



LIFE Project Number
LIFE16 NAT/EE/000710

Mid-term Report
Covering the project activities from 01/07/2017 to 31/03/2020

Reporting Date
30/04/2020

LIFE PROJECT NAME or Acronym
EstBatLIFE

Data Project

Project location:	Estonia
Project start date:	01/07/2017
Project end date:	30/06/2021
Total budget:	972 395 €
EU contribution:	583 437 €
(%) of eligible costs:	60%

Data Beneficiary

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1. List of key-words and abbreviations

AB	Associated beneficiary
AC	Advisory Committee
CB	Coordinating beneficiary
EC	European Commission
EHR	Ehitisregister (<i>National Building Register</i>)
ELF	Eestimaa Looduse Fond (<i>Estonian Fund for Nature</i>)
ELM	Eesti Loodusmuuseum (<i>Estonian Museum of Natural History</i>)
ESS	Electronic Surveillance System
ETS	Estonian Theriological Society
EU	European Union
EUROBATS	Agreement on the Conservation of Populations of European Bats
KEA	Keskkonnaamet (<i>Environmental Board</i>)
KEM	Keskkonnaministeerium (<i>Ministry of Environment</i>)
KKI	Keskkonnainspektsioon (<i>Environmental Inspectorate</i>)
KPI	Key Project-level Indicators
MKA	Muinsuskaitseamet (<i>National Heritage Board</i>)
NGO	Non-governmental organisation
PR	Public relations
RMK	Riigimetsa Majandamise Keskus (<i>State Forest Management Centre</i>)
SA	Sihtasutus (<i>Foundation</i>)
SC	Steering Committee
USS	USS Security Eesti AS
VAT	Value added tax
VR	Virtual Reality
WG	Working group

2. Executive Summary

The overall goal of the project is to contribute actively into the protection of the Pond Bat, *Myotis dasycneme* (Annex II, IV of the EU Habitats Directive) through safeguarding the wintering habitats of that species in Estonia, improving conditions of these underground habitats and rising awareness in order to reach successful conservation of the species with local community involvement. The list of **project deliverables** as defined in the grant agreement is indicated below. Fulfilment of the deliverables is considered till the end date of the reporting period, 31/03/2020.

Name of the Deliverable	Number of the associated action	Deadline	Fulfilment
Project website	E1	31/12/2017	Completed with short delay by 29/01/2018
Technical design documentation established (Annex 1)	A1	31/12/2019	Partly completed in time, partly postponed, new deadline 30/06/2020
Report on the seasonal visitation flows in project sites (Annex 2)	A2	31/03/2019	Completed with delay by 26/06/2019
Construction drawings and building permits (Annex 1)	A1	31/12/2019	Partly completed in time, partly postponed, new deadline 30/06/2020
Report on the counts (Annex 3)	A3	31/03/2019	Completed with delay by 26/06/2019
Night Flyers exhibition educational materials (Annex 4)	E3	01/03/2020	Completed in time
Projects information leaflet (Annex 5)	E2	01/03/2020	Completed in time
Training programme for the tourist guides (Annex 6)	E4	31/03/2020	Completed in time
Preliminary report on socio-economic impact (Annex 7)	D2	31/10/2020	Planned to be in time
Preliminary report on ecosystem functions (Annex 8)	D2	31/12/2020	Planned to be in time

The list of **milestones** as defined in the grant agreement is indicated below. Fulfilment of the milestones is considered till the end date of the reporting period, 31/03/2020.

Name of the Milestone	Number of the associated action	Deadline	Fulfilment
Project manager hired	F1	01/08/2017	Completed with delay by 24/09/2017
Project team completed, all relevant experts agreed	F1	30/09/2017	Completed with delay by 21/12/2017
Steering group formed	F1	31/10/2017	Completed with delay by 29/01/2018

Name of the Milestone	Number of the associated action	Deadline	Fulfilment
Technical design process has been initiated in all project areas	A1	31/01/2018	Completed in time
Visitor counting equipment purchased and set in project sites	A2	28/02/2018	Completed in time
Study tour commenced	E1	30/06/2018	Completed with delay by 30/08/2018
4 meetings with local stakeholders organised	D2	31/12/2018	Partly completed, one meeting postponed, new deadline 31/08/2020
Technical design documentation approved by all relevant authorities	A1	28/02/2019	Partly completed by 31/12/2019, partly postponed, new deadline 30/06/2020
Grilles are tested in project sites	C1	31/03/2019	Completed ahead of time
Preliminary counts carried out in all project sites	A3	31/03/2019	Completed in time
Information boards placed in all project sites (Annex 9)	E2	31/05/2019	Partly completed by 25/02/2020, partly postponed, new deadline 30/06/2020
Conception and schema for the exhibition established (Annex 10)	E3	30/06/2019	Completed by 01/05/2019
Terms of reference for the monitoring are established (Annex 11)	D1	31/12/2019	Completed by 31/01/2020
Culvert is placed and secured	C2	31/12/2019	Requested to postpone, new deadline 30/09/2020
Additional security measures tested and installed	C1	31/12/2019	Completed in time
Hibernacula entrances are closed in appropriate way in 4 sites	C1	31/12/2019	Partly completed in time, partly postponed, new deadline 31/08/2020
Background studies collected for ecosystem functions report	D2	31/12/2019	Completed in time
The exhibition Night Flyers Bats is ready to open	E3	01/03/2020	Completed by 13/02/2020
Training for the tourist guides carried out	E4	31/05/2020	Planned to be in time
Sites are cleaned and shafts filled where necessary	C3	30/06/2020	Postponed, planned to complete by 30/09/2020

General progress of actions implementation:

A. Preparatory actions are mainly finalised. Building notes, including construction sketches need to be done just for fencing work in Ülgase project site and if it appears to be legally needed then also for culvert placement in Piusa. These preparatory actions are hereby asked to be postponed until 30/06/2020. Visitor counting was done for a one-year period in all project sites

and ended with published report by 26/06/2019. Winter counts and mapping of all bats in all four project sites has been well performed in two winters (2017/2018 and 2018/2019) as planned and report was published by 26/06/2019.

C. Conservation actions are well in progress. All entrances in all project sites are secured with ESS and all entrances in two sites (Vääna-Posti and Vääna (Humala)) are also fenced. Fencing all entrances in Piusa and Ülgase are postponed to a period from May to July 2020. Both these postponements do not affect project timing or results. Placing culvert into Piusa caves against collapsing of the roof of the cave was also postponed for one year, because preliminary measurements in caves took more time. New deadline for that work was set to be 30/09/2020. All three project sites where we did foresee cleaning work with voluntary camps were cleaned. Filling of one shaft in Vääna (Humala) project site is postponed to summer 2020. Establishment of permanent electricity connections into all four project sites, so that it can serve in future ESS, is still on the way.

D. Monitoring of the impact of the project actions is in progress. Terms of reference for the monitoring the effects of project actions on target species and visitation flows are prepared and both bat and visitor counts are going on according to them. Preliminary results of the visitor count show that fencing with ESS is working well in keeping human access under control. For socio-economic impact monitoring two meetings have been carried out for three project site stakeholders and one is planned in summer 2020. Also meetings with state stakeholders have been done in 2018 and 2019. Background studies are collected for ecosystem functions report and preliminary draft contents prepared for both, socio-economic and ecosystem report.

E. Public awareness and dissemination of results is performing well. Study tour to Netherlands and attending in first two EUROBATS meetings (Tallinn, Skopje) were finalised and two EUROBATS meetings are still ahead. Project website is working in three languages (Estonian, English and Russian). Communication with Latvian colleagues is going well and two seminars are planned in 2020. Information boards are set into two project sites and two remaining are planned to be set up by the end of June 2020. Information folder with educational topics on bats for outdoor use was produced and will be used also for training of tourist guides in May and June 2020. Online web-camera showing Pond Bat life is set into Piusa and is publicly available. Pond Bat is a mammal of the year in 2020 in Estonia. Night Flyers exhibition is open in ELM and has been very popular. Exhibition is also set up as a virtual museum in web: <https://www.loodusmuuseum.ee/en/virtualmuseum>. In total 14 very popular public Bat-Nights were held during 2018-2019 in different places all over the Estonia and at least 10 are still ahead during 2020-2021.

F. Project management: Project manager and executive team were contracted and SC has been formed. Meetings of teams were held as needed on monthly basis, but are not always protocolled. Meetings of SC were held annually (three meetings) always at 29th January. Partnership agreement is signed between project partners. Three project monitoring meetings have been organised on annual basis. A fieldwork car has been purchased.

3. Introduction

An overall objective of the project is to improve the Pond Bat (*Myotis dasycneme*) habitats in Estonia. The Pond Bat (Annex II, IV of the EU Habitats Directive) is threatened species in Europe. During the 20th century the population of Pond Bat has declined considerably across the EU, especially in the boreal part of distribution range. One of the main reasons of this drastic decline has been reduction of safe winter roosts - underground habitats have either been destroyed or the disturbance level has risen due to high visitor flows. The most significant wintering sites of the Pond Bat for the whole boreal region are located in Estonia, therefore the conservation activities in Estonia play crucial role for the whole EU population of Pond Bat. The previous attempts of managing the visitor flows or prohibiting the entrance to the underground sites were unsuccessful as the placed grilles either had proved to be inappropriate for bats, had been destroyed or removed. It proves the need for awareness raising and community involving conservation activities. Therefore, the existing experience and knowledge of the EUROBATs and Estonian bat conservationists must be combined with the community involvement approach.

Specific objectives are:

1. To secure the most important hibernation sites from uncontrolled visits.
2. To reduce the visitor flows during the hibernation period in the most vulnerable habitats.
3. To stop degradation of habitats caused by low temperatures, draught and collapsing.
4. To involve volunteers, private companies and local communities into cleaning the caves and surroundings, especially the swarming areas.
5. To improve the protection of target species by making the policy recommendations for management plans of Pond Bat and protected areas.
6. To raise public awareness internationally, nationally and locally – to influence the public attitude towards safeguarding of bat populations, as well as to improve understanding of current nature conservation issues, species of EU importance and Natura 2000 network.
7. To present project results on national and international scale in order to share, spread and gain knowledge regarding habitat requirements and ecology of boreal Pond Bat population.
8. To use innovative approach with bat cameras and attractive exhibitions for general public.

The objectives of the project concentrate on the improvement and protection of four most important hibernation sites of the Pond Bat, in Estonia, following Natura 2000 sites: Vääna (Natura 2000 site code: EE0010125), Vääna-Posti (EE0010175), Piusa (EE0080621), Ülgase (EE0010116). In all of the sites the conservation goals are involving the Pond Bat conservation and its wintering habitats' improvement activities. Moreover, the Piusa site is the best wintering area for bats in the Boreal Europe, it brings the bats from large areas to stay over winter.

The activities of the project improve significantly the conditions of wintering sites of the boreal population of Pond Bat (*Myotis dasycneme*) in four project sites that cover by estimations about 95% of the population in Estonia (that is about 45% of the total boreal population of this species). While we do expect considerable rise in bat numbers as a result of the project activities, this can be expected to become clearly observable in no less than 10 years, exceeding the period that is foreseen for assessment of the project results. This is so due to bat biology: bats have long life span and slow reproduction rate (max life span of the Pond Bat is over 20 years, with only one young per year). Expected change in numbers of hibernating bats: after the project: 10% increase in all project sites; 10-20 years after: Ülgase 4-fold increase in bat numbers, Vääna-Posti 2-fold increase in Pond Bat numbers; Vääna (Humala), numbers difficult

to predict, target is that the cave temperature will stay above zero during the whole bat hibernation period. After the project ends, we do also expect reduced visitors' flows during the hibernation period - by 75% compared to the base level of project start.

Measures we do use for active protection of Pond Bat hibernation sites in project are by our knowledge never used before in such combination. There are several cases of using grilles or fences for closing cave entrances, but never in combination with ESS. Due to usage of ESS, type of fences can be much more cost-effective, as they are more as an obstacle with informative signs on them than separate security construction. As ESS we use are standard systems used also for security watch for warehouses and building sites, such combined system can be easily transferred into any other country for similar bat cave security or used also for security watch of any other important site of protected species in Estonia where human access should be restricted, for example sites of very fragile protected plant species or fragile habitat plots.

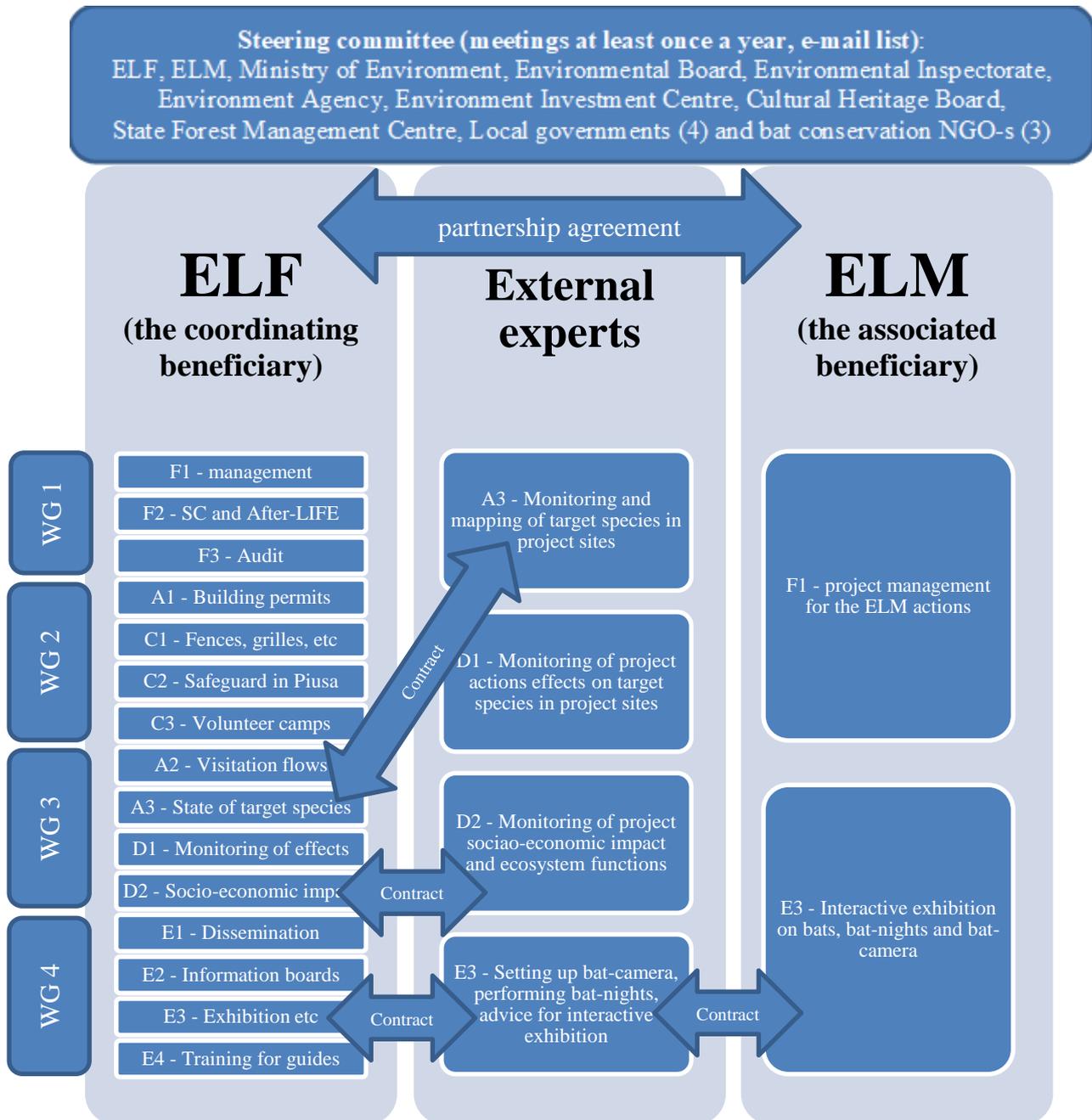
Online web-based bat camera that we have installed into Piusa cave and that has been very popular among web watchers, is also unique and by our understanding has never been used before. It was elaborated especially for an underground complete dark and moist conditions. At the same time, we do test and use it also in bats summer roosting places and test it for giving a web based picture from bat maternity colonies.

Knowledge rising and networking are an essential part of the project. Interactive exhibition in Estonian Museum of Natural History during the year 2020 that is dedicated as a Bat Year in Estonia, having Pond Bat as an animal of the year together with all other 13 bat species, has a lot of hands on innovative elements, starting from bat sound and wintering conditions perception and ending with virtual reality flight as a Pond Bat out from the hibernacula into the summer landscapes.

Project socio-economic context lies also in a possibilities bats will give for local tourism developers – Bat Nights and voluntary camps held during summer will educate people on bats and their life around a year. These Bat Nights and voluntary camps become more and more popular and people are highly interested on bats living around their households. Beside of holding them during project, ELF is planning to involve people in voluntary camps and arrange Bat Nights as much as possible in future. Training of nature guides on most important issues concerning bats and people is giving them good basis for holding such Bat Nights as well as voluntary camps locally all over Estonia in future. Still, as we have targeted nature guide training to those trainees that are active around project sites, they also can target their future work into active nature conservation as well – giving people information why hibernation sites should be under strict protection and leading them to web-based camera to watch bats life in winter from the distance. One of the topics in training as well as in stakeholder meetings we hold in all project sites is bats role in ecosystems and their importance on keeping our environment healthy. People already start to understand that if they have bats in their households, they have well balanced biodiversity around their home and we work along in project to give people guides how they can keep that balance.

4. Administrative part

Project has two partners – ELF as a coordinating beneficiary and ELM as a associated beneficiary. Partner agreement was signed on 26/01/2018 and submitted with the Progress Report. ELF has hired all necessary staff by the end of the year 2017 and associated beneficiary, ELM by the end of the year 2018. Project has following management structure:



From coordinating beneficiary's side, project manager has initiated project team and SC during October-December 2017. Three SC meetings has been held always at the same date – 29th of January every year since 2018. Project team consists 25 persons in total from 7 institutions. After first full project team meeting WG-s have had many smaller working-meetings during 2018-2019 that are not protocolled, but mainly every-day work is going on by e-mails, skype

and social media. In order to have all WG-s actively working every one of them have at least one member that has paid employment status in the project, so called ELF executive committee member beside the project manager. WG1 deals with project management (F actions) and has 7 members; WG2 deals with nature conservation actions (A1, C1, C2, C3) and has 6 members; WG3 deals with monitoring (A2, A3, D1, D2) and has 6 members; WG4 deals with dissemination and awareness rising (E actions) and has at least 10 members, but usually more, as different sub-actions need additional members. During 2020 as the year when bats are mammals of the year in Estonia separate WG has been formed for following all PR issues as well as activities regarding bats in Estonia. That WG has 11 members (three project managers (ELF, ELM and ETS), four bat experts (ELF, ELM and two ETS), two PR coordinators (ELF and ELM), ELF PR assistant and representative of KEA). That, so called WG of the Animal of the Year has since start of the 2020 had meetings on monthly basis (sometimes by electronic means, zoom or skype) and active daily discussion on skype chat as well as in FB chat.

During the first half of the year 2019 ELM was working out the conception and visual identity of the exhibition. Several meetings were held separately in ELM own WG and by the end of the April 2019 ELM had worked out the first conception and in May 2019 opened public procurement procedure. After the winner was selected several meetings were held to discuss the conception and visual identity with the company. ELM has long experience on arrangements of modern, interactive exhibitions in Estonia and as one of the leading nature museums in country it has been irreplaceable for the project, especially for public relations visualisation.

Project management and cooperation as well as communication between two project beneficiaries has been smooth and good. Despite of small changes in teams, there has not been any administrative problems. ELM has performed its actions mainly ahead of time and with good quality. Also the overall working plan has been mainly followed. Delays in performing some actions by ELF have been either due to periodic overload of key team members for these actions, like project leading expert for A2 and A3 and project PR coordinator for actions E1 and E2 or due to unforeseen time consuming preparatory work, as A1 for actions C1 and C2.

There have been three monitoring meetings with project Monitoring Team since the project start: first on 18/04/2018 in Tartu with visit to Piusa project site on 19/04/2018; second on 11/06/2019 in Tallinn with visit to Vääna-Posti project site on 12/06/2019; third on 25/02/2020 in Tallinn with visit to Vääna (Humala) project site on 26/02/2020 together with bat monitoring there (look memos in Annex 14). Monitoring Experts are from NEEMO EEIG – ELLE. On the first and the second meeting the Monitoring Expert was Luule Sinnisov and on the third Katrin Ritso. On the third meeting also Monitoring Expert Inta Duce from NEEMO EEIG – ELLE Latvian office was present. From project side both partners project managers as well as ELF financial manager, PR coordinator and leading bat expert has been present. All these meetings have been very constructive and lot of issues have been clarified for project team from them. Feedback letters after these meetings have been very useful for project management.

During the project there has been also two cases when EASME direct assistance has been needed by e-mail and both clarifications got short and clear answer for project manager.

Due to the change of ELF office and therefore also juridical address in autumn of 2019, there has been need for amendment request to the Grant Agreement. With kind help of Monitoring Team all relevant documents were prepared and changes made also in e-proposal system and request was sent out in April 2020.

5. Technical part

5.1. Technical progress, per Action

5.1.1. Action A – Preparatory actions, elaboration of management plans and action plans

5.1.1.1. Action A1 – Technical designs and building permits of project sites (in progress)

Foreseen start date: 01/10/2017 Actual start date: 11/09/2017

Foreseen end date: 31/12/2019 Anticipated end date: 30/06/2020

Deliverables so far are given in Annex 1.

As a preliminary step for this action bat experts of the project, together with a project manager and other members of ELF project team discussed in detail all foreseen construction works within project and decided preliminarily what kind of construction would be feasible in every single project site for every construction action. It was done during late 2017 and early 2018 in a form of different discussions in smaller groups. Leading bat expert of the project, Lauri Lutsar tested also temporal grilles (with a design as suggested by EUROBATS) in Ülgase project site in October and November 2017. He reached a decision that grilles, no matter of type, are still substantial obstacle for bats to enter or fly out from the hibernacula and therefore they should be avoided as much as possible. Discussions on other needed constructions lead to result that design of the solution would be best to elaborate together with builders.

On a basis of these decisions, project manager compiled preliminary documentation on conservation actions in every project site, including reflections to technical design, so called planning documents. This preliminary documentation was delivered in Annex 1 of the Progress Report. This documentation was discussed with KEM and KEA on 13/12/2018, RMK on 20/11/2018 and MKA on 23/11/2018 (look memos of these meetings in Annex 12). Outcome of these discussions and e-mail consultation with local municipalities was that these construction works do not need building permit and a construction project. They can be done on a basis of simple building note and construction sketch to be coordinated with authorities and land owners and entered into EHR.

Finalisation of technical design documentation and construction drawings was decided to be postponed and done at the same time of the selection of construction firms, in cooperation with builders, to reach most useful solution.

During 2019, on a basis of planning documents, fencing companies were asked for comparable bidding separately for each project site – Vääna-Posti (bidding 3-15/04/2019), Vääna (Humala) (bidding 29/05/2019 – 26/08/2019, because of the low interest bidding was repeated three times: 29-30/05/2019; 19/06/2019; 11-12/07/2019) and Piusa (bidding 7-18/10/2019). For Ülgase site, as its geodetic conditions are most difficult and also as actions still needed some clarification (it was not completely decided how many entrances can be fenced and how many may be possibly grilled), it was decided to postpone construction to summer 2020. Only after getting construction sketch from fencing company that had best bid, coordination of building documentation and preparation of building note was possible. Project manager prepared fence location drawings, attached them construction sketch and coordinated them with authorities (KEA, RMK and MKA) and private landowners (Vääna-Posti: 4 private owners + 2 state authorities; Vääna (Humala): 3 private owners + 2 state authorities; Piusa: only 2 state authorities). After that project manager compiled a construction note in web based EHR and asked municipalities to note it officially. These official building notes that according to Estonian legislation gave green light for fence building action were issued as follows: Vääna-Posti

8/07/2019; Vääna (Humala) 7/10/2019; Piusa 2/01/2020. Building notes and documents attached to them, including construction sketches for Vääna-Posti, Vääna (Humala) and Piusa that are first three deliverables under Action A1 covering both “Technical design documentation” and “Construction drawings and building permits” are found in Annex 1. Under these deliverables, building notes with all attached documents, including building sketches are still needed to be compiled for fencing in Ülgase site and possibly also for security culvert placement in Piusa as well as for filling shaft in Vääna (Humala). These documents are planned to be ready by 30/06/2020. That new deadline was proposed during the last monitoring meeting with the Monitoring Team on 25/02/2020 and we have not yet got an answer from EASME for that. Delay in finalisation of these preparatory actions appears because of the need for justification of the preparatory documents with builders, as the solutions are not standard ones, but need to serve nature conservation purposes. Such delay may also delay finalisation of construction work under C actions, but we do still expect to finalise construction during the summer 2020, before bats will start to gather into hibernacula for next winter. We do not see that delay would affect the overall project objectives. Small drawback has also been that juridical status of underground ownership is somewhat unclear as well as regulations how third party can officially prepare construction works on private land that is at the same time state nature conservation area. Still, these drawbacks were solved by bilateral discussions with landowners and did only cause small delay in timing of the actions, nothing more.

In preliminary planning document compiled by project manager was also described the need for safeguarding work against collapsing roof of rear section of the tunnel in Piusa project site. There was also already mapped a location of the section and described a problem that should be solved. Construction site was inspected by project team together with project monitoring expert from NEEMO EEIG – ELLE on 19/04/2018. Agreement was received from the mining company who is renting the state land parcel from where goes the entrance into construction site. Construction site was also inspected with KEA and RMK as well as with possible engineering bureau OÜ J.Viru Markšeideribüroo on 9/07/2019 before asking for comparative bid for underground measurements for construction site. As there are very few engineering bureaus in Estonia that offer underground measurements services, three such possible bureaus are asked for bidding, but two of them refused (TalTech directed question to OÜ Inseneribüroo Steiger and the latter after reading details of the work, refused). OÜ J.Viru Markšeideribüroo was contracted on 15/08/2019 and underground measurements together with 3D model of the tunnel system was finalised by 22/11/2019.

5.1.1.2. Action A2 – Evaluation of visitation flows (completed)

Foreseen start date: 01/10/2017 Actual start date: 15/09/2017

Foreseen end date: 31/03/2019 Actual end date: 26/06/2019

Deliverable is given in Annex 2

Equipment for a visitor counting was not purchased, as it appeared that relevant counters (census mat) are not in a market anymore (and also out of production), but we found needed number of relevant type and free of charge available counters from Estonian state institutions (KEA and RMK) and did set them up in all project sites in time. It caused no extra costs for the project. But as these counters we got are quite old already, we still seek relevant counters and plan to replace existing ones before the end of the project, so that we can go smoothly on with visitor counting after project end as well. We also had small setback when one of the counters was found by illegal visitors and destroyed in Ûlgase site, but as we had also second counter still working there, it did not cause any problem in visitor counting and also not any financial setback for a project.

Project leading bat expert Lauri Lutsar is on a regular basis checking counters on sites and downloads data from them. He also prepared a report. Time he has to spend for these site based downloads has been somewhat underestimated and therefore he spent slightly more days for that action than was allocated, but as there are enough man-days under action D1 we do not see need for any larges re-allocation so far.

Due to the need to get seasonal visitation flows there was a need to count in all project sites during all four seasons. As we started counts in all sites in January-February 2018 (it took some time to find relevant counters as we did not find them in a market), counted until the January-February 2019 and analysis of the data took time because of bat monitoring still going on in March and data processing in April, the full report for all seasons and all sites was prepared with delay and was finalised as well as uploaded into project website on 26/06/2019. Report is available here: <https://elfond.ee/nahkhiired/projektist/aruanded> and also in Annex 2. Still, the delay in preparation of the report on the seasonal visitation flows in project sites did not affect timing and quality of the other related project actions (especially C-actions).



Photo 1. Installation of visitor counting equipment (counter mat) into Piusa cave. Counters were covered with sand, so they are not detected by visitors. Similar counters were installed into other sites as well. *Photo by Lauri Lutsar.*

5.1.1.3. Action A3 – Evaluation of initial state of target species in the project sites (completed)

Foreseen start date: 01/10/2017 Actual start date: 14/09/2017

Foreseen end date: 31/03/2019 Anticipated end date: 31/03/2019

Deliverable is given in Annex 3

First winter (2017/2018) counts were done in February-March 2018, in time in all project sites by four bat experts: Lauri Lutsar as leading expert together with contracted experts Matti Masing, Oliver Kalda and Rauno Kalda. Second winter (2018/2019) counts were done in February-March 2019, in time in all project sites by three bat experts: Lauri Lutsar as leading expert together with contracted experts Oliver Kalda and Rauno Kalda.

Both winter counts were successful. Data was processed and report was compiled in time by 31/03/2019. Public upload into web-site took some time, because report had to be re-designed, taking out too precise data on bat locations. Such data is not allowed to be publicly available in Estonia, as bats are II category protected species in Estonia, and our nature conservation law does not allow publishing exact locations of such species in media. Therefore, public version is available in web since 26/06/2019.

Report is available here: <https://elfond.ee/nahkhiired/projektist/aruanded> and also as Annex 3.

Winter counts were and are going on also in winters 2019/2020 and 2020/2021, but we consider them from now on as part of the action D1.



Photo 2. Bat count in Vääna (Humala) project site. *Photo by Lauri Klein.*

5.1.2. Action C – Conservation actions

5.1.2.1. Action C1 – Restriction of human access to the hibernacula (in progress)

Foreseen start date: 01/07/2018 Actual start date: 02/07/2018

Foreseen end date: 30/06/2021 Anticipated end date: 30/06/2021

In Vääna-Posti site fencing company that won the bidding was OÜ Suurmeister. It was contracted on 13/08/2019 and fences were built around all four entrances by 5/09/2019. Entrances were fenced with 220 m long and 1,5-1,7 m high welding panel fence. For additional security measure – ESS – permanent electricity connection is needed on site, but until today setting up that has not been successful. Discussions with Estonian national electricity networking company – Elektrilevi – are still going on and we have found that the best solution would be to get agreement with private landowner that has closest existing electricity connection. In such case set up new connection attached to existing one is very cost-effective and can be done within one month. Problem is that the landowner does not want that new connection set to his land. Negotiations with that landowner are still going on. Despite that permanent electricity connection is not there, we managed to set up off-grid ESS for all fenced entrances of that site. Bidding between two largest security companies (G4S and USS) in Estonia was done and it resulted that only one of them is offering off-grid surveillance. So, USS was contracted on 19/09/2019 and off-grid video surveillance security system was set up. Preliminary contract ends by the end of April 2020 and new contract will be done for summer after that. All four entrances are under video surveillance and security company has actively reacting in case of intruding incidents. Project manager and leading expert have also access to video clips in USS server and we can quickly react to any incident. Until today there has been only one incident with one person intruding over fence into the area around entrance (Photo 3).

In Vääna (Humala) project site fencing company that won the bidding was OÜ Suurmeister. It was contracted on 27/11/2019 and fences were built around all nine entrances by 16/12/2019. Fence is in total 350 m long and 1,5 m high with welding panels. Setting up permanent electricity connection has not yet been successful. Most probable is that it can be done in cooperation with private land owner, Estonian Defence League, who is also setting up electricity connection into their land parcel, but it may happen that if they plan it later that project ends we need to find other solution. Despite of that, video surveillance for all nine entrances is set in that project site. USS is hired for security work since 30/12/2019. Security system is still off-grid version and contract with security company is preliminarily until the end of April 2020. Until today there has been two incidents when five people climbed over the fence and entered into underground system. On both of these incidents unfortunately we have not caught intruders. Cooperation on improvement on security actions with USS is going on.

In Piusa project site fencing company that won the bidding was OÜ Aiacentrum and also contract was prepared for them by 7/11/2019, but as preparation and coordination of building note took so much time, it was not any more possible to start fencing. It was because the bats were already in caves and any construction work close to the entrances of caves would have been disturbed them. Therefore, the fencing work was postponed to summer 2020 with re-bidding to be done during April-May 2020. It is planned to build 1050 m long and 1,5-1,7 m high welding panel fence. Also electricity connection especially for project use is not there in Piusa, but there are two existing connections already on state owned land. Still it is not yet clear how to officially set up new electricity connection as it has never been done for such purposes as security system set up for nature conservation use. Despite of that we still did set up off-grid video surveillance for all seven entrances also in Piusa and contracted USS for that since 30/12/2019. It has already

shown that without fence there are a lot of intruding incidents and security company guards should very often go to the sites to catch and identify intruders.

In Ülgase project site we postponed all the bidding as well as fencing (and possibly also grilling) into 2020, especially bidding into May-June and work itself to June-July. New deadline was proposed during the last monitoring meeting with the Monitoring Team on 25/02/2020 and we wait for an answer from EASME for that. Postponing of fencing work in Ülgase do not affect other project actions nor project objectives, if we manage to finalise it before the autumn 2020. Also we have not managed to set up electricity connection into that site, but preliminary agreement has been set with RMK that most probably the connection will be applied to the state owned parcel of which they are responsible. Still, it might appear that closest point from where to bring electricity is ca 200 m outside of the Natura 2000 site and line should be built to bring electricity into site. Therefore, we ask hereby EASME to allow us to have that building work outside of the Natura 2000 site. Despite of that we have managed to set up off-grid video surveillance also to that site and USS is contracted for that since 30/12/2019. Similarly, to Piusa there are a lot of intruding incidents despite of the fact that both in Piusa and in Ülgase it is all year around prohibited to go underground without permit of Environmental Board. In Ülgase there was also planned to be built a stairway up to the main entrance, but after discussions in project team and weighting plusses and minuses, we decided not to build it, as it will make access better to the caves not only for security guards and bat researchers, but also intruders.

After project end we hand fences over to KEA as manager of all nature conservation areas in Estonia and discussions with them on taking also ESS over are still going on. Process of handing over will be described in AfterLIFE plan of the project.



Photo 3. Example of the ESS (video surveillance photo) and welded fence working together in Vääna-Posti project site. Similar looking fence is also built in Vääna (Humala site). Photo is showing the only incident appeared in Vääna-Posti during November 2019 to March 2020.

5.1.2.2. Action C2 – Safeguarding the collapsing caves (in progress)

Foreseen start date: 01/04/2019 Actual start date: 15/06/2019

Foreseen end date: 30/09/2019 Anticipated end date: 30/09/2020

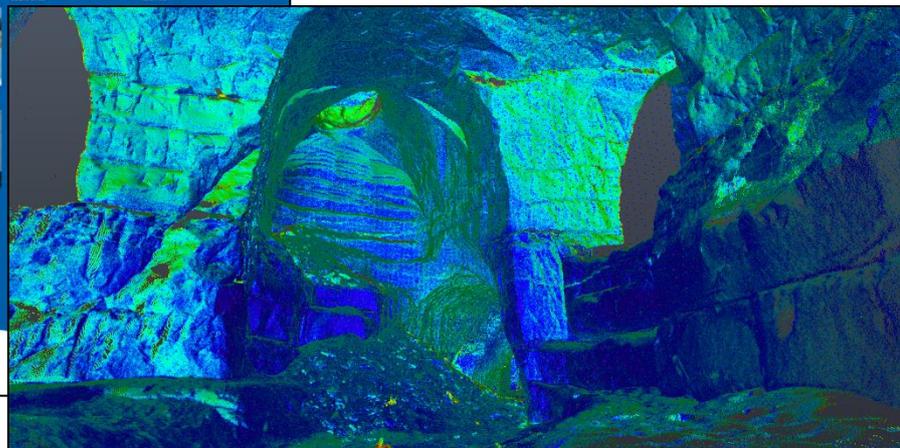
As the preliminary underground measurements in order to make preparations for safeguarding work, were finalised by 22/11/2019, it was not possible to start the construction, because bats were already in caves. Therefore, the work was postponed to summer 2020 with new deadline by 30/09/2020. That new deadline was proposed during the last monitoring meeting with the Monitoring Team on 25/02/2020 and we wait an answer from EASME for that.

Currently we seek the construction companies for discussion of what solution might be the best in such hard conditions as they are in cave. Possible solutions may be small game tunnel like construction or tube, large enough for bats as well as for bat researchers or any kind of concrete construction. Solutions/bidding could be asked from following companies: E-betoonement, ViaCon Eesti AS, Betoonkivi OÜ. Preliminary contact has been set with E-betoonement. Best would be find such company that will give a complete solution, including construction drawings, coordination and building itself. Such companies are hard to find and most of them are working with concrete solutions that may not be possible in Piusa.

Delay in construction works within action C2 may affect monitoring activities under D1, as the effect of the culvert and how bats react on that cannot be monitored before culvert is placed. Still there is at least one winter before the end of the project and if culvert will be successfully placed before the autumn 2020, it still will not cause any substantial harm in reaching project objectives.



Photo 4. Tunnel section in Piusa caves as a fragment from 3D-measurement done by J.Viru Markšeideribüroo, below and possible solutions to be installed into that section produced by company ViaCon, on the left.



5.1.2.3. Action C3 – Cleaning and filling the cave systems and organising volunteer camps (in progress)

Foreseen start date: 01/04/2019 Actual start date: 08/10/2018

Foreseen end date: 30/09/2020 Anticipated end date: 30/09/2020

This action contains two different sub-actions: filling one vertical shaft in Vääna (Humala) site in order to avoid low temperatures in bat hibernacula and organising volunteer camps in three project sites in order to clean area around bat hibernacula entrances from trash.

Filling of one vertical shaft at Vääna (Humala) project site was initially planned to be completed during the summer 2019, but was postponed to 2020, because of clarification need with plans of landowner, Estonian Defence League, whose cooperation partner – Riigikaitse Rügement – has been using underground tunnels also for military education purposes. Now it is clear that filling can be done in July-August 2020, after decision if military education can be done in other tunnel system. That delay in filling the shaft do not affect project objectives if it will be done during the summer of 2020. Only project action it will somewhat affect is D1, as instead of two winter time we can monitor its effect for bats only during one winter, 2020/2021.

We have elaborated following possible ways of filling the shaft:

- Easiest and best for bats would be to fill shaft with stones that were taken out of the shaft earlier and are still piled nearby. It will not allow passage below the ground in future, but will restore temperature conditions for bats as it was for years.
- To allow passage still below, we could cover shaft outside on the ground with concrete panels. That is a way military people suggest.
- Other way to allow passage below is to close tunnel below the ground on both sides of shaft with built walls and wind barrier doors.
- probably most expensive way would be to install small game-tunnel element or tube into the shaft and cover it with stones and ground on top.

What will be the way we choose, depends on what will be the results of Riigikaitse Rügement to find and open other tunnel system below the land parcel they rent from Estonian Defence League.

With volunteer camps we are much more far. First two volunteer camps were done already on 18/10/2018 in Vääna-Posti project site and reported in Annex 2 of the Progress Report. These camps were both less than one day camps on same site. One camp, five hours, was for cleaning the site with 20 volunteers and other camp, three hours, was for filling illegally made cavity between two tunnels with five volunteers. During 2019 altogether five one-day camps were organised: Vääna-Posti – cleaning area from residual waste 5/05/2019 (22 volunteers), 2/06/2019 (20 volunteers) and 19/10/2019 (23 volunteers). Three times 10 m³ trash container and once 15 m³ container was filled with trash. Total amount of removed waste is ca 45 m³, with weight ca 20 tons. Ülgase – cleaning area from residual waste was carried out on 27/04/2019 (20 volunteers) in cooperation with locals – Ülgase village society. Vääna (Humala) – cleaning area from residual waste in cooperation with local people was carried out on 8/10/2019 (15 volunteers). Total amount of removed waste ca 15 m³, with weight ca 2,5 tons. We had very good cooperation with all three local municipalities on organising all these camps as well as with local people and landowners. From Saue Municipality we even got separate financial support to cover expenses of one container and partly also other.

5.1.3. Action D – Monitoring of the impact of the project actions

5.1.3.1. Action D1 – Monitoring of the effects of project actions on target species and visitation flows (in progress)

Foreseen start date: 01/04/2019 Actual start date: 01/04/2019
Foreseen end date: 30/06/2021 Anticipated end date: 30/06/2021

Terms of reference for monitoring of bats human visitation flows, temperature conditions in Vääna (Humala) and measures taken against collapsing cave roof in Piusa was compiled by project leading bat expert Lauri Lutsar by 31/01/2020 and is given as Annex 11. Monitoring of bats was first time done according of these terms of reference in winter 2019/2020. For the compilation of terms of reference there was wrong milestone deadline in application, because it is not wise to prepare terms of reference for the monitoring of how target species reacts to the conservation action results before we know what are these results (either grilles, fences, ESS or something else). Therefore, in Progress Report there was set up new deadline – 31/12/2019. Actual finalisation of terms of reference was done with one-month delay by 31/01/2020 (Annex 11).

Monitoring of bats was done this winter and also planned for next winter, but real effect of project nature conservation measures on bat wintering population can be monitored during the period after the project as wintering population of bats is not reacting so fast. So, monitoring is planned to go along same way also after the end of project. It will be described in detail in AfterLIFE plan as well as in recommendations for amendments into management plan of bats in Estonia. It is foreseen that monitoring of bat populations as well as human visitation in project sites will be part of annual state level environmental monitoring programme coordinated by Estonian Environment Agency. Agreement on such addition into state monitoring programme will be described and agreed within project AfterLIFE plan.

Human visitation counters are in place in all sites and counting. Leading bat expert Lauri Lutsar is taking data from counters on monthly basis and he is also keeping record on incidents appearing on ESS – video surveillance cameras. As fences are in place at two project sites and not yet in place at two other sites, only very preliminary results could be given on visitor flows – at sites with fence, only three such incidents have been detected when human beings entered hibernacula during the time when it is forbidden, but at sites without fence, but with cameras, such incidents appear every week. It does already show the huge positive effect of fencing.

Suggestions for the amendments of the management plans and protection rules of Pond Bat at project sites according to the data from the A2-A3 actions are not yet formulated, but some of them are already discussed with KEA (about boundary amendment and protected object type for Vääna (Humala) site). Suggestions are planned to be done also for Vääna-Posti, Ülgase and Piusa as well as for protection plan for bats in Estonia.

5.1.3.2. Action D2 – Monitoring of the project’s socio-economic impact and ecosystem functions (in progress)

Foreseen start date: 01/07/2017 Actual start date: 12/09/2017

Foreseen end date: 30/06/2021 Anticipated end date: 30/06/2021

In order to rise positive attitude towards bats and inspire more people to be active in bat protection, it is very important that as much stakeholders as possible and especially those who are living or are active in close vicinity of bat hibernacula are met during the project. Therefore, meetings with stakeholders and landowners were foreseen to be organised.

The first such meeting (called as Bat Interest Day) was held in Piusa Visitor Centre on 28/09/2019. It was also a celebration of 70-year anniversary of bat research in Piusa. Stakeholders invited there were nature guides (active in Piusa Visitor Centre) and tourism developers in South-Estonia, but also students and school children from local schools. All together there were 40 participants and 7 presentations were given, including one by KEA.

The second such Bat Interest Day was held in Vääna Manor House on 17/11/2019. It was meant for stakeholders both around Vääna (Humala) and Vääna-Posti sites, as they situate quite close to each other and latter one is also very small. People were present from local communities, municipalities, several landowners as well as representatives of nature protection societies. Some people were also interested on military history, as both these bat hibernacula are in old military constructions that are at the same time registered as National Heritage sites. There were more than 40 participants and 5 presentations were given, including by KEA. Special voluntary survey with anonymous questions to bat researchers was done during the Bat Interest Day that once more raised strongly the specificity of military issues around these sites.

The third such meeting is planned to be held during summer 2020 in Jõelähtme municipality for Ülgase project site stakeholders, a new deadline for that is set to 31/08/2020. We have postponed that meeting because we do want to focus on that together with other project activities in that project site. As we have also postponed fencing work in Ülgase we also did it with Bat Interest Day. Other reason for postponing is that we did want to hold training of nature guides first and have also educational material prepared for that.

Socio-economic impact of the project and public attitude change towards bats can also be evaluated on a basis of a lot of media presentations and articles that are in more details given under E actions. Also the fact how popular are both volunteer camps and Bat Nights (detector trips) does show high positive interest towards bat life in Estonia. On a basis of Bat Interest Days results, voluntary camp outcomes, training of nature guides and discussions in municipalities as well as with some special stakeholders, preliminary table of contents of preliminary report on socio-economic impact was compiled by project manager (Annex 7).

For collecting background studies for ecosystem functions report, a special common folder has been set up in Zotero – electronic system for collecting and sharing articles. We already have list of relevant articles there. Ecosystem functions related to bats were also discussed several times among bat experts of the project. We have read a guide “Assessing ecosystems and their services in LIFE projects”, but do still need some more clarification from EASME how to perform that for such species specific project like we have. Very preliminary table of contents for the preliminary report on ecosystem functions is available as Annex 8.

5.1.4. Action E – Public awareness and dissemination of results

5.1.4.1. Action E1 – Dissemination planning and execution (in progress)

Foreseen start date: 01/07/2017 Actual start date: 25/09/2017

Foreseen end date: 30/06/2021 Anticipated end date: 30/06/2021

Action E.1.1 Dissemination plan, networking with other projects and EUROBATS experts

E.1.1.1 Study tour to Netherlands

Study tour to Netherlands was commenced on 20-30/08/2018. Instead of having it for 4 persons for 4 days, as in application, it was with same budget held for 6 persons for 6 days (even 10 days for 3 persons). During the study tour we met bat experts and Pond Bat hibernacula in Netherlands. Several discussions were done on following issues: grilling and fencing of hibernacula, bats in houses, summer colonies of bats, bat boxes, bat migration, bat monitoring, ultrasound detectors etc. Study tour was very successful and gave a lot of practical input on measures for securing wintering sites. Objectives of the activity were fully reached and feedback was very good.

E.1.1.2 EUROBATS Advisory Committee annual meetings

First annual meeting during the project time was held in Tallinn, Estonia from 14/05/2018 to 17/05/2018 and due to the cost savings from Estonian experts' attendance this time (they were already in Estonia), it was possible to use that amount to promote networking and to present project through organising an excursion for meeting participants on 13/05/2018. Such a minor change was also accepted by EASME in response letter after the first project monitoring meeting (18/04/2018) where that matter was risen (e-mail confirmation on that was received on 25/06/2018). One of the project experts (Matti Masing) did also presentation at the meeting about bats and their research in Estonia and we did show the movie about bats in Estonia to meeting participants. Also special leaflets about project were produced as well as project roll-ups in two languages. Two of the project experts also attended the meeting for full period. Objectives of the activity were reached as most of the Estonian bat experts were actively participating and feedback from the EUROBATS AC members was highly positive.

Second meeting was held in Skopje, North-Macedonia from 1/4/2019 to 5/4/2019. As the meeting was held outside of the EU we did inform EASME about that and asked if project leading expert Lauri Lutsar can attend the meeting. Also as the overall costs for one person were almost same amount than according to the application was foreseen for two persons, we asked EASME if this time only one expert can go. We got e-mail confirmation on both these questions that the travel outside the EU seems to be justified in this case and that only one person is allowed to attend this time. As a result, project leading expert Lauri Lutsar attended that meeting with project expenses, together with Kaja Lotman who was a representative from KEA and whose attendance costs were covered by Estonian Government. We do evaluate that objectives of attending that meeting were met as project expert did participate in many working groups relevant for the project as well as did have networking discussions with colleagues from Latvia.

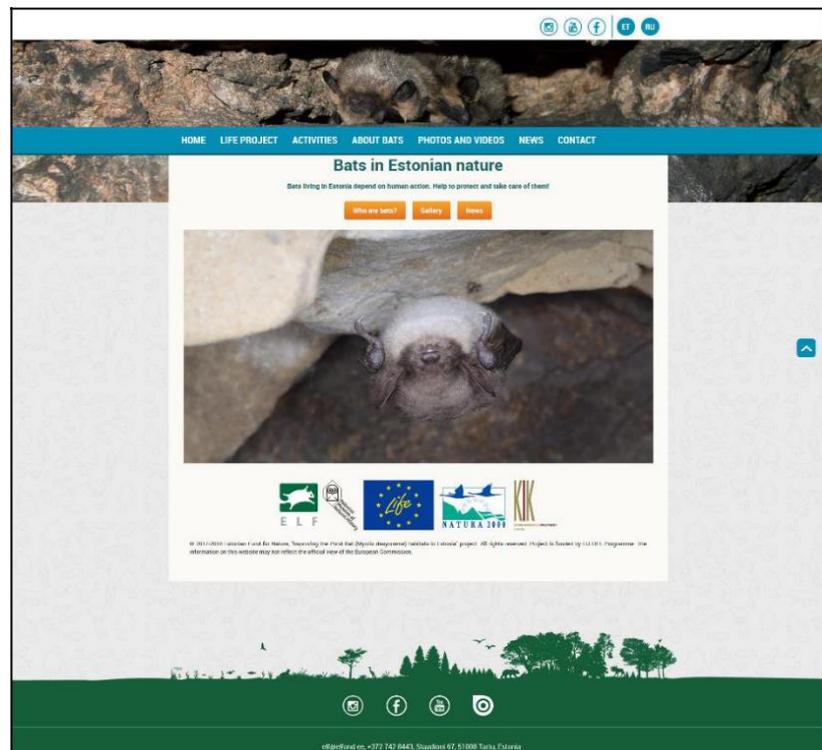
Third meeting was preliminarily foreseen to be held in Sarajevo, Bosnia-Herzegovina from 25/4/2020 to 29/4/2020, but it was postponed due to COVID-19 pandemic. Still, according to our calculation of costs it may again happen that actual costs of that meeting are double compared to what was foreseen in application. As it also is again outside of the EU we did inform again EASME and got a permit to send again one expert instead of two.

Action E.1.2 Development of the Dissemination Pack

E.1.2.1 Website

Website, <http://elfond.ee/nahkhiired> was published with short delay by 29/1/2018 in Estonian language and translated to English and Russian during February 2018: <http://elfond.ee/bats> and <http://elfond.ee/letuchie-myshi>. Website has had 19 075 visits since publishing. In 2020 number of visits has risen substantially (Annex 16). Website has already photos and videos on bats in uploaded. It also has section for reports (<https://elfond.ee/nahkhiired/projektist/aruanded>), where project reports are and will be uploaded for public use. Website has also section for questions and answers (<https://elfond.ee/nahkhiired/kkk>), where anyone can find information on bats or direct questions to bat researchers. There is also now a link to the online Bat Camera in web (<https://elfond.ee/nahkhiired/nahkhiirekaamera>) and to newly compiled information leaflets on bat issues for teachers and nature guides, including issues like on bats in houses, bat habitats, bat protection (<https://elfond.ee/nahkhiired/opimapp>). Online Bat Camera stream is available in ELF Youtube channel since mid-February 2020 and since then it has been watched almost 62 000 times. It is accessible also from <https://looduskalender.ee/n/en> and there is active forum of nature camera watchers, accessible here <https://www.looduskalender.ee/forum/>. Most of Estonian bat experts as well as project manager are actively participating also in Facebook group “Nahkhiiresõbrad” (“Friends of Bats”) that unites most of Estonian bat friends and where many actual issues concerning bats are daily discussed. That group was established on 17/07/2010 and it has currently 556 members. Compared to planned amount of visitors in web and for Bat Camera as well as other public awareness indicators (look KPI chapter), we have exceeded almost all of these planned goals. Also the feedback reactions by users have been only positive.

Overall estimated cumulative number of all media clicks into project related media publishing since project start is 7 270 258 (within first three months of 2020 has been 2 300 000 of it that is huge, compared to that whole year of 2019 was 3 300 000). With social media we have reached the users 186 425 time since the start of the project (first three months of 2020 we have same number of reaching than within 9 months during 2019). Table of media monitoring together with webpage statistics is added as Annex 16.



5.1.4.2. Action E2 – Elaboration of project information boards and information materials (in progress)

Foreseen start date: 01/07/2018 Actual start date: 01/09/2018

Foreseen end date: 30/06/2020 Anticipated end date: 30/06/2020

Deliverable is given in Annex 5

Four information boards about LIFE-project were planned to be produced – one into each site – deadline was 31/05/2019, but we are in delay and new deadline set is 30/06/2020. It was also discussed at the last meeting with project Monitoring Team and we wait for answer by EASME on that. Collection of the content material for the information boards started in December 2018. It took some time to discuss content with all stakeholders and first two information boards in three languages (Estonian, English and Russian) were printed by 21/02/2020. Information boards are in place at Vääna-Posti and Vääna (Humala), look Annex 9. Agreements on locations and formats of two remaining information boards – Ülgase and Piusa are there, but content and design needs still to be agreed, before we can print and place them.



Delay in preparation and set up of information boards have not had strong influence as we still managed to set them in these project sites where we did set fences and for these where we only have ESS we did put separate smaller signs, that explain the rules of protected areas and inform about video surveillance. We do not have had much feedback on information boards yet, but these few we have are only positive.

Photo 5. Information board on the fence in Vääna-Posti project site. *Photo by Lauri Klein.*

Information materials (1000 pc) – deadline 01/03/2020 – a folder with information on both sides that can be used also in outdoor conditions was compiled by project bat expert Rauno Kalda and edited by other experts during February 2020. The folder contains five A4 laminated, richly illustrated and separately usable weather-proof sheets. Folders (200 pc, all together 1000 sheets) were sent to printing office on 28/02/2020 and were ready on 05/03/2020 (Annex 5). LIFE logo and disclaimer are set on the folder cover. Although that due to the COVID-19 pandemic we have not yet had possibility to distribute these folders to Nature Education Centres, we have already got lot of positive feedback on the pdf-material available in project web site and know that teachers are already using that folder for their biology classes.

5.1.4.3. Action E3 – Public events and exhibitions (in progress)

Foreseen start date: 01/10/2018 Actual start date: 31/10/2017

Foreseen end date: 31/12/2020 Anticipated end date: 31/12/2020

Deliverable is given in Annex 4.

At least 24 Bat Nights are foreseen to be held during the project. 14 of them are done during 2018-2019: 4 in relation with celebrating Republic of Estonia 100-year anniversary and Nature Day of Estonia at 18.08.2018 (Tallinn, Tartu, Narva, Haapsalu); one at the volunteer camp managers training of ELF in Kauksi 18.05.2019; 3 in relation with celebrating Natura 2000 Day and International Biodiversity Day at 21.05.2019 (Tallinn, Tartu, Võru) – articles were also published about nights in Tallinn and Võru; one in relation with biodiversity monitoring marathon in June 2019; 2 in Seto folk festival at 28-29.06.2019 in Värskä and 3 in relation with celebrating International Bat Night and Nature Day of Estonia at 17.08.2019 (Keila-Joa, Viljandi and Iisaku). All four bat experts active in project were acting as guides in these Bat Nights. Usually about 20 to 30 people were attending the Bat Night. At least 10 Bat Nights remain for years 2020 and 2021. Feedback on the Bat Nights have always been very positive and people are asking if there will be Bat Nights also next year.

ELM purchased weatherproof high quality bat camera and the camera has been tested by the person who has set up almost all of the online web based nature cameras in Estonia. Camera system past testing and calibration during winter period of 2017/2018, was accepted and purchased in May 2018. Several video clips have already been recorded. Currently the camera is open for public viewing and set up to bat hibernacula in Piusa caves. Camera is focused into hibernating Pond Bat set (look also chapter E1.2.1 on page 24). Since 13/02/2020, the camera is showing live video-feed here: <https://www.youtube.com/watch?v=yqfnbkQoX3Q>.



On the web page where camera feed is linked is also existing an international forum for people who want to discuss about what happens in front of the camera. There are lot of positive feedback and many discussions initiated in that forum by watchers all over the world. Camera has been watched more than 62 000 times.

Photo 6. Screenshot of project bat camera image from 16/02/2020 when hibernating Pond Bats changed their position and did fly around in Piusa cave.

In preparation of interactive exhibition, ELM also purchased a professional photo-camera for taking high quality bat photos. Also several local nature photographers were contacted to raise their awareness of the project and to encourage them to take photos of bats. ELM purchased 3 computers for projecting digital data (sound and visuals) and interactive programmes at the exhibition. Besides computers, we use data projectors and speakers at the exhibition.

In cooperation with Estonian Theriological Society the Pond Bat and other bat species are put up for the mammal of the year 2020. There have been held a lot of different events during January and February 2020 already. Opening of the Bat Year in Estonia was at 30/01/2020 in Tallinn Zoo and it had highest number of participants since the start of the celebration of Animal of the Year in Estonia more than 10 years ago. Since then many articles, TV-interviews and movies as well as discussions in radio stations has been done. All project bat experts have been involved in that. Team of the mammal of the year is communicating daily and have monthly meetings. All communication means are daily in use, starting from phone-calls and ending with skype or zoom meetings. We have got very much positive feedback through many channels and number of people calling to bat experts or posting information on bats in their houses has been increased a lot compared to what it was before. Even in time of the COVID-19 pandemic and its connection to bats has not been turned overall attitude negative – always there are much more positive than negative reactions.

Preparation of conception of interactive exhibition of Night Flyers – Bats – has started with very first brainstorming lead by the ELM ahead of schedule in summer 2018 and was finalised also ahead of schedule by 01/05/2019. The conception of the exhibition is in Annex 10. In May 2019 After ELM had worked out the first conception it opened public procurement procedure for production of the exhibition. ELM, as state institution, has its own public procurement policy, which follows regulations of the Government of Estonia. Public Procurement notice was published on-line in the central Public Procurement Register. Contract with winner of the procurement, Produktsioonigrupp OÜ, was for the exhibition production signed on the 01/07/2019. The lighting of the exhibition was put up also by the same company. They had the best overview which exhibit to highlight. The animations and interactive parts of the exhibition were produced by Frost FX. They also produced exhibition themed VR movie, which was made as an extra opportunity for the visitors to experience the mysterious lives of bats. The VR movie is not included in this project's budget and was made with museum's own financial resources. ELM used some scientific consultation from Elustik OÜ to be sure that the data presented at the exhibition was correct.

Opening event of the exhibition was held on 13/02/2020. Before the opening of the exhibition halls were renovated. This mostly included painting the walls after the last exhibits were demounted. 71 invited guests that were related to the project attended the opening event. During 13/02 to 12/03/2020, before museums were closed because of COVID-19 pandemic, there were almost 4000 visitors at the exhibition that is much more than usually. Very popular has been VR movie, that has been watched almost 800 times. Two very popular bat-evenings were held during that time and podcast was produced that has had almost 800 listeners already. Feedback to all events and exhibition itself has been very good and people wait until it will be open again. As the exhibition is open until October 2021 the final advertisement costs will be shown in the final report. All the texts shown at the exhibition were edited and translated into Russian, English and Finnish. An audio guide was recorded in every language. ELM has concluded the contract with the educational specialist and the educational programmes are ready to use. ELM decided to harmonize all educational material and the programmes are being designed right now. The un-designed materials are presented with the report as Annex 4. ELM is planning to open an extra exhibition about bats in September-October this year. This exhibition focuses mainly on bat photos and is planned to be opened in two different locations – in the museum and outside, in a central park of Tallinn.

5.1.4.4. Action E4 – Field training for tourist guides for bat-friendly tours (in progress)

Foreseen start date: 01/01/2020 Actual start date: 01/02/2020

Foreseen end date: 30/06/2020 Anticipated end date: 30/06/2020

Deliverable given in Annex 6

Preliminary programme of the training is compiled and in Annex 6. Preparations of the content of training started already in January 2020. Plan is, if possible, to arrange two trainings, both in two sessions. Training will consist of theoretical day and practical day. Due to the COVID-19 quarantine situation it might be that theory training should be done as electronic training and practical training postponed to summer 2020. If it will still be possible to arrange the training physically we have planned that one training will be done in North-Estonia, in Vääna area, most possibly in Vääna manor house and practical training arranged in Vääna (Humala) site. Second training is planned to be held in South-Estonia, in Piusa site, theory in Visitor Centre and practices around caves and in vicinity. Participant amount for both trainings we have planned to be ca 20 persons and we have compiled already preliminary lists of interested people.



Photo 7. One page of the project leaflet (folder of laminated pages for outdoor use) with the information on bat year in boreal region, like Estonia is. That folder will be also used for training nature guides and given later to trainees for their further use.

5.1.5. Action F – Project management

5.1.5.1. Action F1 – Project management (in progress)

Foreseen start date: 01/07/2017 Actual start date: 24/09/2017

Foreseen end date: 30/06/2021 Anticipated end date: 30/09/2021

Project has two partners – ELF as coordinating beneficiary and ELM as associated beneficiary. Partner agreement was signed on 26/01/2018. By the end of the year 2018, associated beneficiary, ELM had hired all necessary staff.

ELF hired executive committee that includes six employees with full or part-time work-load: project manager (Lauri Klein), project assistant (Aili Saluveer since start until July 2018, replaced with Kärt Mell starting in Sept. 2018), project financial manager (Kadri Kalmus), PR coordinator (Mariliis Haljasorg since start until April 2018 and replaced with Kertu Hool after that), communication assistant (Laura Oro since project start and replaced with Raul Kübarsepp in November 2019), project leading expert (Lauri Lutsar, since Sept. 2017). Project manager was contracted on 24/09/2017. Until the end of 2017 he worked on partial time and since 01/01/2018 on full time. Agreements with the project team members were obtained during October-November 2017 and first meeting of full team (25 persons) was arranged on 21/12/2017. Project assistant has been maintaining technical documentation, contracts, assisting project manager in organisation of meetings and taking care of the office for the project staff. Project financial manager is involved in financial planning of the project, controls expenditure documents and provides financial reports of the project. Doing so, she is also providing assurance that project expenditures are in line with LIFE, EU and national provisions. She also has checked financial correctness of associated beneficiaries' financial reports and provided answers for relevant enquiries. PR coordinator together with communication assistant have established project web site and are keeping it alive. Articles and press-releases as well as news for social media have been prepared with assistance of PR coordinator and her assistance. PR coordinator is also responsible for the overview of media coverage and relevant statistics. Overview table on media coverage is in Annex 16. In order to fulfil all project actions so that they are best for a target species – Pond Bat – project leading expert as a part-time paid employee was recruited from the staff of ELF. He is assisting project manager with content issues and is involved in all these actions that are directly dealing with target species (all other than F-actions currently). Beside of the leading expert, three more bat experts (Matti Masing, Oliver Kalda, Rauno Kalda) are contracted with separate contracts when needed (currently for actions A3 – evaluation of initial state of target species, D1 – monitoring of the effects of project actions on target species and visitation flows, D2 – monitoring of the project's socio-economic impact and ecosystem functions, E2 – elaboration of project information boards and information materials, E3 – conduct Bat-Nights, E4 - field training for tourist guides for bat-friendly tours). These experts are known and educated bat experts in Estonia.

ELM hired an executive team to manage actions foreseen to be done by associated beneficiary. Team consists of seven employees with full or part-time work-load: project coordinator (Laura Pärtel (changed to Laura Reinurm in February 2020 due to marriage) since start of the project until March 2020, replaced with Madli Karjatse starting in 13/04/2020), project manager for national contribution and financial issues (Nelly Orissaar), PR coordination (Kätlyn Metsmaa), Ulla Männi (exhibition curator), Lennart Lennuk (exhibition curator and bat expert), Tiiu Liimets (contact person of exhibition educational materials), Sander Olo (technical expert for exhibition). Beside of them a legal expert for legal advice for procurements and drawing up project documentation was hired. Both positions of project coordinator and legal expert are foreseen in the approved proposal. ELM also hired taxidermist for taxidermical work for the exhibition as well as making the realistic forms of bats. All the work is visible at the exhibition. Also specialist of the environmental

education for working out the educational programme was hired. The programme mainly focuses on students, but there is material for other visitors too.

Performance Indicators were entered into KPI web-based database in January-February 2018. As we understood there is no need to do intermedium update during the project and the next update of the indicator values will be done at the end of the project. Still, we did calculate KPI values during compilation of current midterm report and evaluation on the current situation is given in Chapter 7 below.

Progress Report was compiled and delivered in time on 31/10/2018

ELF has had a long consideration process on what kind of 4x4 fieldwork car is needed for the project and also considered possibility to repair an existing old car, but at the end had a decision still to purchase newer, but still used car and has purchased such car on 24/10/2018. This car has been very useful in many conservation actions during project already. We have used it for much more action than expected in application. Car has been in use for almost all actions, but has been irreplaceable for A and C actions (Annex 15 and Photo 8). As the price of the car was less than expected in application, ELF did also purchase a laptop computer for a leading expert for a bat sound and video analysis needed for actions A3, D1, D2, E3 and E4.



Photo 8. Project fieldwork car before bat counts in 2018/2019 winter. *Photo by Lauri Klein.*

5.1.5.2. Action F2 – After-LIFE plan and steering committee meetings (in progress)

Foreseen start date: 01/09/2017 Actual start date: 29/01/2018

Foreseen end date: 30/06/2021 Anticipated end date: 30/06/2021



SC was formed during November – December 2017 and three SC meetings were arranged on annual basis (29/01/2018, 29/01/2019 and 29/01/2020, look memos in Annex 13). There are 25 persons from 16 institutions in SC. Project manager keeps record on project team, SC contacts and will make corrections if needed (look table 1 below).

Photo 9. Third SC meeting held in Telliskivi Quarter in Tallinn on 29/01/2020. Photo by Kertu Hool.

Table 1. Members of the SC by 10/04/2020, their participation in meetings and changes.

Nr.	Nimi	Asutus	Osalemine			Muudatused
			avakoosolek, 29.01.2018	2. koosolek, 29.01.2019	3. koosolek 29.01.2020	
1	Taimo Aasma	KEM	jah	ei	jah, asendas Merike Linnamägi	
2	Marju Erit	KEA	jah, asendas Tarvo Roose	jah, skype	jah, asendas Marju Keis	
3	Mariliis Haljasorg	ELF	jah	ei	ei	
4	Kertu Hool	ELF	ei	ei	jah	
5	Oliver Kalda	OÜ Elustik	jah	ei	ei	
6	Rauno Kalda	OÜ Elustik	jah	jah	jah	
7	Lauri Klein	ELF	jah, ettekanne	jah, ettekanne	jah, ettekanne	
8	Kaupo Kohv	RMK	jah, skype	ei	ei	
9	Meelis Leivits	KAUR	ei	ei	ei	
10	Kaja Lotman	KEA	jah	jah, skype	jah	
11	Silvia Lotman	ELF	jah	jah, skype	jah	
12	Lauri Lutsar	ELF	jah	jah, ettekanne	jah	
13	Matti Masing	MTÜ Siciستا	ei	ei	ei	
14	Kärt Mell	ELF	jah, Aili Saluveer, protokoll	jah, protokoll	jah, protokoll	kuni juuli 2018 Aili Saluveer
15	Peeter Nork	MKA	jah, Silja Konsa	ei	jah	
16	Laura Pärtel	ELM	jah	jah	jah	alates aprill 2020 Madli Karjatse
17	Val Rajasaar	Harku vald	jah	jah, skype	jah	
18	Lembe Reiman	Harku vald	ei	jah, skype	jah	
19	Piret Reinsalu	KKI	jah	jah	jah	
20	Piret Sepp	KIK	ei	ei	ei	kuni detsember 2018 Indrek Pöder
21	Aino Suurmann	Piusa	jah	jah	ei	
22	Merle Tarrend	Võru vald	ei	ei	ei	alates 2020 Jaanus Tanilsoo
23	Liis Truubon	Jõelähtme vald	jah	jah	jah	
24	Katrina Utsar	Saue vald	ei	jah, skype	ei	alates 2020 Birgit Panksepp
25	Mailis Virve	Jõelähtme vald	ei	ei	jah	

After-LIFE plan of the project is not yet shaped, but first discussions on its content has been done. Main issues that are almost agreed between ELF and state institutions KEA and RMK that are responsible on bat protection at the state level, concern handing over fences and information boards for future maintenance. Also preliminary discussions on continuous monitoring have been done as well as on ELF input into updating of bat conservation plan and management plans of protected areas. Most arguable issues are still what will happen with ESS and permanent electricity connections after the end of the project.

5.2. Main deviations, problems and corrective actions implemented

Project was supposed to start on 01/07/2017, but recruitment of the project manager took some time due to summer period and was successful on 24/09/2017. Due to that also some of the first milestones were with some delay, but it is not affecting the overall schedule of the project.

Preparation for project conservation actions, especially tasks under action A1 have been somewhat rescheduled, due to need for prepare construction drawings together with builders after bidding. Due to that it was planned that conservation actions at every project site will be described in planning document (that includes also preliminary descriptions and drawings of possible types of conservation means). After these planning documents were coordinated with landowners and authorities, construction companies were tendered asking also construction drawings and only after that it was possible to prepare building notes in EHR that gave finally green light for construction firms for building. Therefore, deadlines for action A1 were rescheduled and set separately for every building action. It was also explained in Progress Report and accepted by EASME.

On construction work, main deviations have been with setting up security culvert in Piusa, that was planned to be ready by 30/09/2019, but has postponed one year because of measurement of caves took more time than expected. Also fencing in Piusa is postponed because preparation of building note took more time than expected, but as that work is not very difficult and also that we managed to set up ESS in Piusa, it did not harm project schedule. Also fencing and grilling work in Ülgase project site were postponed one year, but it also seems that as all necessary preparatory discussions were already done, it is now only a formal procedure that should be passed.

Biggest problems are with getting permanent electricity connections to every site. That work has been under preparation already long time and discussions have been done with Elektrilevi, but there are still strong drawbacks. In Vääna-Posti, we had already agreement by private owner to fill the application and she did it, but then appeared from Elektrilevi side that it will be very expensive to build connection to that location and will also take very long time. So we did turn back to most simple solution suggested by Elektrilevi that is using closest existing permanent connection point, but landowner on whose land that is do not want to allow us to set also our connection there. In Vääna (Humala) we need to rely on landowner, Estonian Defence League plans – Riigikaitse Rügement who is renting their land has applied a connection and we can use it then also for our project need, but we do not know when they manage to get that connection. In Ülgase there are no any existing connection nearby and we still do need to apply for new connection through procedures of RMK. In Piusa there are un-clarity issues because closest existing connection is on state land that is rented to mining company who do not have anything against to set also new connection into same electricity cabinet, but as they are not land owner they cannot apply for it, neither can ELF. So, question was sent to Estonian Land Board, but as it is very rare precedent they do not know how to act and discussions are still going on. As a result, if we do not manage to set up permanent electricity connections by autumn 2020, we probably need to ask for project extension to be able to do that. Other option is to give up and not to use ESS that needs permanent electricity, but use fake cameras and other such facilities to keep people away of the fenced areas. One option is also to set up off-grid surveillance not through security company but as standalone and arrange regular maintenance and reaction to incidents by ourselves, using volunteers and local active people.

First two information boards are set up in Vääna-Posti and Vääna (Humala), but in Ülgase and in Piusa we do not have them yet. We have preliminary agreement already with RMK in both

sites where we do not have information boards yet. In Piusa we have agreed that RMK will build a wooden stand for information board by their own expenses, so it allows us to do larger board than in other sites. We have planned now by any means to set information boards up into Ülgase and Piusa by the end of June 2020.

There have been no problems or difficulties concerning schedule, budget or the overall role of the only associated beneficiary – ELM.



Photo 10. Information board in Vääna (Humala) site. *Photo by Lauri Klein*

5.3. Evaluation of Project Implementation

The main objective of the project is to improve situation in Pond Bat hibernacula so that species wintering population abundance in four project sites will not decrease any more or starts to increase. The objectives of the project concentrate on the improvement and protection of hibernation sites. Project objectives and expected results, their achievement until current reporting time and evaluation of success as well as lessons learned are given in table 2 below.

Selected main problems to be targeted are uncontrolled human visitation in all four project sites, freezing air temperature in Vääna (Humala) site and collapsing roof in rear tunnel section of Piusa site. Methods foreseen to improve situation are as follows:

- For uncontrolled human visitation – fencing/grilling entrances of the hibernacula; setting up ESS for all entrances of the hibernacula; rising public awareness on bat ecology and right human behaviour with bats in every season.
- For keeping habitats around hibernacula entrances natural and suitable for bat swarming – clean surroundings of hibernacula entrances.
- For avoiding freezing air temperature in Vääna (Humala) site – filling the central shaft.
- For collapsing tunnel roof in Piusa – set security culvert into tunnel.

Controlling human visitation with ESS combination with fences seems to be very effective method, but off-grid ESS is still somewhat expensive. Most cost-effective and sustainable solution would be a fence combination with ESS that has permanent electricity and such sensor system that is least expensive to set and do have as less as possible maintenance need. On the other hand, setting up permanent electricity connection may not be possible for every site. As there are still risks that state institutions whom we do hand over the security measures after the project do not have possibilities for keeping expensive ESS, we seek alternatives. One of them might be a combination of fences with standalone ESS (similar to hunting cameras), but instead of controlling and maintaining it by security company it could be done by local volunteers.

Voluntary camps seem to be very cost-effective measure for keeping hibernacula surroundings natural. ELF has long experience in arrangement of such camps and they are very popular, so that people are even ready to pay for participation in such camps.

Against bat freezing it is very important that underground tunnels have closed ends with more stable temperature. Filling the shaft with gritstone is most cost-effective method to create such situation. Any other filling method, so that tunnel through the vertical shaft would remain open underground and people can go through that are more expensive to create, more dangerous and will not create best conditions for bats.

Securing collapsing roof, seems to be most cost-effective to do with installing tube-shape culvert into the collapsing section of the tunnel. We only need to find construction company that can and is allowed to install it.

As we do not have completed yet two site specific actions under C2 and C3, their methodology can be evaluated in Final Report (objective 3 from the list above).

Evaluation of all other actions serving other objectives are given in following table. Actions are given by their code from initial application, objectives and expected results by numbers listed above in the current chapter.

Table 2. Evaluation of achievement of the expected results and meeting of the objectives of the project.

Action	Foreseen in the revised proposal	Achieved	Evaluation
A1 – prep. docs.	<p><u>Objectives:</u> To secure the hibernation sites from uncontrolled visits. To reduce the visitor flows during the hibernation period. To stop degradation of habitats caused by low temperatures, draught and collapsing.</p> <p><u>Expected results:</u> Closure and safeguarding of most important hibernacula - total number of underground site entrances affected approximately: 40. Reduced visitors' flows during the hibernation period - by 75% compared to the base level of project start. Significantly reduced temperature fluctuations and draught.</p>	<p>Achieved for three cases out of six. Needed documentation prepared and building notes in EHR for fencing in Vääna-Posti, Vääna (Humala) and Piusa. Preparation still needed for fencing-grilling in Ülgase, security culvert in Piusa and shaft filling in Vääna (Humala).</p>	<p>Objectives met on procedures for three site for fencing; deviation and difficulties still with underground work (security culvert, filling shaft and grilling). Experiences can be well replicated at least nationally, but perhaps also internationally.</p>
A2 – visitor count	<p><u>Objectives:</u> To secure the hibernation sites from uncontrolled visits. To reduce the visitor flows during the hibernation period.</p> <p><u>Expected results:</u> Closure and safeguarding of most important hibernacula in four project sites - total number of underground site entrances affected approximately: 40 Reduced visitors' flows during the hibernation period - by 75% compared to the base level of project start.</p>	<p>Yes. Visitor number counted for one year in all four project sites. Report compiled and published in web site.</p>	<p>Objective met on fixing baseline number of visitors and trend for all sites. Counting methods (either counting mat or beam-counter etc) used were good in all sites, only one counter in Ülgase was destroyed and caused small drawback, but as there was also second counter in work it did not affect the results.</p>
A3 – bat count	<p><u>Objectives:</u> To secure the hibernation sites from uncontrolled visits. To reduce the visitor flows during the hibernation period. To stop degradation of habitats caused by low temperatures, draught and collapsing.</p> <p><u>Expected results:</u> Closure and safeguarding of most important hibernacula - total number of underground site entrances affected approximately: 40.</p>	<p>Yes. Counting and mapping of bats done in all project sites for two first winters of the project life by four bat experts.</p>	<p>Objective met on counting, even mapping was done that was not foreseen. Baseline and trend fixed for Pond Bat (as well as for other bat species) population number in all project sites. No substantial drawbacks existing.</p>

Action	Foreseen in the revised proposal	Achieved	Evaluation
	Reduced visitors' flows during the hibernation period - by 75% compared to the base level of project start. Significantly reduced temperature fluctuations and draught.		
C1 – safe-guard	<u>Objectives:</u> To secure the hibernation sites from uncontrolled visits. To reduce the visitor flows during the hibernation period. <u>Expected results:</u> Closure and safeguarding of most important hibernacula in four project sites - total number of underground site entrances affected approximately: 40. Reduced visitors' flows during the hibernation period - by 75% compared to the base level of project start.	Completely done for two sites out of four. Fences placed for Vääna-Posti and Vääna (Humala). Partly done for all sites – ESS set up in all sites.	Objective met in selection of combination – standard welded fence with information signs on it and with attached video surveillance system. Drawback in set up of permanent electricity connection.
C2 – set culvert	<u>Objectives:</u> To stop degradation of habitats caused by low temperatures, draught and collapsing. <u>Expected results:</u> Significantly reduced temperature fluctuations and draught.	Planned in 2020	Delay due to more time-consuming preparatory work. Drawback on finding builder, as it is very special construction work.
C3 – filling shaft, volunt. camps	<u>Objectives:</u> To stop degradation of habitats caused by low temperatures, draught and collapsing To involve volunteers, private companies and local communities into cleaning the caves and surroundings, especially the swarming areas <u>Expected results:</u> Significantly reduced temperature fluctuations and draught. Involvement of volunteers into management actions and thus creating better understanding and commitment for nature conservation efforts in Estonia: 6 volunteer camps with approximately 100 participants are to be organised.	Achieved for volunteer camps. 7 camps with 120 volunteers altogether. Planned for avoiding degradation of habitats – shaft filling in Vääna (Humala) site.	Objective met with voluntary camps and involvement of local people – involved in all three project sites where camps were held. Temperature and humidity is regularly counted in Vääna (Humala) tunnel system during hibernation period since project start, that is success already. First agreement is also there with landowner.
D1 – monit. effect	<u>Objectives:</u> To secure the hibernation sites from uncontrolled visits. To reduce the visitor flows during the hibernation period.	Action just started, no results yet available, but counting and mapping went on with	Preliminary success towards reaching expected results is already there through ESS video

Action	Foreseen in the revised proposal	Achieved	Evaluation
	<p>To stop degradation of habitats caused by low temperatures, draught and collapsing.</p> <p>To improve the protection of target species by making the policy recommendations for management plans of bats and protected areas.</p> <p><u>Expected results:</u></p> <p>Closure and safeguarding of most important hibernacula in four project sites - total number of underground site entrances affected approximately: 40.</p> <p>Reduced visitors' flows during the hibernation period - by 75% compared to the base level of project start.</p> <p>Significantly reduced temperature fluctuations and draught.</p> <p>Suggestions and directions for the conservation management authorities to improve the conservation of the Pond Bat habitats.</p>	<p>method comparable with baseline, so that result achievement can be later easily evaluated. For policy recommendations first analysis has been done.</p>	<p>material analysis – comparison of human visitation numbers from sites with fences and ESS with those with only ESS – only three visits in fenced sites compared to many visits every week in sites with only ESS.</p>
D2 – monit. socio- econ. and eco- system	<p><u>Objectives:</u></p> <p>To raise public awareness internationally, nationally and locally.</p> <p>To present project results on national and international scale.</p> <p><u>Expected results:</u></p> <p>Suggestions and directions for the conservation management authorities to improve the conservation of the Pond Bat habitats.</p> <p>Project will reach 50 000 people by its public exhibitions, information materials, directions for dealing with the "bats-in-houses" issues, public events, online bat-watching forums.</p> <p>Project will make significant contribution to the further management and restoration of EU protected bat species in Estonia and other EU countries by sharing the experiences gained and lessons learned on the international scale in EUROBATS meetings and work groups.</p>	<p>Stakeholders from three project sites met in meetings, one such meeting still to be held. Background articles collected for ecosystem functions report.</p>	<p>Objectives partly met, as stakeholder meetings were very popular and successful.</p>

Action	Foreseen in the revised proposal	Achieved	Evaluation
E1 – network, dissemination.	<p><u>Objectives:</u> To raise public awareness internationally, nationally and locally. To present project results on national and international scale.</p> <p><u>Expected results:</u> Project will reach 50 000 people by its public exhibitions, information materials, directions for dealing with the "bats-in-houses" issues, public events, online bat-watching forums. Project will make significant contribution to the further management and restoration of EU protected bat species in Estonia and other EU countries by sharing the experiences gained and lessons learned on the international scale in EUROBATS meetings and work groups.</p>	Study tour commenced, 2 EUROBATS AC done, website has ca 20 000 and web-camera more than 60 000 visits.	Objectives partly met. Very successful study tour gave good knowledge on grilling and fencing. Expert participation in EUROBATS AC working groups have been giving good opportunity for networking with colleagues from other countries, incl. Latvia. Newly set up bat web-camera, showing pack of Pond Bats in Piusa hibernacula has been very popular among international watchers who are active also in bat camera forum.
E2 – info-boards, info-folder	<p><u>Objectives:</u> To raise public awareness internationally, nationally and locally. To present project results on national and international scale.</p> <p><u>Expected results:</u> At least 20 local tourist guides and grass-root organisations are trained for noticing and considering the bat issues. Project will reach 50 000 people by its public exhibitions, information materials, directions for dealing with the "bats-in-houses" issues, public events, online bat-watching forums.</p>	Information boards for two sites out of four and information folder completed.	Objectives partly met. Information folder with five most important bat issues for outdoor training was successfully compiled and waits now distribution to nature education centres and will be also used in nature-guide training.

Action	Foreseen in the revised proposal	Achieved	Evaluation
E3 – bat-nights, bat camera, campaigns, exhibition	<p><u>Objectives:</u> To raise public awareness internationally, nationally and locally. To use innovative approach with high-resolution bat cameras and attractive exhibitions for general public.</p> <p><u>Expected results:</u> Project will reach 50 000 people by its public exhibitions, information materials, directions for dealing with the "bats-in-houses" issues, public events, online bat-watching forums.</p>	14 bat nights out of 24 done, bat-camera working and popular (more than 60 000 visits and popular forum attached), bats announced as the animals of the year 2020 with ETS and campaign very popular, Night Flyers exhibition set up and opened at 13/02/2020	Objectives met. Bat Nights are very popular and always there are more people who want to attend than we can allow. Bat-camera is popular also internationally through actively used forum attached to it. Night Flyers exhibition has been already evaluated as very innovative, especially its virtual reality part where exhibition visitor can be a Pond Bat in hibernacula and fly out of it to summer habitats. As bats are the animals of the year 2020 in Estonia we have succeeded to be in media with articles and TV as well as radio interviews every week.
E4 – training guides	<p><u>Objectives:</u> To raise public awareness internationally, nationally and locally.</p> <p><u>Expected results:</u> At least 20 local tourist guides and grass-root organisations are trained for noticing and considering the bat issues.</p>	Planned in May 2020	We have already more than double number of candidates to the nature guides training. Small drawback is that due to COVID-19 pandemic we need to do training as e-training, but currently it seems not to affect the objectives much.

5.4. Analysis of benefits

5.4.1. Environmental benefits

Nature conservation activities in Estonia have according to our knowledge never before been done with a help of security company. Also such combination – fencing with ESS (video surveillance) has never been used for any of nature protection purpose. First results with such combination show that it is very effective and as we have involved also KKI into that work they also see already how such system will help them.

Most beneficial results for the project and its objectives achieved by the April 2020 are fences with ESS set up around all entrances to the hibernacula in Vääna-Posti and Vääna (Humala) project site. These direct nature conservation measures have resulted already to strong decrease in human visitation into these two hibernacula. We have not yet analysed bat counts done in winter 2019/2020, as these counts did end only in March and bat experts have not yet processed all data, but number of human visitation counted in Vääna-Posti has been only one person during whole winter and in Vääna (Humala) 10 persons, while year ago in winter 2018/2019 these numbers were for Vääna-Posti 140 and for Vääna (Humala) ca 300. So, it is quite obvious that fences with signs and information boards in combination with ESS are keeping people away. It is also interesting to note that incidents number since 1/01/2020 that needed security company USS to send guards to the site is very low for these two sites where fences exist – in Vääna-Posti – 0 and in Humala – 1. At the same time in these sites where we only have ESS set without fences these numbers are as follows: Piusa – 9 and Ülgase – 14.

On the other hand, ESS without permanent electricity connection is very expensive, due to frequent maintenance need, but fences without ESS are not secure enough. As it is usually quite difficult or even not possible to set permanent electricity connection into natural sites, therefore it is very crucial to make close cooperation with local stakeholders, who are active close to the sites. Educating them and perhaps in future also contracting may give the possibility to set up off-grid video surveillance systems that are online visible also to them and allow them react quickly.

We have also noticed that many landowners whose land appears to be on nature reserves, are much more cooperative than expected and one simple way to protect entrances of hibernacula would be to help landowners to set up private land signs to their land and close roads leading to the entrances. Such cooperation could also become a nature conservation standard and can be replicated everywhere around the country.

5.4.2. Economic and social benefits

In many ways during the project we have performed economic benefits. First of all, combining fencing with ESS allowed us to use standard welded panel fence instead of very expensive forged iron fence that is stronger, but many times more expensive and without surveillance it is also vandalized, as we saw in study tour to Netherlands. Secondly we managed to use existing visitor counters. Arranging voluntary camps, local stakeholders came to help with their own machines and good relationship with them allows us to plan their recruitment in future for local surveillance of the sites. In bat counts and mapping we started first time to use long distance laser measurement with special handheld device. That technique saved time for bat researchers. For public awareness rising is very much helping a bat-camera system that was elaborated as part of the project and set online in YouTube channel.

Although it was planned to train at least 20 nature guides we have planned to train at least 40. For training of nature guides we have selected especially local guides from the project site regions and actually create future job for them. Besides of local organised naturalists, we have also involved some French biology students as volunteers helping us in camp organisation, bat counts and visitor counting. In two project sites – Vääna-Posti and Vääna (Humala) we do open gates in fences for public access during the summer, so that people can visit underground tunnels during the time when bats are not there. We do plan similar possibility also for Ülgase that currently is closed all year around, but where in summer bats are not as vulnerable as during winter.

5.4.3. Replicability, transferability, cooperation and innovation

Combination of physical obstacle usage with video surveillance is not new, but is not much used in nature conservation. As there are several similar standard combinations used in other human activities, for instance construction site protection with temporary fences and temporary video surveillance, it allowed us to justify one of such systems to nature conservation use. Such combination appeared to be very effective in controlling human visitation to hibernacula. As we have tested it now and can make it more cost-effective during the project, it can be used in other similar nature conservation cases where uncontrolled human access should be taken into control. Therefore, the method has a good potential for replication in the same sector at the local and also EU level. We estimate project's likelihood of replication to be quite high, but it will still be rather policy dependant than market-driven.

We have also ourselves transferred existing technology into our project use – bat-camera system is using camera type that normally is used to detect car numbers in nearly dark situation. That was the best camera type in market to be used for complete darkness in caves, giving still quite clear image for online use.

In preparation of Night Flyers exhibition many innovative techniques have been used to set up hands on possibilities for visitors. Best of them seems to be very well done virtual reality clips that allow users to feel yourself as Pond Bat in hibernation cave, being upside-down, going to fly and fly out from the cave to summer habitats.

Cooperation seems to be basis for success in many actions of the project. We have had good cooperation with local stakeholders both in voluntary camps as well as security guarding the sites. We have had good cooperation with local municipalities in preparation of documentation for EHR. We have had good cooperation with fence builders to find out best solution for fencing in every project site. Cooperation with Saue municipality resulted to small separate contract with them on cleaning Vääna-Posti site from Soviet time and other residual waste even from larger area than was needed for the project, but still being within boundaries of protected habitat of bats. By the end of the project we would like to reach such a cooperation model that allows state institutions responsible to bat protection, to cooperate with local organised or not organised people who are enthusiasts on nature conservation so that locals get job in securing sites and arranging guided tours and at the same time state institutions can save their budget on eternal reparation of fences or expensive security company contracts.

5.4.4. Policy implications

We have noticed many weaknesses in national legislation that do not allow smoothly safeguard bats life, including Pond Bat. First such obstacle is about type of protection we have in Vääna (Humala) site. It is limited-conservation area that does not clearly allow to set up prohibition for human access

for a certain period of the year. Although it states that species or habitat should not be affected, it is not clear for visitors what they are allowed to do and what not. We will make suggestions to change protected area type there, to make it more clear.

Also appeared that there is too much bureaucracy and also lot of un-clarity on a way to perform practical nature conservation by third party. It should be eased up, because there are lot of local people and stakeholders who would do much more for nature conservation if it would be easier in preparatory and documentation phase.

Regulation of any underground action is also not very well set in Estonia. Also ownership of underground facilities is not clear. We are planning to ask juridical help on that from Estonian Environmental Law Centre. Until it is not so clear we will try to keep good cooperation with private landowners above underground hibernacula and compile as clear as possible amendments for protection rules of protected sites where hibernacula are.

One of the best practice lessons during the project is certainly ELF cooperation with local stakeholders (private-private cooperation) and also cooperation between KKI and USS (public-private cooperation). We would certainly like to promote more public-private cooperation in nature conservation, as we have seen a lot of voluntary interest by local landowners and other stakeholders in performing nature conservation. Controlling human access to hibernacula that are on private land helps also private owners to control human access to their property.

Other such best practice might be a combination of military defence, national heritage and nature conservation so that it will be win-win for all of them. As one of the project sites is on the private land, owned by state military organisation Estonian Defence League and maintained currently by private military organisation Riigikaitse Rügement and hibernacula is in historical military object that is at the same time national heritage site, there is a combination of different interests. Still, these interests can be combined, as there is one common part in them – public presentation and training. Combined nature trips and voluntary camps could be easily organised, so that all three stakeholders will gain from them.

6. Key Project-level Indicators

Following key project-level indicators were set for current project in 2018 with baseline values and a current status:

D. Project setting, area/length and population

Indicator code	Indicator name	Specific context	Descriptor	Start value	End value	Status in April 2020	Unit
1.5	Project area/length	Safeguarding Pond Bat hibernacula	Conservation or improvement of the status of an area or segment	0	26	2 (26)*	Km
1.5	Project area/length	Awareness rising on Pond Bat in EE	Conservation or improvement of the status of an area or segment	0	45227	45227	Km ²
1.6	Humans (to be) influenced by the project	Safeguarding Pond Bat hibernacula	Persons concerned by the project independent of the project area	0	2000	60000	Humans influenced by the project
1.6	Humans (to be) influenced by the project	Awareness rising on Pond Bat in EE	Persons concerned by the project independent of the project area	0	60000	1300000	Humans influenced by the project

*Completely safeguarded both with fences and ESS are 2 km, but with only ESS 26 km.

E. Environmental and Climate action outputs and outcomes

Indicator code	Indicator name	Specific context	Descriptor	Start value	End value	Status in April 2020	Unit
7.4	Wildlife species	Safeguarding Pond Bat hibernacula	Annex II Habitats Directive species. <i>Myotis dasycneme</i> / Mammals	26	26	2 (26)*	length of inhabited feature in km
7.4	Wildlife species	Safeguarding Pond Bat hibernacula	Annex II Habitats Directive species. <i>Myotis dasycneme</i> / Mammals	760	760	741	number of individuals
7.4	Wildlife species	Safeguarding Pond Bat hibernacula	Species Trend	unknown	stable	no data yet	
7.4	Wildlife species	Safeguarding Pond Bat hibernacula	Species Status	Unfavourable – inadequate (U1)	Favourable (FV)	Favourable (FV)	

*Completely safeguarded both with fences and ESS are 2 km, but with ESS only 26 km.

F. Societal outputs and outcomes

Indicator code	Indicator name	Specific context	Descriptor	Start value	End value	Status in April 2020	Unit
10.2	Involvement of non-governmental organisations (NGOs) and other stakeholders in project activities	Awareness rising on Pond Bat in EE	Individuals	5	25	25	number of individuals
10.2	Involvement of non-governmental organisations (NGOs) and other stakeholders in project activities	Awareness rising on Pond Bat in EE	NGO	1	4	5	number of stakeholders involved due to the project
11.1	Website	Awareness rising on Pond Bat in EE	Average visit duration (minutes)	0	1	1,47	Number
11.1	Website	Awareness rising on Pond Bat in EE	No. of individuals	0	15000	19075	Number
11.1	Website	Awareness rising on Pond Bat in EE	No. of unique visits	0	7500	14790	Number
11.1	Website	Awareness rising on Pond Bat in EE	No. Downloads	0	25	160	Number
11.2	Other tools for reaching / raising awareness of the general public	Awareness rising on Pond Bat in EE	Hotline / information centre	0	1	1	Number
11.2	Other tools for reaching / raising awareness of the general public	Awareness rising on Pond Bat in EE	Publications/ reports	0	5	2	Number
11.2	Other tools for reaching / raising awareness of the general public	Awareness rising on Pond Bat in EE	Displayed information (poster, information boards)	0	4	4	Number
11.2	Other tools for reaching / raising awareness of the general public	Awareness rising on Pond Bat in EE	Other media (video /broadcast)	0	145	54	Number
11.2	Other tools for reaching / raising awareness of the general public	Awareness rising on Pond Bat in EE	Print media	0	70	135	Number
11.2	Other tools for reaching / raising awareness of the general public	Awareness rising on Pond Bat in EE	Events / exhibitions	0	1	1	Number
12.1	Networking	Networking in boreal region	Professionals	0	7	5	No. of individuals
12.2	Professional training or education	Training guides in EE	Professionals	0	20	0	No. of individuals

G. Economic outputs and outcomes

Indicator code	Indicator name	Specific context	Descriptor	Start value	End value	Status in April 2020	Unit
13	Jobs	Awareness rising on Pond Bat in EE	Jobs	0	7	4	No. of FTE
14.1	Running cost / operating costs during the project and expected in case of continuation / replication / transfer after the project period	Safeguarding Pond Bat hibernacula	Running cost / operating costs during the project and expected in case of continuation / replication / transfer after the project period	0	972395	476234	€
14.2.2	Operating expenses expected in case of continuation / replication / transfer after the project period	Safeguarding Pond Bat hibernacula	Operating expenses expected in case of continuation / replication / transfer after the project period		600000*	476234	€
14.3	Future funding	Safeguarding Pond Bat hibernacula	Grants, subsidies		500000*	0	€
14.4.1	Entry into new entities / projects	Training guides in EE	Continuation			Starting	
14.4.1	Entry into new entities / projects	Safeguarding Pond Bat hibernacula	Continuation			continuing	
14.4.1	Entry into new entities / projects	Safeguarding Pond Bat hibernacula	Replication			not yet replicated	

*Beyond end value

Almost half of the KPI indicator target values are already met or exceeded (14 indicators out of 29). Close to the other half are well on the right track (11 out of 29). Remaining 4 indicators are those last ones that are set for future.

7. Comments on the financial report

7.1. Summary of Costs Incurred

PROJECT COSTS INCURRED			
Cost category	Budget according to the grant agreement in €	Costs incurred within the reporting period in €	%
1. Personnel	358350	212875	59,4
2. Travel and subsistence	32700	15755	48,2
3. External assistance	343420	139606	40,7
4. Durables goods: total <u>non-depreciated</u> cost			
- <i>Infrastructure sub-tot.</i>	34550	1290	3,7
- <i>Equipment sub-tot.</i>	74000	45723	61,8
- <i>Prototype sub-tot.</i>			
5. Consumables	9100	5375	59,1
6. Other costs	56775	24482	43,1
7. Overheads	63500	31127	49,0
TOTAL	972395	476234	49,0

Individual (ELF ja ELM) and Consolidated Financial Statements are given in Annex 17.

ELF do not see yet need to transfer any costs between different budget categories, but it may appear in coming months that we may need to transfer some remaining amount from External assistance C1 to Infrastructure C2, because set up the culvert may be much more expensive as previously expected. But as we do not have yet any bid for that as well as we do not yet know how much will be remains under External assistance C1, we would rise that issue when these matters are clarified.

We propose to transfer some of the costs within following budget categories:

- In personnel cost category our leading bat expert has used more man-days as expected for actions A2, C1 and E3, but less man-days for A1 and A3. Therefore, we would like to transfer remaining amounts from A1 and A3 (5534,77 €) to other actions, especially to cover minus under A2, C1 and E3 (total minus is 4075,70 €), but also for C3 and D2 that are not yet in minus, but are very low (619,08 €). All mentioned actions C1, C3, D2 and E3 are still going on and need still bat expert input.
- In travel costs we need to transfer remains from A3 (2731 €) and A2 (531 €) into D1 (863 €) and D2 (164 €), as all these actions are on monitoring, but D actions do not have enough amount for travel.
- In external assistance we are overusing already amount for security watch, but at the same time underuse amount for placement of restrictions that are both under action C1, so we would shift between them amounts needed.
- In consumables cost category in application there is only marked as that cost category is only for action A3, but it has been needed also for actions A2, C1, C3, D1, E2 and E3. We have already used some amounts for C1, C3 and E2 (658,76 €) that we consider as consumables.

ELM has to transfer some costs from one cost line to another in budget. All exhibition curators have travelled during the exhibition preparation period. So, their travel costs should also be eligible. There is no contract considering their work in project and so we are transferring their travelling costs to other costs. In addition, the taxidermical work was done by company Mägraug OÜ. These costs should be transferred under external assistance. And, the educational materials were made by an NGO, which means that we have to transfer these costs to external assistance as well.

7.2.Accounting system

The accounting systems of all beneficiaries allows for separating project expenses from other expenses. This was done using unique codes, which were associated with corresponding expenses (invoices, expense receipts) when registering expenses in the organisations' accounting. All beneficiaries adopted project-based accounting from beginning of the project.

ELF. All the project cost documents include a clear reference to the project – invoices the acronym of the project and project number as follows: EstBatLIFE LIFE16 NAT/EE/000710

Other cost documents (statements of expenditures and travel expenses) are marked with project stamp. Invoices are accepted when the title of the project as well as the financial code are marked on it. After receiving of the invoice, it is checked if there are the correct requisites and the reference to the LIFE project, as well as if it is in accordance with the project budget. Thereafter the invoice signed by the project manager and approved by Member of Executive Committee. Only after that it is delivered to the accountancy and the payment is carried out. All the project entries in the ledger have a separate object identifier that allows to see the project income and expenses. The LIFE project object identifier in accounting system in ELF is BAT-LIFE. Employees fill timesheets on daily basis, filling manually an Excel-based reporting sheet. Both LIFE template timesheet and ELF's own are in use. Timesheets record both the time spent on given project and total working hours of employee. Timesheets are checked and approved by the Chairman of Executive Committee during the first week of the following month as salaries are being paid by 8th day of the month. All the LIFE project staff members have agreements for the duration of LIFE project. The original project documentation is kept at the accounting department and in the electronic document management system Folderit. Each year a yearly project budget is prepared and approved to follow the project expenses.

ELM. Unique codes identifying the project costs in the accounting systems. The code for EstBatLIFE costs is L60-18KIK14264. Cost approving procedures: Invoices and expense receipts (here and after cost document) are submitted to the project manager, who is checking their accuracy and conformity with project requirements (incl. references to the project - number and acronym). The project manager entering cost document in the internal document system and accepting it. In this system there is a separate field for project code and it is obligatory to fill it. After that the project accountant submitting the cost document for payment. Working trip order before the trip and report (incl. financial report and cost documents) after the trip are both approved by the director of the Museum. The system is electronic and it has also the obligatory field for project code. In addition, the explanation of the trip consists project number and acronym. If it is not possible to add to the cost document project references the special project stamp is used. This is usually the case of gasoline bills and bus/train tickets. ELM project coordinator is working with load 0,34 and is filling also timesheets. They are kept manually and approved by the director of the ELM. Timesheets are regularly submitted to ELF financial manager.

7.3. Partnership arrangements

There is only one associated beneficiary and transactions from coordinating beneficiary to them have been done smoothly upon the request and after receiving relevant documentation. According to partnership agreement associated beneficiary delivers financial reports to coordinating beneficiary after every six months. Coordinating beneficiary compiles consolidated cost statement and delivers financial reports with project reports and according to Grant Agreement.

7.4. Certificate on the financial statement

Not relevant because according to updated LIFE rules, none of the beneficiaries are liable for an audit. None of them receives an EC contribution above €750,000.

7.5. Estimation of person-days used per action

Action type	Budgeted person-days	Estimated % of person-days spent
All projects when applicable Action A: Preparatory actions	300	83,7
NAT and CLIMA projects Action B: Purchase/lease of land and/or compensation payment for payment rights		
ENV projects Action B: Implementation actions		
GIE projects Action B: Core actions		
NAT projects Action C – Concrete conservation actions	70	115,2
CLIMA projects Action C: Implementation actions		
ENV and GIE projects Action C: Monitoring of the impact of the project action		
NAT and CLIMA projects Action D: Monitoring and impact assessment		
ENV and GIE projects Action D: Public awareness/communication and dissemination of results		
NAT and CLIMA projects Action E: Communication and Dissemination of results	627	33,3
ENV and GIE projects Action E: Project management		
NAT and CLIMA projects Action F: Project management (and progress)	1825	56,9
TOTAL	2982	55,4

8. Envisaged progress until next report

Actions / sub-actions		2017				2018				2019				2020				2021				Envisaged progress until the final report by 30/06/2020		
		1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T			
Overall project schedule	Proposed			O	01/07/2017								30/04/2020									O		Carry on according to the project agreement
	Actual			●									●										●	
P=Progress report; M=Midterm report; F=Final report																								
A1	Proposed				■	■	■	■	■															Finalise building notes for remaining construction
	Actual				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
A2	Proposed				■	■	■	■	■	■	■	■												Completed
	Actual				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
A3	Proposed				■	■	■	■	■	■	■	■												Completed
	Actual				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
C1	Proposed								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	Perform remaining construction works and set up electricity connections
	Actual								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
C2	Proposed												■	■										Place the culvert to the tunnel in Piusa
	Actual												■	■	■	■	■	■	■	■	■	■	■	
C3	Proposed												■	■	■	■	■	■	■	■	■	■	■	Filling the shaft in Vääna (Humala) project site
	Actual												■	■	■	■	■	■	■	■	■	■	■	
D1	Proposed												■	■	■	■	■	■	■	■	■	■	■	Monitoring of the actions effect and report done
	Actual												■	■	■	■	■	■	■	■	■	■	■	
D2	Proposed			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	Meeting in Ülgase and reports on socio-economic impact and ecosystem function
	Actual			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
E1	Proposed			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	EUROBATS meetings attended, workshops held in Latvia, final event done
	Actual			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
E2	Proposed								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	Information boards placed in all project sites
	Actual								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
E3	Proposed								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	At least 10 Bat Nights held, bat camera operating
	Actual								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
E4	Proposed												■	■										Training for the tourist guides carried out
	Actual												■	■	■	■	■	■	■	■	■	■	■	
F1	Proposed			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	Project well managed, deliverables and meetings done
	Actual			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
F2	Proposed			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	At least one SC meeting arranged, After-LIFE plan discussed and approved
	Actual			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	

Before next reporting deadline ELF is planning to finalise documentation and order conservation activities in all project sites. Go on with visitor counting, winter counting and monitoring conservation effect. Arrange at least 10 Bat Nights. Participate in EUROBATS meetings and arrange cooperation meetings in Latvia. Place information boards to the remaining two project sites. Arrange training of nature guides. Organise at least one SC meeting as well as final event of the project.

ELM is planning to keep the exhibition open and have additional open air exhibition in the central park of Tallinn.

INDEX of deliverables

Technical design documentation (A1) / Construction drawings and building permits (A1) – Annex 1

Report on the seasonal visitation flows in project sites (A2) – Annex 2

Report on the counts (A3) – Annex 3

Night Flyers exhibition educational materials (E3) – Annex 4

Projects information leaflet (E2) – Annex 5

Training programme for the tourist guides (E4) – Annex 6

Preliminary report on socio-economic impact (D2). Table of contents – Annex 7

Preliminary report on ecosystem functions (D2). Table of contents – Annex 8

INDEX of milestones

Information boards placed in all project sites (E2) – Annex 9

Conception and schema for the exhibition established (E3) – Annex 10

Terms of reference for the monitoring are established (D1) – Annex 11

ANNEXES

- Annex 1.** First three approved and officially noted building notes from EHR (*in Estonian*). Building notes for fencing in Vääna-Posti in Saue municipality; Vääna (Humala) in Harku municipality and Piusa in Võru municipality with all attached documents to them, including building sketches. **Part of the deliverables within action A1 - Technical design documentation / Construction drawings and building permits.**
- Annex 2.** Report on the seasonal visitation flows in project sites (*in Estonian*). **Deliverable within action A2.**
- Annex 3.** Report on the counts (*in Estonian*). **Deliverable within action A3.**
- Annex 4.** Night Flyers exhibition educational materials (*in Estonian*). **Deliverable within action E3.**
- Annex 5.** Projects information leaflet (*in Estonian*). **Deliverable within action E2.**
- Annex 6.** Training programme for the tourist guides. **Deliverable within action E4.**
- Annex 7.** Preliminary report on socio-economic impact. Table of contents. **Part of the deliverable within action D2.**
- Annex 8.** Preliminary report on ecosystem functions. Table of contents. **Part of the deliverable within action D2.**
- Annex 9.** Information boards in Vääna-Posti and Vääna (Humala) project sites. **Part of the milestones within E2.**
- Annex 10.** Conception and schema for the Night Flyers exhibition. **Milestone within E3.**
- Annex 11.** Terms of reference for the monitoring of the effect of project actions. **Milestone within D1.**
- Annex 12.** Memos and presentations of the meetings with KEM, KEA, RMK, MKA and Defence League (*in Estonian*).
- Annex 13.** Memos and presentations of the SC meetings (*in Estonian*).
- Annex 14.** Memos and presentations of the project monitoring meetings (*in Estonian*).
- Annex 15.** Purchase of the fieldwork car.
- Annex 16.** Media monitoring table and statistics of the website visits.
- Annex 17.** Individual (ELF and ELM) and Consolidated Financial Statements.