

A. PREPARATORY ACTIONS

ACTION A.1: AUTHORIZATIONS TO PERFORM DEFRAGMENTATION ACTIONS TARGETING ROADS

Request for authorization to perform defragmentation actions targeting roads (underpasses), including the necessary maps and documents. Authorizations must be requested from the authorities in charge of the roads (Province of Varese, ANAS), the relevant municipalities and, in some cases, the subjects in charge of the SCIs for the Environmental Impact Assessment.

Beneficiary responsible for implementation:

Province of Varese

ACTION A.2: AUTHORIZATIONS TO PERFORM DEFRAGMENTATION ACTIONS TARGETING BRIDGES

Request for authorization to perform defragmentation actions targeting bridges and the waterways flowing beneath them, including the necessary maps and documents. Authorizations must be requested from the relevant water authority, the authorities in charge of the roads (Province of Varese, ANAS), the relevant municipalities and, in some cases, the subjects in charge of the SCIs for the Environmental Impact Assessment.

Beneficiary responsible for implementation:

Province of Varese

ACTION A.3: AUTHORIZATIONS TO PERFORM HABITAT RESTORATION EFFORTS

Request for authorization to perform habitat restoration efforts, including the necessary maps and documents. Authorizations must be requested from the relevant water authority (STER-PAI) for interventions in wetland areas, the relevant municipalities, and, in some cases, the subjects in charge of the SCIs for the Environmental Impact Assessment.

Beneficiary responsible for implementation:

Province of Varese

ACTION A.4: DETAILED MAPPING OF EXISTING WETLANDS

Surveys (location, size, phytosociology, hydrogeologic and hydrologic aspects) maps for the identification and characterization of wetlands located in the project area. This action will be carried out during the first year of the project and will help steer the planning of activities related to wetlands (Actions C.2).

Beneficiary responsible for implementation:

LIPU

ACTION A.5: DETAILED MAPPING OF DRY STONE WALLS

Surveys (location, characteristics, use on the part of the herpetofauna) maps for the identification and characterization of dry stone walls located in the project area. This action will be carried out during the first year of the project and will help steer the planning of activities related to the construction of dry stone walls (action C.5).

Beneficiary responsible for implementation:

LIPU

ACTION A.7: TOPOGRAPHIC SURVEYS FOR DEFRAGMENTATION ACTIONS

Topographic surveys at the adequate scale (1:500 – 1:2.000) will be carried out in all areas subject to defragmentation efforts (underpasses – including those near bridges); the extent of the survey area varies according to the size of the interventions.

Beneficiary responsible for implementation:

LIPU

C. CONCRETE CONSERVATION ACTIONS

ACTION C.1: UNDERPASSES FOR AMPHIBIANS

This action calls for the construction of rectangular concrete underpasses, with a minimum diameter of 50 cm, to be placed underneath roadways and to allow amphibians to cross both ways.

Beneficiary responsible for implementation:

Province of Varese

ACTION C.2: CREATION OF POOLS FOR THE REPRODUCTION OF AMPHIBIANS

This action calls for the creation of small pools 3-10 m in diameter, with a maximum depth of 1 meter, with irregularly-shaped shores and gentle slopes, in order to create a variety of microhabitats (in terms of water depth and exposure to the sun) for the development of amphibian larvae. Pools will be dug with shovels or mini-excavators, in open wooded areas.

Beneficiary responsible for implementation:

Province of Varese (see commitment as specified in Annex 4)

ACTION C.3: WETLAND RECOVERY AND IMPROVEMENT

The action aims to recover and improve two wetlands – (a) “Motta d'oro pond” and (b) “Cavallit peat bog” (SCI IT2010005) – by intervening on the water supply system in order to prevent them from filling in and drying up. The action will facilitate the presence and improve the population status of breeding amphibians, as well as the use of these wetlands on the part of other wildlife (snakes, bats, ungulates, etc.).

Beneficiary responsible for implementation:

Province of Varese

ACTION C.4: EXPERIMENTATION WITH REMOVAL TECHNIQUES FOR INVASIVE EXOTIC HYDROPHYTES

The action aims to experiment with removal techniques for invasive exotic species (*Nelumbo nucifera* e *Ludwigia grandiflora*) in several bodies of water in the project area.

Removal techniques will be experimented with in:

- (a) in Brabbia Marsh (SIC IT2010007) with regards to *Nelumbo nucifera*;
- (b) on Varese Lake (ZPS IT2010501) with regards to *Ludwigia grandiflora*.

Beneficiary responsible for implementation:

Province of Varese

ACTION C.5: CREATION OF DRY STONE WALLS

Building dry stone walls, which once were a common feature of the farmland landscape in the Prealps, where they were built to mark boundaries or support cultivated terraces. This action intends to build dry stone walls, especially in areas free of optimum reptile habitat and near the best wetlands for amphibians, located all along the ecological corridor, in order to facilitate the passage of target species. Dry stone walls are particularly important for reptiles, since they are rich in nooks and crannies that provide natural shelter and hunting grounds.

Beneficiary responsible for implementation:

Province of Varese

ACTION C.6: INTERVENTIONS TARGETING EXOTIC TREES AND AIMING TO INCREASE NECROMASS

We propose to adopt measures to kill particularly problematic exotic trees in the project area (*Platanus hybrida*, *Ailanthus altissima*, *Prunus serotina*, *Quercus rubra* and *Populus hybrida*), turning them into dead wood and microhabitat for saproxylic fauna. Dead wood in forests is an ideal habitat for many invertebrates, and is often an ideal niche for the sprouting of many tree species; as such, it is considered a vital component for maintaining and increasing biodiversity.

Beneficiary responsible for implementation:

Province of Varese

ACTION C.7: CREATION OF LOG PYRAMIDS USING LOCAL TIMBER

Log-pyramids are made up of 5-6 logs (15-20 cm in diameter and about 2 meters in length); the logs are half buried so that about 1 meter is below ground and 1 meter is above ground. The project will mostly use local oak species that have been cut for firewood, to be purchased from local tree farms.

Timber – particularly oak wood – is the main or preferred habitat for many saproxylic species, such as *Cetonischema aeruginosa*, *Gnorimus variabilis*, *Aegosoma scabricorne*, *Cerambyx Cerambyxcerdo* - included in Annexes II and IV of Habitats Directive -, *Liocola marmorata* and *Lucanus cervus* (Annex II), some of which can be defined as “umbrella species” (particularly *Cetonischema aeruginosa* and *Gnorimus variabilis*);

Beneficiary responsible for implementation:

Province of Varese

ACTION C.8: PLANTING OF WHITE WILLOWS TO BE MANAGED BY POLLARDING

The action foresees planting of 350 White Willow *Salix alba* trees with a circumference of 12-16 cm and the pollarding of 30 existing trees. Pollarding is a traditional management method which consists of the periodical, drastic pruning of the trees' upper branches.

The main goal of this action is to create optimal habitat for the conservation and expansion of the small local population of *Osmoderma eremita*, a species of conservation priority that is now rare and disappearing throughout Europe.

Beneficiary responsible for implementation:

Province of Varese

ACTION C.9: UNDERPASSES FOR SMALL AND MEDIUM-SIZED ANIMALS USING PIPE-JACKING TECHNIQUES

For roads that are slightly raised with regards to surrounding land, underpasses can be made using pipe-jacking techniques. In this case, the underpass has a circular cross-section, with a minimum diameter of 1 meter and a maximum of 1.5 meters.

Roads along the ecological corridor between the Campo dei Fiori Park and the Ticino River Park are barriers that prevent the movement of wildlife within the corridor. Underpasses can help wildlife cross these barriers.

Beneficiary responsible for implementation:

Lombardy Regional Government

ACTION C.10: UNDERPASSES FOR SMALL AND MEDIUM-SIZED ANIMALS USING CUT-AND-COVER TECHNIQUES

For roads that are even with the surrounding land, underpasses can be made using cut-and-cover techniques, then laying the prefabricated underpasses. These underpasses have a square or rectangular cross-section, with a minimum side of 1 meter.

The planned interventions benefit the conservation of small and medium-sized mammals (*Mustela nivalis*, *M. putorius*, *Martes foina*, *M. martes*, *Meles meles*), amphibians (*Bufo bufo*, *Triturus carnifex*, *Rana latastei*), and reptiles, by facilitating their movements and reducing road mortality.

Beneficiary responsible for implementation:

Lombardy Regional Government

ACTION C.11: IMPROVEMENT OF EXISTING UNDERPASSES

Where there are already underpasses in place that have not been designed for wildlife, the project plans to adapt them for wildlife crossing.

The planned interventions benefit the conservation of small and medium-sized mammals (*Mustela nivalis*, *M. putorius*, *Martes foina*, *M. martes*, *Meles meles*), amphibians, and reptiles, by facilitating their movements and reducing road mortality.

Beneficiary responsible for implementation:

Province of Varese

ACTION C.12: ADAPTATION OF CULVERTS FOR THE PASSAGE OF WILDLIFE ALONG WATERWAYS

The underpass is built by clamping a series of stones to one side of the culvert and to the river bed. Access ramps, made up of rocks that also double as riverbank protection, must link the underpass with the upstream and downstream entrances to the culverts.

Bridges over watercourses can be a barrier for wildlife, due to the fact that the culverts underneath them can have steep banks and smooth piers. During low-water periods, animals can use the river bed as a passageway, but this becomes impossible when water levels are high (floods).

Beneficiary responsible for implementation:

Province of Varese

ACTION C.13: PLACEMENT OF BIRD-SCARING DEVICES ON POWERLINES

The action will place visual bird-scaring devices on the powerlines located near the Strona torrent. In order to increase the visibility of the powerlines and reduce the risk of bird strikes, spirals will be placed on the powerlines. These spirals function as a visual and auditory warning (they vibrate with the wind) of the presence of powerlines.

The presence of wooded areas and a stream (Strona) attracts birds to the area. The powerlines located next to the watercourse are a threat to many species of birds.

Beneficiary responsible for implementation:

Province of Varese

D. PUBLIC AWARENESS AND DISSEMINATION OF RESULTS

ACTION D.1: WEBSITE

The website will present project information on two clearly identifiable levels: educational level (web pages: descriptions using simple language) and technical level (technical and scientific documents and reports). The goal is to disseminate the “project culture” to as wide an audience as possible, including each of the categories listed in the table below, which refers to the Communication Plan as a whole.

Beneficiary responsible for implementation:

LIPU

ACTION D.2: LAYMAN’S REPORT

Layman’s Report will illustrate the project’s motives, actions, and results to a non-specialist audience, which nevertheless plays an important role in achieving the project’s mid- and long-term goals, through their everyday actions and political choices.

Beneficiary responsible for implementation:

LIPU

ACTION D.3: ON-SITE PANELS

The on-site panels will be placed at the main intervention sites from the very beginning of the project. They will inform visitors on the existence of the LIFE+ TIB project, and briefly summarize its main actions (motives and description): habitat enhancement efforts; underpasses; dry stone walls.

Beneficiary responsible for implementation:

LIPU

ACTION D.4: LEAFLET

Leaflets target a wide audience, comprising mostly (but not exclusively) non-specialists. It will thus be necessary to begin with the basic concepts upon which the project rests, keeping in mind that most people remain unaware of concepts such as *biodiversity* and *ecological network*.

Beneficiary responsible for implementation:

LIPU

ACTION D.5: VIDEO PRODUCTION

A documentary video of average information level will be produced to discuss the project's critical issues in depth (*duration about 30 minutes – format 16:9 – in Italian with English subtitles*). The main topic will be "green infrastructure" – i.e. ecological corridors – and the LIFE+ TIB project will be portrayed in a demonstrative way, to discuss the possibility – and indeed, the absolute necessity – to defragment areas where human activities are a barrier to the mobility of plants and animals, and thus a serious threat to biodiversity.

Beneficiary responsible for implementation:

LIPU

ACTION D.6: INVOLVEMENT OF LOCAL MEDIA: PRESS, TELEVISION, RADIO, AND WEBSITES

The systematic involvement of local (regional, provincial, and municipal) media such as press, television, radio, and websites, and of national media focusing on issues relevant to Lombardy and Varese province, is an integral part of the Communication Plan

Beneficiary responsible for implementation:

LIPU

ACTION D.7: EVENTS FOR JOURNALISTS

Journalists are essential for promoting the project's goals, since they can reach a very wide audience. Along with providing them with clear, specific information, it is necessary to establish a relationship between journalists and the project's goals for the local area.

Beneficiary responsible for implementation:

LIPU

ACTION D.8: NETWORKING FOR TRAINING: CREATION AND PRESENTATION OF A TECHNICAL MODULE

This action will create a technical training module suitable for a face-to-face lesson presenting the project's significance. This will be a flexible presentation that can be easily adapted to focus on the most pressing issues for each of the target groups.

Beneficiary responsible for implementation:

LIPU

ACTION D.9: FINAL CONFERENCE

This is the final event of the LIFE+ TIB project, during which the results obtained over the course of the three-year projects will be presented to stakeholders and the press.

Beneficiary responsible for implementation:

LIPU

ACTION D.10: NETWORKING WITH INTERNATIONAL ORGANIZATIONS AND OTHER SUBJECTS RELEVANT AT THE EUROPEAN LEVEL

Some of the beneficiaries of the present LIFE+ TIB project are founding or active members of important international organizations whose goals closely match those of the project itself. The present action thus proposes to establish partnerships with those organizations, in order to set up international networking for the LIFE+ TIB project.

Beneficiary responsible for implementation:

LIPU

ACTION D.11: ACTIVATION OF A LOCAL CONSERVATION GROUP

BirdLife is working on promoting Local Conservation Groups (known internationally as IBA's caretakers) active at the volunteer level, in the fields of communications and monitoring related to Natura 2000 Network sites. This programme is successfully and running worldwide. This action will involve the Local Conservation Group (which already exists and is active in the Varese Lake and Brabbia Marsh sites).

Beneficiary responsible for implementation:

LIPU

ACTION D.12: DRAFTING OF TECHNICAL AND SCIENTIFIC ARTICLES

The LIFE+ TIB project includes a significant technical and scientific component. In order to strengthen the project's demonstrative aspect, it is important to promote and disseminate these contents through the specialised press, making a particular effort to reach out to media outlets which, in spite of regularly dealing with land-use management issues, tend to ignore – for cultural or general approach reasons - the importance of the need to conserve biodiversity in general, and ecological connectivity issues in particular.

Beneficiary responsible for implementation:

LIPU

ACTION D.13: SCHOOL PROGRAMS

The LIFE+ TIB project has great educational value. Concepts such as biodiversity, ecological connections, conservation, and environmental enhancement, especially if applied to the local context (with tangible examples that can easily be verified in person), are cross-cutting issues relevant to both primary and secondary school pupils. The action is necessary to involve teachers – one of the key groups to build consensus in the middle term - and to disseminate the basic concepts

behind the LIFE+ TIB project among future generations, who will soon be called upon to make land-use management choices.

Beneficiary responsible for implementation:

LIPU

ACTION D.14: POSTERS

Building local consensus is an important aspect of the present project. To this end, four different posters will be printed dealing with the main topics of the LIFE+ TIB project. The posters will be designed according to the guidelines provided in the “Designing a LIFE Project Poster” document.

Beneficiary responsible for implementation:

LIPU

E. OVERALL PROJECT OPERATION AND MONITORING

ACTION E.1: BATHYMETRIC AND TOPOGRAPHIC MONITORING OF INTERVENTIONS CARRIED OUT IN WETLANDS

Topographic and bathymetric surveys will be carried out at an adequate scale (1: 500 – 1:2.000) for interventions in wetlands, namely: Cavallit/Motta d’Oro, Brabbia Marsh , Varese Lake. Surveys will be carried out during the project’s first year, to evaluate the pre-intervention status, immediately after the execution of the actions (second year), and during the third year in order to monitor the efficacy of interventions.

Beneficiary responsible for implementation:

LIPU

ACTION E.2: FLORA AND FAUNA MONITORING PRE – DURING – POST PROJECT

Monitoring of the flora and fauna is a key tool to assess the viability of the proposed ecological corridors, and to verify the success of the interventions carried out to implement them.

1. Monitoring of experimental control/removal efforts targeting *Nelumbo nucifera* in the Brabbia Marsh Reserve (action C.4a) and *Ludwigia grandiflora* in the Varese Lake SPA (action C.4b).
2. Monitoring of the presence and diffusion of exotic species before and after intervention to increase exotic tree necromass (action C.6).

Verification sources: quantification seedling and young tree cover indexes; annual report.

3. Monitoring of saproxylic invertebrates.
4. Monitoring of amphibians in wetlands and at road crossings.

5. Monitoring of bird species tied to dead wood.

6. Monitoring of medium-sized mammals.

Beneficiary responsible for implementation:

LIPU

ACTION E.3: PROJECT MANAGEMENT ON THE PART OF THE PROVINCE OF VARESE, THE LOMBARDY REGIONAL GOVERNMENT, AND LIPU

This action includes all the personnel which is considered essential to the development of project activities of project beneficiaries (Province of Varese, coordinating beneficiary, Region Lombardy and LIPU, associated beneficiaries). It refers to the management of the project as a whole.

Beneficiary responsible for implementation:

Province of Varese, Lombardy Region, LIPU

ACTION E.4: MONITORING OF PROJECT MANAGEMENT

This action includes specific persons and functions, that are responsible for monitoring and control of management activities and aspects, such as respect of deadlines, financial aspects, planning of activities, assessment of effectiveness and efficiency of the process.

Carrying out monitoring actions is fundamental to ensure that the project remains efficient and effective with regards to its stated goals.

Beneficiary responsible for implementation:

Province of Varese and LIPU

ACTION E.5: FINANCIAL AUDITING

First of all, the auditor shall verify that the reported products and services have actually been supplied, and that the partner's declared expenses have indeed been incurred in compliance with relevant national and Community legislation. In particular the auditor shall ensure that all regulations in terms of transparency, equity, and public evidence in assigning contracts on the part of public authorities have been complied with.

Beneficiary responsible for implementation:

Province of Varese.

ACTION E.6: POST-PROJECT COMMUNICATION

The Communication Plan for continuing to disseminate the results of the LIFE+ TIB project even after its end will be drafted according to the guidelines provided in the "The 'After-LIFE Communication Plan'" document. This plan will be drafted at the end of the project, and will be based on an analysis of the performance of the general Communication Plan, keeping in mind both positive aspects and any shortcomings, and linking post-project communication goals to the communication potential of participants in the LIFE+ TIB project (communication and press offices).

Beneficiary responsible for implementation:

Province of Varese

ACTION E.7: NETWORKING WITH OTHER LIFE AND/OR NON-LIFE PROJECTS

The main issues of the present LIFE+ TIB project, particularly those related to ecological connectivity, have great relevancy within the broader context of biodiversity conservation at the European and international level. It is thus reasonable to assume that other LIFE and non-LIFE projects dealing with systematic environmental conservation will be of great relevance to the LIFE+ TIB project working group.

Beneficiary responsible for implementation:

LIPU