N/A	0	1298	1598	N/A	Added
1.6.; Lynx conservation	N	N/A	N/A	N/A	0	56421	56421	N/A	Added

in Croatia; Persons									
1.6.; Lynx conservation in Slovenia; Persons	N	0	20000	20000	0	31186	31579	Positive	
1.6.; Lynx conservation in Slovakia; Persons	N	N/A	N/A	N/A	0	180	180	N/A	Added
7.1; Lynx reinforcement area; Ecosystem Assessment	km²	0	8000	8600	8850	14700	18000	Positive	
7.1; Lynx reinforcement area; Ecosystem Trend	N/A	Improvement and/or deterioration in different locations	Improving	Improving	Improvement and/or deterioration in different locations	Improving	Improving	No change	
7.1; Lynx reinforcement area; Ecosystem Condition	N/A	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	No change	
7.2; Lynx reinforcement area; Ecosystem Service Condition	N/A	Poor/ unfavourable	Moderate	Good/ favourable	Poor/ unfavourable	Moderate	Good/ favourable	No change	
7.2; Lynx reinforcement area; Ecosystem Service Trend Deterioration	N/A	Deterioration	Improving	Improving	Deterioration	Improving	Improving	No change	
7.4; Lynx reinforcement area; Annex II	N	60	81	88	N/A	N/A	N/A	N/A	Deleted
7.4; Lynx conservation in Slovenia; Annex II	N	N/A	N/A	N/A	19	50	65	N/A	Added
7.4; Lynx conservation in Croatia; Annex II	N	N/A	N/A	N/A	50-60	99	130	N/A	Added
7.4; Lynx conservation in Italy; Annex II	N	N/A	N/A	N/A	3	3	7	N/A	Added
7.4; Lynx reinforcement area; Annex II	km²	6000	8000	8600	N/A	N/A	N/A	N/A	Deleted
7.4; Lynx conservation	km²	N/A	N/A	N/A	2250	5500	7070	N/A	Added

in Slovenia; Annex II									
7.4; Lynx conservation in Croatia; Annex II	km²	N/A	N/A	N/A	6500	8700	10130	N/A	Added
7.4; Lynx conservation in Italy; Annex II	km²	N/A	N/A	N/A	100	500	800	N/A	Added
7.4; Lynx reinforcement area; Species Trend	N/A	- decrease	+ increase	+ increas e	N/A	N/A	N/A	N/A	Deleted
7.4; Lynx conservation in Slovenia; Species Trend	N/A	N/A	N/A	N/A	- decrease	+ increase	+ increas e	N/A	Added
7.4; Lynx conservation in Croatia; Species Trend	N/A	N/A	N/A	N/A	- decrease	+ increase	+ increas e	N/A	Added
7.4; Lynx conservation in Italy; Species Trend	N/A	N/A	N/A	N/A	- decrease	+ increase	+ increas e	N/A	Added
7.4; Lynx reinforcement area; Specific status	N/A	unfavour able - bad (U2)	unfavour able - inadequa te (U1)	favoura ble (FV)	N/A	N/A	N/A	N/A	Deleted
7.4; Lynx conservation in Slovenia; Specific status	N/A	N/A	N/A	N/A	unfavour able - bad (U2)	unfavour able - inadequa te (U1)	favoura ble (FV)	N/A	Added
7.4; Lynx conservation in Croatia; Specific status	N/A	N/A	N/A	N/A	unfavour able - bad (U2)	unfavour able - inadequa te (U1)	favoura ble (FV)	N/A	Added
7.4; Lynx conservation in Italy; Specific status	N/A	N/A	N/A	N/A	unfavour able - bad (U2)	unfavour able - inadequa te (U1)	favoura ble (FV)	N/A	Added
10.1.1; Lynx conservation in Croatia; Public entities	Entit ies	3	3	3	0	4	4	Positiv e	
10.1.1; Lynx conservation in Italy; Public entities	Entit ies	3	3	2	0	6	6	Positiv e	
10.1.1; Lynx conservation in Slovakia; Public entities	Entit ies	1	1	1	0	4	4	Positiv e	
10.1.1; Lynx conservation	Entit ies	1	1	1	0	3	3	Positiv e	

in Romania; Public entities									
10.1.1; Lynx conservation in Slovenia; Public entities	Entities	4	4	4	0	4	4	The same	
10.2; Lynx conservation in Slovenia; Public body/ bodies	N	N/A	N/A	N/A	0	23	23	N/A	Added
10.2; Lynx conservation in Italia; NGO	N	1	1	1	1	2	2	Positive	
10.2; Lynx conservation in Croatia; NGO	N	1	1	1	1	2	2	Positive	
10.2; Lynx conservation in Romania; NGO	N	1	1	1	1	1	1	The same	
10.2; Lynx conservation in Slovenia; NGO	N	3	3	2	3	3	3	The same	
11.1; Website	N	0	280000	330000	0	536298	700000	Positive	
11.2; publications	N	N/A	N/A	N/A	0	72	77	N/A	Added
11.2; discrete reports	N	N/A	N/A	N/A	0	36	36	N/A	Added
11.2; articles	N	0	30000	2000	0	1887	1937	Negative	
11.2; media products	N	0	5000	300	0	162	189	Negative	
11.2; events	N	0	570	50	0	179	179	Negative	
11.2; displayed information	N	0	1300	1000	0	28	28	Negative	
11.2; Number of Hotline/information centers created	N	1	1	1	N/A	N/A	N/A	N/A	Deleted
11.2; Publications/reports	N	0	8000	1200	N/A	N/A	N/A	N/A	Deleted
11,3; Number of individuals surveyed	N	0	4800	0	0	5802	5802	Positive	
12.1; Members of interest groups / lobby organisations	N	N/A	N/A	N/A	0	75612	75612	N/A	Added

12.1; Professionals - experts in the field	N	0	30	0	0	291	291	Positive	
12.1; Layman	N	0	210	0	0	8627	8627	Positive	
12.1; Pupils (of school age)	N	0	2000	0	N/A	N/A	N/A	N/A	Deleted
12.2; Awareness and communication; Pupils (of school age)	N	N/A	N/A	N/A	0	3850	4707	Positive	Added; We compared this indicator with indicator from 12.1 with the same Descriptor
12.2; Lynx conservation in Slovenia; Other	N	0	30	0	0	129	129	Positive	
12.2; Awareness and communication; Professionals - experts in the field	N	0	60	0	0	334	334	Positive	
12.2; Lynx conservation in Slovenia; Members of interest groups / lobby organisations	N	0	145	0	0	765	765	Positive	
13; Jobs	FTE	4,15	18,71	5,15	0	16,77	5,15	Positive	
14.1; Running costs	€	0	828408	280000	0	826.371,41	1075283,37	Negative	
14.3; Project finance	€	N/A	N/A	80000	N/A	N/A	123295	Negative	
14.3; Beneficiary own contribution	€	N/A	N/A	50000	N/A	N/A	66133	Positive	
14.3; EU Structural Funds (ESIF)	€	N/A	N/A	80000	N/A	N/A	19380	Negative	
14.3; Funding from other international organization	€	N/A	N/A	10000	N/A	N/A	40000	Positive	

14.4.3.; Lynx reinforcement area; ÖSTERREICH (AUSTRIA)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
14.4.3.; Lynx reinforcement area; ÖSTERREICH (AUSTRIA)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
14.4.3.; Lynx reinforcement area; ČESKÁ REPUBLIKA (CZECH REPUBLIC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
14.4.3.; Lynx reinforcement area; DEUTSCHLAND\\RHEINLAND-PFALZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
14.4.3.; Lynx reinforcement area; DEUTSCHLAND\\BAYERN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
14.4.3.; Lynx reinforcement area; SLOVENIJA (SLOVENIA)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Table 7: Table of KPI

1.5

We are very pleased with the values of the indicator Project area/length. Throughout the project, we monitored the lynx distribution, which equals the lynx area. The monitoring of the lynx was done through genetics, snow-tracking, and camera trapping. At the beginning of the project, the lynx population distribution was 8,850 km² (6,500 km² in Croatia, 2,250 km² in Slovenia, and 100 km² in Italy). We were expecting that the lynx distribution would increase by at least 2000 km², but the increase was higher, ending up at 14,700 km² (8,700 km² in Croatia, 5,500 km² in Slovenia, and 500 km² in Italy). We expect that in the future the lynx distribution will expand even more, to roughly 18,000 km² (10,130 km² in Croatia, 7,070 km² in Slovenia, and 800 km² in Italia). Please, refer to the indicator 7.1 Ecosystem assessment for further explanation.

1.6

Indicator Humans (to be) influenced by the project, both times that we could compare, showed a positive deviation. Due to an understanding that the future of a lynx in the wild depends on people's acceptance of it, we strongly focused on the implementation of awareness and communication actions on lynx conservation. The result is overwhelmingly telling, with 1,494,613 individuals that may have been influenced. That is, via social media, project's website, magazines, workshops, seminars, conferences,

practical trainings, local meetings, video materials, documentaries and, overall through numerous public events. Specific in Slovenia, we exceeded our expectations of improving people's capacity or knowledge due to project's actions by over 50 %, because finally, we influenced 31,186 individuals. This number does not include any social media reach, video views or similar that aimed international public. It includes only the individuals reached over activities that were organized in Slovenia, like taking a guided walk on a lynx trail, workshops, educational seminars, public events, LCG meetings, school involvements and hunters.

7.1
Indicator Ecosystem assessment showed a positive deviation. Although we did expect the improvement of the ecosystem condition since lynx plays an important role in European ecosystems (area = estimated distribution of lynx), we are still pleased by how well the reintroduced lynx spread and integrated into the population. Moreover, with this project, we are opening a steady option of helping nature to reconnect over potential future corridors. For this reason, we analysed an area of the size 20,271 km². Finally, altogether we suggested 97 movement corridors, which refers to the area of 232.14 km².

7.2
Indicator Ecosystem services assessment showed no change in a predicted value, which was moderate, at the end of the project. As follows, we continue to predict good/favourable ecosystem service conditions still for the next years after the project. We achieved all the predicted values for project indicators of biological and ecological values, and most of them we even greatly exceeded. We successfully translocated 18 animals, which resulted in 14 of them being included in the receiving population. As follows, after the 22 documented breeding events of the translocated animals, the abundance of lynx increased from 60-90 to 121-192 individuals in the Dinaric part, and a stepping stone of at least 6 independent lynx was created in the SE Alps. Moreover, we detected an 85 % increase in total Dinaric SE-Alpine lynx distribution - which equals the lynx area. The monitoring of the lynx was done through genetics, sign surveys, and camera trapping. By using genetic data we estimated the inbreeding coefficient. At the beginning of the project was the inbreeding coefficient estimated to be more than 0.3 and we expected it to decrease to below 0.18. However, the actual estimate for the last monitoring season (2023) was between 0.08 – 0.19. To be exact, for 2023 it was estimated by including the Alpine stepping stone population under different assumptions of gene-flow with Dinaric Mts.

7.4
Indicator Wildlife species: here, we report for each partner country where the translocated animals could spread, separately. Of 18 translocated animals, 14 got included in the receiving population and we documented 22 breeding events of the translocated animals. As follows, the abundance of lynx increased from 60–90 to 121–192 individuals in the Dinaric part, and a stepping stone created in the SE Alps. Moreover, we detected an 85 % increase in total Dinaric SE-Alpine lynx distribution - which equals the lynx area. Overall, the animal count (adult animals) at the beginning was 72–82 lynxes (19 in Slovenia, 50–60 in Croatia, and 3 in Italy), 152 at the end of the project (50 in Slovenia, 99 in Croatia, and 3 in Italy), and we assume that beyond 5 years the lynx count will be 202 individuals (65 in Slovenia, 130 in Croatia and 7 in Italy).

10.1.1
Indicator Compliance/enforcement showed a positive deviation four times and once a negative deviation. The latter refers to Slovenia and it can be easily explained with the initial values including also two partner public entities, that were for the final entry deleted. In Slovenia, we collaborated with the following public entities: the MOP/MNVP, the Ministry of Interior, ZOO Ljubljana, and Chamber

of Agriculture and Forestry of Slovenia, and the collaboration was successful. We prepared a new Lynx strategy and action plan, in 2023, in cooperation with the MNVP; both documents are now in the process of adoption by the MNVP. (Both document were adopted by the Government of the Republic of Slovenia in November 2024.) In addition, we prepared new guidelines for ungulate management plans in Slovenia – the main purpose was to adjust hunter harvest of ungulates (red deer, roe deer, chamois), to ensure an adequate prey base for a recovering lynx population. We exceeded our original plan - instead of 3 game management plans, we prepared 5.
Positive deviation refers to lynx conservation in Croatia, Italy and Slovakia. In Croatia, we collaborated with the following public entities: the Ministry of Economy and Sustainable Development, the Ministry of Agriculture, the Agency for the Protection of Environment and Nature, and Zagreb ZOO. Moreover, in Croatia a new Lynx Management Plan with an Action Plan was adopted in 2024. Additionally, Guidelines for the management of lynx orphans were prepared as it was identified that proper procedures were missing. In Italy, we collaborated with the following public entities: Friuli Venezia Giulia region, province of Belluno, province of Trentino, province of South Tyrol, ISPRA, and Ministry of Environment. All of these entities participated in drafting the Interregional Management Plan. Friulia Venezia Giulia region, province of Belluno additionally participated in monitoring and information activities. In Slovakia, we collaborated with the following public entities: the Ministry of Environment of the Slovak Republic, the State Nature Conservancy of the Slovak Republic, the Forests of Slovak Republic, the Slovak Hunting Chamber, and departmental / regional departments of these institutions. Within the project, these entities have consistently collaborated in the preparation of strategic documents, participating in poaching prevention actions, monitoring, addressing damage prevention issues, and communicating the importance of lynx conservation.

10.2
Indicator Involvement of non-governmental organisations (NGOs) and other stakeholders in project activities showed twice a positive deviation and twice no change in value. Positive value was shown by the number of NGOs in Croatia and Italy, indicating an increased recognition and interest in collaboration with the project over time. The involvement of NGOs from Romania and Slovenia was throughout the project steady and active. In addition, for the final entry, we also measured a number of public bodies – municipalities in Slovenia, with which we collaborated. Throughout the Local Consultative Groups, we covered the territories of 23 municipalities in Slovenia.

11.1
Indicator Website showed a positive deviation. We are very proud of our achievement of making our project’s website very popular. The unique page views increased from value 0, at the beginning, over more than double the expected end value of 280,000, up to 536,298 unique page views. With the project’s website we targeted the wider public and, in addition to sharing information about project activities, we were also using it for regular share of information about lynx conservations. Until the project's official end, we published 2,144 news entries. We will continue to share the lynx-related information on the LIFE Lynx webpage and we will continue to promote the webpage through social media.

11.2
Indicator Other tools for reaching/raising awareness of the general public showed four times a negative deviation when compared. This deviation is likely to be explained by the change in the measuring units for the indicator. We actually exceeded our expected 400 media appearances, as the project appeared in as many as 1,887 media articles.

11.3
Indicator Surveys carried out regarding awareness of the environmental/climate problem addressed (only mandatory for information and awareness projects) showed a positive deviation. We aware that a long-lasting success of conservation actions highly depends on people attitudes, knowledge and similar. Thus, we conducted quantitative structured surveys of public attitudes toward lynx and lynx management in all participating countries across the entire Dinaric - SE Alpine project area. Questionnaires were distributed in 2019, 2021, and 2023. Altogether, we surveyed 5,802 people. One of the most important results refers to the support of maintaining lynx in the wild. In Croatia, Italy, and Slovenia the support for maintaining lynx was already very high in the first public opinion survey of the project and remained high throughout the project (85.7 % in 2019 and 85.3 % in 2023).

12.1
Indicator Networking showed positive deviation both times when we could compare. Indeed, we executed numerous project presentations and events where professionals could exchange their knowledge – study visits, experience exchange workshops in Slovenia, project's international conference in Croatia. Also, we organized numerous networking events with the final count of 8,627 participants. In addition, we produced Layman's report in 4 languages - SLO, CRO, IT, and EN, with 2,700 copies. Moreover, we added also a count of Members of interest groups / lobby organisations, as their participation was great – an estimation of 75,612 individuals. That mostly includes hunters, but also a few individuals from LIFE related projects.

12.2
Indicator Professional training or education showed a positive deviation for all comparisons. This included the descriptor Pupils (of school age), despite that it was initially written under the 12.1 Indicator. During the project's duration, the interest of schools to collaborate increased. By the end, 3,850 children and 114 school teachers from 81 schools were involved in lynx-related activities. Teachers received school kits and additional training. Moreover, many primary schools and kindergartens were actively involved in the dissemination of the Mighty Lynx Cartoon; it reached more than 2,400 children by the end of the project. Many schools will continue to use it in their program to educate children about lynx. We also worked with park rangers – at least 15 park rangers from Triglav National Park in Slovenia received practical training in lynx release and collaring. They were executing these tasks within the project. Moreover, we educated numerous more professionals – experts in the field. Overall 334 professionals received additional expert training: 69 spatial planners were involved in the training seminar, 95 project team members were involved in communication training, and 170 representatives of the tourism sector and protected areas were included in trainings regarding their field of expertise.

13.
Indicator Jobs showed a positive deviation. Project LIFE Lynx was very important in terms of providing income for numerous people in all partner countries. The starting value of 0 FTE rose to 16.77 FTE, representing average FTE per year for the duration of the project. With the agreement of LIFE instructions, we calculated the FTE as 220 8-hour working days per year. The starting value was calculated as FTE annually working as permanent employees for the project beneficiaries on lynx-related topics.

14.1

Indicator Running cost/operating costs during the project and expected in case of continuation/ replication/transfer after the project period showed a negative deviation. The negative deviation is easily explained with a slightly lower spending of funds at the end of the project than it was initially planned.

14.3

Indicator Future funding showed a combination of twice negative and twice positive deviation. As calculated, for future lynx protection, we expect the funds to come less from projects and EU Structural Funds (ESIF), but more from other international organizations and from the Beneficiary's own contribution, including funds from various Ministries.

14.4.3

Indicator Entry into new geographic areas cannot be compared with numbers as there are no values. Nonetheless, regarding the comments, we can note down a positive development for all descriptors. For Austria, lynx population reinforcement practices can be used in the Bavarian-Bohemian-Austrian lynx population. A networking agreement between the Styrian Regional Hunting Association, SFS, and HAS was signed by legal representatives. The main aim of this agreement is the collaboration and participation of all parties for the conservation of the Eurasian lynx (exchange of knowledge, data, and good practice examples).

In Croatia, we managed to establish a strong positive bond with numerous hunters, and with the Croatian hunting association (HLS). We are already seeing results of their increased interest in large carnivore issues - HLS has decided to actively participate, as a partner, in the LIFE Wild Wolf project which is all about problem-solving between wolves and people. Moreover, in the years 2023/2024, actions were organized in Croatia to collect bear and wolf scats for the population census and hunters participated and provided samples. For the Czech Republic, the lynx population reinforcement practices can be used in the Bavarian-Bohemian-Austrian lynx population. Within the LIFE Lynx project, best practices were exchanged with all three countries sharing the BBA lynx population (Austria, Czech Republic, Germany/Bayern), and also with the LIFE Luchs project from Pfalzerwald (Germany, Rheinland-Pfalz); both projects benefitted from the exchange. For Slovenia, a transfer of key stakeholder involvement (hunters, farmers, etc.) to bear and wolf conservation and management occurred. A collaboration with hunters continued in the Slovenian national bear monitoring. More than 1,000 hunters were involved.