The project «Establishment of a Plant Micro-Reserve Network in Cyprus for the Conservation of Priority Species and Habitats» (PLANT-NET CY) focuses on the conservation of four priority species and two priority habitat types of Cyprus. The European Union, recognising the uniqueness and value of these species and habitats, has included them in the Annexes of the Habitats Directive (92/43/EEC) as priority species and habitat types, since there is an immediate need for implementing appropriate measures for their conservation. The project’s objectives are achieved through the establishment, monitoring and management of a network of five Plant Micro-Reserves (PMRs), namely:

**PMR 1** – Area of Mitsero, which aims to improve the conservation status of *Ophrys kotschyi*,

**PMR 2** – Area of Koiada Kedron-Kambos, which aims to improve the conservation status of the habitat type *9390 Scrub and low forest vegetation of Quercus alnifolia*,

**PMR 3** – Area of Koiada Kedron-Kambos, which aims to improve the conservation status of *Arabis kennedyae* and also of the habitat type *9590 Cedrus brevifolia forests (Cedrosetum brevifoliae)*,

**PMR 4** – Area of Chersonisos Akama which aims to improve the conservation status of *Centaurea akamantis* and

**PMR 5** – Area of Asgata which aims to improve the conservation status of *Astragalus macrocarpus* subsp. *jelkarensis*.

The project is implemented under the LIFE+ programme, which is the EU’s funding instrument for the environment. The project started on 1/1/2010 and will be completed by 30/6/2013.

**Expected results:**

A) Improvement of the conservation status of four plant species and two habitat types, all endemic to Cyprus (found only in Cyprus).

B) Implementation of appropriate conservation measures for these species and habitats, both within their natural distribution areas (in situ) as well as outside these areas (ex situ).

C) Active participation of local communities through public involvement in issues related to protection and promotion of natural wealth.

D) Awareness of citizen groups and organisations (e.g. non-governmental environmental organisations, tourist bodies, youth centres, schools) on issues related to biodiversity conservation (and environment in general).

### Plant Micro-Reserves (PMRs)

The main objective of the project will be achieved by the establishment, monitoring and management of a network of 5 PMRs. These are small land plots (~20 ha) that have been selected for their floristic value. This approach was firstly developed in the 1990s in Spain and since then, it has been adopted with great success in other regions of the European Union (Greece, Slovenia and Bulgaria). The PMR approach aims at protecting selected areas with rare, endemic and endangered species, by establishing a system of continuous monitoring and implementing measures for their conservation. Moreover, PMRs are areas of attraction for scientists, persons with special interests (e.g. agrotourism), schools and other visitors. The establishment of the PMR network in Cyprus includes five selected sites (as shown on the map) all within sites included in the European network of protected areas Natura 2000.

#### In situ conservation

The methods chosen for the conservation of the targeted species within their natural distribution areas are widely accepted and safe. In this way natural processes such as natural selection and evolution are supported. The conservation of the targeted species is achieved by reducing the main threats and enhancing their populations so as to minimise the danger of extinction. As a result, natural wealth is enhanced and can turn into an investment for the future.

#### Ex situ conservation

The ex situ conservation methods for the targeted species can be used as a safety net for preserving genetic material in the long term and as a complimentary tool to the in situ conservation. Such methods include the storage of their seeds in seed banks and the establishment of living collections in botanical gardens.

*Ophrys kotschyi* is described as one of the most impressive wild orchids across Europe. It is a perennial, erect herb, 10-30 cm high, and is found in a variety of habitats at 30 locations throughout Cyprus. It is a protected species and is included in the Red Data Book of the Flora of Cyprus (characterised as Vulnerable), in Appendix I of the Bern Convention, in Annex II of Directive 92/43/EEC and in the CITES Convention (on international trade in endangered species). The threats that this species faces are: urban development in lowland areas, unsustainable agricultural practices, grazing, reduced reproductive ability, and decrease in genetic variability of the population due to low sexual reproduction ability. The project is focused on the largest subpopulation of the species found in the Mitsero area, where PMR1 has been established.

Conservation actions in this site include:

A) monitoring of the subpopulation and all the parameters affecting it,

B) increase of the percentage of reproductive success using artificial pollination procedures and

C) artificial seed dispersal in selected sites.

**Habitat **9390 «Scrub and low forest vegetation with Quercus alnifolia» is found exclusively on the Troodos mountain range. The main species of the habitat, *Quercus alnifolia* (Golden oak), is the National Tree of Cyprus. The species has great ecological value as it grows on rocky slopes preventing soil erosion, while its fruits are excellent nutriment for the local fauna. The habitat *9390 is included in Annex I of the Directive 92/43/EEC as a priority habitat type. Although this habitat has a large distribution area, climate change could possibly affect it negatively. Additionally, it is threatened from human intervention (e.g. recreational activities, road development) and biological processes (e.g. consumption of its fruits by insects). The project focuses on the study and conservation of habitat *9390 at the Tripylos area (PMR2).

Selected conservation actions for this site include:

A) monitoring of the subpopulation and all the parameters affecting it and

B) sustainable management of predators.
**Arabis kennedyae** is an erect herb, 5-30 cm high growing only in three locations. One of these locations is found in the Cedar Valley, where PMR3 has been established. This species is included in the Red Data Book of the Flora of Cyprus (described as Endangered), in Appendix I of the Bern Convention, in Annex II of Directive 92/43/EEC and in the list of the Top 50 Plants of Mediterranean Islands of the International Union for Conservation of Nature (IUCN). This species is mainly threatened from biotic factors (e.g., insect attacks), fires, genetic erosion as a result of isolation and its small number of subpopulations and climate change.

Conservation actions for this species include:

A) monitoring of the subpopulation in PMR3,
B) seed collection, plant growing in the laboratory and artificial dispersal of produced seeds in selected sites,
C) sustainable management of predators and
D) storage of seeds in the Agricultural Research Institute's (ARI) seed bank.

**Habitat** >9590 *Cedrus brevifolia* forests (*Cedrocetum brevifoliae*) is restricted to only one area in the Pafos forest. Habitat >9590 is included in Annex I of Directive 92/43/EEC as a priority habitat type. Moreover, its main distribution area (Tripylos) has been declared a Nature Reserve. For the purposes of this project, PMR3 has been established at the peak of the Tripylos mountain. The Cyprus cedar forests are threatened from climate change, as well as from biotic (e.g., insect attacks, lichens) and abiotic (e.g., forest fires) factors.

Conservation actions for this habitat include:

A) monitoring of subpopulation in PMR3,
B) removal of dry flammable biomass as a measure for preventing forest fires,
C) enrichment of the population by planting new cedars and
D) storage of seeds in ARI’s seed bank.

**Centaurea akamantis** is a subshrub that grows on rocky areas. It is restricted in only two neighbouring locations at the Akamas peninsula, one of which is the Avakas gorge, where PMR4 has been established. The species is included in the Red Data Book of the Flora of Cyprus (described as Endangered), in Appendix I of the Bern Convention, in Annex II of Directive 92/43/EEC and in the list of the Top 50 Plants of Mediterranean Islands of IUCN. The species is threatened from overgrazing and genetic erosion as a result of isolation and of the small size of its subpopulations.

Conservation actions for this species include:

A) monitoring of the subpopulation in PMR4,
B) artificial seed dispersal in selected locations,
C) fencing of selected plants and
D) storage of seeds in ARI’s seed bank.

**Astragalus macrocarpus** subsp. *lefkarenis* is an erect, perennial, hairy herb, 30-100 cm high, found in 6 locations. One of these locations is situated close to Asgata village, where PMR5 has been established. The subspecies is included in the Red Data Book of the Flora of Cyprus (described as Vulnerable), in Appendix I of the Bern Convention, in Annex II of Directive 92/43/EEC and in the list of the Top 50 Plants of Mediterranean Islands of IUCN. The species is threatened by disturbance of its natural habitats for urban development, reduced reproductive ability and genetic erosion as a result of the isolation and the small size of its subpopulations.

Conservation actions for the subspecies include:

A) monitoring of the subpopulation at PMR5,
B) fencing of selected plants,
C) moderate addition of fertiliser/manure for increasing reproductive success and
D) seeds storage in ARI’s seed bank.