

(Projects funded under the Call 2014 onwards must use this format)



LIFE Project Number

< LIFE14 NAT/IT/000209 >

### Mid-term

Covering the project activities from 01/01/2016<sup>1</sup> to 30/11/2018

Reporting Date<sup>2</sup>

<15/12/2018>

LIFE PROJECT NAME or Acronym

< LIFE EREMITA >

#### Data Project

<b>Project location:</b>	Emilia Romagna, Italy
<b>Project start date:</b>	01/01/2016
<b>Project end date:</b>	31/12/2020 <b>Extension date:</b> <dd/mm/yyyy >
<b>Total budget:</b>	€ 2,126,987
<b>EU contribution:</b>	€1,268,863
<b>(%) of eligible costs:</b>	59.66%

#### Data Beneficiary

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<sup>1</sup> Project start date

<sup>2</sup> Include the reporting date as foreseen in part C2 of Annex II of the Grant Agreement

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## 2. List of key-words and abbreviations

GA: grant Agreement

PR1: First Progress Report

MR: Mid Report

CB: Coordinating Beneficiary

AB: Associated Beneficiary

RER: Emilia-Romagna Region

MAR: Romagna Parks and Biodiversity Management Agency

MEOR: Eastern Emilia Parks and Biodiversity Management Agency

MEOC: Western Emilia Parks and Biodiversity Management Agency

MEC: Central Emilia Parks and Biodiversity Management Agency

PNATE: Tuscany-Emilia Apennines National Park Agency

PNFC: Casentino, Monte Falterona and Campigna forest National Park

PM: Project Manager

TC Technical coordinator

ISPRA: Istituto Superiore per la Protezione e la Ricerca Ambientale

BCWT: Black cross window traps

WMS: Wood mould sampling

VES: Visual encounter survey

PT: Pitfall trap

WMB: Wood Mould Box

GIS: Geographical information system

### 3. Executive Summary

Five preparatory actions out of seven have been completed: A1, A2, A3, A4, A6. Action A5, which concerns volunteering, is regularly underway in accordance with the schedule of the project: two volunteer recruitment campaigns have been carried out. In total, to date, after a first training course held in the first year (2016), in the 6 AB areas, 40 volunteers were involved in 2016/17 and 43 volunteers in 2018, with a fast turn over. The volunteers were involved in the three main types of activities: monitoring, conservation (C4, breeding), as well as communication and information actions. One Eremita festival has been organised out of the four that are envisaged, and two more have already been scheduled for 2019. The organization is being entrusted to an external company that will also take care of the entertainment and production of promotional objects and gadgets (foreseen in action E6). The ex-ante monitoring actions on the four target species and their living environments have been completed. Monitoring was extended to a period of two years, instead of only one year as planned (EASME B3/MMR/ D(2017) 3790763 of the 03/07/2017 and EASME B3/MMR/hm/D(2018)4243625 of the 17/07/2018), thus also creating a delay in the start of conservation actions, yet the extension allowed the gathering of more detailed data and knowledge on the species and to cover a number of SCIs that was twice the expected. With regard to the results of the A2 action on the Emilia-Romagna territory: for *O. eremita*, monitoring was carried out on 32 Natura 2000 sites in 2016 and 2017 and the species was found overall with 85 individuals, 20 of which in 2016 and 65 in 2017; for *R.alpina* the monitoring developed on 13 Natura 2000 sites and the species was found overall with 110 individuals, 47 of which in 2016 and 63 in 2017. In 2017, three holes on trees were also detected, thus confirming the species' presence. For *C.mercuriale*, monitoring was carried out on 7 Natura 2000 sites and the species was found with 1912 individuals overall in 2016 and 1695 individuals in 2017. For *G.bilineatus* the monitoring developed on 14 Natura 2000 sites and the species was found with 6 individuals overall, 5 of which were spotted in 2016 and 1 in 2017, in a single site at Lago Pratignano. Method standardisation has proved crucial to obtain data on a large scale, usable as future term of comparison. With regard to action A3 for *O. eremita*, 1,757 habitat trees were surveyed, catalogued and geo-referenced: 164 of them present high suitability; 533 average suitability; 118 low suitability and 942 no suitability. With reference to *R. alpina* 1,112 habitat trees have been surveyed, catalogued and geo-referenced: 318 of them present high suitability; 198 average suitability; 491 low suitability and 105 no suitability. As far as the A4 action for *G.bilineatus* is concerned, 127 transects were surveyed, catalogued and geo-referenced in 110 basins: 25 of them exhibit high suitability; 18 average suitability; 16 low suitability and 68 no suitability. For *C. mercuriale*, 110 transects were surveyed, catalogued and geo-referenced in 81 water courses, 20 of which exhibit high suitability; 11 average suitability; 19 low suitability and 60 no suitability. The mapping of species' habitats together with that of the distribution of the 4 target species, allowed the elaboration of the Action Plan foreseen in Action A7. The Action Plan was drawn up containing all the foreseen points (action plan foreseen in C1 and C2, identification of the sites for the WMB installation, feasibility study for sampling, breeding and release to the wild for *O. eremita*, translocation plan (withdrawal and entry points) for *C.mercuriale*. For the breeding of *G. bilineatus* it has been estimated that the population of Lago Pratignano, the only site of certain presence in Emilia-Romagna, does not have a consistency sufficient for the withdrawal of founders, therefore it was necessary to move to a planned contingency plan, which led to the request of a substantial change, sent jointly with this report. Action A6 on the "Ex-ante survey on the opinions of the main stakeholder groups "was carried out: about

15,000 questionnaires were distributed and filled by approximately 3,700 persons aged between 16 and over 66, covering the whole project territory.

With the results of the preparatory actions, the first specific objective of the project that concerns "the increase of knowledge concerning the presence / absence, distribution and abundance of the residual sub-populations of the target species in the project area" was achieved.

Among the conservation actions, action C.6 is completed. The results of the action were achieved: 3 integrated databases and supporting GIS; a system of Web interfaces for consulting / implementing data through three access masks with also the function of a web application accessible from various devices (annexed in this Report, Folder: Deliverable - C6\_System\_Web\_technology ); involvement of volunteers in data updating. The deliverable was delivered late due to the prolongation of monitoring activities and therefore also the definition and identification of the various types of conservation actions. Action C1 is under way, currently 309 habitat trees for *O. eremita* and 432 for *R. alpina* have been created. At the date of this report, approximately 50% of the set quantitative objectives have been achieved. The C2 action has not yet started, the executive project of the interventions for the recovery and improvement of the habitats for *C.mercuriale* in the MAR has been drafted and approved with the necessary authorisations, but the works have not yet been carried out, and they should be completely implemented by spring 2019. No intervention was designed to improve the habitats of *G.bilineatus*: on one hand the species is present in only one site, on the other the monitored sites that are suitable for the species do not require intervention. The C3 action is in progress. Currently around 92 of the 150 WMBs have been installed and the remaining 58 are being installed as planned. For *R. alpina*, sites were mapped as to where to create stacks and tripods suitable for the species, to allow different generations to complete the biological cycle. After the ex-post monitoring, the expected results will be quantified.

With regard to C4 action, three breeding facilities are in operation, but only the reproduction of *O. eremita* is in progress due to the lack of reproducers of *G. bilineatus*. For this species, a request for a substantial modification of the project is underway (request of Amedement, annexed in this Report). Currently there are 2,055 larvae of *O. eremita* already available, at various age stages. Two informative/training thematic workshops were held, the first one addressing the project's technical staff and the second the guides/educators involved in environmental education activities (C7).

As far as ex-post monitoring actions are concerned, only action D1, which takes place in parallel with action C4, has begun. Even though still at an early stage of breeding, the indices identified to monitor action C4 have been calculated. They are:

- 1) Number of reproduction sites created / number programmed = 3/3;
- 2) Number of reproducers made captive for each species *O.eremita* = tot. 239 + 93 larvae collected in nature for PNFC;
- 3) Number of larvae produced (different stages) for each species/ number of adult individuals made captive = *O.eremita*: (631 + 456 + 968) = 2055/239 (A);
- 4) Number of progeny to sexual maturity/total number of specimens made captive= Datum not yet significant;
- 5) Growth rate of captive species = Datum not yet significant;
- 6) Development of pathologies = Necrosis of probable fungal origin.

The remaining monitoring actions will be activated as soon as the C1, C2, C3 and C5 actions have been completed.

All dissemination actions are underway with two exceptions (E3, E6) scheduled at the end of the project. The website, published on schedule, is periodically updated, and in this phase it is undergoing graphical and structural updating (E1) <https://progeu.regione.emilia-romagna.it/it/life-eremita>.

The identifying look of the project is recognizable and by now well known to the sector through its logo and the related graphic style of dissemination products; signs were enhanced using project cost savings, with the production of a greater number of notice boards of different types: 20 Roll-UP information panels for interiors; 20 information panels for the outdoor; 3 information panels for breeding centres; n.150 rectangular plates for WMBs (E4). A specific environmental education project has been developed with the planning of the activities of the various ABs. To date 3,563 students and 142 classes have been involved in environmental education activities dedicated to the project. 32 awareness-raising meetings have been organised involving different targets representative of the citizens, during which the project was presented (E2). 21 editions of the Palaeremita Tour were held, cared for by the PNATE, 16 editions will be produced by the PNFC starting from the spring of 2019 (E7). Two informative brochures were produced (one at the beginning and one in 2018), as well as two technical publications (in a single volume), various paper-based publications (posters, bookmarks, notebooks, etc.), and an educational kit with a notebook, stickers, magnets and poster (E2). 50 backpacks with the Eremita logo have been produced. 32 press releases were published as news on the project website and a Facebook page, which was not envisaged by the project, was created and is active with 739 followers (E8).

Despite an initial delay of the monitoring activities, the project is quickly recovering; a greater effort by the entomologists allowed a more precise and detailed knowledge picture of the 4 species. The breeding of *O.eremita* is under way and the results are excellent, many conservation interventions have been carried out or are being carried out, and an alternative strategy has been defined to deal with the impossibility of recovering founders for *G. bilineatus* from Lago Pratignano. The request for extension of the current project is crucial for the achievement of the expected results for the *G. bilineatus*, using specimens from other Member States, instead of restocking with specimens produced by ex-situ breeding. The emergency plan required genetic analysis, due the absence of bibliographic information. Only after obtaining the results on genetic variability we could move on researching donor sites for restocking. A network activated with 15 research groups at European level allowed the selection of 3 institutions with which we are already collaborating for the definition of a feasibility study for the restocking of *G.bilineatus*. In the absence of an extension of the project it will not be possible to carry out the alternative plan and increase the possibilities of conservation of the species.

## 4. Introduction

The project involves the Emilia-Romagna Region as the Coordinating Beneficiary together with four Managing Bodies of the regional protected areas and two National Parks, as managers of the Natura 2000 sites within them, and also involves many other sites of the Natura 2000 Network currently managed by the Region itself, for a total of 78 sites.

The project aims to ensure the best conditions for the conservation, in Emilia-Romagna for the medium and long term, of the residual populations of two saproxylic insects of priority conservation interest (*Osmoderma eremita* and *Rosalia alpina*) and of two lentic and lotic water insects of community interest (*Graphoderus bilineatus* and *Coenagrion mercuriale castellanii*), acting on the threat factors of anthropic origin.

*Osmoderma eremita* (Scopoli, 1763), a priority species included in Annexes II and IV of the Habitats Directive 92/43 / EEC, assessed as "near threatened" by IUCN, is a saproxylic insect linked to the deciduous forests of temperate Europe. In Europe it is in decline. The main threat factor for the species is the extreme fragmentation and isolation of populations, often corresponding to a strong localisation of suitable habitats. The causes are to be found in the ways forest management is carried out, exclusively or mainly for productive purposes and

the lack of large decayed and dying trees - even isolated or in groups - in pastoral-forestry contexts, in agro-ecosystems and in other anthropized environments, from the plains to the mountains.

*Rosalia alpina* (Linnaeus, 1758), priority species included in Annex II and Annex IV of the Habitats Directive 92/43 / EEC; assessed as globally of "least concern" in Europe by the IUCN but as "threatened" in several European countries. It is a cerambycidae beetle linked to mature beech-woods from the mountain to the subalpine (between 600 and 1500 m.a.s.l.). The species is undergoing a fragmentation of its habitat in Europe, which has led to the existence of isolated populations, which may pose a threat to this species, as it is a saproxylic beetle with a low dispersion capacity.

*Graphoderus bilineatus* (DeGeer, 1774) is a species included in Annexes II and IV of the Habitats Directive 92/43 / EEC, in Appendix II of the Berne Convention and classified as "vulnerable" by the IUCN because it is rare and in strong decline in most of Europe and extinct in some European countries. It is a sedentary and strictly aquatic species, a relic of the beginning of the post-glacial period. In Emilia - Romagna and in Italy the species is present in a single site, Lago Pratignano (MO), and is strongly threatened by the lack and fragmentation of suitable habitats and by the presence of alien predator species.

*Coenagrion mercuriale castellanii* (Roberts, 1948) is a dragonfly included in Annex II of the Habitats Directive 92/43 / EEC and in Appendix II of the Berne Convention and in particular it is among the species that need special measures for habitat conservation. The species is assessed as "vulnerable" by the IUCN and globally threatened. Later on it was assessed as "near threatened" by the IUCN and declared in decline in its area of distribution. In Italy, the IUCN-Italy commission assessed it as "vulnerable" but in strong decline in northern Italy. The dragonfly is indeed rare and in decline throughout the European range. The main threats are: reduction of the suitable habitat and/or its alteration; excessive isolation of relict and residual populations.

Concrete conservation actions are implemented in an integrated and coordinated way among all partners to pursue specific objectives that contribute to improving the conservation status of these insect species and their habitats, while allowing them to expand their distribution range in Emilia - Romagna and ensuring their survival over time.

The specific objectives are: to increase the knowledge on the presence/absence and distribution of sub-populations in Emilia-Romagna; increase the availability of habitats for residual populations and improve their connectivity; develop a long-term management strategy, through the development and implementation of management plans and specific conservation measures; to promote correct behaviour - compatible with the needs of habitat and species protection - by interest groups; to involve citizens and the various stakeholders to spread a greater naturalistic culture, to raise awareness on respecting ecosystem balances and to overcome commonplaces and paradigms on insects, with an increased awareness of the importance of their role, for humankind, in the ecosystem.

The concrete conservation actions, partly already implemented, concern: habitat creation and restoration interventions to guarantee adequate availability of reproductive sites; ex situ reproduction (captive breeding), in particular for *O. eremita*, to provide specimens for restocking/reintroduction to reinforce natural populations; installation of nest boxes, Wood Mould Boxes, for the reproduction in situ of *O. eremita* thus favouring the natural dispersion of the species; drafting of multi-annual operational programs for the management /conservation of the species; carrying out information and awareness campaigns aimed at the public opinion and stakeholders.

The wide geographic scale to which project actions refer is undoubtedly a unique experience also for the European context. The joint work between various parties involved ("Management Bodies of Macro-areas for Parks and Biodiversity", National Parks and the

Emilia-Romagna Region) and the various stakeholders, is a practice that will remain stable over the medium and long term to allow a synergic and systemic effort for the conservation of the four target species, but also for the benefit of other species of insects to be protected, linked to the forest and aquatic environment.

Expected results:

300% increase in the availability of habitats for *O. eremita* in the Emilia-Romagna Region; 200% increase in the availability of preferential habitat for *R. alpina* in the Emilia-Romagna Region; 900% increase in the availability of habitats for *G. bilineatus* in the Emilia-Romagna Region; 900% increase in the availability of habitats for *C. mercurialis* in the Emilia-Romagna Region; 50% increase in the *O. eremita* area of presence in the project area; 50% increase in the area of direct presence of *Rosalia alpina* in the project area; 600% increase in the area of presence of *G. bilineatus* in the Emilia-Romagna Region and at the national level; 600% increase in the presence of *C. mercurialis* in the Emilia-Romagna Region; 100% increase in the numerical consistency of *O. eremita* in the project area; 80-100% increase in the number of *Rosalia alpina* individuals in the project area; 400% increase in the number of individuals of *G. bilineatus* in the Emilia-Romagna Region and at the national level; 400% increase in the number of *C. mercurialis* individuals in the Emilia-Romagna Region. The project will involve 100% of the stations with the presence of *G. bilineatus* and *C. mercurialis* at the regional level.

The project will involve 100% of the sites of the RN2000 managed by project partners with an established or presumed presence of *O. eremita* and *R. alpina*. It is estimated that the project activities involve 100% of the sub-populations present in the project area.

## 5. Administrative part

Project coordination and management are under the responsibility of BC. The organisational structure includes a BC Project coordinator (Monica Palazzini), who works as part of the staff with the Project manager and Technical Coordinator (Cristina Barbieri - sub-contractor), with the Entomological support (Roberto Fabbri - sub-contractor). To aid the project manager, BC made available a support structure for the technical and administrative aspects as well as for the communication activities. Each AB appointed the project's contact persons: technical, administrative and communication. The organisational chart is reported in Technical Annex (annexed in this report, Folder: Other documents - Technical\_annex.pdf)

The project manager is in charge for:

- supervision of the technical aspects of the project partners' activities;
- support communication between the different partners and technical-administrative aspects;
- coordination between partners for joint activities;
- control of the consistency of the activities with respect to the times and deliverables provided by the various Project Actions;
- Support to the CB and ABs regarding the rules for eligibility of expenditure and reporting;
- organization of periodic meetings of coordination and drafting of minutes;
- drafting of the reports foreseen by the project for the technical-scientific aspects;
- communication activities with the EC and the external monitoring team.

The Activity Plan (Action A1) defines for each action the activities to be carried out, implementation methods, results, deliverables and milestones, and the role of each beneficiary.

The co-ordination between the beneficiaries is ensured by the Project Manager and the Technical Board (comprising the technical representatives of all partners) and the Administrative Board (administrative representatives).

The documentation is updated quarterly (as established in the partnership agreement) and filled in the groupware system of the Emilia-Romagna Region, to which all the beneficiaries' representatives have access with different rules.

All partner agreements have been signed and drafted following the guidelines published by the Committee and explicitly referring to the General Conditions ANNEXED TO THE PR1 .  
FOLDER: A1\_Deliverable\_1.

All beneficiaries equipped themselves with a project-related analytical accounting system and identified the resources responsible for managing payments and spending commitments.

## 6. Technical part

### 6.1 Technical progress, per Action

#### 6.1.2 ACTION A.1: Preliminary meeting, draft and signing of agreements, annual activity plan

Foreseen start date: 01/01/2016

Actual start date: 01/01/2016

Foreseen end date: 30/06/2016

Actual end date: 30/06/2016

*Beneficiary responsible for implementation:* RER

The preliminary meeting took place on 10/02/2016 at the presence of all beneficiaries (CB and AB) during which the administrative and technical procedures were defined.

The project was approved by the Emilia-Romagna Region with Resolution No. 1733/2015 In which occasion also the Draft of the Partnership Agreement (Milestone) was approved. All Partnership Agreements were signed between CB and AB within February 2016. Annexed to the PR1 (Folder: Deliverable, file: A1\_Deliverable\_1).

The work plan was drawn up within May 2016, where all project actions were analysed and protocols required to implement the activities were agreed. Annexed to the PR1(Folder: Deliverable file: A1\_Deliverable\_2).

Administrative and technical representatives were appointed by each individual beneficiary within March 2016. Annexed to the PR1 (Folder: Milestone -A1\_Milestone\_3)

All Entomologists (involved in Actions A2, A3, A4) were selected through selection procedures within the month of May 2016 and they signed their assignments within June 2016.

Macroarea	Entmologist	Period	Note
MAR	Ecosistema S.c.a. rl Andrea Serra	from 6/7/2016 to 5/2/2017	for the entomologist assignment, the budget was transferred from "Direct Personnel Costs" to "External assistance costs" due to impediments and long periods of administrative wait for summoning the selection procedures. The assignment was entrusted to "Ecosistema S.r.l." (Mr. Andrea Serra.)
MEC	Davide Malavasi Silvia Maria Stefanelli	from 4/06/2016 to 30/06/2017 from 4/06/2016 to 30/06/2017	Silvia Maria Stefanelli Rocca resigned her post through resignation letter dated June 16, 2018.
MEOC	Francesca della Rocca Davide Malavasi	from 20/06/2016 to 31/07/2016 from 1/3/2017 to 31/12/2020	Francesca della Rocca resigned her post through resignation letter dated July 29, 2016 and subsequently MEOC summoned a new selection and the new assignment was appointed in March 2017
MEOR	Hidrosynergy Elisa Monterastrelli Patrizia Giangregorio	from 20/05/2016 to 30/06/2017	for the entomologist assignment, the budget was transferred from "Direct Personnel Costs" to "External assistance costs" due to impediments and long periods of administrative wait for summoning the selection procedures. The assignment was entrusted to "Hidrosynergy" (Dr. Elisa Monterastrelli and Dr. Patrizia Giangregorio)
PNATE	Giovanni Carotti Iris Biondi	from 01/06/2016 to 30/05/2017 from 01/06/2016 to 30/05/2017	
PNFC	Margherita Norbiato	From 26/07/2016 to 31/12/2020	

Regarding the authorisations: on 01/02/2016 the Ministry of the Environment and Protection of Land and Sea authorises the capture– marking and release for monitoring purposes (letter PG 2016/056067). The single Managing Bodies of protected areas (AB) have issued to the technical staff the authorisation to capture, breed, translocate and release to the wild for the 4 species pursuant to Article 4 of Regional Law 15/2006 and art. 3 paragraph 2, letter i) of Regional Law 24/2011.

The authorisations for the breeding structures are dealt with in Action C4, the possible assessments for the environmental impact of the interventions (C1, C2, C3) are dealt with in the related actions. All expected results of this action have been achieved. Deliverables foreseen by the action have already been transmitted with the 1st PR FOLDER: Other\_documents / A1.

DELIVERABLE	Foreseen Deadline	Actual Deadline	DELIVERY DATE AND REFERENCES
Agreement between partners	03/2016	03/2016	27/06/2017 – 1° PR – Folder: Deliverable – A1_Deliverable_1; file: Action A1 - Agreement between partners
Drafting of a work program	06/2016	05/2016	27/06/2017 – 1° PR – Folder: Deliverable; file A1_Deliverable_2
Milestone	Foreseen Deadline	Actual Deadline	DELIVERY DATE AND REFERENCES
Start of administrative procedures for personnel selection	06/2016	05/2016	
Draft agreement between beneficiary coordinator and associated partners	02/2016	12/2015	27/06/2017 – 1° PR – Folder: Milestone - A1_Milestone_2
Appointment of in-house staff for the project	03/2016	03/2016	27/06/2017 – 1° PR – Folder: Milestone - A1_Milestone_3

### 6.1.3 ACTION A.2: Ex ante monitoring

Foreseen start date: 01/04/2016      Actual start date: 01/06/2016

Foreseen end date: 30/04/2017      Actual end date: 31/12/2017

*Beneficiary responsible for implementation: PNATE*

The TC defined the monitoring protocols of the 4 species with the supervision of the Scientific Supervisors, by May 2016, the protocols were annexed with 1°PR FOLDER: Other\_documents/A2\_A3\_A4. During the meeting held on June 3, 2016 in Bologna at CB's headquarters the protocols were shared with all AB's entomologists and technical representatives.

The monitoring of the 4 species began in May 2016 and ended in October 2017 and was carried out according to what was defined in the Protocols. Compared to the Proposal, the monitoring took place over two years instead of one and involved 78 NATURA 2000 sites instead of 38. The two-year monitoring and the expansion of the study area allowed a deeper knowledge of the species and better planning of the interventions envisioned in Actions C1, C2, C3. In the survey areas, monitoring took place by defining transects (ID-transect) and geo-referencing the presence points of the species and/or habitat trees (ID-tree) on GIS. For *O. eremita* and *R. alpina* for each transect a quantified abundance index was calculated as the number of individuals captured-sighted/Km of transects. The results of the two monitoring campaigns of the target species are summarised in the following table:

PNFC	Survey area, 6 Natura 2000 sites: IT4080001; IT4080002; IT4080003; IT5140005;
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	<p>IT5180002; IT5180018. All four target species were monitored.</p> <p><i>O. eremita</i>: 8 transects containing 24 habitat trees in two Natura 2000 sites: IT4080002; IT4080003. The species was detected in 5 transects, 24 individuals were captured or reported, including 3 larvae, 4 reports of remains of individuals and 17 adults. In particular, 12 specimens were intercepted in the BCWT traps and 11 specimens were found with WMS and VES (larvae, adults and remains of exoskeleton/elytra). A specimen was seen flying in a mapped transect. The abundance index for transects varies from a minimum of 1.43 to a maximum of 36.49 N / km.</p> <p><i>R. alpina</i>: 9 transects containing 151 habitats trees in 3 Natura 2000 sites: IT4080002; IT4080003; IT5140005 and in an area outside SCI. The species was detected in 7 transects. 101 individuals have been captured or reported, including 2 larvae, 10 reports of remains of individuals and 89 adults. In particular, all identified with the CMR method. In one transect the presence was detected with the VES method because of the identification of a hole on a tree. The abundance index of the transects varies between 3.68 and 26.67 N/km.</p> <p><i>G. bilineatus</i>: 4 transects in 4 basins monitored within 2 Natura 2000 sites: IT4080002; IT5180018. For the detection of the species bottle-traps and nets for aquatic insects were used. The species was not detected in any investigated site.</p> <p><i>C. mercuriale</i>: 2 transects, outside SCI, in 1 water course. For the detection of the species the VES method was used. The species was not detected in any investigated transects.</p>
PNATE	<p>Survey area, 8 NATURA 2000 sites: IT4020020; IT4030001; IT4030002; IT4030003; IT4030004; IT4030005; IT4030006; IT4030009. As per GA, the <i>Coenagrion mercuriale</i> has not been monitored because of unsuitable environments.</p> <p><i>O. eremita</i>: 17 transects containing 72 habitat trees in four NATURA 2000 sites: IT4030002; IT4030003; IT4030004; IT4030009 and in an area outside SCI. The species was detected in 6 transects, 20 individuals were captured or reported, including 19 adults (female), 1 remain of individual intercepted in the BCWT. The abundance index for transects varies from a minimum of 2.24 to a maximum of 108.1 N / km.</p> <p><i>R. alpina</i>: 2 transects containing 3 habitat trees in one NATURA 2000 sites: IT4030004 and in an area outside SCI. The species was detected in 2 transects, 10 individuals were captured or reported, including 8 adults (4 male and 4 female), 2 remains of individual, chest and leg respectively. In particular, individuals were intercepted with VES and CMR, while the remains of individual with VES. The abundance index for the transect is 0.27 N / km.</p> <p><i>G. bilineatus</i>: 20 transects in 16 basins monitored within 5 NATURA 2000 sites: IT4030001; IT4030002; IT4030003; IT4030004. For the detection of the species bottle-traps and nets for aquatic insects were used. The species was not detected in any investigated site.</p>
MAR	<p>Survey area, 9 NATURA 2000 sites: IT4050004; IT4070011; IT4070016; IT4070024; IT4080004; IT4080008; IT4090001; IT4090003; IT4090002.</p> <p><i>O. eremita</i>: 19 transects containing 78 habitat trees in eight NATURA 2000 sites: IT4070011; IT4070016; IT4070024; IT4080004; IT4080008; IT4090001; IT4090003 and in an area outside SCI. The species was detected in 10 transects, 29 individuals were captured or reported, including 2 larvae, 16 remains of individual and 11 adults (1 male), intercepted in the BCWT, and 10 females, intercepted with WMS and BCWT. The abundance index for transects varies from a minimum of 1.15 to a maximum of 19.05 N / km.</p> <p><i>R. alpina</i>: 4 transects containing 4 habitat trees in one NATURA 2000 sites: IT4080008. For the detection of the species VES were used. The species was not detected in any investigated site.</p> <p><i>G. bilineatus</i>: 5 transects in 5 basins monitored within one NATURA 2000 sites: IT4070011. For the detection of the species bottle-traps and nets for aquatic insects were used. The species was not detected in any investigated site</p> <p><i>C. mercuriale</i>: 12 transects in 12 basins monitored within two NATURA 2000 sites:</p>

	IT4070011; IT4090002. The species was detected in 7 transects. 3607 adults were captured or reported, 3179 male and 422 females. For the detection of the species VES was used, with the exception of one transect where CMR was used.
MEOR	<p>Survey area, 8 NATURA 2000 sites: IT4050001; IT4050002; IT4050003; IT4050012; IT4050013; IT4050020; IT4050015; IT4050029.</p> <p><i>O. eremita</i>: 13 transects containing 57 habitat trees where identified in five NATURA 2000 sites: IT4050001; IT4050002; IT4050003; IT4050013; IT4050020. The species was detected in 2 transects, 4 adults were captured or reported, 1 adult (female) and 3 males, intercepted in the BCWT and VES. The abundance index for transects was not calculated.</p> <p><i>R. alpina</i>: 6 transects containing 21 habitat trees where identified in one NATURA 2000 sites: IT4050002. The species was intercepted with VES. The species was not detected in any investigated site.</p> <p><i>G. bilineatus</i>: 3 transects in 3 basins monitored within two NATURA 2000 sites: IT4050015; IT4050029. For the detection of the species bottle-traps and nets for aquatic insects were used. The species was not detected in any investigated site</p> <p><i>C. mercuriale</i>: 7 transects in 7 basins monitored within two NATURA 2000 sites: IT4050003; IT4050012 and in an area outside SCI. For the detection of the species VES was used. The species was not detected in any investigated site.</p>
MEC	<p>Survey area, 8 NATURA 2000 sites: IT4030007; IT4030011; IT4040001; IT4040002; IT4040003; IT4040004; IT4040005; IT4040013; IT4040018.</p> <p><i>O. eremita</i>: 20 transects containing 115 habitat trees where identified in six NATURA 2000 sites: IT4030007; IT4030011; IT4040001; IT4040002; IT4040003; IT4040004 and in an area outside SCI. The species was detected in 2 transects, 2 adults were captured or reported, 1 female with BCWT and 1 male, intercepted with VES. The abundance index for transects was not calculated.</p> <p><i>R. alpina</i>: 11 transects containing 280 habitat trees where identified in three NATURA 2000 sites: IT4040001; IT4040002; IT4040005 and in an area outside SCI. The species was intercepted with VES. The species was not detected in any investigated site.</p> <p><i>G. bilineatus</i>: 23 transects in 6 basins monitored within two NATURA 2000 sites: IT4040001; IT4040002; IT4040005. For the detection of the species bottle-traps and nets for aquatic insects were used. The species was detected in 5 transects. 6 adults were captured or reported, 1 larva with net, 2 females, one with net and one with trap, 3 males with net and bottle-trap.</p> <p><i>C. mercuriale</i>: 3 transects in 3 basins monitored within two NATURA 2000 sites: IT4040013; IT4040018 and in an area outside SCI. The species was not detected in any investigated site.</p>
MEOC	<p>Survey area, 11 NATURA 2000 sites: IT4030007; IT4010003; IT4010008; IT4010017; IT4020001; IT4020003; IT4020007; IT4020008; IT4020017; IT4020020; IT4020021; IT4020026.</p> <p><i>O. eremita</i>: 10 transects containing 41 habitat trees in seven NATURA 2000 sites: IT4010008; IT4010017; IT4020001; IT4020003; IT4020017; IT4020021; IT4020026 and in an area outside SCI. The species was detected in 2 transects. 6 individuals were detected, 3 larvae and 3 adults, 2 females and 1 male. The individuals were detected with BCWT and VES. The abundance index for transects was not calculated.</p> <p><i>R. alpina</i>: 8 transects containing 118 habitat trees in four NATURA 2000 sites: IT4010003; IT4020007; IT4020008; IT4020020 and in an area outside SCI. The species were intercepted with VES. The species was not detected in any investigated site.</p> <p><i>G. bilineatus</i>: 5 transects in 4 basins monitored within three NATURA 2000 sites: IT4010003; IT4020008; IT4020020 and in an area outside SCI. For the detection of the species nets for aquatic insects were used. The species was not detected in any investigated site.</p> <p><i>C. mercuriale</i>: 3 transects in 3 basins monitored within one NATURA 2000 site: IT4020017; The species was not detected in any investigated site.</p>

It was not possible to define the numerical consistency of the sub-populations of the target species through the CMR method, with the exception of *C. mercuriale*, since there were no recapture data. For the CPSI index the considered species are the ones of saproxylic Coleoptera intercepted with non-attractive and discriminating systems, placed within the hollows of the trees or in the external part of the tree trunks, therefore this index was applied only to *O. eremita*. Specific trapping was carried out in two transects in the MAR- Campiuno locality (RA) in SCI - IT4070011 of the Vena del Gesso romagnola.

For *O. eremita* and *R. alpina* the respective eligibility models were developed, updating models previously defined for the Emilia-Romagna Region by a study group of Sapienza University of Rome (Prof. Maiorano). The 2016 and 2017 monitoring data made it possible to deepen and develop the models with greater precision. Eligibility models for the other two target species were not achieved because the results revealed an extremely localised presence.

DELIVERABLE	Foreseen Deadline	Actual Deadline	DELIVERY DATE AND REFERENCES
Activity report	04/2017	12/2017	20/12/2018 -- MR -- Folder: Deliverable A2_ActivityReport

#### 6.1.4 ACTION A.3: Identification/inventory of habitat trees

Foreseen start date 01/04/2016 Actual start date 01/06/2016

Foreseen end date 30/06/2017 Actual end date 31/12/2017

*Beneficiary responsible for implementation:PNFC*

The monitoring of the habitat trees allowed identification of the areas potentially suitable for the reproduction of the two target forest species and directed the implementation of the actions C1, C3 and C5. The result is a catalogue of all the habitat trees surveyed along the identified transects and their geo-referencing, which made it possible to produce detailed maps. The identification of the habitat trees was carried out following the protocols elaborated by the TC (Mr Roberto Fabbri) and validated by the scientific supervisor (Dr. Marco Uliana). The suitability level for the species has been attributed to each tree. The protocols were shared with all AB's entomologists and technical representatives at the meeting held on June 3, 2016 in Bologna at CB's headquarters. The overall area of the survey is the same one as for the species monitoring (Action A2). The results of the two monitoring campaigns of the target species are summarised in the following table:

PNFC	<p><i>O. eremita</i>: 2 NATURA 2000 Sites: IT4080002; IT4080003 and an area outside SCI. The results of the survey have catalogued 8 transects containing 238 habitat trees, of which 14 with high suitability; 4 with medium suitability; 0 with low suitability; 220 with no suitability.</p> <p><i>R. alpina</i>: 2 NATURA 2000 Sites: IT4080002; IT4080003. The results of the survey have catalogued 8 transects containing 191 habitat trees of which 45 with high suitability; 82 with medium suitability, 45 with low suitability, 19 with no suitability.</p>
PNATE	<p><i>O. eremita</i>: 4 NATURA 2000 Sites: IT4030001; IT4030002; IT4030003; IT4030005 and an area outside SCI. The results of the survey have catalogued 14 transects containing 155 habitat trees, of which 0 with high suitability; 8 with medium suitability; 2 with low suitability; 145 with no suitability.</p> <p><i>R. alpina</i>: 4 NATURA 2000 Sites: IT4020020; IT4030003; IT4030004; IT4030005 and an area outside SCI. The results of the survey have catalogued 21 transects containing 243 habitat trees of which 230 with high suitability; 3 with medium suitability, 0 with low suitability, 10 with no suitability.</p>
MAR	<p><i>O. eremita</i>: 8 NATURA 2000 Sites: IT4050004; IT4070011; IT4070016;</p>

	<p>IT4070024; IT4080004; IT4080008; IT4090001; IT4090003 and an area outside SCI. The results of the survey have catalogued 33 transects containing 307 habitat trees, of which 81 with high suitability; 179 with medium suitability; 0 with low suitability; 47 with no suitability.</p> <p><i>R. alpina</i>: 2 NATURA 2000 Sites: IT4080005; IT4080008 and an area outside SCI. The results of the survey have catalogued 5 transects containing 10 habitat trees of which 0 with high suitability; 0 with medium suitability, 1 with low suitability, 9 with no suitability.</p>
MEOR	<p><i>O. eremita</i>: 8 NATURA 2000 Sites: IT4050001; IT4050002; IT4050003; IT4050013; IT4050020; IT4050023; IT4050025; IT4050029 and an area outside SCI. The results of the survey have catalogued 24 transects containing 87 habitat trees, of which 18 with high suitability; 13 with medium suitability; 3 with low suitability; 53 with no suitability.</p> <p><i>R. alpina</i>: 1 NATURA 2000 Sites: IT4050002. The results of the survey have catalogued 7 transects containing 21 habitat trees of which 10 with high suitability; 4 with medium suitability, 7 with low suitability, 0 with no suitability.</p>
MEC	<p><i>O. eremita</i>: 5 NATURA 2000 Sites: IT4030007; IT4040001; IT4040002; IT4040003; IT4040004 and area outside SCI. The results of the survey have catalogued 19 transects containing 210 habitat trees, of which 11 with high suitability; 97 with medium suitability; 0 with low suitability; 102 with no suitability.</p> <p><i>R. alpina</i>: 2 NATURA 2000 Sites: IT4040001; IT4040002 and an area outside SCI. The results of the survey have catalogued 24 transects containing 415 habitat trees of which 29 with high suitability; 72 with medium suitability, 247 with low suitability, 67 with no suitability.</p>
MEOC	<p><i>O. eremita</i>: 11 NATURA 2000 Sites: IT4010008; IT4010012; IT4010017; IT4010018; IT4020001; IT4020003; IT4020012; IT4020015; IT4020017; IT4020021; IT4020026 and area outside SCI. The results of the survey have catalogued 40 transects containing 760 habitat trees, of which 40 with high suitability; 232 with medium suitability; 113 with low suitability; 375 with no suitability.</p> <p><i>R. alpina</i>: 2 NATURA 2000 Sites: IT4010003; IT4010012; IT4020007; IT4020008; IT4020010; IT4020012; IT4020015; IT4020020 and area outside SCI. The results of the survey have catalogued 14 transects containing 232 habitat trees of which 4 with high suitability; 37 with medium suitability, 191 with low suitability, 0 with no suitability.</p>

DELIVERABLE	Foreseen Deadline	Actual Deadline	DELIVERY DATE AND REFERENCES
Technical report including overview map and detailed maps	06/2017	12/2017	20/12/2018 - - MR - Folder: Deliverable A3_Technical_Report

#### 6.1.2 ACTION A.4: Identification of suitable lakes, ponds and streams

Foreseen start date	01/04/2016	Actual start date	01/06/2016
Foreseen end date	30/06/2017	Actual end date	31/12/2017

*Beneficiary responsible for implementation: MAR*

The monitoring involved areas potentially suitable for conducting the repopulation of *C. mercuriale* and *G. bilineatus*. The result is a catalogue of all the registered water basins and waterways, using transects, and the geo-location of points to which a suitability scale has been

assigned. The geo-location allowed the production of detailed maps. The monitoring was carried out following the protocols elaborated by the TC (Mr Roberto Fabbri) and validated by the scientific supervisor (Prof. Carchini). The protocols were shared with all AB's entomologists and technical representatives at the meeting held on June 3, 2016 in Bologna at CB's headquarters. The overall survey area is the same one as for the species monitoring (Action A2). The results of the two monitoring campaigns of the target are summarised in the following table:

PNFC	<p><i>G. bilineatus</i>: 2 NATURA 2000 sites: IT4080002; IT5180018. 4 basins and 5 transects were catalogued, 1 of which with high suitability, 3 with medium suitability, 0 with low suitability, 1 with no suitability.</p> <p><i>C. mercuriale</i>: 2 transects in 1 watercourse outside the NATURA 2000 network, but adjacent to SCI IT4080002. A watercourse with 1 low-suitability transect and 1 transect with no suitability have been catalogued.</p>
PNATE	<p><i>G. bilineatus</i>: 5 NATURA 2000 sites: IT4020020; IT4030001; IT4030002; IT4030003; IT4030006 and area outside SCI. 16 basins and 20 transects were catalogued, 4 of which with high suitability, 7 with medium suitability, 6 with low suitability, 3 with no suitability.</p> <p><i>C. mercuriale</i>: as foreseen by GA it has not been monitored as it has no environments.</p>
MAR	<p><i>G. bilineatus</i>: 2 NATURA 2000 sites: IT4070011; IT4080004. 8 basins and 8 transects were catalogued, 1 of which with medium suitability, 1 with low suitability, 6 with no suitability.</p> <p><i>C. mercuriale</i>: 3 NATURA 2000 sites: IT4070011; IT4080007; IT4090002 and an area outside SCI. 16 basins and 24 transects were catalogued, 0 of which with high suitability, 7 with medium suitability, 7 with low suitability, 10 with no suitability.</p>
MEOR	<p><i>G. bilineatus</i>: 7 NATURA 2000 sites: IT4050001; IT4050002; IT4050003; IT4050015; IT4050016; IT4050023; IT4050029 and an area outside SCI. 52 basins and 54 transects were catalogued, 0 of which with high suitability, 4 with medium suitability, 5 with low suitability, 45 with no suitability.</p> <p><i>C. mercuriale</i>: 5 NATURA 2000 sites: IT4050001; IT4050003; IT4050012; IT4050016; IT4050029 and area outside SCI. 42 basins and 44 transects were catalogued, 0 of which with high suitability, 1 with medium suitability, 7 with low suitability, 36 with no suitability.</p>
MEC	<p><i>G. bilineatus</i>: 3 NATURA 2000 sites: IT4040001; IT4040002; IT4040005 and area outside SCI. 15 basins and 33 transects were catalogued, 20 of which with high suitability, 1 with medium suitability, 1 with low suitability, 11 with no suitability.</p> <p><i>C. mercuriale</i>: 3 NATURA 2000 sites: IT4030018; IT4040004; IT4040013. 3 basins and 3 transects were catalogued, 0 of which with high suitability, 2 with medium suitability, 0 with low suitability, 1 with no suitability.</p>
MEOC	<p><i>G. bilineatus</i>: 4 NATURA 2000 sites: IT4010003; IT4010004; IT4020008; IT4020020. 6 basins and 7 transects were catalogued, 0 of which with high suitability, 2 with medium suitability, 3 with low suitability, 2 with no suitability.</p> <p><i>C. mercuriale</i>: 3 NATURA 2000 sites: IT4020001; IT4020003; IT4020017 and an area outside SCI. 7 basins and 10 transects were catalogued, 0 of which with high suitability, 5 with medium suitability, 0 with low suitability, 5 with no suitability.</p>

DELIVERABLE	Foreseen Deadline	Actual Deadline	DELIVERY DATE AND REFERENCES
Technical report including maps	06/2017	12/2017	20/12/2018 -- MR – Folder: Deliverable A4_Technical_Report

### 6.1.3 ACTION A.5: Training courses for volunteers/contractors

Foreseen start date	01/04/2016	Actual start date	01/04/2016
Foreseen end date	30/06/2020	Actual end date	In progress

*Beneficiary responsible for implementation: MEOR*

The action started in April 2016, the activity was centralised for some organisational aspects to the CB.

**2016/2017 Volunteers Recruitment Campaign:** <http://ambiente.regione.emilia-romagna.it/life-eremita/notizie/notizie-2016/da-oggi-e-possibile-partecipare-come-volontari-al-progetto-life-eremita>

In July 2016 a call for expressions of interest (approved by the RER with act n ° 10786 of 06/07/2016) was published (Annexed to the PR1, Folder: Other documents, Action A5). It was addressed to all citizens over the age of 18 to select a group of volunteers dedicated to the activities of the project, who were required to commit to a training period. For the dissemination, a flyer-manifesto of the initiative was created and printed (Annexed to the this MR, Folder: Other documents, A5\_2016-17) and posted at all the universities of the region and other selected locations frequented by possible target subjects (Museums, associations, etc.). 63 volunteers joined the training course. On 25/10/2016, in Bologna at the CB's headquarters, the first meeting was held to present the activities to the 63 aspiring volunteers, the project technical representatives and the representatives of the main regional volunteers associations. During the meeting the project (objectives and activities) and the training program were presented. The training activity established consisted of three initial meetings in three distinct locations spread over the regional territory: 16/12/2016 - 17/12/2016 - 23/01/2017. The field training activity also consisted of several repeated meetings to cover the entire regional territory, and they took place on: 25/03/2017 - 01/04/ 2017- 14/04/2017 - 29/04/2017 - 06/05/2017 - 07/05/2017 - 11/05/2017 both in forest environments and in aquatic environments. All flyers and program of the events are annexed to the this MR, Folder: Other documents, Action A5. The volunteers were evaluated by the trainers with the aim of identifying their aptitudes and vocations to the various voluntary activities (Annexed to the this MR, Folder: Other documents, A5\_2016-17).

The first "Catalogue of opportunities for the volunteer within the LIFE Eremita Project" was drafted and disseminated. At the end of this first training phase, 33 volunteers were selected and assigned to the various ABs. Other volunteers were recruited directly by the ABs. The 1st volunteer campaign involved in project activities a total of 40 volunteers. Below is the detail.

PNFC	17 volunteers involved in the following project activities: species monitoring (A2, A3, A4); <i>O. eremita</i> collecting, to be used as founders for the breeding centre of the Santa Sofia PNFC (C4); choice of trees on which to install WMBs (C3), breeding activities (C4).
PNATE	7 volunteers involved in the following project activities: species monitoring (A2, A3, A4); communication and information (E7 - paleremita)
MAR	8 volunteers + 1 trainee involved in the following activities: habitat trees monitoring (A3), aquatic habitat monitoring (A4), monitoring of the 4 species (A2), <i>O. eremita</i> ex situ breeding activities (C4), Wood Mould Boxes installation and monitoring (C3), dissemination activities (E2, E7)
MEOR	2 volunteers involved in the following activities: monitoring of species and

	habitats (A2, A3, A4).
MEC	3 volunteers involved in the course, with field trips in April. The volunteers did not participate in the project activities.
MEOC	3 volunteers involved in the following activities: <i>O. eremita</i> monitoring (A2, A3)

**Volunteers recruitment campaign 2018:** on 05/25/2018 a workshop was organised on the progress of the project, with the presentation of the new catalogue of opportunities for the volunteers. 15 aspiring volunteers joined the programme. It was an opportunity for a new phase of recruitment. a flyer-manifesto of the initiative was created and printed (Annexed to the this MR, Folder: Other documents, A5\_2018) A second volunteer catalogue was developed and presented. In the 2nd volunteer campaign a total of 43 volunteers were involved in project activities. In this case, no training courses were organised but the training material previously produced was delivered. Below are the details broken down by AB.

PNFC	11 volunteers involved in the following activities: collection of <i>O. eremita</i> , to be used as founders (C4), marking and cataloguing of the plants selected for WMBs (C3); <i>O. eremita</i> breeding activity: larvae control, box humidity, replacement and creation of new boring dust.
PNATE	9 volunteers were involved in the following activities: <i>O. eremita</i> collecting, to be used as founders (C4), marking and filing of the plants selected for WMBs (C3); breeding activity of <i>O. eremita</i> : larvae control, box humidity, replacement and creation of new boring dust; communication and information (E7 - paleremita)
MAR	5 volunteers + 3 trainees were involved in the project activities. The activities were: monitoring of habitat trees (A3), monitoring of aquatic habitats (A4), monitoring of the 4 species (A2), <i>O. eremita</i> ex -situ farming activities (C4), installation and monitoring of Wood Mould Boxes (C3), dissemination activities (E2, E7)
MEOR	12 MEOR volunteers were involved in the project activities. The activities were: support for the capture of specimens of <i>O. eremita</i> to be used for breeding (C4) and support during inspections for the analysis in the field of conservation actions to be developed for <i>O. eremita</i> and <i>R. alpina</i> .
MEC	The volunteers did not participate in project activities.
MEOC	6 volunteers were involved in the project activities. The activities were: preparation and management of the boring dust. Installation of boards on forest interventions. WMBs maintenance.

Within the costs of the action, the project does not provide for expenditures to support voluntary activities, therefore a fast turn over of the volunteers often occurs. The PM and the regional structure remain as an organisational reference of the volunteer body. Once the volunteers have been assigned to the different ABs, they are organised directly by the respective technical representatives.

The first edition of the “Festa dell’Eremita” (*Eremita Festival*) took place on 23 September 2017 at the Casa Fantini Visitor Centre (via Jussi, 171 - Farneto) San Lazzaro di Savena (BO). The event took place concurrently with the inauguration of the "Eremita Tour "(Action E7). For the occasion, the first promotional objects were created: 50 backpacks with the "Life Eremita" logo.

The three remaining “Festa dell’Eremita” will be scheduled as such: 2 festivals in 2019 and the last one in 2020. The CB called for a tender for providing the organisation of the festivals and the production of promotional objects planned for in E6 action, and – thanks to cost savings - other additional promotional objects to be distributed to information events foreseen in E actions. The service assignment is in progress.

The poster with the programme of the 1st *Festa dell'Eremita* and the materials of the meetings of the 2nd campaign for the recruitment of the volunteers are attached to this Report Folder: Other documents, A5\_2018\_Festa Eremita.

DELIVERABLE	Foreseen Deadline	Actual Deadline	DELIVERY DATE AND REFERENCES
1° Catalogue of Volunteers' opportunities within the LIFE Eremita Project.	01/2017	05/2017	20/12/2018 – MR – Folder: Deliverable-A5_Catalogue_minute
2° Catalogue of Volunteers' opportunities within the LIFE Eremita Project.	01/2018	05/2018	20/12/2018 – MR – Folder: Deliverable-A5_Catalogue_minute
Minutes of volunteers' training courses, first phase.	06/2018	06/2018	20/12/2018 – MR – Folder: Deliverable-A5_Catalogue_minute

#### 6.1.4 ACTION A.6: Ex-ante survey on the opinions of the main stakeholder groups.

Foreseen start date 01/07/2016      Actual start date      01/05/2016  
 Foreseen end date 30/06/2017      Actual end date      30/06/2017

*Beneficiary responsible for implementation: PNATE*

During the Technical Table held on 30/05/2016, acting on a proposal by the Project Manager with a consensus shared by all the partners, a decision was made to change the method of administration of the questionnaire, opting for the involvement of the schools present in the territories of the various ABs. This modality was presented to the Monitor during the first monitoring visit of 09/06/2016. In the note of EASME Ref. Ares (2016) 4205908 of 08/08/2016, "I consider acceptable your request of sharing a questionnaire through students in schools, instead of performing interviews, with the aim of obtaining more answers and more attention to the survey. Anyway, I remind you that the eligibility of costs for this action will be evaluated at Final Report stage on the basis of the results obtained."

The questionnaire (Deliverable sent with PR) was shared and approved by all the ABs in the TT on 12 September 2016.

Approximately 15,000 questionnaires were distributed and approximately 3,700 were filled and returned by persons aged between 16 and over 66, with coverage of the entire project territory.

The questionnaire was presented to schools with a direct (telephone) contact, then sent with an accompanying letter to explain to the school management and teachers the aims of the project and of the cognitive survey as well as the procedures to be followed for the distribution of the questionnaire to the students' families.

A poster was printed and sent to the schools involved in the survey, to be posted inside the school to inform people attending the school about the project objectives and make them aware of the survey in progress.

By the end of the school year, in June 2017, all the questionnaires were retrieved, analysed and the activity report (Deliverable already sent with the PR1, Folder: Deliverable-A6) was drawn up. The action is therefore completed and the results obtained will constitute a useful benchmark to evaluate the effectiveness of the training and information campaigns envisaged in the project (Action D5).

DELIVERABLE	Foreseen Deadline	Actual Deadline	SENDING DATE AND REFERENCES
Evaluation questionnaire	01/2016	09/2016	27/06/2017 – 1° PR – Folder: Deliverable – A6_Questionario_DEF.pdf
Activity report	06/2017	06/2017	27/06/2017 – 1° PR – Folder: Deliverable – A6_activity report.pdf

### 6.1.2 ACTION A.7: Drafting of a recovery plan for the target species based on the results of preliminary surveys

Foreseen start date	01/10/2016	Actual start date	01/10/2016
Foreseen end date	30/06/2017	Actual end date	in progress

*Beneficiary responsible for implementation: RER*

The Plan was defined following the completion of the monitoring activities (A2 and A3), which, as already described, were extended by one year. In some areas of PNATE, PNFC; MAR and MEOR the monitoring of the habitats for the saproxylic species took place also in 2018, with the aim of a precise identification of the habitat trees with the final goal of expanding the distribution range.

**Action C1 interventions planning:** the choice of the intervention areas was based, where possible, on the identification of buffer areas of amplitude compatible with the biology of the species, identified starting from the established centres of presence, within areas of civic use or of public property. The tree in which the specimens were captured represents the centre of a circle with a radius equal to the dispersal capacity of the species: 3000 m for *R. alpina*; 2500 for *O. eremita*. Within these buffers habitat trees were identified and mapped with action A3. Using the suitability value the types of intervention were defined. The types of intervention planned for *O. eremita* are: suckers removal area radius 5m, 10m; trimming area radius 5m; pruning of the dry parts or to let the light in, H 2-3m; pruning-scaffolding (big branches); removal of suckers at the base of the plant; felling; creation of hollow on the stem H <1.80m, grade 1, 2 and 3, creation of hollow on the stem from a branch scar, deepening the scar cavity on a branch or stem.

The types of intervention planned for *R. alpina* are: felling; stacks formation; girdling; ring barking; broken stem; pruning of the dry parts and to let the light in; pruning main branches; removal of suckers at the base of the plant; cleaning area radius 5m, 10m; thinning 10m, 15m.

**Action C2 interventions planning:** Following the results of actions A2 and A4, a low number of suitable sites for *G. bilineatus* and *C. mercuriale* has been detected as well as monitoring of the presence of species, therefore the choice of intervention areas is relative only to the MAR's area and only with regards to *C. mercuriale*. For *G. bilineatus*, the monitoring activities of the A4 action, revealed that the few sites that resulted suitable do not require interventions.

**Action C3 interventions planning:** the choice of the habitat trees on which to install the WMBs was carried out together with the definition of the areas in which to execute the interventions envisaged in action C1, so as to enhance their effectiveness and function in relation to expansion of the *O. eremita* distribution range.

**Actions C4 and C5 interventions planning:** a Feasibility Study was carried out for the breeding and repopulation of *O. eremita*, according to the MATTM and INFS Guidelines (2007) and the recent IUCN Guidelines (2013). The study sent by the CB to the Ministry of Land and Sea Protection and to ISPRA (note No. PG / 2017/0583976 of 25/08/2017) received a favourable opinion from ISPRA, note prot.n. 49711 of the 10/10/2017. For *C. mercuriale* a specific translocation programme has been defined that concerns only the MAR area within two Natura 2000 sites IT4070011 and IT4090002, in the waterways suitable for hosting it, where the habitat improvement and restoration interventions were carried out (Action C2). Some adult specimens of *C. mercuriale* will be moved from the source site of the Rimini area (IT4090002) to the 6 rivers present in the site IT4070011-Vena del Gesso Romagnola.

For the breeding of *G. bilineatus* it has been estimated that the population of Lago Pratignano, the only site of certain presence in Emilia-Romagna, does not possess sufficient consistency for the withdrawal of founders. In fact, during the monitoring campaigns of 2016 and 2017 only 4 specimens were captured. Furthermore, the CB also verified the possibility of withdrawing founders from other areas in Italy, however contacts with the competent services

of the Lombardy and Piedmont Regions, where in the past the presence of the species was reported, provided a negative result. As a consequence, we proceeded according to the alternative scenario envisaged by the GA in action C4, which plans for the use of *G. bilineatus* specimens from other European populations. On this scenario, the Emilia-Romagna Region CB conducted a specific meeting on 18/10/2016 with Dr. P. Genovesi (Area for technical advice and strategies for the conservation and management of the national fauna heritage, ISPRA) and Prof. Paolo Audisio of La Sapienza University of Rome, from which emerged the need for genetic analysis of European and Italian populations. The CB, following a comparison of cost estimates from other universities, commissioned to the University of Padua a study on the genetic variability of *G. bilineatus* using samples from Croatia (multiple sites), Hungary, and Lithuania, with the aim of identifying the closest genetic population to the one historically present in Lake Pratignano. The cost of the study (€ 6,322) borne by the CB, was paid for using other actions' savings. The survey on genetic diversity observed in the gene for mitochondrial COI has revealed that the population of Lake Pratignano has an extremely reduced genetic diversity. The other European populations have a greater diversity, none of the other populations has shown the haplotype equal to that of Pratignano, and there is no significant relationship between genetic distance and geographical distance between populations. On 7/06/2018 a skype meeting took place with Dr. Genovesi and Prof. Audisio and Prof. Congiu of the University of Padua, due the results of the genetic investigations, the alternative program with founders from other European sites has been approved. To this end, at the date of this Report, a request for a substantial change to the project is underway.

The feasibility study for *G. bilineatus* will be defined following the approval of the request for substantial modification of the project.

The drafting of the action plan for the interventions is delayed by 17 months. The monitoring necessary for the correct definition of the Plan has taken one extra year. For *G. bilineatus* it was necessary to wait for the results of the genetic analyses, and the picture was clarified only in November 2018. For the withdrawal of founders abroad, networking was activated with more than 15 research groups in Europe (complete list in "other documents") and we have identified at least 3 available research groups. Three countries, Sweden, Latvia and Croatia, have sites on their territory with populations that can guarantee the withdrawal of founders of *G. bilineatus* for restocking in the project sites. The plan is not complete for the planning part of the interventions of Action C1 by the MAR. Despite this fact, it has been transmitted as deliverable.

PNATE	<p><b>Action C1 interventions planning:</b>  <u>Intervention area:</u> 5 Natura 2000 sites (IT4030001, IT4030002, IT4030003, IT4030004, IT4030005).  An executive project been drafted and approved by act no. 132 dated 11/06/2018  <b>Action C3 interventions planning:</b> the trees were identified where to install 27 WMBs regarding 10 transects located in 4 Natura 2000 sites.</p>
PNFC	<p><b>Action C1 interventions planning:</b>  <u>Intervention area:</u> 2 Natura 2000 sites (IT4080003, IT4080002).  An executive project was drafted and approved by act no. 707 on 24-10-2018 including the following authorisations: nulla Osta (<i>clearance</i>) Ente Parco no. 244_2018-11-20. The authorisation has been obtained from the Unione dei Comuni della Romagna Forlivese - Ufficio Gestione Demanio Regionale (<i>Union of Municipalities of the Forlì area of Romagna - Regional property Management Office</i>) to operate on the regional property of its jurisdiction prot. no. 2648 of 12-04-2018  The project was also sent as communication via certified email prot no. 7739 of 09-11-2018 to the Unione dei Comuni della Romagna Forlivese - Ufficio tecnico</p>

	<p>(Union of Municipalities of the Forlì area of Romagna - Technical Office.)</p> <p><b>Action C3 interventions planning:</b> the trees where 35 WMBs were to be installed were identified on 7 transects located in 2 Natura 2000 sites.</p>
MEOR	<p><b>Action C1 interventions planning:</b></p> <p><u>Area of intervention:</u> 6 Natura 2000 sites (IT4050001; IT4050002; IT4050003; IT4050004; IT4050016; : IT4050020).</p> <p>An executive project was drafted and approved by act no.446 on 14-12-2018, The authorisation has been obtained from the Unione Appennino Bolognese.</p> <p><b>Action C3 interventions planning:</b> the trees where 23 WMBs are to be installed have been identified regarding 7 transects located in 6 Natura 2000 sites.</p>
MEC	<p><b>Action C1 interventions planning:</b></p> <p><u>Area of intervention:</u> 4 Natura 2000 sites (IT4040001,IT4040002,IT4040003, IT4040004).</p> <p>An executive project was drafted and approved with Determina (<i>Resolution</i>) no. 29 of 22/02/2018, including the impact pre-assessment form.</p> <p>The outline of the agreement for the management of interventions on 10 trees owned by the Parish of the B.V. Assunta of Niviano di Pavullo (Mo), within the Sassoguidano Nature Reserve, was approved with Determina (<i>Resolution</i>) no. 17 of 9/2/2018.</p> <p>The outline of the agreement for the management of the interventions on trees within the areas of the Civic Uses in the Pratignano area, within the Park of the Alto Appennino Modenese, was approved with Determina (<i>Resolution</i>) no. 36 of 24/4/2018.</p> <p>Both agreements were then signed by the parties (a copy of these documents have already been sent to Flavio Bruno).</p> <p><b>Action C3 interventions planning:</b> the trees have been identified where to install 25 WMBs regarding 6 transects located in 4 Natura 2000 sites.</p>
MEOC	<p><b>Action C1 interventions planning:</b></p> <p><u>Area of intervention:</u> 3 Natura 2000 sites (IT4020001, IT4020003, IT4020026)</p> <p>An executive project was drafted and approved by act no. 85, dated 06-02-2018, inclusive of the following authorisations: clearance by the Authority and Impact Assessment with positive result.</p> <p><b>Action C3 interventions planning:</b> the trees have been identified where 13 WMBs are to be installed along 4 transects located in 3 Natura 2000 sites.</p>
MAR	<p><b>Action C1 interventions planning.</b> It's being drafted and will be completed within March 2019</p> <p><b>Action C2 interventions planning.</b> The final project "Project for the recovery and improvement of riparian areas in order to increase the availability of suitable habitats for <i>Coenagrion mercuriale</i> in the SCI - SPA IT4070011..., was approved with act no. 51 on 5/07/2018. Following the availability reported by the owner of the important site of Pietracuta di San Leo (RN) (Republic of San Marino), the executive project was drawn up, approved with act no. 86 of 16/11/2018, inclusive of the following authorisations: hydraulic clearance by the Servizio Area Reno e PO di Volano della Ag. Reg.le Sicurezza Territoriale e Protezione Civile (<i>Reno Area and Po river of Volano Service of the Regional Agency for Territorial Security and Civil Protection</i>) no. 362 of 11/10/2018; hydraulic clearance by the Servizio Area Romagna della Ag. Reg.le Sicurezza Territoriale e Protezione Civile (<i>Romagna Area Service of the Regional Agency for Territorial Security and Civil Protection</i>) no. 4136 of 11/15/2018.</p> <p><b>Action C3 interventions planning:</b> the trees where 27 WMBs are to be installed</p>

	have been identified along 9 transects located in 8 Natura 2000 sites.
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A draft of Report is annexed to this report: Folder: Other documents, A7\_ActionPlan.  
The final report of Genetic analysis is annexed to this report: Folder: Other documents, A7\_Genetic\_analysis.

### 6.1.3 ACTION C.1: Creation of habitat trees for *Osmoderma eremita* and *Rosalia alpina*

Foreseen start date 01/01/2017    Actual start date    03/2018  
Foreseen end date 30/09/2020    Actual end date    in progress

*Beneficiary responsible for implementation: MEC*

The action is under way, some ABs have already carried out and completed the interventions aimed at increasing the availability of habitat trees for *Osmoderma eremita* and *Rosalia alpina* (MEC and MEOC), others are on-going (PNATE and PNFC) and finally two ABs (MAR and MEOR) have yet to start, foreseeing anyway the conclusion by 2019.

The interventions for the creation of necromass in favour of *R. alpina* are aimed at speeding up the ordinary evolutionary processes of a forest that lead, in times normally long, to the formation of dead trees standing or dead trees on the ground. The interventions in favour of *O. eremita* are aimed at creating habitats suitable for the reproduction of the species, from hollowing to the installation of WMBs (Action C3). The types of intervention were identified in the Action Plan (Action A7).

PNATE	The works were assigned, through a tender procedure with an invitation to 3 Companies, to the Company "Briganti del Cerreto". The works started on 19/10/2018, the end of works is scheduled for December 2018. 376 interventions in 373 habitat trees, of which 241 in favour of <i>R.alpina</i> and 135 in favour of <i>O.eremita</i> . The executive planning and works supervision was entrusted to Dr. Willy Reggioni.
PNFC	The works were assigned, through a tender procedure with an invitation to 6 companies, to the "Alberi Sparsi" Network of enterprises in Faenza. The publishing of the entrustment resolution, closing the tender procedure, is underway. The works are scheduled to start on 1 December 2018 and are scheduled to end on 31/03/2019, subject to unforeseen events and impracticability due to snow. The executive planning and works supervision was entrusted to Studio Verde Professional Association of Forestry Doctors with Resolution no. 68 of 25-01-2018. To date, no intervention has yet been carried out.
MEOR	The works to create habitat trees for <i>Osmoderma eremita</i> and <i>Rosalia alpina</i> have not started yet; it is expected that they will be completed by December 2019.
MEC	The works were assigned, through a tender procedure with an invitation to 5 Companies, to the company "Acque Chiare" soc. coop.va, based in S.Annapalago, via Radici, 43, 41027 Pievepelago (Mo). Executive planning and works supervision: Dott. Davide Malavasi The works started on 08/05/2018, and were completed on 28/05/2018 372 interventions in 298 habitat trees, of which 191 in favour of <i>R.alpina</i> and 107 in favour of <i>O.eremita</i> .
MEOC	The works were assigned, through a tender procedure with an invitation to 3 Companies, to the Cooperative Company Territorio Ambiente Montano

	Acquacheta Rabbi (CTA) of Premilcuore (Fc) Executive planning and works supervision: Dott. Davide Malavasi Work started in March 2018, and was completed in April 2018. 77 interventions in 67 habitat trees, all in favour of <i>O. eremita</i> .
MAR	The works to create habitat trees for <i>Osmoderma eremita</i> have not yet started; they are expected to be completed by 2019.

At the present state of the works, we have intervened to improve the suitability of habitat trees to host the two target species, *O. eremita* and *R. alpina*, on 309 habitat trees for *O. eremita* and 432 habitat trees for *R. alpina*. The number of trees and the related interventions aimed at restoring and improving the habitat have increased compared to what was initially foreseen, since part of the budget planned for the C2 action has been transferred to action C1. As already specified in the action A7, in all ABs areas it was not necessary to carry out restoration interventions in aquatic environments. The deliverable of the action has not been produced yet; it is, however, planned for year 2020.

#### 6.1.4 ACTION C.2: Restoration of suitable ponds, lakes and streams

Foreseen start date 01/07/2017    Actual start date    01/01/2018  
Foreseen end date 30/09/2020    Actual end date    in progress

*Beneficiary responsible for implementation: MAR*

The action is implemented exclusively by the MAR, all the other ABs will not carry out any intervention for the reasons already stated in the description of action A7.

For these beneficiaries, with the exception of the MEC, the budget foreseen in this action has been moved to action C1, favouring the increase of interventions in support of the two saproxylic species.

In the MAR the works are aimed at increasing the availability of suitable habitats for *Coenagrion mercuriale* by cutting tree plants of various sizes, logging, collecting and eliminating waste material, and selective trimming.

The executive project prepared by Dr. Gabriele Cassani (internal staff) was approved with act no. 51 on 5/07/2018. The assignment procedure is underway through a below threshold tender (Article 36 of Legislative Decree 50/2018) with the consultation of at least three economic operators. The interventions, which will be carried out in the first months of 2019, plan for a stop and then a recovery of operations after the vegetative season to eliminate the suckers; at any rate, they are planned to end by 2019.

No intervention is executed in favour of *Graphoderus bilineatus*. The MEC has not yet committed the quota for the accomplishment of this action, leaving the opportunity, if necessary, to use it for interventions in favour of *G. bilineatus*, should the new repopulation plan be approved by EASME, following the request for substantial modification.

One of the two action deliverables is transmitted with this MR.

DELIVERABLE	Foreseen Deadline	Actual Deadline	SENDING DATE AND REFERENCES
Basins and waterways recovery project for <i>Coenagrion mercurialis</i>	07/2017	11/2018	20/12/2018 – MR – Folder: Deliverable-C2_executive_project

#### 6.1.5 ACTION C.3: In-situ breeding

Foreseen start date 01/01/2017    Actual start date    01/09/2016  
Foreseen end date 31/12/2020    Actual end date    In progress

*Beneficiary responsible for implementation: PNATE*

For *O. eremita* the action started in September 2016 with the drafting of the Technical Specifications (technical features, materials, dimensions...) to acquire 150 Wood Mould Boxes (WMB). The call has been centralised to the manager of the PNATE action. Each AB

has set up the expense commitment for its own share. The supply has been assigned to the Falegnameria di Bagnocavallo (RA). The TC has elaborated the Technical guidelines for the preparation of the substrate to be inserted (wood mould) (annexed in this Report, Folder: Other documents,C3\_wood\_mould). The ABs have acquired all the necessary materials and as early as November 2016 and each has been involved in the preparation of the substrate. For the correct installation of WMBs, guidelines have also been produced, annexed in this Report (Folder: Other documents,C3\_guidelines). In accordance with what has been defined in the Action Plan (Action A7), some ABs have already installed the boxes, others have defined where to install them. Each WMB carries an identification ID and a metal plate, created with Action E4, where the project logo, together with the Life and the Natura 2000 logos, are depicted.

Below is the breakdown of the WMBs between the beneficiaries and the state of installation.

Beneficiario	N. WMB	ID- identificativo
PNATE	27 (installed)	IT40700xx_PNATE_WMB_001 IT40700xx_PNATE_WMB_027
PNFC	35 (undergoing installation)	IT40700xx_PNFC_WMB_001 IT40700xx_PNFC_WMB_035
MEOC	13 (installed)	IT40700xx_MEOC_WMB_001 IT40700xx_MEOC_WMB_013
MEC	25 (installed)	IT40700xx_MEC_WMB_001 IT40700xx_MEC_WMB_025
MEOR	23 (to be installed)	IT40700xx_MEOR_WMB_001 IT40700xx_MEOR_WMB_023
MAR	27 (installed)	IT40700xx_MAR_WMB_001 IT40700xx_MAR_WMB_023

To date, no WMB installed is subject to in-situ reproduction, the substrate in some cases has been introduced, but the restocking with larvae L3 and pupae will take place in spring 2019. Although there are already available specimens to introduce, it's been cautiously decided to start this activity at the end of winter/early spring to allow a smoother monitoring of the evolution of the biological cycle under more controlled conditions in the breeding centres.

For *R. alpina* with the action plan (A7) sites were identified and mapped where to create stacks and tripods suitable for the species. These interventions provide for the creation of stacks of sufficiently large logs (in diameter) to allow different generations of *R. alpina* to complete the biological cycle. This entails the construction of a pyramid of logs about 2 m long, with a diameter greater than 25 cm, with a shape that can be that of a pyramid 3-4 rows high, or of a cube, and raised 20 cm from the ground. This type of intervention to favour the in situ reproduction will be carried out by the PNFC, PNATE and MEOR, the beneficiaries who verified the presence of *R. alpina* during the ex-ante monitoring (A2e A3).

The deliverable of the action has not yet been produced; it is however scheduled for 2020.

#### 6.1.6 ACTION C.4: Ex-situ (captive) breeding

Foreseen start date 01/10/2016 Actual start date 01/04/2016

Foreseen end date 31/12/2020 Actual end date In progress

*Beneficiary responsible for implementation: MAR*

Three breeding facilities are operational in the MAR, PNATE and PNFC. Breeding is currently active only for *O. eremita*. The activity started in April 2016, with the discussion and sharing of a specific breeding protocol for *O. eremita* (annexed in this Report, Folder: Other documents-C4\_Breeding\_protocol), which also identifies a series of instruments and materials to be acquired to equip the three facilities. The following are the information on how the three breeding facilities were activated and the work progress:

PNATE	Work assignment for the construction of the breeding structure: Resolution no. 166 of
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	<p>26/06/2017. Structure completed on 27/07/2017  Contractor: FPV srl ", with headquarters in Via Isolella, 1 / D - 42032 Ventasso (RE)  Breeding in progress since July 2017.  To date, in the breeding centre there are 456 larvae, also coming from MEC.</p>
MAR	<p>On 19 April 2016, EASME was asked to modify the action by including the agreement for the construction of an ex-novo facility as per GA. The change has been notified by the CB to the PA Mr Montero with the email of 14/04/2016 and was accepted by the PA with the email of 21/07/2016.  Agreement with the Aquae Mundi Association, approved with resolution no. 64 of 30 November 2016 of the Executive Committee and signed on 15/12/2016.  The breeding is in progress starting from 01/11/2017. To date the results obtained are 968 larvae in the breeding: 738 coming from the MAR, 67 coming from the MEOR and 163 coming from the MEOC.</p>
PNFC	<p>The works project was entrusted through a tender procedure to engineer Giovanna Pondini with DD 713 dated 30/11/2016; the works were entrusted with DD 921 dated 30/12/2016 to the company "Le Arti" of Bonaventura Giulia of Bagno di Romagna, identified through the tender procedure. The works formally terminated on 01/08/2018.  However, the breeding is in progress starting from 01/11/2017. To date the result is the achievement of 631 larvae in the breeding, of which 552 coming from the PNFC and 79 coming from MEC's territory.</p>

Although the construction of the two PNATE and PNFC facilities has been slowed down due to obtaining the necessary authorisations, with the materials acquired and planned for by the project, both the beneficiaries have set up two temporary structures, that as early as May 2017 were ready to host the breeding activity.

To date, the breeding activity in the three centres has achieved the following results:

PNATE Centre	<p><b>No. of founders (withdrawal site): No. founders withdrawn in 2017:</b> 21 = 19 PNATE + 2MEC captured in the following sites: IT4030005 Abetina Reale Alta Valle del Dolo; IT4030002 Monte Ventasso; IT4030001 Monte Acuto Alpe di Succiso; IT4030003 Monte La Nuda, Cima Belfiore, Passo del Cerreto. <b>No. founders withdrawn in 2018:</b> no. 30 PNATE; no. 9 MEC captured in the following sites: IT4030005 Abetina Reale Alta Valle del Dolo; IT4030002 Monte Ventasso; IT4030001 Monte Acuto Alpe di Succiso; IT4030003 Monte La Nuda, Cima Belfiore, Passo del Cerreto.  <b>No. Larvae in relation to the stage:</b> L1: 102; L2: 318; L3: 36  <b>No. and estimated time of introduction:</b> Introduction of at least 270 larvae L3 and 54 Adults is expected starting from June 2019.</p>
MAR Centre	<p><b>No. of founders (withdrawal site):</b> MAR 118 in total: 14 F adults and 10 M adults from mature L3 larvae collected in nature in 2017 plus 94 mature L3 larvae not yet pupated collected in nature in 2017 (sites of origin: IT4070011 Vena del Gesso Romagnola, IT4070024 Podere Pantaleone, IT4090003 Rupi and Gessi Valmarecchia); MEOR 16 in total : 2 F adults collected in nature in 2018 plus 14 mature L3 larvae not yet pupated, collected in the wild in 2017 (site of origin: IT4050020 Lakes of Suviana and Brasimone); MEOC 24 in total: 6 F adults and 11 M adults from mature L3 larvae harvested in nature in 2017 plus 7 mature L3 larvae not yet pupated, collected in nature in 2017 (site of origin: IT4020021 Medio Tarò).  <b>No. of larvae in relation to the stage:</b> MAR: 738 larvae between L1, L2, L3; MEOR: 67 larvae between L2 and L3; MEOC: 163 larvae between L2 and L3.  <b>No. and estimated time of introduction:</b> MAR: introduction of at least 270 larvae and 54 adults is expected starting from May 2019; MEOR: introduction of at least 230 larvae and 46 adults is expected starting from May 2019; MEOC: introduction of least 130 larvae and 26 adults is expected starting from May 2019.</p>
PNFC Centre	<p><b>No. of founders (withdrawal site):</b> 18 F adults. + 12 M adults + 93 larvae collected in nature for PNFC.  3 F adults.+ 6 M adults for the MEC  <b>No. of larvae in relation to the stage:</b> 552 between L1, L2, L3 for the PNFC, 79 between L2 and L3 for the MEC.  <b>No. and estimated time of introduction:</b> introduction is planned of least 350 larvae and 70 adults starting from May 2019 for PNFC. Introduction of at least 250 larvae and 50 adults, is expected starting from May 2019 for the MEC (other larvae coming from the territory of the MEC are present at the breeding centre of PNATE).</p>

The *ex situ* breeding of *G.bilineatus* in Ligonchio (PNATE) and in Russi (on behalf of MAR), was supposed to start in spring 2017, but the failure to find founding individuals in the wild (already described in action A7), did not allow it. In the GA, among the Constraints and assumptions of the action, there is the plan to define "*an alternative and emergency strategy*" to be set in the Action Plan of Action A7, which is the subject of a request for substantial change, transmitted with the present MR. At any rate, both facilities were equipped to accommodate the breeding and temporary storage of the founders of *G.bilineatus* before introduction in the restocking sites (should the request for substantial modification be accepted).

MILESTONE	Foreseen Deadline	Actual Deadline
Beginning of the works to set up the three breeding facilities.	10/2016	November 2016 (temporary breeding structure). Permanent breeding structure. PNATE 26/06/2017; PNFC 30/12/2016; MAR 15/12/2016

DELIVERABLE	Foreseen Deadline	Actual Deadline	SENDING DATE AND REFERENCES
Agreement and breeding protocol	12/ 2016	12/ 2016	27/06/2017 – 1° PR – Folder: Other documents- C4 -Agreement_Acquaemundi
1° Technical report on ex-situ reproduction activities.	12/2018	12/2018	20/12/2018 – MR – Folder: Deliverable-C4_Technical_report

### 6.1.7 ACTION C.5: Introduction of species bred off site or relocated into the natural habitat

Foreseen start date 01/07/2017 Actual start date 05/2019 (prevista)  
Foreseen end date 31/12/2020 Actual end date not started yet

*Beneficiary responsible for implementation: MAR*

The action has not started yet. The delay is caused by the prolongation of ex-ante monitoring activities and by the obtainment of the necessary authorisations for the withdrawal of founders in nature. The positive opinion of Ispra was issued on 10/10/2017. The action will begin in April -May 2019 with the introduction of the specimens of *O.eremita* farmed with C4 action and with the translocation of *C. mercuriale*.

### 6.1.8 ACTION C.6: Creation of an integrated computer system to support the conservation of the target species, including web tech solutions to involve stakeholders

Foreseen start date 01/07/2016 Actual start date : 06/10/2017  
Foreseen end date 31/12/2020 Actual end date: in progress

*Beneficiary responsible for implementation: RER*

The activity has been assigned with order no. PG0647271 / 2017 to the company "Engineering - Ingegneria informatica SPA" as part of the Intercenter - ER agreement signed in November 2014 following a tender carried out by the ER Region for the provision of services aimed at developing, managing and evolving maintenance of information systems...".

The activity took place in two steps:

1) In the first phase an analysis was carried out of the needs of the project and the instruments held by the CB, with particular reference to a series of Access databases linked to the Natura 2000 network and in particular to the database called " Banca dati delle segnalazioni sulla

biodiversità regionale” (*Database of reports on regional biodiversity*). The goal is to relate the DBs and to make the import and export operations between the two systems practical. The web-technology was then structured with three access masks: 1) monitoring; 2) conservation actions; 3) documentation. The users were categorised (by user-administrator, compiler, validator, etc.) all the information deriving from the monitoring of both the species and the habitats coming from the ABs were systematised; the metadata fields and the methods of insertion of the monitoring-related mask were defined.

2) In the second phase an analysis was carried out on the metadata structure of the various conservation actions: forestry interventions (C1); aquatic interventions (C2); WMB (C3); breeding farms (C4); introductions (C5). The relative access mask with metadata tables that are activated in relation to the different types of data that are to be inserted has been structured. The metadata of the third mask relating to the documents have been defined and a geometric field has been created for the generation of shape-files to be imported on Q-gis and Archgis. Therefore all the information has been organised, systematised and centralised in a web-technology system, which at the date of this report is only accessible by the computers of the regional network of the Emilia-Romagna Region. An integrated environment is being created with Federa (Digital Identity Management) for registration. On the home page of the web site there will be a dedicated space (working in progress).

The action has been optimised compared to what is foreseen in the Proposal because the web - technology adapts to every device on which it is displayed (laptops, tablets and smartphones) and does not require a specific application (App-web technology). The system is accessible by different categories of authorised users. The data can be entered by the compiling user, but will be validated by the validating user. In this way the database can be used by the volunteers and the datum be validated by authorised professional entomologists as validators. To date, all monitoring data have been imported and data regarding conservation actions and documents are being entered. The system will be enriched with data with the progress of the project activities. Use cases include: insertion/modification of monitoring, conservation action and documents; monitoring display, conservation action and documents; downloading of data; User Management.

The deliverables ended late due to the prolongation of monitoring activities and therefore the consequent delay in defining and identifying the various types of conservation actions. The design of all metadata requires a clear picture of global data. The results of the action were achieved: 3 integrated databases and supporting GIS; a system of Web interfaces for consulting / implementing data through three access masks with also a function of web application accessible from different devices; involvement of volunteers in updating data.

DELIVERABLE	Foreseen Deadline	Actual Deadline	DATA INVIO E RIFERIMENTO
System of web interfaces	11/2016	11/2018	20/12/2018 – MR – Folder: Deliverable-C6_System_Web_technology
Web-technology application	11/2016	11/2018	

### 6.1.9 ACTION C.7: Thematic workshops for training and internal information

Foreseen start date	01/07/2016	Actual start date	01/05/2016
Foreseen end date	30/09/2020	Actual end date	In progress

*Beneficiary responsible for implementation: RER*

Two of the three planned workshops were carried out. The action began in May 2016 with the preparation of the first training workshop held on 6/06 at the Carnè Visitor Centre in Brisighella (RA) in the MAR. This workshop was aimed at the technical staff of the project

(internal and external) and the technical staff of all the Beneficiaries. Dr. Sönke Hardersen of the Life MIPP project participated. Materials are attached to pr1; folder other\_documents / c7  
The second workshop was held on September 23, 2017 and was addressed to the guides involved in environmental education activities (Action E2). This workshop was held in conjunction with the events of the Palaeremita (E7) of the Eremita Festival (A5).

The third workshop will address the Forestry Corps and the Provincial Supervisory Bodies and will be carried out in the first half of 2019. The action plan of conservation actions (A7) has been defined and also a good part of the interventions on habitat trees have been executed, therefore it is possible to provide a framework rich with information and precise indications for those who carry out territorial surveillance work. The entire period in which the ex-ante monitoring took place, the TC carried out continuous training also in the field with the entomologists appointed by the ABs, and carrying out specific meetings at the CB: one in October 2016, one in March 2017. All the material related to the 2nd workshop is herewith attached in Folder: Other documents, C7\_workshop\_23\_09\_17. No deliverables are foreseen for this action.

#### **6.1.10 ACTION C.8: Conservation Measures and Management Plan**

The action hasn't begun yet since it's planned to start in the first quarter of 2020.

#### **6.1.11 ACTION D.1: Ex-post evaluation of ex-situ reproduction efficiency**

Foreseen start date	01/07/2017	Actual start date	01/11/2017
Foreseen end date	30/09/2020	Actual end date	in progress

*Beneficiary responsible for implementation: MAR*

The action takes place in parallel with the activities of C4. It has been started only for *O. eremita*.

Below is the evaluation of the measures implemented according to the indexes identified in the Proposal.

1) No. reproduction sites created / no. programmed	3/3
2) No. captive reproducers for each species.	<i>O. eremita</i> : tot. 239 + 93 larvae collected in nature for PNFC
3) No. larvae produced (different stages) for each species / no. adult captive individuals.	<i>O. eremita</i> : (631+456+968) = 2055/239 (A)
4) No. of progeny to sexual maturity / no. tot. of captive specimens.	Datum not yet significant
5) Rate of growth of species in captivity.	Datum not yet significant
6) Development of pathologies.	Necrosis of probable fungal origin

The data will be stored in the Web-technology DB (C6). The deliverable is planned for at the end of the project.

#### **6.1.12 ACTION D.2: Ex-post evaluation of restocking efficiency**

The action is in delay and hasn't started yet. It is planned to start after restocking activities that will begin in May 2019.

#### **6.1.13 ACTION D.3: Evaluation of socio-economic impact**

The action hasn't started yet.

#### **6.1.14 ACTION D.4: Ex-post evaluation of presence, distribution and abundance of the target species**

The action hasn't started yet since it's planned to begin in the first quarter of 2020.

### 6.1.15 ACTION D.5: Ex-post analysis on main stakeholders groups opinion

The action hasn't started yet since it's planned to begin in the first quarter of 2020

### 6.1.16 ACTION D.6: Evaluation of ecosystem functions

The action hasn't started yet since it's planned to begin in the first quarter of 2020

### 6.1.17 ACTION E.1: The project's website

Foreseen start date 01/04/2016 Actual start date 01/01/2016

Foreseen end date 31/12/2020 Actual end date In progress

*Beneficiary responsible for implementation: RER*

In January 2016, the CB, through its staff, created the website <https://progeu.regione.emilia-romagna.it/it/life-eremita>, structured in the sections described in the GA. Some of the contents of the website have been translated in English.

Currently the site is being updated, has been improved in its usability and graphics, and will be uploaded from January 2019. Until the date of uploading it remains active in its current form. The new site's home page has a menu divided into three main sections: The project; Dissemination and Communication; Further information. Each section has an articulated sub-menu.

The home page hosts the news of the project and all the linked logos. The screen shot of the home page is herewith attached as "other documents". Here are the site statistics:

Total visits from April '16	4.713
Unique visitors from April '16	3.334
Average length of visit:	0,83s

DELIVERABLE	Foreseen Deadline	Actual Deadline
Website	06/2016	05/2016
MILESTONE		
Website activation	06/2016	05/2016

### 6.1.18 ACTION E.2: Communication, distribution and environmental education actions

Foreseen start date 01/07/2016 Actual start date 01/07/2016

Foreseen end date 30/06/2020 Actual end date In progress

*Beneficiary responsible for implementation: MEOC*

#### Environmental education

MEOC's staff has drawn up the environmental education project, which was shared in the TT of October 2016 and approved in the TT of January 2017 (27/06/2017 – 1° PR – Folder: Deliverable E2\_ Deliverable\_1). Subsequently, each AB has prepared a tender for the assignment of environmental education activities, with the request for three offers. Below is the progress by each AB.

PNFC	The environmental education activity has been assigned to the Coop. Sterna of Forlì. On 09/10/2017 a meeting was held in Forlì for the presentation of the Environmental Education programme with 4 participating teachers. Overall 21 classes and 375 students joined: 5 pre-schools, 2 elementary, 2 high schools for science, and 1 secondary school coming from: Forlì, Faenza, Tredozio, Premilcuore, Rimini and Ravenna. Each class was involved in a class lesson and a field trip, for a total of 40 meetings. During the 2018/2019 school year there will be networking with the Life
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	WetFlyAmphibia project on teaching, which will involve several comprehensive schools of the Park.
PNATE	The educational activity was carried out directly by the two entomologists appointed by PNATE: Giovanni Carotti and Iris Biondi. 99 classes and 2,500 students joined: 6 kindergartens, 33 elementary, 24 secondary schools, 36 high schools. Classes were involved in classroom lessons at the Park Visitor Centre and in a field trip, for a total of 37 meetings in 2017 and 47 in 2018.
MAR	The environmental education activity was entrusted to the Cooperativa Ecosistema of Imola with Resolution 30 of 07 April 2017. The activities will take place in the 2018 - 2019 school year and have been included in MAR's 2018/2019 school catalogue.
MEOR	The environmental education activity has been entrusted to Hydrosynergy Soc. Coop. of San Lazzaro di Savena on 27 November 2017. The activities started in the 2017/2018 school year and involved 3 classes for a total of 76 students, belonging to 2 secondary and 1 primary school. In the 2018/2019 school year, 13 teaching modules are underway and planned (2 of which are for kindergartens and 11 for primary schools). Further 32 modules will be implemented in the second part of the project. The activity includes class lessons and field trips. These activities have been included in MEOR's catalogue of proposals for schools.
MEC	One environmental education intervention was carried out, conducted by MEC internal staff, on 20/6/2018 at the Summer School of the Modena and Reggio Emilia University and Soc. Ital. Pedologia, within the course "Mountain development and support" with the participation of 20 students, at Lake Pratignano, in the Park of the Alto Appennino Modenese, (Fanano, Mo).
MEOC	Environmental education activities have been entrusted to Esperta srl on 24/10/2017. The activities took place during the 2017-2018 school year from February to May 2018 and involved 270 pupils of nursery and primary schools. For the 2018/2019 school year, 22 classes -12 kindergarten and 10 of primary schools – for a total of 418 pupils have booked the activity, which includes: 1 class lesson of 2 hours and 1 half day field trip.

To date, a total of 3563 students and 142 classes have been involved.

### Technical Symposia

The two symposia have not yet been held. A first symposium on the two forest species is planned in 2019 and the second in 2020 linked to the two aquatic species.

### Specific information and communication meetings

To date, 32 awareness-raising meetings have been held in the AB territories, presenting the project to several citizens' representative targets. The calendar of events and targets involved for each AB and the material produced are in the Technical Annex (annexed in this Report in Other documents).

### Dissemination material and publications:

CB's staff has created a series of dissemination products availing itself of the Region's typography. The material was printed starting from August 2016 and has been delivered to the AB according to their requests. The material is printed with limited editions and when requested by the AB. Here follows the list of what has been printed to date:

Dissemination product printed by RER typography	No. Prints as of 31/10/2018	Distribution list	Delivery date and reference
Information leaflet - Italian	3252	Eremita tour – EntoModena-Information	20/12/2018 – MR – Folder: Other documents – E2 - Dissemination material.
Information leaflet - English	500		
Notebooks	5400		

Poster	2875	meetings of the ABs	<a href="https://progeu.regione.emilia-romagna.it/it/life-eremita/temi/progetto-eremita/prodotti">https://progeu.regione.emilia-romagna.it/it/life-eremita/temi/progetto-eremita/prodotti</a>
Bookmarks	9600		
Memory game	400		

The CB, following a tender, entrusted "Tutti Frutti" of Ravenna with the production of: a dissemination leaflet – Italian (8,500) and English (1,500) versions- 6 pages folded in three, 21x21 cm in four colours; two technical publications A4 size, 40pages + 40 pages in Italian (3,500) and in English (1,500). The leaflet was printed and delivered in August 2018. The two publications have been merged into a single volume by editorial choice but the number of pages (40 + 40 = 80) and the contents do not change. The volume is divided into two sections: the first concerns the two saproxylic-forest species (update of the distribution, catalogue of tree-habits, catalogue of conservation interventions and breeding), the second section concerns the two aquatic species (update of the distribution, conservation actions in favour of *C. mercuriale*, genetic analysis results of *G.bilineatus*).

DELIVERABLE	Foreseen Deadline	Actual Deadline	SENDING DATE AND REFERENCES
Executive environmental education project activated	01/2017	01/2017	27/06/2017 – 1° PR – Folder: Deliverable E2_ Deliverable_1- Progetto educazione ambientale
1st Dissemination publication presenting the project and the target species	01/2017	08/2016	27/06/2017 – 1° PR – Folder: Deliverable E2_ Deliverable_2- E2_Depliant_LifeEremita
2nd Dissemination publication presenting the project and the target species	01/2017	08/2018	20/12/2018 – MR – Folder: Deliverable – E2 – Diss-pubblication - depliant 21x21ITA/ ENG def
Technical publication on actions regarding habitat creation and management.	09/2017	12/2018	20/12/2018 – MR – Folder: Deliverable – E2 E2_Technical_publication ITA_ENG
Technical publication on in situ-ex situ conservation actions and reintroductions.	06/2018	12/2018	20/12/2018 – MR – Folder: Deliverable – E2 E2_Technical_publication ITA_ENG

### 6.1.19 Action E3 Layman's report

The action hasn't started yet.

### 6.1.20 ACTION E.4: Project logo selection and creation of informational, educational and "best practices" notice boards

Foreseen start date 01/04/2016    Actual start date    01/04/2016

Foreseen end date 31/12/2016    Actual end date    in progress

*Beneficiary responsible for implementation: RER*

The logo of the project was created by CB's internal technical staff during the month of April 2016. During the first monitoring visit the decision was made to produce and install panels only after the definition of the Action Plan of conservation actions (Action A7), in order to place notice boards in areas where it is possible to see the interventions, providing information on the types of interventions carried out. To date, notice boards have been created, delivered and some of them installed in areas where interventions have been carried out (C1, C2, C3, C4). (annexed in this Report, Folder Other documents-E4\_foto). The signs were enhanced with the production of a greater number of information panels of different types: 20 Roll-UP information panels for interiors; 20 information panels for the outdoor; 3 information panels for breeding centres; 160 rectangular plates for WMBs.

DELIVERABLE	Foreseen Deadline	Actual Deadline	SENDING DATE AND REFERENCES
Project logo	06/2016	04/2016	27/06/2017 – 1° PR – Folder: deliverable-E4-PojectLogo
Production of notice boards	12/2016	12/2018	20/12/2018 – MR – Folder: Deliverable- E4_notice_boards

### 6.1.21 ACTION E.5: Thematic workshop

Foreseen start date 01/07/2018 Actual start date not started yet  
Foreseen end date 01/01/2019 Actual end date

*Beneficiary responsible for implementation: PNATE*

The action has not started yet because it has been delayed. The planned workshops will be carried out starting from the first months of 2019, at the end of the forest works. The delay accumulated on the implementation of the C1 action has postponed the start of training and updating activities addressed to the action target.

### 6.1.22 ACTION E.6: Final workshop

The action has not yet begun with regard to the organisation of the final workshop, but the production of the planned promotional objects has been entrusted by the Region E-R to coop Atlantide of Cervia, with a single contract that includes the organisation of the remaining 3 Eremita Festivals scheduled in action A5.

### 6.1.23 ACTION E.7: The EREMITA Tour: a travelling awareness campaign

Foreseen start date 01/01/2017 Actual start date 01/03/2017  
Foreseen end date 31/12/2020 Actual end date In progress

*Beneficiary responsible for implementation: PNATE*

#### **EREMITA tour**

The Eremita awareness-raising campaign was launched together with the first EREMITA Festival (A5), on 24/09/2017 in Bologna. The Palaeremita, an inflatable modular structure previously dedicated to the wolf species, has been covered and equipped with information contents regarding the 4 target species of insects. In particular, the following were produced: 12 sheets used as removable graphics and 8 sails printed on recycled polyester with images of the project target species, 4x0.70 m in size, and equipped with support rod and cast iron base / counterweight.

The Eremita tour is in progress, 21 editions have been carried out. In the Technical Annex (annexed in this Report in Other documents) is the calendar of events organised, with photos and the documentation produced.

The PNFC, another beneficiary involved in the organisation of this specific activity, has assigned to an external company (Coopertiva Atlantide), through specific tender, the organisational and entertainment service of the editions that will take place in the Eastern sector of the ER Region, in the territory of PNFC and MAR. These are 16 editions starting from spring 2019.

#### **Video clips**

PNATE has created 5 video clips: 1) The Life Eremita Project: species, partners and monitoring; 2) *O. eremita*; 3) Discovering beetles; 4) *Rosalia alpina* 5) Presentation of the project with an interview with Dr. Willy Reggioni. (Deliverable, annexed in this Report).

The PNFC has been creating 2 of the 3 envisaged video clips: 1) on *O.eremita*; 2) on *C.mercuriale*. The last video, documenting the restoration and environmental improvement interventions for aquatic insects (C2), will be produced in the spring, when these interventions will be carried out. Only once the last video has been made will the DVD containing the 8 video clips be produced. 3 video clips have not yet been produced due to delays in conservation actions.

### Stickers

In the Proposal it was envisaged to create a stickers album. In the executive phase, thanks also to cost savings deriving from other communication actions, it was decided to create an actual didactic kit, consisting of:

- a **didactic notebook**, addressed to the students of the Primary and I degree Secondary school, with contents specifically designed for this type of user. The notebook should describe, through photos and original illustrations, the insects and their role in the animal kingdom; the four project target species, their role in the ecosystem, conservation status, the main threats; the importance of ecological networks and the Natura 2000 network, project actions for the conservation of target species (monitoring, habitat recovery interventions, in situ and ex situ conservation). The notebook will contain an **informative album insert** with stickers to paste "Le Figurine dell'Eremita" (*The Eremita picture cards*).
- a 70x100 cm colour **poster** on recycled paper, folded into four, which has the aim of disseminating the project.
- **promotional objects**: 800 3x3.7 cm colour magnets representing the 4 target species (200 per species).

The kit was created and completed in November 2018.

DELIVERABLE	Foreseen Deadline	Actual Deadline	SENDING DATE AND REFERENCES
Album and picture cards printing	12/2017	11/2018	20/12/2018 – MR – Folder: Deliverable-E7_kit_didattico
Video clip on target species	01/2017	09/2017	20/12/2018 – MR – Folder: Deliverable-E7_video clip
Sheets and flags printing	01/2017	09/2017	20/12/2018 – MR – Folder: Deliverable-E7_eremita_tour_Sheets_flags
MILESTONE			
Launch of travelling awareness-raising campaign Eremita tour	02/2017	09/2017	on 24/09/2017 in Bologna

### 6.1.24 ACTION E.8: Project press office

Foreseen start date 01/04/2016    Actual start date    01/04/2016

Foreseen end date 31/12/2020    Actual end date    In progress

*Beneficiary responsible for implementation: RER*

The Press Office of the EREMITA project was activated in March 2016. Simultaneously with the completion of the tender for the PM position, the project communication service was also assigned to the Istituto Delta – Ecologia Applicata. The coordination of communication is therefore conducted by the PM in consultation with the communication contact persons appointed by each AB. That which was envisaged in the application form was improved by activating a Facebook page of the project: <https://www.facebook.com/liferemita/>. The page is managed by the communication coordinator. To date, the statistics on the Facebook page are: 755 followers, and more 150 post published.

At present, 32 press releases have been issued, published on the project web pages, and linked to the Facebook page. The collection of press releases is published in the web site <https://progeu.regione.emilia-romagna.it/it/life-eremita/notizie/notizie>

The Communication Plan was established, which defines the methods for circulating information within and outside the partnership, the communication organisational chart, the project identity, the activity plan and the communication products plan. The plan was approved at the December 2016 TT.

<b>DELIVERABLE</b>	<b>Foreseen Deadline</b>	<b>Actual Deadline</b>	<b>SENDING DATE AND REFERENCES</b>
Communication plan	12/2016	12/2016	27/06/2017 – 1° PR – Folder: deliverable-E8_Piano_comunicazione
<b>MILESTONE</b>			
Activation of Project Press Office	06/2016	05/2016	--

### **6.1.25 ACTION F.1: Administrative-accounting and technical project management**

Foreseen start date 01/01/2016 Actual start date 01/06/2016  
 Foreseen end date 31/12/2020 Actual end date In progress

*Beneficiary responsible for implementation: RER*

The PM was selected through tender and appointed with Resolution n. 8573 of 27/05/2016. The PM and TC contract didn't cover the entire duration of the project. The first contract concluded on June 2017. The second contract, again following a tender procedure, was assigned in December 2017 with award resolution no. 21061/2017, and ends on 30/11/2018. The assignment in favour of the Istituto Delta Ecologia Applicata, provides the following figures in the working group: Cristina Barbieri as PM and TC; Flavio Bruno as coordinator of financial reporting, and Roberto Fabbri as entomologist supporting the TC.

The technical coordinator (Mr. Roberto Fabbri) was selected by tender and appointed with resolution n. 5010 of 31/03/2016. The contract concluded on June 2017.

In consideration of the figure envisaged for scientific supervision, two supervisors were appointed: one specialised in saproxylic insects and one in aquatic insects. Professor Renato Carchini, for the aquatic insects component, was appointed with resolution o. 18418 of 22/12/2015. Professor Marco Uliana, for the saproxylic insects component, was appointed with resolution no. 20843 of 23/12/2016.

The technical and administrative tables were officially established with resolution no. 8673 of 30/05/2016, with the first formal meeting. The technical table consists of:

<b><i>Nominativi</i></b>	<b><i>Ruolo</i></b>
Monica Palazzini	Project Coordinator
Elena Chiavegato	Support to the Project Coordinator
Ornella De Curtis	Technical-scientific aspects support
Cristina Barbieri	Project manager and Technical Coordinator
Roberto Fabbri	Entomological support to the Technical Coordinator
Massimiliano Costa	MAR Technical manager
Fausto Minelli	MEC Technical manager
Renato Carini	MEOC Technical manager
David Bianco	MEOR Technical manager
Francesca Moretti	PNATE Technical manager
Davide Alberti	PNFC Technical manager

The administrative table consists of:

<b><i>Nominativi</i></b>	<b><i>Ruolo</i></b>
Monica Palazzini	Project Coordinator
Cristina Barbieri	Project manager
Diego Mattioli	MAR Financial manager
Alessandra Galli	MEC Financial manager
Marcella Ghiretti	MEOC Financial manager

Lucia Bolognesi	MEOR Financial manager
Willy Reggioni	PNATE Financial manager
Roberta Ricci	PNFC Financial manager

However, even before their formalisation, the partners met at two tables. The first joint meeting was held on 10 February 2016. The administrative table periodically monitors the progress of the expenditure, collects the administrative documentation of all the partners and resolves all the administrative problems involved. The table meets every 3-4 months, depending on the needs, compared to the six-monthly meetings planned in the application form. At report delivery date, the following were realised:

n. 8 administrative tables (8/03/2106, 30/05/2016, 28/09/2016, 23/01/2017, 31/03/2017, 01/03/2018, 14/05/2018, 19/11/2018). Internal coordination meetings, between Project Coordinator and PM take place regularly and are documented in the monthly activity report sent to Monitor Alberto Cozzi. Since the last PR the PM was also involved, with the manager and staff of the CB, in writing texts for dissemination and technical publications, defining the fields of web technology, and preparing reports A2, A3, A4 and A7 by organising and standardising the various contributions of the Abs. They also worked on realisation of the GIS and of all the maps necessary for reports as well as informative and technical products.

DELIVERABLE	Foreseen Deadline	Actual Deadline	SENDING DATE AND REFERENCES
Minutes of the meetings of technical and administrative tables and of the first year meetings	12/2016	12/2016	27/06/2017 - PR1 Folder: F1_Deliverable_1/ Tavoli amministrativi; F1_Deliverable_1/ Tavolo Tecnici
Minutes of the meetings of technical and administrative tables and of the second year meetings	12/2017	12/2017	27/06/2017 - PR1 Folder: F1_Deliverable_2/ Tavoli amministrativi; F1_Deliverable_2/ Tavolo Tecnici 20/12/2018 – MR – Folder: Deliverable- F1_TT_TA_minute-2017
Minutes of the meetings of technical and administrative tables of the third year	12/2018	12/2018	20/12/2018 – MR – Folder: Deliverable- F1_TT_TA_minute-2018
MILESTONE			
Appointment of the project manager	03/2016	05/2016	
Appointment of the scientific supervisor	06/2016	12/2016	

### 6.1.26 ACTION F.2: Establishment of the technical workgroup

Foreseen start date	01/04/2016	Actual start date	01/03/2016
Foreseen end date	31/12/2020	Actual end date	In progress

*Beneficiary responsible for implementation: RER*

The technical table was officially established with resolution no. 8673 of 30/05/2016. The technical table was periodically convened that allowed a measure of progress on the actions and solutions of the technical issues that occurred. The table is composed of the Project Coordinator, the PM, the TC and the technical representatives of all the ABs. The table meets every 1-2 months, according to need. On the report delivery date, the table met: 5 times in 2016; 8 in 2017; 5 in 2018. Two Focus Groups meeting have taken place: on 18/10/2016 and on 03/07/2018. The second Focus group was established permanently (appointment n. 13250 del 13 08 2018 – annexed in this Report, Folder Other documents F2) to partake and plan activities on *G. bilineatus*. In particular, the group defined, with the support of Dr Piero Genovesi of ISPRA and prof. Audisio, an alternative plan for the *G.bilineatus* breeding

activity as already described in the actions C1, C2, C4. In order to better define the plan, a Focus group was set up with the participation of the technical representatives, the Project Coordinator, the PM, some entomologists (Mr. Roberto Fabbri, Dr. Giovanni Carotti, Dr. Gianluca Nardi), prof. Congiu and prof. Audisio. The Focus group will support all future (scientific and organisational) activities on *G.bilineatus* as defined in the request for substantial modification of the project.

TT dates: 10/02/2016 e 8/3/2016 (unofficial phase), 30/05/2016, 21/06/2016, 18/07/2016, 12/09/2016, 28/09/2016, 25/10/2016, 23/01/2017, 03/03/2017, 31/03/2017; 18/05/2017, 10/07/2017, 10/08/2017, 02/11/2017, 05/12/2017, 22/01/2018, 01/03/2018, 14/05/2018, 03/10/2018 e 12/11/2018 and two focus groups on 18/10/2016, and 03/07/2018.

The activity takes place regularly, without criticality.

The minutes of the tables are attached as deliverables of the F1 action.

MILESTONE	Foreseen Deadline	Actual Deadline	SENDING DATE AND REFERENCES
Appointment of members and activation of the project Technical table.	03/2016	05/ 2016	27/06/2017 - PR1 Folder: F1_Milestone2

### 6.1.27 ACTION F.3: Networking with other projects, LIFE and non-LIFE

Foreseen start date	01/07/2016	Actual start date	01/04/2016
Foreseen end date	30/09/2020	Actual end date	In progress

*Beneficiary responsible for implementation: MEC*

The action was anticipated to April 2016 through the networking request to the managers of LIFE WetFlyAmphibia and LIFE MIPP. Meetings and the exchange of technical information with the representatives of the two projects periodically continue to take place.

The following activities involve networking with the LIFE MIPP project: definition of the possible capitalisation on the project results, sharing of monitoring protocols, collaboration between PNFC and UTB Pratovecchio, participation at the EntoModena fair on 17 and 18 September 2016, participation of the LIFE MIPP coordinator in the first seminar addressing volunteers on 25/10/2016 (action A5), participation in the final MIPP Life Conference in Mantova, 24-26 May.

The following activities involve networking with the LIFE WetFlyAmphibia project: definition of intervention points of common interest, participation by LIFE EREMITA technical coordinator at the initial conference of the WetFlyAmphibia project, organisation of a weekend with national CAI-TAM at the PNFC.

Further networking was activated: with the LIFE14NAT / DK / 000606 RigKilde, with the Lazio Region on monitoring of *C. mercuriale* and with the University of Zagreb on monitoring of *G. bilineatus*.

The support letter (form A8) was requested and released to two LIFE candidate projects with the 2016 call on *O. eremita*: one in the Czech Republic and one in Lithuania.

On 5 April 2017 the representatives of LIFE EREMITA participated in the StudyVisit Life Slovenija - LIFE14CAP / SI / 000012.

On April 19, 2018 the Project Coordinator, the PM and the technical representative of the MAR participated in the StudyVisit - HUNGARIAN LIFE-LIFE14 CAP / HU / 000010.

On 18-19 September 2018 the PNFC entomologist Margherita Norbiato participated in the "BRINGING BUGS BACK TO LIFE: action for threatened invertebrates"

LIFE platform meeting on invertebrates "BRINGING BUGS BACK TO LIFE: action for threatened invertebrates" in Stirling, Scotland.

For the supply of *G.bilineatus* specimens necessary for comparative genetic analysis, networking with Dr. Martina Temunovic in Croatia was activated; Dr. Dalia Bastytė in Lithuania and Dr. Zoltán Csabai in Hungary.

To investigate the availability of research groups to collaborate on a repopulation plan with founders to be withdrawn abroad, 15 contacts were activated, of which: 6 derive from Life projects completed or still in progress, identified through research on the Life Data Bank; 3 from contacts already started for the supply of *G. bilineatus* specimens for genetic analysis; 6 contacts from direct and indirect knowledge on research groups in Europe.

The materials regarding networking activity are transmitted in “Other documents”.

DELIVERABLE	Foreseen Deadline	Actual Deadline	SENDING DATE AND REFERENCES
Minutes of networking activities years 2016-2018	12/2018	12/2018	20/12/2018 – MR – Folder: Deliverable-F3_networking

### 6.1. Main deviations, problems and corrective actions implemented

The first difficulty encountered concerned Action C4 and the change proposed to use an existing private structure, managed by Acquaemundi, in the partner’s area (in the same province of Ravenna, located about 35 Km from the natural park and from the place where the new building is expected by the project), dealing with aquatic wild animal farming (fishes, amphibians, reptiles) for reintroduction and restocking. The use of the Acquaemundi center replaces the realization of the structure in the Centro Visita Ca’ Carnè, included in the area of MAR. On 19 April 2016, EASME was asked to modify the action by including the agreement for the construction of an ex-novo facility as per GA. The change has been notified by the CB to the PA Mr Montero with the email of 14/04/2016 and was accepted by the PA with the email of 21/07/2016. Agreement with the Aquae Mundi Association, approved with resolution no. 64 of 30 November 2016 of the Executive Committee and signed on 15/12/2016 (annexed with IPR on 27/06/2017; Folder ù: other documents C4\_Acquaemundi).

The second difficulty encountered concerned the timeline of ex - ante monitoring actions: A2, A3, A4. The sharing of methodologies, the practice of monitoring, the extension of the area of investigation and the lack of previous knowledge on the distribution and consistency of the populations of the 4 target species, required more effort than expected in the Proposal, monitoring in fact was carried out over two years instead of one (EASME B3/MMR/ D(2017) 3790763 of the 03/07/2017 and EASME B3/MMR/hm/D(2018)4243625 of the 17/07/2018 ). The delay of these actions has consequently caused the delay of the Action A7, which foresees a "Plan of conservation actions" and therefore the beginning of the actions C1, C2, C3, C4 and C5. In the face of a strong initial slowdown, the activities are recovering, especially for the *O. eremita* breeding activity already under way, and which has already provided part of the expected results. Furthermore, the request for a substantial modification of the project will guarantee the optimal execution of the post-intervention monitoring actions.

The third difficulty concerns the target species *G.bilineatus*, as already described in action A7. The impossibility of withdrawing founders from Lago Pratignano, already foreseen in the GA as a risk, has determined the definition of an alternative plan that is the subject of a request for substantial modification in terms of technical change and duration of the project.

If the substantial modification of the project is accepted, this will allow us not only to recover the initial gap on the actions in favour of the other three target species of the project, being able to plan and enrich with content the next planned information / training and communication activities, but also implement a restocking plan thanks to the activation of a European networking, which will allow the exchange of technical and scientific practices that will define a good practice to be transferred to other European realities.

To the first progress report some partners have made or planned changes to budget within the limits of General Condition Art. II.22, specifically:

Partner	Changes
MAR	30.000 € from Infrastructures for Action C4 (agreement with Acquemundi already notified to PA with mail 14/4/2017): 23.400 € to External Assistance, 4.000 € to other costs (documentary), 1.000 € to consumables and 1.600 € to overheads. 34.410 € from personnel costs (additional staff actions A, C7 and E5) to external assistance. Total amount: 64.410 €.
MEOC	1.645 € from equipment (saving of tender) and consumables in Action A2 to personnel (Additional Staff) for Action C3 (installation of WMB). 4.330 € from travel in personnel (Additional Staff) (2.000 € for Action C5 and 2.330 € for Action D4). Total amount: 5.975 €.
MEOR	4.150 € from travel to external assistance in order to support entomologists for Actions A2, A3, C3).
PNFC	17.870 € from Travel to External Assistance for monitoring actions. 30.780 € from Personnel (Additional Staff) to External Assistance. Total amount: € 48.650 for actions C3, C4, C5, D1, D2, D4.

The changes planned to 30/04/2017 (123.185 € equal to 5,79 % of the budgeted costs) was confirmed. To these are added the new planned changes to budget, described in this MR. Another deviation of the project is represented by the need to make genetic analysis to define the alternative scenario, activity not foreseen by project. The CB, following a comparison of cost estimates from other universities, commissioned to the University of Padua a study on the genetic variability of *G. bilineatus*. The cost of the study (€ 6,322) borne by the CB, was paid for using other actions' savings (realized under the same budget line). The survey on genetic diversity observed in the gene for mitochondrial COI has revealed that the population of Lake Pratignano has an extremely reduced genetic diversity. The other European populations have a greater diversity, none of the other populations has shown the haplotype equal to that of Pratignano, and there is no significant relationship between genetic distance and geographical distance between populations. On 7/06/2018 a skype meeting took place with Dr. Genovesi and Prof. Audisio and Prof. Congiu of the University of Padua, due the results of the genetic investigations, the alternative program with founders from other European sites has been approved. The genetic analysis of *Graphoderus bilineatus* allowed to prepare the alternative scenario proposed in the request of amendment.

## 6.2.Evaluation of Project Implementation

The project methodology is based on the typical phases of species restocking, and can be summarised as: analysis of residual population, analysis of suitable environments for the species, possible improvement of species habitat, ex-situ breeding, breeding and/or translocation restocking. The basic methodology proved to be adequate. We point out how the contingency plan, in case of lack of individuals for repopulation, revealed to be of strategic relevance, as well as the genetic variability analyses have been a useful tool to realise the contingency plan for *G. bilineatus*.

A specific comparison of the obtained results have been summarized in the table below.

Action	Foreseen in the revised proposal	Achieved	Evaluation

Action	Foreseen in the revised proposal	Achieved	Evaluation
A2 Ex ante monitoring (all 4 species)	<p>Objectives: obtain a framework of the conservation state of the population maximize the results of concrete conservation actions and in particular actions C1, C2, C3 and C4</p> <p>Expected results: specific localisation of species presence; numeric estimation of the sub-population consistence; environmental suitability model at regional scale; abundance index of <i>C. mercuriale</i> and <i>G. bilineatus</i>.</p>	<p>The distribution and conservation of all 4 species has been defined. The specific occurrence has been mapped on GIS. The suitable environmental model at regional scale has been defined for <i>O. eremita</i> and <i>R. alpina</i>, not for the other 2 species given the lack of existing habitat.</p> <p>The abundance index has been calculated as number of individuals trapped/detected per Km in transects.</p>	<p>The monitoring has been extended for 2 years, instead of only one, however, the extension permitted the gathering of better data on the species and a number of monitored SCIs which was twice the one originally planned.</p> <p>The standardisation of methods revealed to be crucial in order to obtain data at a wider scale and that could be utilised as future benchmark. The capture – mark – recapture method for numeric estimation proved to be not viable.</p>
A3 Individuazione/inventario alberi habitat <i>O. eremita</i> e <i>R. alpina</i>	<p>Objectives: identification of all potential suitable areas for species reproduction of target species on the entire project area</p> <p>Expected results: Technical report and framework cartography</p>	<p>The potentially suitable areas for the target species reproduction have been correctly identified. The monitoring has produced a catalogue, as shapefile, of all habitat trees recorded, which permitted the production of detailed cartography. Each tree has been assigned a suitability degree per species.</p>	<p>The monitoring produced the expected results, and it was carried out as foreseen, with results useful for the implementation of the next actions C1, C3 and C3. The methodology is therefore considered as effective, replicable and applicable to other alike projects.</p>

Action	Foreseen in the revised proposal	Achieved	Evaluation
<p>A4 Identification of suitable lakes, basins and rivers</p> <p>C. <i>mercuriale</i> e <i>G. bilineatus</i></p>	<p>Objectives: identification of all potential suitable areas for target species reproduction on the whole project area for propaedeutic conservation actions C2 and C5</p> <p>Expected results: - Identification of basins and rivers with maximum suitability for the species (circa 5-10 for <i>C. mercuriale</i> and circa 5-8 for <i>G. bilineatus</i>). - List of more water points (as backup) where it's possible to carry out interventions</p>	<p>The potential suitable areas for the reproduction of the two-target species have been identified. The monitoring has produced a list, as shapefile, of all basins and rivers surveyed, using transects; all points have been provided with a suitability degree according to a 4-level scale. The list has permitted the production of detailed cartography. <i>G. bilineatus</i> has been detected in 25 transects with the highest suitability. No basins of those foreseen have been identified with high suitability for <i>C. mercuriale</i>, however, 15 transects with medium suitability and 16 with low suitability have been identified.</p>	<p>The monitoring has produced the expected results and has been done as foreseen with useful results for the implementation of action C2. The methodology is therefore considered effective, applicable and replicable in other like projects.</p>
<p>A7 Writings of a recovery plan for the target species following the results from preliminary investigations</p>	<p>Objectives: the elaboration of the plan will be fundamental and propaedeutic to the concrete conservation actions foreseen by the following project (with particular reference to actions C1, C2, C3, C4 and C5)</p> <p>Expected results: 1 action plan with the following information: 1. Identification of the best area for the execution of C actions of environmental recovery and reinstatement 2. Identification of the most suitable points</p>	<p>The action plan has been realised with all the foreseen details. As concerns the breeding of <i>G. bilineatus</i>, it was established that the population in Lago di Pratignano, the only site with verified species presence in the whole Emilia-Romagna Region, does not have sufficient consistency for the withdrawal of founders. Therefore, it was necessary to move to an emergency plan, which led to a project extension request that is in progress at the time of presentation of this report.</p>	<p>The plan has been processed as foreseen by utilising the information of the previous actions A2 and A3. However, for <i>G. bilineatus</i> it was necessary to activate an emergency plan. In these cases, the genetic analysis and the networking at European level were strategic. It should be highlighted that only the results of genetic analyses can define where it is appropriate to activate networking, hence they represent the first step, except when the information is already available in the literature. At the current state the situation should be considered as rare.</p>

Action	Foreseen in the revised proposal	Achieved	Evaluation
	<p>for the reintroduction of bred or translocated target species;</p> <p>3. Identification of the best periods in which to carry on works on habitats;</p> <p>4. Identification of the best periods to collect founders individuals for breeding farms and those for the translocation;</p> <p>5. Identification of the best characteristics, techniques and solutions that should be adopted in the execution and implementation of ex-situ breeding;</p> <p>6. Identification of the most suitable periods to reintroduce or transfer the target species.</p>		
<p>C1 Creation of habitat tree for <i>O. eremita</i> and <i>R. alpina</i></p>	<p>Objectives: ensure the surviving during time of <i>O. eremita</i> and <i>R. alpina</i> by guaranteeing and adequate availability of reproduction sites</p> <p>Expected results: In the Emilia-Romagna Region: min. 800 habitat trees for <i>O. eremita</i>. Increase of the 300% of the habitat availability.</p> <p>Min. 800-900 habitat trees for <i>R. alpina</i>. 200% increase of the habitat</p>	<p>The action is in progress, currently 309 habitat trees for <i>O. eremita</i> and 432 for <i>R. alpina</i> have been created. At the date of this report, about 50% of the foreseen quantitative objectives have been achieved.</p>	<p>The preliminary results do not allow an evaluation of the action yet; currently they are in line with the forecasts.</p>

Action	Foreseen in the revised proposal	Achieved	Evaluation
	availability.		
C2 Recovering of suitable basins, lakes and rivers	<p>Objectives: interventions aimed to restore the maximum functionality of the suitable places for introduction/reintroduction (C5)</p> <p>Expected results:</p> <ol style="list-style-type: none"> <li>1. An executive project with a list of the places where to carry out the habitat recovery works for the two-aquatic species;</li> <li>2. Recovering within a year of circa 5-10 areas for <i>C. mercuriale</i> and circa 5-8 for <i>G. bilineatus</i>;</li> <li>3. Restoring of 2-3 backup areas</li> <li>4. Benefits for species of Community interest: <i>Proserpinus proserpina</i> <i>Euplagia quadripunctaria</i>, <i>Dytiscus mutinensis</i> <i>Hydrophilus piceus</i> <i>Somatochlora meridionalis</i>.</li> </ol> <p>In the Emilia-Romagna Region: 900% increase of</p>	Not started yet	An executive project for the recovering of habitats for <i>C. mercuriale</i> in the Romagna Macro-area (MAR) has been produced, but no interventions have been realised yet.

Action	Foreseen in the revised proposal	Achieved	Evaluation
	<p>the habitat availability for <i>G. bilineatus</i>. 900% increase of habitat availability for <i>C. mercuriale</i>.</p>		
<p>C3 In-situ reproduction</p>	<p>Objectives: increase of the size of <i>O. eremita</i> population and testing of the expansion and colonising capacity by using artificial sites. For what concerns <i>R. alpina</i> the action is necessary in order to favour the occurrence of the species in conditions of insufficient availability of dead beech logs either standing or decaying on the ground and consequently to favour in situ reproductive nuclei</p> <p>Expected results: At project area level: 50% increase of the area of presence of <i>O. eremita</i> and 100% increase of numerical consistency.</p> <p>50% increase of the area of presence of <i>R. alpina</i> and 80-100% increase of numerical consistency. Installation of 150 WMBs. Benefits for other insect species of conservation interest which could settle in the WMBs.</p>	<p>The action is in progress, at the moment circa 40 of the foreseen 150 WMBs have been placed and the installation of the remaining 110 is in progress. For <i>R. alpina</i> sites where to create stacks and tripods suitable for the species have been mapped, in order to allow the completion of the biological cycle of different generations. The quantification of the expected results will be possible after the ex-post monitoring.</p>	<p>The preliminary results do not allow an action evaluation yet; currently they are in line with the forecasts.</p>
<p>C4 Ex-situ reproduction (captive breeding )</p>	<p>Objectives: produce an adequate quantity of <i>O. eremita</i> and <i>G. bilineatus</i> individuals with the purpose of allowing an efficient reintroduction into the wild</p>	<p>At the moment 3 facilities are operative, but only the reproduction of <i>O. eremita</i> is in progress due to the lack of <i>G. bilineatus</i> reproducers, as better described in Action A7.</p>	<p>Even if the action is still in progress, for <i>O. eremita</i> it has been already obtained a production of larvae higher than the foreseen number; 2 reproductive</p>

Action	Foreseen in the revised proposal	Achieved	Evaluation
	<p>Expected results:            2 ex-situ coleoptera reproduction facilities, which include aquariums, terrarium-aquariums, and terrariums.            Circa 1500 last generation larvae (L3) and circa 300 adults of <i>O. eremita</i>.            Circa 500 larvae (L3) and 200 adults of <i>G. bilineatus</i>.</p> <p>Verification for the first time of the efficiency of <i>G. bilineatus</i> ex-situ breeding.            Confirm of the efficiency of <i>O. eremita</i> ex-situ breeding as good action for further conservation projects.            Collection of further information on <i>G. bilineatus</i> and <i>O. eremita</i> biology and ethology, increasing the knowledge of the life cycle.</p>	<p>Currently 2055 <i>O. eremita</i> larvae at different age stages are available.</p>	<p>cycles are still to be conducted.</p>
<p>C5            Restocking of ex-situ or transferred individuals</p>	<p>Objectives:            Increase of target species populations</p> <p>Expected results:            Release of circa 1.500 last generation larvae (L3) and 300 adults starting from circa 20-30 captive individuals of <i>O. eremita</i>.            Release of at least 500 larvae (L3) and 200 adults starting from circa 20 captive individuals of <i>G. bilineatus</i>.            Capture within the IT4090002 site and immediate transferring and releasing of circa 500 <i>C. mercuriale</i> adults (sex ratio 1:1) in suitable habitats</p>	<p>Not started yet.</p>	<p>--</p>

Action	Foreseen in the revised proposal	Achieved	Evaluation
	created under Action C2.		
D.1 Ex-post evaluation of ex-situ reproduction efficiency	<p>Objectives: verification of Action C4 efficiency aimed at its continual improvement and the following elaboration of management guidelines.</p> <p>Expected results: final technical report where activities, results and critical issues observed in action C4 will be described.</p>	<p>Even if we are still in the initial phase of breeding, the identified indexes to monitor action C4 have been calculated.</p> <ol style="list-style-type: none"> <li>1. N° of reproduction sites realised/planned = 3/3</li> <li>2. N° of captive reproducers for each species. <i>O. eremita</i> = 239 in total + 93 larvae collected by PNFC</li> <li>3. N° of produced larvae (different stages) for each species/n° of captive adults. <i>O. eremita</i>: (631+456+968) = 2055/239 (A)</li> </ol>	<p>All the planned reproduction sites have been created. We have already reached the n° of larvae foreseen and available for the restocking activities, even if there still are two reproductive cycles to achieve before accomplishing project completion.</p>
D2, D3, D4, D5, D6,	--	Not yet started	--

At the date of this report, the preliminary results of environment restoration are visible, as are the results concerning the reproduction of *O. eremita*. The project extension request in progress is essential to achieve the expected results for *G. bilineatus*, because it was necessary to activate an emergency plan and resort to specimens coming from other Member States, instead of restocking with specimens from ex-situ breeding. The emergency plan required genetic analyses, due to the absence of bibliographic information. Only after obtaining the genetic variability results was it possible to seek donor sites for the restocking activities. In the absence of an extension of the project it will not be possible to carry out species conservation and increase its possibilities.

Currently, the dissemination activities are still in progress. The website of the project is periodically updated; the project is identifiable and known for its image through its logo. The FB page has 739 followers. To date, 3563 students and 142 classes have been involved in environmental education activities. 32 awareness-raising meetings have been organised, presenting the project to different representative targets of citizens. 21 editions of the PalaEremita Tour have been organised. Two educational brochures (one at the beginning and one in 2018), 2 technical publications (merged in one volume), several educational materials on paper (posters, bookmarks, notebooks etc.), one educational kit composed of notebook, stickers, magnet and poster have been created. 50 backpacks with the Eremita logo were produced.

From the policy impact standpoint, the project envisions the drafting and adoption of measures and plans for the target species, therefore implementing conservation policies at regional level, currently the action has not started yet.

The expected European added value was the provision of the experience gained. Furthermore, the Networking carried out with regard to the emergency plan for *G. bilineatus*, will provide for the direct involvement of 3 Member States - Sweden, Latvia and Croatia – and of managers of sites with similar conservation problems.

### 6.3. Analysis of benefits

#### 1. Environmental benefits

##### a. Direct / quantitative environmental benefits.

At the current state of the project with a delay on different actions we are not able to quantify the benefits for the four target species. Their distribution data has been updated in the Emilia-Romagna Region, in the 78 Natura 2000 sites investigated, thus allowing the verification of the poor conservation status of the 4 species, whose presence is fragmentary and localised. Based on this information it will be necessary to update the Natura 2000 forms of the following sites: IT4080002 (for the presence of *R. alpine* and *O. eremita*), IT4030002, IT4030005, IT4030003, IT4050004, IT4070016, IT4090003 (for the presence of *O. eremita*), IT4050002 (for the presence of *R. alpine*).

Moreover, it has been confirmed that in the Emilia-Romagna Region and in Italy *G. bilineatus* is detected only in one site, Lago Pratignano, where the population is numerically poor and, as highlighted by an adequate genetic investigation carried out during the project, is in a bottleneck situation with reproductive isolation and decrease of genetic variability. The site where *G. bilineatus* has been found in the Emilia-Romagna Region is at the low border of its distribution area in Europe. The need to define an alternative restocking plan with specimens from abroad has activated an investigation at European level, which entailed contacting 15 different study groups on the species. (ELENCO QS 15 CONTATTI). The survey and the availability of few Countries in guaranteeing the withdrawal of individuals demonstrated that the species is critically threatened above all at its inferior area limits.

With regard to the two saproxylic species - *O. eremita* and *R. alpina* - the project made it possible to define and standardise a list of interventions in forestry environments in order to increase and trigger processes that in the long term will make the habitat trees more suitable for the two species. This result, defined in the Action Plan (A7) and in the technical publication produced (A2), stands as a reference handbook at European level for conservation actions in favour of the saproxylic species. In continuing the project the necessary attention will be provided to the transferability of those results. To date, the beginning of the breeding of *O. eremita* has produced excellent results, the technique employed proved to be efficient, and the availability of the founders withdrawn in the project area has already allowed the production of 2055 larvae that will be released to the wild starting from spring 2019.

At the current state of implementation of the project it is not possible to define the definitive framework and the threats removal level, even though improvements of the species habitats have already been implemented. It is expected that information on their efficacy will be available at the end of the project. In the face of the knowledge already acquired and of that which we will acquire with post-intervention monitoring and thanks to the definition of specific conservation actions, providing a significant qualitative contribution to the future conservation of the four target species and to the related European policies is foreseen.

2. Economic benefits: Currently it is not possible to define the economic benefits.

3. Social benefits: Currently it is not possible to define the social benefits.

Socio-economic indicators are being defined on the assessment of the socio-economic impact that will be measured both as a result of the implementation of conservation and communication actions and as a result of the results "Ex-post analysis on main stakeholders groups opinion (Action D5)". The activity will be included in action D3 and the results will be described in the Final Report.

4. Replicability, transferability, cooperation: some project techniques and experiences represent good practices to replicate and transfer to actions in favour of the target species. These will be better defined and monitored at the end of the project and will be explained in the Final Report: *ex situ* breeding of *O. eremita*; *in situ* breeding of *O. eremita*; catalogue of the types of forestry interventions; specific conservation measures; restocking plans for *O. eremita*; *G. bilineatus*; *C. mercuriale*; and the volunteers network involved in the project activities.

5. Best Practice lessons: at the moment, the best practices employed derive from Life MIPP project, in particular regarding the monitoring methodologies that are traded between the two projects. Periodic revision of the monitoring protocols produces a feedback toward the work group that is currently working on the post-Life MIPP.

6. Innovation and demonstration value: currently it has not yet possible to provide a definitive value of the innovation and demonstration worth of some project actions, as described in the proposal. The reason is to be attributed to the not yet complete implementation of demonstrative and innovative activities such as the *O. eremita* breeding, which has already produced partial and significant results, the translocation of *C. mercuriale*, which has been just planned, and also the *O. eremita* and *G. bilineatus* restocking (subject of the request of substantial modification).

WMBs have been partially installed but not yet used as *in situ* reproductive sites.

7. Policy implications: currently, the only specific objective reached is the "increase of knowledge regarding the presence/absence as well as the distribution of sub-populations in the Emilia-Romagna region" of the four-target species. Objectives related to the management of the four species will be achieved in the second phase of the project. We can affirm that the project will certainly provide contributions to the regional legislation due to the types of actions that will be implemented both in terms of conservation interventions and of information/training activities for the conservation of these species and of insects in general.

## 7. Key Project-level Indicators

It is not possible ensure that you have finalised the inclusion of data into the KPI database webtool <https://webgate.ec.europa.eu/eproposalWeb/kpi/module> , because the link is not available, this is the message

Error 500--Internal Server Error

From RFC 2068 *Hypertext Transfer Protocol -- HTTP/1.1*:

### 10.5.1 500 Internal Server Error

The server encountered an unexpected condition which prevented it from fulfilling the request.

Currently it seems there aren't significant deviations from the targets set initially.

## 8. Comments on the financial report

### 8.1. Summary of Costs Incurred

The incurred project costs at the November 2018 are:

PROJECT COSTS INCURRED			
Cost category	Budget according to the grant agreement in €*	Costs incurred within the reporting period in €	%**
1. Personnel	761.718	533.419	70 %
2. Travel and subsistence	88.941	4.996	6 %
3. External assistance	901.504	190.021	21%
4. Durables goods: total <u>non-depreciated</u> cost			
- <i>Infrastructure sub-tot.</i>	84.800	62.653	74%
- <i>Equipment sub-tot.</i>	112.956	45.542	40%
- <i>Prototype sub-tot.</i>			
5. Consumables	25.846	13.613	52%
6. Other costs	15.700	3.303	21%
7. Overheads	135.522	51.305	38%
<b>TOTAL</b>	<b>2.126.987</b>	<b>904.851</b>	<b>43%</b>

\*) If the EASME has officially approved a budget modification through an amendment, indicate the breakdown of the revised budget. Otherwise this should be the budget in the original grant agreement.

\*\*\*) Calculate the percentages by budget lines: e.g. the % of the budgeted personnel costs that were actually incurred

The expenditure level reach within 31/10/2018 for the whole project is 43%, which is 100% of the expense target for the first pre-financing. This corresponds to 380,658.90 € a figure that has been reached and abundantly overcome, for this reason it is possible to request a second pre-financing.

An expenditure level lower in relation to the total of the project has been registered in the following cost categories:

- travel (given the fact that RER and PNFC are accounting travel and subsistence expenditures and have moved budget from one category to another, PNATE has not accounted travel and subsistence expenditure concerning Eremita Tour yet);
- External Assistance (given the fact the major part of foreseen expenditure is concerning tasks in progress which must still be accounted);
- Other costs (linked to auditor costs).
- Staff costs are much higher in percentage because substantial staff involvement was required.

Control of cost flexibility and compliance with art. II.22 of the General Condition is constantly monitored at the level of single partner and project. The Project Manager has asked all partners to plan ahead in advance for any budget changes.

Any budget modification through an amendment was requested. However, some partners have made or planned changes to budget within the limits of General Condition Art. II.22, specifically:

<b>BUDGET MODIFICATIONS WITHIN THE LIMITS OF ART. II.22</b>						
<b>GENERAL CONDITIONS. 13</b>						
<b>€ 185.688,80 equal to 8,73 % of the total budget</b>						
<b>FROM COST CATEGORY</b>	<b>SHIFT (€)</b>	<b>Action</b>	<b>To COST CATEGORY</b>	<b>BENEFICIARY</b>	<b>TOTAL (€)</b>	
Travel	10.031	From various actions to E2 and E7	Personnel	RER	90.311	
Personnel	70.080	From F1 to A7, C5, F1, F3	External Assistance			
Other costs	10.200	From F4 to C5	External Assistance			
Infrastructure	23.400	From C4 to C4	External Assistance	MAR	67.931,82	
Infrastructure	4.000	From C4 to C4	Other costs			
Infrastructure	1.000	From C4 to C4	Consumables			
Infrastructure	1.600	From C4 to C4	Overheads			
Personnel (Additional Staff)	34.410	From various actions to the same actions	External Assistance			
Equipment	3.521,82	From C2 to C4	External Assistance			
Equipment	695	From A2 to C3	Personnel (Additional Staff)	MEOC	5.975	
Consumables	950	From A2 to C3	Personnel (Additional Staff)			
Travel	4.330	From various actions to C5 and D4	Personnel (Additional Staff)			
Travel	4.150	From various actions to A2 and A3	External Assistance	MEOR	10.073,18	
External Assistance	633,18	From C3 to C3	Equipment			
Equipment	5.290	From A2 to D4	External Assistance			
Travel	17.870	From various actions to D1, D2 and D4	External Assistance	PNFC	33.650	

Personnel (Additional Staff)	30.780	From C3, C4, C5 to same actions	External Assistance		
External Assistance	15.000	From F1 to F1	Personnel		
Consumables	1.300	From E7 to F2	Personnel	PNATE	28.800
Equipment	27.500	From E7 to C4, C5 and D2	Personnel		
<b>REALLOCATION OF ACTIONS WITHIN THE SAME COST CATEGORY:</b>					
FROM COST CATEGORY	SHIFT (€)	Action	To COST CATEGORY	BENEFICIARY	TOTAL (€)
Personnel	3.366	From F4 to F1	Personnel	RER	3.366
External Assistance	8.780,80	From E2 and E4 to F1 (Translation costs)	External Assistance	RER	13.255,66
External Assistance	35.000	From C2 to C4	External Assistance	MAR	35.000
External Assistance	5.000	From C2 to C1	External Assistance	MEOC	6.900
Personnel	950	From A7 to F2	Personnel		
Personnel	380	From C2 to E5	Personnel		
Personnel	570	From C2 to F1	Personnel		
External Assistance	5.000	From C2 to C1 and D2	External Assistance	MEOR	5.000
External Assistance	20.000	From C2 to C1	External Assistance	PNFC	20.000

The changes planned to 30/11/2018 amounts to 185.688,80 € equal to 8.73 % of the budgeted costs. The reallocation takes into account the possible reallocation in case of substantial modification.

In the folder “Financial Annexes\Supporting documents\R2 modified\_after amendment” we send a file with the changed request, based on the model R2, where we highlighted the categories/actions modified in red.

The details for each beneficiary and expenditure category, the modality of filling in of the financial reporting, and of the cases in which modification during the execution of the project has been verified can be found below.

The instances of previously unforeseen expenses sustained within the project are reported on the submitted form and uploaded in the related financial report. For all beneficiary, the item “Material for osmoderma substrate” it's one of these.

For all the beneficiaries, the following is valid.

The annual gross salary of the employees has been calculated by summing the following categories:

- Annual gross salary, which consists of the annual gross salary, any contractual holiday indemnity, any sub-fund indemnity and any remuneration for positions of responsibility;
- Annual obligatory social charges, which comprehends the social security contributions of the INDADEL body (TFR / TFS – *termination payments*) and the INAIL contribution;

- Annual eligible pension contribution, which consists of the social security contributions of the CPDEL body.

Daily rate foreseen: it has been calculated starting from the monthly pay including the thirteenth month, without counting the social charges paid by the management body and applying the standard divisor of 26 productive days per month (6 days a week, as per the public employment contract).

The value for the “Daily working hours” (column D4) is equal to 7.20, calculated on 5 work days per week (actual value). Using this method (actual working time per day), the daily cost reported on the financial reporting does not reflect the calculation method utilised during the submitting phase and in some cases, it results as higher.

As required in your letter EASME B3/MMR/AT D(2017) 5094392 point 8, we attach to the report supporting documents for the calculation of the staff cost. For each beneficiary, as an example and as agreed with the external monitor, the employee who has worked the most on the project was chosen.

### **Emilia -Romagna Region**

In contrast with the years 2016 and 2017, in which 6 employees were listed in the project, during 2018 there has been a reduction of the accounted personnel. Currently, only 4 professionals of Emilia – Romagna Region are accounted within the project: a Project Coordinator Monica Palazzini, an administrative accounting collaborator Daniela Battazza, an administrative/secretary Elena Chiavegato and a technical collaborator Ornella De Curtis.

The number of hours reported for the whole personnel of the management body (column D5), as above mentioned, refers to productive hours actually worked by the employees and that can be drawn from the timesheets.

For 2018, since the final calculations were not yet available, the same values of 2017 were used conventionally.

Moreover, personnel costs during the submitting phase had been estimated on the base of standard costs of regional personnel updated to 2011. In 2016, these costs were updated. After the update an increase of costs has been observed.

As a demonstration of the increase in the daily cost starting in 2016, we attach to the report: payslip on January 2016 and the resolution to recalculate the standard personnel costs is attached (folder Financial annexes\supporting documents\RER).

In conclusion, when the project started, some colleagues of Province administration (following the law that eliminated Provinces) entered in the regional staff. This permits the utilisation of internal staff (not foreseen during the submitting phase). While this avoided additional staffing, the downside was finding wage references that are completely different from those used in the application phase.

The daily costs accounted are 20% higher than the daily costs foreseen during the submitting phase for all employees and for all the years. We attach to the report the supporting documents for the calculation of the cost of Project Coordinator Monica Palazzini year 2017(timesheets, monthly payslips, staff costs calculation).

The “External Assistance” sheet accounts for the costs sustained for genetic analysis, an expenditure not foreseen by the submitting form, but necessary to evaluate the possibility of a restocking programme of *G. bilineatus* using samples from European populations. The CB has appointed the University of Padua (identified following a previous comparison of estimates with other Universities) and the related costs are financed with savings from communication activities, done mainly with internal regional personnel.

Compared to the technical part of the report, the invoices of Roberto Fabbri and Istituto Delta paid in October 2018 refer to activities carried out in 2017.

### **Ente di Gestione per i Parchi e la Biodiversità Romagna**

Personnel of MAR, has emerged during the third monitoring visit, is payed from Emilia-Romagna Region. After further in-depth analysis it emerged that the separation of regional personnel must be intended as a regional financing form for Management Body of Romagna. For this reason, the personnel costs of 2016, 2017 and 2018 has not been effectively sustained by MAR, for this it will not be accounted. Starting from 2019, instead, the separated personnel will assume the command position among other Bodies. This means that the RER personnel in charge to MAR will be paid by Emilia – Romagna Region and the same costs will be reimbursed by the Management Body of Romagna towards the Region, at the end of each year. So, from 2019 it could be demonstrated that, even if the payroll are paid by the Region, the MAR personnel is a cost for them, compared to the costs reimbursement sustained by the Region.

The reported travel costs are those actually incurred; even if the vehicle employed is the company car, only the actual costs of the journey, such as motorway tolls and parking, are reported.

MAR has not reported any expenses not foreseen.

### **Ente di Gestione per i Parchi e la Biodiversità Emilia Centrale**

The MEC accounting reports employee and additional personnel. These additional personnel are composed of 2 professional figures of entomologist, selected through public tender, employed in ex-ante monitoring activities, identification/inventory of habitat trees and conservation activities. The additional personnel are reported in the “Personnel\_NON\_EMPLOYEES” sheet of the financial reporting. For these, as many rows are reported as the invoices issued, even if referring to the same year. Compared to the technical part of the report, the entomologist Malavasi worked in 2018 but was not reported because he has not yet issued the relevant invoice.

As a staff member, only the Technical Manager of the MEC project, Fausto Minelli, who performs all the planned technical activities, is reported. Though in the application form there were three professional figures, with three different hourly costs, during the execution phase the work is carried out exclusively by the technical manager, who corresponds to the figure with the highest daily cost (168 Euro).

The number of hours reported (column D5) refers to productive hours actually worked by the employee and that can be inferred by the timesheets.

For 2018, since the final calculations were not yet available, the same values of 2017 were used conventionally.

The daily cost accounted of the permanent staff is 20% higher than the daily costs foreseen during the submitting phase for all employees and for all the years. We attach to the report the supporting documents for the calculation of the cost of Technical Manager of the MEC Fausto Minelli year 2017 (timesheets, monthly payslips, staff costs calculation).

In the Travel and Subsistence budget line, only the costs effectively sustained by the management bodies for business trips are reported. When the company car has been used, only fuel costs are accounted. Specifically, this is calculated by multiplying Kms covered with costs per Km, the latter calculated from the consumption data of the car (taken from the booklet) and the cost of fuel supplied by the Ministry of Transport on a monthly basis.

MEC does not account expenditures not foreseen by the Application Forms.

### **Ente di Gestione per i Parchi e la Biodiversità Emilia Orientale**

Under the Personnel category, MEOR currently accounts for 3 works positions: a technical manager, an administrative one and a technical collaborator.

The number of hours reported for the whole entity's personnel (column D5), as mentioned above, refers to the production hours actually worked by the employee and deduced from the timesheets.

For 2018, since the final calculations were not yet available, the same values of 2017 were used conventionally.

The daily cost accounted of the administrative and technical collaborator are 20% higher than the daily costs foreseen during the submitting phase for all employees and for all the years. We attach to the report the supporting documents for the calculation of the cost of Technical Collaborator Cristina Gualandi year 2017 (timesheets, monthly payslips, staff costs calculation).

In the Travel and Subsistence budget line, only the costs effectively sustained by the entity for business trips are reported.

MEOR does not account expenditures not foreseen by the Application Forms.

### **Ente di Gestione per i Parchi e la Biodiversità Emilia Occidentale**

MEOC accounts both employees and additional personnel. The latter includes the professional position of entomologist, selected through public tender, employed in ex-ante monitoring activities, identification/inventory of habitat tree and conservation actions. The additional personnel are reported in the "Personnel\_NON\_EMPLOYEES" sheet of the financial report. Compared to the technical part of the report, the entomologist Malvasi worked in 2018 but was not reported because he has not yet issued the relevant invoice.

Four work position are accounted as employees: a Technical Project Manager for MEOC, an administrative one and a communication manager and a technical collaborator, a role covered by 2 different employees.

The number of hours reported (column D5) refers to productive hours actually worked by the employee and that can be inferred by the timesheets.

For 2018, since the final calculations were not yet available, the same values of 2017 were used conventionally.

The reported daily cost exceeds in some cases 20% the daily cost expected during the application phase for some employees and every year. Specifically, the final costs are much higher because the role of the Organisational Position not accounted for during the submitting phase.

In the Travel and Subsistence budget line only the costs effectively sustained by the entity for business trips are reported.

MEOC does not account expenditures not foreseen by the Submitting Forms.

### **Parco Nazionale Appennino Tosco Emiliano**

PNATE accounts employees and additional personnel. The latter consists of the professional position of entomologist, selected through public tender, employed in ex-ante monitoring activities, identification/inventory of habitat tree and conservation actions. The additional personnel are reported in "Personnel\_EMPLOYEES" sheet of the financial report since they are under project contract, and therefore to all effects linked to the Managing body through a collaboration and employment relation..

Three structured work positions are accounted as employees: a Technical manager of the Project for PNATE Francesca Moretti, an administrative one Willy Reggioni and a technical collaborator Nadia Fattori.

The number of hours reported (column D5) refers to productive hours actually worked by the employee and that can be inferred by the timesheets.

For 2018, since the final calculations were not yet available, the standard values 1720 were used conventionally.

The reported daily cost exceeds in some cases 20% the daily cost expected during the application phase for some employees and every year. Specifically, the final costs are in line with the one foreseen for Ms Nadia Fattori results much higher. We attach to the report the supporting documents for the calculation of the cost of Nadia Fattori year 2017 (timesheets, monthly payslips, staff costs calculation).

In the Travel and Subsistence budget line only the costs effectively sustained by the entity for business trips are reported. When the company car has been used, only fuel costs are accounted. Specifically, this is calculated by multiplying Kms covered with costs per Km, the latter calculated from the consumption data of the car (taken from the booklet) and the cost of fuel published by the Ministry of Transport on a monthly basis.

PNATE does not account expenditures not foreseen by the Submitting Forms.

### **Parco Nazionale delle Foreste Casentinesi**

PNFC accounts employees and one additional. The latter consists of the professional position of entomologist, selected through public tender, employed in ex-ante monitoring activities, identification/inventory of habitat trees and conservation activities. The additional personnel are reported in the “Personnel\_NON\_EMPLOYEES” sheet of the financial report.

Three employees are accounted in 3 works positions: a Technical Project Manager for PNFC, an administrative one and a technical collaborator.

The number of hours reported (column D5) refers to productive hours actually worked by the employee and that can be inferred by the timesheets.

For 2018, since the final calculations were not yet available, the same values of 2017 were used conventionally.

The reported daily cost exceeds in some cases 20% the daily cost expected during the application phase for some employees and every year. We attach to the report the supporting documents for the calculation of the cost of Davide Alberti year 2017 (timesheets, monthly payslips, staff costs calculation).

PNFC does not account expenditures not foreseen by the Submitting Forms.

With reference to the cost per action, for the completed actions, there are no differences in terms of how much actually spent and what was expected, in all cases the cost incurred was in line or lower than expected.

At the moment it is not possible to define the expenditure level of conservation actions because they are still in progress and susceptible to modifications which can be significant in some cases, also in function to the substantial modification request. Furthermore, it has been foreseen in case of approval of substantial modification, that the costs of some supporting actions, such as those of communication and management, will increase following the 1-year extension, even if the additional costs will not be in charge to the project.

## **8.2. Accounting system**

All money transferring from European Commission towards CB, from CB to ABs, as well as the recording of expenditure commitments and the payment of expenses in the balance sheet, are recorded on specific budget headings, identified within the analytic accounting system of beneficiaries by utilising the code of the project itself. In this way it is possible to track all accounting movement linked to the project.

The accounting records of CB and ABs are filled in and kept updated on the basis of national accounting rules.

For Italian Public Bodies the commitment of expenditures are activated by the competent function and, following, the accounting regularity stamp of the various treasury offices is affixed.

All beneficiaries have indicated the income and expense budget chapters in which the financial sums of the project transit, as resulting by the following table:

(Projects funded under the Call 2014 onwards must use this format)

N°	Name of beneficiaries	Cost account (e.g. code name or number)	Name / function of person authorising expenditure	Name / function of person authorising payment at present	Name / function of person responsible for financial project management
1	Regione Emilia-Romagna	Chapter 38255 "Spese per il conferimento di incarichi professionali - quota regionale"; capitolo 38263 "Spese per il conferimento di incarichi professionali - quota UE"; Chapter 38253 "Spese per l'acquisizione di beni - quota regionale"; Chapter 38251 "Spese per servizi di lavoro flessibile - quota regionale"; capitolo 38249 "Spese per prestazioni professionali e specialistiche - quota regionale"; Chapter 38257 "Spese per prestazioni professionali e specialistiche - quota UE"; Chapter 38280 "Organizzazione e realizzazione di eventi - quota UE"; Chapter 38282 "Servizi di consulenza e assistenza informatica - quota UE".	Enzo Valbonesi (Manager of the service "Aree Protette Foreste e Sviluppo della Montagna")	Enzo Valbonesi (Manager of the service "Aree Protette Foreste e Sviluppo della Montagna")	Monica Palazzini (Project coordinator)
2	Ente di Gestione per i Parchi e la Biodiversità Romagna	Income Chapter: Voce di P.E.G 140 1 0 - Contributi Straordinari Progetto LIFE EREMITA Expenditure chapter: Voce di P.E.G. 2600 1 0 – Fondo per interventi in rete natura 2000 progetto LIFE EREMITA	Director Massimiliano Costa	Director Massimiliano Costa	Director Massimiliano Costa Financial Manager Diego Mattioli
3	Ente di Gestione per i Parchi e la Biodiversità Emilia Centrale	Missione 09 Programma 0902 Tit I Cap. 7101200 "Acquisti Progetto Life". Missione 09 Programma 0902 Tit I Cap. 7203001 "Progetto Life incarichi". Missione 09 Programma 0902 Tit I Cap. 7203002 "Progetto Life Servizi". Missione 01 Programma 06 Tit I Cap. 4600101 "Retribuzione personale a tempo indeterminato". Missione 01 Programma 06 Tit I Cap. 4600201 "Competenze accessorie personale a tempo indeterminato". Missione 01 Programma 06 Tit I Cap. 4600301 "Contributi obbligatori personale a tempo indeterminato". Missione 01 Programma 06 Tit I Cap. 4600500 "Indennità di posizione organizzativa".	Director Valerio Fioravanti	Alessandra Galli Responsible of service "Finanziario Personale e Bilancio"	Alessandra Galli Administrative responsible

<b>N°</b>	<b>Name of beneficiaries</b>	<b>Cost account (e.g. code name or number)</b>	<b>Name / function of person authorising expenditure</b>	<b>Name / function of person authorising payment at present</b>	<b>Name / function of person responsible for financial project management</b>
4	Ente per la Gestione dei parchi e della biodiversità Emilia Occidentale	Chapter n. 2077 LIFE EREMITA	Delio Folzani – General Director Ente Parchi Emilia Occidentale	Alessandra Maestri – Financial Responsible	Marcella Ghiretti – Administrative collaborator
5	Ente per la Gestione dei parchi e della biodiversità Emilia Orientale	"Life Eremita acquisto di beni" Cap. 9231/114 U 1.03.02.99.999 "Life Eremita prestazione di servizi" Cap. 9232/114 U 1.03.02.99.999	Bianco David Responsible	Bianco David Responsible	Bianco David Responsible
6	Ente Parco nazionale dell'Appennino tosco-emiliano	Income chapter 1.1.2.2.09 "Cofinanziamento progetto LIFE EREMITA (da Regione E.R.) Expenditure chapter 1.1.2.1.56 denominato "LIFE EREMITA".	Director Giuseppe Vignali	Responsible of financial service: Rag. Patrizia Rubertelli	Willy Reggioni
7	Parco Nazionale delle Foreste Casentinesi,	Chapter11590 LIFE/14/NAT/IT/000209 EREMITA	Director Sergio Paglialunga	Director Sergio Paglialunga	Administrative responsible Roberta Ricci

*(Projects funded under the Call 2014 onwards must use this format)*

The individual costs statements and the Certificates of Natura Projects were signed by the same function/person who signed the A3 and A4 forms in the Application Form. Some roles have changed, specifically: Paolo Ferrecchi is the new Director of RER, Antonio Venturi is the new President of MAR, Sergio Paglialunga is the new Director of PNFC.

Timesheet are filled in electronic forms by using the form requested by the Commission and downloaded by the LIFE website; the form has been personalised by each beneficiary with their logos and the LIFE project logo. The CB, at the beginning of the project, provided the timesheet's scheme to be used and gives information to the beneficiaries about the correct compilation.

At the end of the each passing month, the electronic sheet is printed and the date is written manually at the signing moment. When compiling the timesheet, the action or actions to which the worker has worked at the indicated hours are listed so as to be able to complete the table of costs per action. The timesheets are filled in also by outside personnel, the entomologists in charge, even if not specifically foreseen by the GA.

As an internal system, all beneficiaries are equipped with automatic detection systems of service attendance. Some beneficiaries have a system of approval of the attendance cards by the individual employees, while others receive the details in digital or paper format or together with the paycheck. The in-charge professionals, participating in the project as personnel not permanently employed, record the time worked for the project manually and in consequence fill in the timesheets.

The worked hours for the project are registered on timesheets in a systematic way by all the partners. At the beginning of each month the employee signs the timesheet reporting the hours worked the month before and sends it for countersigning of the higher responsible. This is for all the partners. Following are specified the countersignature modalities for each partner.

Specifically, timesheets of Emilia – Romagna Region are countersigned by the Project Coordinator Ms Monica Palazzini. The Project Coordinator's timesheets are countersigned by the service managing Director Mr Enzo Valbonesi.

The timesheet of AB MEC are countersigned by Director Mr Valerio Fioravanti, the entomologists' timesheets are countersigned by the AB project coordinator.

The timesheets of AB MEOR are countersigned by the AB's project coordinator Mr David Bianco, his are countersigned also by the Director Mr Massimo Rossi.

The timesheets of AB MEOC are countersigned by the AB's project coordinator Mr Renato Carini, his are countersigned also by the Director Mr Delio Folzani.

The timesheets of AB PNATE are countersigned by the Director Mr Giuseppe Vignali.

The timesheets of AB PNFC are countersigned by the Director Mr Sergio Paglialunga.

To make sure that the invoices contain the reference to the project code, at the beginning of the project specific training was given to all the partners on the rules and methods for accounting expenses. A session was dedicated to how to request invoices, focusing in particular on the fact that all invoices must have specific reference to the LIFE project. If this does not happen, the connection to the project and to the specific action can be inferred from the determinations of payment of the expenditure, in which explicit reference is made to the details of the invoice. In some cases, the managing bodies communicate the code and acronym of the project in the invoice header.

The assignments of external assistance for public bodies were assigned in accordance with the rules on credit lines provided for by the national legislation and by the internal regulations of the Bodies.

### 8.3.Partnership arrangements (if relevant)

Transactions between the CB and the ABs take place with the same timing as the Grant Agreement, so a first pre-financing of 30% is granted when the individual beneficiary sends a specific request and demonstrates that it has started operations. The second pre-financing of 40% is granted after the successful collection by the CB, and following a letter of request from each individual AB. The financial reporting is filled in by each beneficiary, and the PM checks everything reported, based on the transmitted documentation, archived by the CB. The financial report of the CB is filled in by the PM. In financial reporting, only expenses incurred and paid by each beneficiary are recorded. The consolidated financial state is filled in by the PM starting from single financial reports. A financial reporting of the project is set up from which data are obtained to compile the "Consolidated cost statement" sheet of the CB financial report. Another management file is filled in in order to have a financial frame per partner and per action. These 2 files are compared for a last verification of the accounted values.

As required in your letter EASME B3/MMR/AT D(2017) 5094392 point 6, we attach to the report all partnership agreements which have been signed with digital signature, except that of the PNATE.

### 8.4.Certificate on the financial statement

As specified in the Letter Amendment No 2, Article II.23.2 for which only beneficiaries for whom the total contribution in the form of reimbursement of the actual costs referred to in Annex III is at least EUR 750,000, a certificate concerning financial statements and the underlying accounts is necessary. In the specific case, no beneficiary will receive a contribution above this threshold, and therefore the external auditor should not be designated.

### 8.5.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	1.521	74,93%
NAT and CLIMA projects Action B: Purchase/lease of land and/or compensation payment for payment rights	-	-
NAT projects Action C – Concrete conservation actions	1.832	30,17%
CLIMA projects Action C: Implementation actions		
NAT and CLIMA projects Action D: Monitoring and impact assessment	385	1,05%
NAT and CLIMA projects Action E: Communication and Dissemination of results	1.061	61,66%
NAT and CLIMA projects Action F: Project management (and progress)	974	75,80%
<b>TOTAL</b>	<b>5.773</b>	<b>53,51%</b>

## 9. Envisaged progress until next report

The next progress report will be sent on 15<sup>th</sup> June 2020 (if the amendment request is accepted). For that date, the following activities are planned and the following deliverable and milestone are achieved.

Action	Activity foreseen	Deliverable/Milestone foreseen
A.5 Training courses for volunteers/contractors.	Volunteers' activity will continue with the recruitment of new volunteers. Another two Eremita Festival will be carry out.	<b>Deliverable:</b> 3rd Catalogue of Volunteers' opportunities within the LIFE Eremita Project. 4 <sup>th</sup> Catalogue of Volunteers' opportunities within the LIFE Eremita Project.
A.7 Drafting of a recovery plan for the target species based on the results of preliminary surveys.	A specific Restocking Plan will be written for <i>G. bilineatus</i> and for activities aimed to request authorisation to withdraw individuals from European Countries and for the specific restocking activity (feasibility study that must be sent to Italian Ministry). The action plan will be completed	<b>Deliverable:</b> Action plan of the interventions C1, C2, C3, C4, C5.
C.1 Creation of habitat trees for <i>Osmoderma eremita</i> and <i>Rosalia alpina</i>	The interventions for the creation of necromass of the MEOR, PNFC and MAR will be completed.	--
C.2 Restoration of suitable ponds, lakes and streams	The interventions for increasing the availability of suitable habitats for <i>Coenagrion mercurial</i> will be completed.	<b>Milestone:</b> Start of recovery interventions of watercourses for <i>Coenagrion mercurialis</i> .
C.3 In-situ breeding	All WMB will be installed. The restocking with larvae L3 and pupae will take place in spring 2019 and after will be in course the in situ breeding	---
C.4 Ex-situ (captive) breeding	The activity of breeding of <i>O. eremita</i> will be regularly in course.	---
C.5 Introduction of species bred off site or relocated into the natural habitat.	The action will begin in April -May 2019 with the introduction of the specimens of <i>O. eremita</i> farmed with C4 action and with the translocation of <i>C. mercurial</i> .	<b>Milestone</b> Start of translocation and restoking
C.6 Creation of an integrated computer system to support the conservation of the target species, including web tech solutions to involve stakeholders	The activity will be regularly in course and the data will be constantly updated	
C.7 Thematic workshops for training and internal information	The third workshop will address the Forestry Corps and the Provincial Supervisory Bodies and will be carried out in the first half of 2019.	--
C.8 Conservation Measures and Management Plan	The activities will be started	--
D.1 Ex-post evaluation of ex-situ reproduction efficiency	The activities will be regularly in course	--

E.1 The project's website	The activities will be regularly in course	
E.2 Communication, distribution and environmental education actions	The activities will be regularly in course.	
E.5 Thematic workshops	The activities will be started. The planned workshops will be carried out starting from the first months of 2019, at the end of the forest works.	<b>Delivarable:</b> Minutes of the thematic workshops of the first year of Activation.
E.7 The EREMITA Tour: a travelling awareness campaign	The Eremita tour will be in progress. The last 3 video clip will be created and also the DVD with project's video clip.	<b>Delivarable:</b> The last 3 Video clip on target's species DVD with project's video clip.
E.8 Project press office	The activities will be regularly in course.	--
F.1 Administrative-accounting and technical project management	The activities will be regularly in course.	Minutes of the meetings of technical and administrative tables of the fourth year.
F.2 Establishment of the technical workgroup	The activities will be regularly in course	--
F.3 Networking with other projects, LIFE and non-LIFE	The activities will be regularly in course . If the amendment request is accepted, the network will be strengthened with experience exchanges with other projects focused on <i>G. bilineatus</i> and with foreign institutions willing to provide individuals, both for the definition of the Restocking Plan and for the introduction of individuals. A workshop will be held in the first semester of 2019 at CB and AB headquarters hosting research groups from countries where source populations of <i>G. bilineatus</i> are located in order to better plan the monitoring activities for the withdrawal of founders and plan the translocation. Two researchers per each group will be hosted, the visit will last 3 days at least, and will take place at CB headquarters and in the sites (lakes, basins) involved in <i>G. bilineatus</i> repopulation activities.	--



(Projects funded under the Call 2014 onwards must use this format)

## 10. Annexes

### 10.1. Deliverables

<b>Main Folders</b>	<b>Folders</b>	<b>file</b>
<b>A2_ActivityReport</b>		Report_A2_.pdf Summary_A2.pdf Annex_1.pdf
	Annex_2	Annex 2_ Coenagrion.pdf Annex 2_ Graphoderus.pdf Annex 2_ Osmoderma.pdf Annex 2_ Rosalia.pdf
		Annex_3.pdf
	Annex_4	climate suitability_4C_Ros.pdf climate suitability Osm.pdf climate suitability_4C_Osm .pdf climate suitability_Ros.pdf habitat suitability_Osm.pdf habitat suitability_Ros.pdf Total suitability_Osm.pdf Total suitability_Ros.pdf
<b>A3_Technical_Report</b>		Report_A3.pdf Summary_A3.pdf Annex_7.1.pdf Annex_7.2.pdf Annex_7.3_Os.pdf Annex_7.4_Ros.pdf Annex_7.5.xlsx
<b>A4_Technical_Report</b>		Report_A4.pdf Summary_A4.pdf Annex_8.1.pdf Annex_8.2.pdf Annex_8.3.pdf Annex_8.4.pdf Annex_8.5.xls
<b>A5_Catalogue_minute</b>		Eremita_catalogue2017.pdf Eremita_catalogue2018.pdf VolunteersEREMITA_16_17-12-2016.pdf VolunteersEREMITA16-17dic2016_Gra-Coe.pdf VolunteersEREMITA16-17dic2016_Osm-Ros.pdf
<b>C2_executive_project</b>		SUMMARY Action C2.pdf
	MAR	1_Report.pdf 2_maps.pdf 3_land list.pdf 4_price list.pdf 5_work estimate.pdf 6_economic framework.pdf
<b>C4_Ex-situ</b>		Technical_report_ex-situ.pdf SUMMARY ACTION C4.pdf
<b>C6_System_Web_technology</b>	Application analysis	LifeEremita - Analisi.doc The technical document that describes the construction of the System and web technology

Main Folders	Folders	file
	Database schema and content	lifeeremita_db.sql
	Front end (React.js)	system files
	Java application (Eclipse projects)	system files
	Java code documentation	system files
	ShapeA2	A2_C.mercuriale.dbf A2_G.bilineatus.dbf A2_O.eremita.dbf A2_R.alpina.dbf And others system files
	ShapeA3	Habitat_O.eremita.dbf Habitat_R.alpina.dbf And others system files
	ShapeA4	Habitat_C.mercuriale.dbf Habitat_G.bilineatus.dbf And others system files
<b>E2_Diss_publication_ITA_ENG</b>		depliant 21x21 ENG def.pdf depliant 21x21 ITA def.pdf
<b>E2_Technical_publication</b>		T_Pub_ENG.pdf T_Pub_ENG_cover.pdf T_Pub_ITA.pdf T_pub_ITA_cover.pdf
<b>E4_notice_boards</b>		breedingnotice_boards.pdf notice_boards_MEOR.pdf notice_boards_PNFC.pdf notice_boards_MAR.pdf notice_boards_MEC.pdf notice_boards_MEOC.pdf notice_boards_PNATE.pdf roll up 85x200 1 water.pdf roll up 85x200 2 forest.pdf WMB 15x10.pdf
<b>E7_eremita_tour_Sheets_flags</b>		flag.jpg image.jpg sheet1.jpg sheet2.jpg
<b>E7_kit_didattico</b>		book21x21def7.pdf poster 70x100 def6.pdf stickers 42x21 def2.pdf
<b>E7_video_clip</b>		eremita.mp4 Osmoderma_eremita_02.mp4 porgetto_lifeeremita.mp4 Rosalia alpina.mp4 Saproxilici.mp4
<b>F1_TT_TA_minute</b>	2017	TA_23_01_17.pdf TA_31_03_17.pdf TT_3_03_17.pdf TT_05_12_17.pdf TT_10_07_17.pdf TT_18_05_17.pdf TT_23_01_17.pdf TT_31_03_17.pdf

Main Folders	Folders	file
	2018	TA_01_03_2018.pdf TA_14_05_2018.pdf TA_19_11_2018.pdf TT_03_10_2018.pdf TT_01_03_2018.pdf TT_03_10_2018.pdf TT_14_05_2018.pdf TT_19_11_2018.pdf TT_22_01_2018.pdf
F3_networking	MIPP	
		Agenda _ Study visit SLOVENIA_31_03_2017.pdf LIFE_EREMITA_Norbiato.pptx LIFE_EREMITA_Palazzini_16_11_2018.pptx LiFe-EREMITA_StudyVisitSlovenianLIFE_TEAM5-4-2017_ENG.pptx Palazzini_LIFE__apr_18.pdf

## 10.2. Other documents

Main Folders	Folders	file
A5	2016-17	1°Incontro_formazione_Volontari.pdf EREMITA_Programma_25_10_2016.pdf Calendario_2017.jpg Programma_25_10_2016.pdf Locandina Università.png Locandina_25_maggio.pdf Programma_25_10_2016.pdf Test_valutationA5.pdf Volantino volontari_2016.pdf
	2018	Slide_25_05_18 Locandina Università.png Locandina_25_maggio.pdf
	Festa_eremita	cartolina invito lato A.jpg cartolina invito lato B.jpg locandina EREMITA TOUR_DEF.pdf
A7	MEC_executive_project MEOC_executive_project PNATE_executive_project PNFC-_executive_project	A7_breeding_Osmoderma eremita.pdf A7_DRAFT_Action_Plan.pdf A7_FEASIBILITY STUDY_OSMODERMA.pdf A7_Genetic_analysis_eng_summary.pdf A7_Genetic_analysis_final_report.pdf Enviromental_minister.pdf ISPRA_captivebreeding Osm_ 10 _10_17.pdf

Main Folders	Folders	file
C3		C3_woodmould.pdf WMB_guidelines.pdf
C4		C4_Breeding_protocol.pdf
C7		C7_workshop_23_09_17.pdf Fabbri_23_09_17.pdf
E2	Dissemination_material	Locandina Seminario Life E.pdf
E4		notice_boards.jpeg notice_boards1.jpg
F2		F2_Appointment_FG.pdf F2_Minute_FG_03_07_2018.pdf F2_MinuteFG_18_10_2016.pdf
F3		F3_Graphoderus_networking.pdf F3_mail_HR_SE_LE_graphoderus.pdf F3_RigKilde-LIFE_G. bilineatus.pdf
Technical_annex.pdf		

### 10.3. financial annexes

Document type	Action	File(s) name
Consolidated financial statement, including Payment Request, both in pdf and excel format	F1	Financial Annexes\Consolidated costs statement\Consolidated financial statement_EREMITA Financial Annexes\Consolidated costs statement\Payment request_EREMITA
Individual financial statement of all beneficiaries, including certificate for natura projects, both in pdf and excel format	F1	Financial annexes\Individual financial statement\ Individual financial statement_MAR Financial annexes\Individual financial statement\ Individual financial statement_MEC Financial annexes\Individual financial statement\ Individual financial statement_MEOC Financial annexes\Individual financial statement\ Individual financial statement_MEOR Financial annexes\Individual financial statement\ Individual financial statement_PNATE Financial annexes\Individual financial statement\ Individual financial statement_PNFC Financial annexes\Individual financial statement\ Individual financial statement_RER
Model R2, with the categories/actions modified in red	F1	Financial Annexes\Supporting documents\R2 modified_after amendment
Supporting documents for the calculation of the cost of Project Coordinator Monica Palazzini (timesheets, monthly	F1	Financial Annexes\Supporting documents\RER\ Standard personnel cost after 2016 Financial Annexes\Supporting documents\RER\ Payslip_Palazzini_January_2016

Document tipe	Action	File(s) name
payslips, staff costs calculation)		Financial Annexes\Supporting documents\RER\ Payslips_Palazzini_2017 Financial Annexes\Supporting documents\RER\ Timesheet_Palazzini_2017 Financial Annexes\Supporting documents\RER\ Staff cost calculation_2017_Palazzini
Supporting documents for the calculation of the cost of Technical Manager of the MEC Fausto Minelli (timesheets, monthly payslips, staff costs calculation)	F1	Financial Annexes\Supporting documents\MEC\ Payslips_Minelli_2017 Financial Annexes\Supporting documents\MEC\ Timesheet_Minelli_2017 Financial Annexes\Supporting documents\MEC\ Staff cost calculation_2017_Minelli
Supporting documents for the calculation of the cost of Technical Collaborator of the MEOR Cristina Gualandi (timesheets, monthly payslips, staff costs calculation)	F1	Financial Annexes\Supporting documents\MEOR\ Payslips_Gualandi_2017 Financial Annexes\Supporting documents\MEOR\ Timesheet_Gualandi_2017 Financial Annexes\Supporting documents\MEOR\ Staff cost calculation_2017_Gualandi
Supporting documents for the calculation of the cost of Nadia Fattori (timesheets, monthly payslips, staff costs calculation)	F1	Financial Annexes\Supporting documents\PNATE\ Payslips_Fattori_2017 Financial Annexes\Supporting documents\PNATE\ Timesheet_Fattori_2017 Financial Annexes\Supporting documents\PNATE\ Staff cost calculation_2017_Fattori
Supporting documents for the calculation of the cost of Davide Alberti (timesheets, monthly payslips, staff costs calculation)	F1	Financial Annexes\Supporting documents\PNFC\ Payslips_Alberti_2017 Financial Annexes\Supporting documents\PNFC\ Timesheet_FattAlbertiori_2017 Financial Annexes\Supporting documents\PNFC\ Staff cost calculation_2017_PNFC
Partnership agreements signed with digital signature	F1	Financial Annexes\Supporting documents\PA\ Partnership agreement MAR Financial Annexes\Supporting documents\PA\ Partnership agreement MEC Financial Annexes\Supporting documents\PA\ Partnership agreement MEOC Financial Annexes\Supporting documents\PA\ Partnership agreement MEOR Financial Annexes\Supporting documents\PA\ Partnership agreement PNATE Financial Annexes\Supporting documents\PA\ Partnership agreement PNFC