



LIFE **OROKLINI**  
project

[www.orkliniproject.org](http://www.orkliniproject.org)

Protecting an important wetland  
for birds and people:

## The LIFE Oroklini project

Layman's report



LIFE10 NAT/CY/000716



With the contribution of the LIFE financial  
instrument of the European Union

Πτηνολογικός  
Σύνδεσμος Κύπρου

BirdLife  
Cyprus



# Project identity

**Project Title:** Restoration and Management of Oroklini Lake SPA (CY6000010), in Larnaca, Cyprus

**Project code:** LIFE10 NAT/CY/000716

**Duration:** 01/01/2012 – 31/12/2014

**Coordinating beneficiary:** Game and Fauna Service

**Associated beneficiaries:** BirdLife Cyprus, Environment Department, Department of Forests, Voroklini Community Council

**Project site:** Oroklini Lake Special Protection Area, Cyprus (57 hectares)

**Total budget:** €797,070

**Funding:** 50% from the European Commission (€398,535)



## What is LIFE?

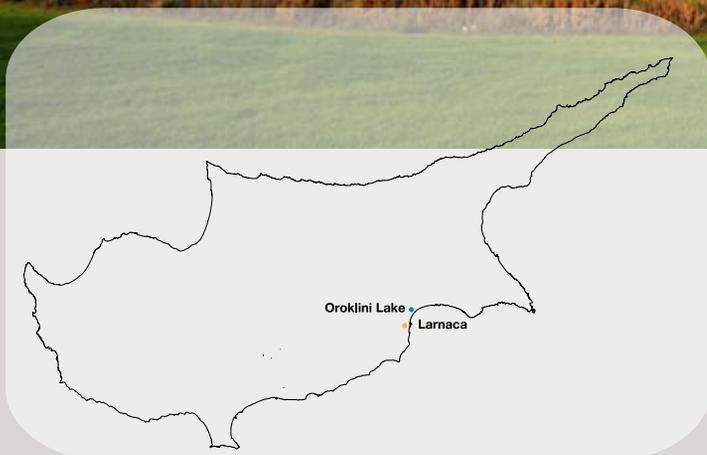
The LIFE programme is the financial instrument of the European Union for the environment. The word originates from the French acronym (L'Instrument Financier pour l'Environnement) which means exactly this. One of the main strands of the LIFE programme is the **LIFE Nature and Biodiversity** which supports projects that contribute to the implementation of the EU Birds and Habitats Directives in the Natura 2000 network and to the EU's goal of halting the loss of biodiversity.



## What is Natura 2000;

Natura 2000 is the centrepiece of EU nature & biodiversity policy. It is an EU wide network of nature protection areas established under the 1992 Habitats Directive. The aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and habitats. It is comprised of Special Areas of Conservation (SACs) designated by Member States under the Habitats Directive (92/43/EEC), and also incorporates Special Protection Areas (SPAs) designated under the Birds Directive (2009/147/EC).

## Oroklini Lake: a wetland of European importance



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Oroklini Lake is a haven for birds and a special site for every visitor seeking contact with wildlife.

It is located within the Larnaca district, only 7km from Larnaca city centre, at Voroklini Community. The site is one of the few natural wetlands in Cyprus, with shallow brackish water. What we see today is a remnant of a once, much larger seasonal wetland that used to extend to the sea.

Oroklini Lake collects water during wet months while most years it naturally dries out completely late in the summer and remains dry until the first autumn rains.



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Wood Sandpiper, © A. Stoecker

In 2009 the site was included in the Natura 2000 network of protected areas. It was designated as a Special Protection Area under the EU Birds Directive and a Special Area of Conservation under the EU Habitats Directive. Oroklini Lake is the smallest Natura 2000 area in Cyprus; however it is very important for biodiversity and especially for birds.

Among the 190 different species of birds that have so far been recorded at Oroklini Lake are permanent residents but also migrants that come to the site to breed, spend the winter or on passage in spring or autumn. Beyond this general importance for birds, Oroklini Lake is particularly important as a breeding site for two species, the Spur-winged Lapwing and the Black-winged Stilt.

Apart from birds, Oroklini Lake is also important for rare halophytic vegetation – plants that are adapted to soils with high salinity levels.



Glossy Ibis, © A. Stoecker



Shoveler, © A. Stoecker



Little Tern, © A. Stoecker



Purple Heron, © D. Nye



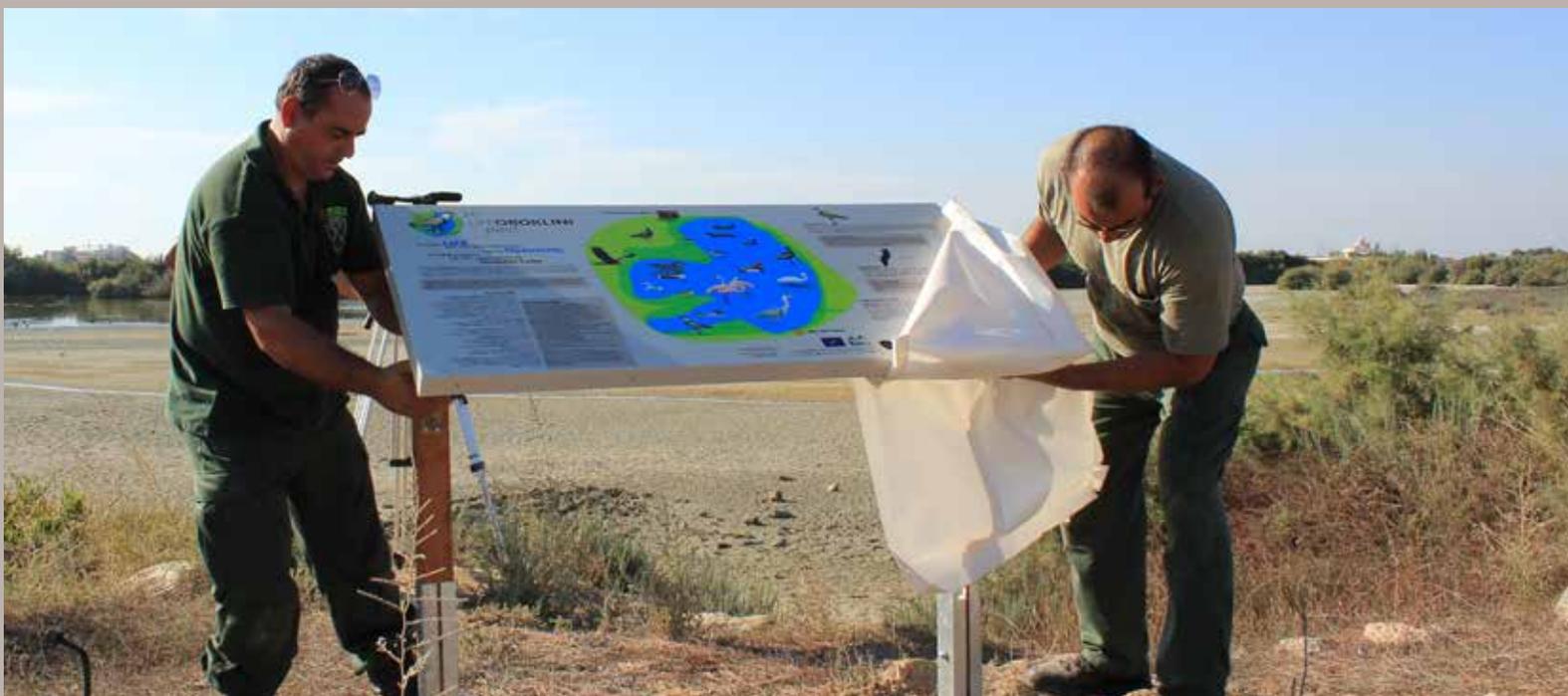
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Unfortunately, despite its importance and uniqueness, Oroklini Lake was threatened by developments within the site's protection boundaries, by disturbance, lack of water management, invasive alien species (acacias) and lack of awareness of its importance and the need for its protection.

The LIFE Oroklini project started in 2012 and lasted for three years, with the aim of addressing these threats to ensure the sustainable management of Oroklini Lake long-term.



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## The Spur-winged Lapwing...

The **Spur-winged Lapwing** *Vanellus spinosus* is a migratory African wader that breeds only in Greece and Cyprus in the EU. Oroklini Lake is one of the top five breeding sites for the species in Cyprus. In recent years a small resident population has been recorded in Cyprus.

This bird feeds on insects found in muddy edges and in shallow waters and nests on dry bare ground. The Spur-winged Lapwing has a distinctive appearance, with white 'cheeks' on an otherwise black head.

A visit to Oroklini Lake during spring will reward every visitor, as the Spur-winged Lapwing is quite vocal during the breeding season. In winter one can see a large flock of this species, sometimes up to 80 birds.



© S. Christodoulides



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## ...and the Black-winged Stilt

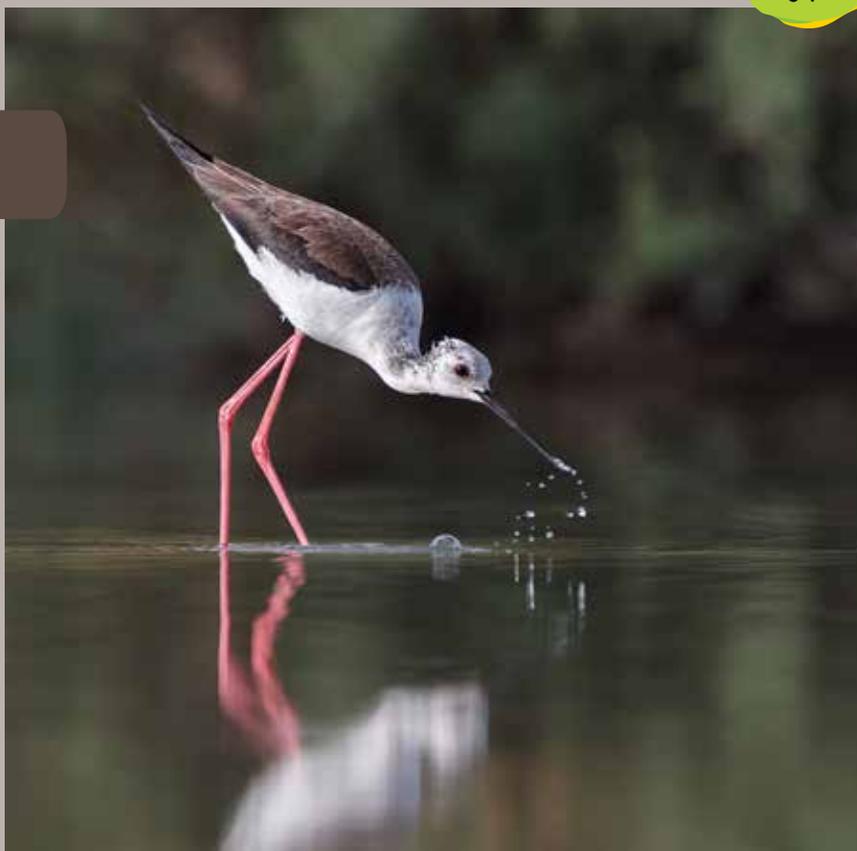
The **Black-winged Stilt** *Himantopus himantopus* is also a migratory wader and Oroklini Lake is regularly the best breeding site island-wide for this species.

The Black-winged Stilt is more slender than the Spur-winged Lapwing, with very long legs that allow it to seek food in deeper water than other waders. It is an elegant black-and-white bird with distinctive red-orange legs. It prefers islands of vegetation surrounded by water for nesting, forming nesting colonies.

Like the Spur-winged Lapwing, this species is also sensitive to disturbance during the breeding season and also to sudden fluctuations in water level.

One can see the Black-winged Stilt at Oroklini Lake during spring and until summer, and sometimes during migration.

**Oroklini Lake was classified as a Special Protection Area for these two bird species, making it a Natura 2000 site!**



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# Threats

Before the start of the LIFE Oroklini project, Oroklini Lake was facing a number of threats leading to continuous degradation of the wetland and causing significant disturbance to birds.

The main threats were:

- Uncontrolled access to the site. This was either people driving vehicles (when low water levels allowed it) or walking their dogs. This disturbance, was affecting the breeding success of birds.
- Lack of water management. As a result, nests faced the risk of getting flooded after a spring rainfall event and also an important part of the wetland dried out towards the end of the breeding season, with an impact on the birds' breeding success.
- The creation and operation of a flea-market, part of which stretched within the protected area. This resulted in the loss of Spur-winged Lapwing nests, while the flea-market attracted large crowds, causing great disturbance to birds and littering on site.
- Acacia trees spreading around the wetland. Acacias are Invasive Alien Species in Cyprus (non-native species that pose a threat to native biodiversity) and are a threat to native flora and fauna.
- Lack of protection and management due to lack of public awareness about the wetland's importance and the birds it hosts.



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© C. Papazoglou



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## The aim of the LIFE Oroklini project



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The aim of the project was to bring the Oroklini Lake Special Protection Area to a favourable conservation status as defined by the EU Birds and Habitats Directives. Specifically, the project actions aimed to protect the two qualifying species of the site, the Spur-winged Lapwing and the Black-winged Stilt. However, the implementation of these actions benefited the whole wetland ecosystem. To accomplish its aim, both on site conservation actions and awareness raising actions were implemented.



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## Gathering and analysing information

To achieve better results regarding the wetland's management, the project gathered information about the site through the elaboration of a number of studies. These studies included amongst others a hydrological study, an ichthyological study, a topography study and a study identifying the favourable population size for the Spur-winged Lapwing and the Black-winged Stilt that would ensure the long-term maintenance of favourable conservation status for Oroklini Lake (setting of Favourable Reference Values).

### Studies and reports conducted through the LIFE Oroklini project

Topography study for Oroklini Lake SPA

Determination of important hydrological features for Oroklini Lake

Ichthyological Study for Oroklini Lake

Analysis of Pressures and Impacts on runoff water quality for the Oroklini Lake catchment

Setting Favourable Reference Values for Annex I bird species at Oroklini Lake

Report on the predator's impact on breeding waders at Oroklini Lake

Water Management Plan for Oroklini Lake

Monitoring Protocol for Oroklini Lake

Action Plan for Oroklini Lake SPA

The predation report showed that there is predation from foxes and Hooded Crows and this is something that needs to be controlled and monitored with a focus on related wetland management actions

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The hydrological study provided important information on the hydrological features of Oroklini Lake

© LIFE10NATCY716



The Ichthyological study showed that Oroklini Lake is one of the most important sites known for the European Eel in Cyprus

© S. Zogaris



The Favourable Reference Value for Oroklini Lake for the Spur-winged Lapwing was set at 15 pairs and for the Black-winged Stilt at 60 pairs

© P. Panayides



## Restoration of the area where a flea-market was illegally operating

By restoring the 3 hectares area once occupied by the flea-market, the project managed to create more suitable nesting habitat for important species.

**BEFORE**



© M. Apostolidou

**AFTER**



The success of this action was highlighted by the fact that a pair of Spur-winged Lapwing returned to nest on the restored field and also Stone curlew *Burhinus oedicanus* - which is another important species - was recorded nesting in the same restored field for the first time ever.



Stone curlew, © S. Christodoulides

## Fencing the site

By fencing the perimeter of the wetland, the project significantly minimised the disturbance to birds, resulting in the improvement of nesting conditions.



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Kentish Plover *Charadrius alexandrinus* nested again at Oroklini Lake in 2014, after an absence of 7 years, while the Little ringed Plover *Charadrius dubius* nested in an area where, before the erection of the fence, people and cars would pass!

Kentish Plover © D. Nye



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## Water management works

By installing water level control structures on site, the project improved nesting conditions for wild birds. These control mechanisms allow site managers to reduce water levels when necessary, thus minimising the risk of nests getting flooded.

As part of the water management works, the project created six nesting islets surrounded by ditches with water. This provided suitable nesting habitat secure from predators like foxes and rats, and also suitable feeding areas.

In 2014, a breeding colony of 45 Cattle Egrets *Bubulcus ibis* nests constituted the first breeding record for this species at Oroklini Lake.



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Cattle Egret © D. Nye

## Installing eel passes



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By installing eel passes, the project provided means to help eels migrate from the sea into the wetland. Eels enter the Lake from the sea as elvers and spend most of their lives in the Lake, before they migrate back to the Atlantic Ocean, where they breed. Eels constitute an important part of the Lake ecosystem.

## Marking powerlines

Placing fireflies on the power lines crossing over the wetland was important to reduce the risk of collision for birds.



© M. Apostolidou

## Pedestrian crossing

A pedestrian crossing on the road running down the side of the wetland was essential to provide a means for visitors to safely cross that road.



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## Removing Invasive Alien Species of plants

Removing acacias from an area of half a hectare was important in order to restore local vegetation.



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## Planting local trees and shrubs

Planting local trees and shrubs provided better screening around the wetland. This also protects the birds from disturbance in a wetland surrounded by development.



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## A collective effort to save Oroklini Lake



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### Public awareness and environmental education

The project managed to reach a wide variety of target audiences through its website, on-site information panels, leaflets and brochures, a documentary, a birdwatching hide, an information kiosk, a photo album, an education pack, information events, opportunities for involving the public in awareness raising activities and also through communication with other LIFE projects in Cyprus and across Europe. The involvement of the Voroklini Community Council in the project played a key role in its success!

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Engaging the public is a vital factor in all conservation efforts

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LIFE project officers from different European countries participated in a workshop in Cyprus on managing wetlands for birds

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More than 170 volunteers helped clean up Oroklini Lake from litter



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Oroklini Lake is ideal for innovative educational activities. Students from the Cyprus University of Technology experienced birdwatching and learnt how to build nests for small birds



© M. Apostolidou

Children and adults learn about the rich bird life Oroklini Lake hosts



© M. Apostolidou

Through experiential education children learn about the importance of wetlands and biodiversity



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The information kiosk (north of the wetland) and the birdwatching hide (south of the wetland) provide a unique view of the wetland and its wildlife

### Information panels erected at Oroklini Lake

The project of the LIFE10NATCY716 initiative, which aims to improve the environmental quality of the wetland and its wildlife, has reached a significant milestone. Information panels have been erected at Oroklini Lake, providing visitors with valuable information about the wetland and its wildlife.

The panels, which are part of the LIFE10NATCY716 initiative, provide visitors with valuable information about the wetland and its wildlife. They cover topics such as the importance of wetlands, the biodiversity of the area, and the impact of human activities on the environment.

The panels are part of a larger project aimed at improving the environmental quality of the wetland and its wildlife. The project includes various activities such as birdwatching, nature walks, and educational programs for children and adults.

ENTS

The LIFE10NATCY716 initiative is a joint project of the European Union and the Government of Cyprus. It is funded by the LIFE program, which is part of the European Union's budget.

The project is managed by the Cyprus University of Technology (CUT) and the Cyprus Environmental Centre (CEC). The project is expected to run until 2016.



### LIFE in Oroklini



and other wildlife with 2006.

On 20 June 2010, the Department of Parks and Recreation, in cooperation with the Cyprus Environmental Centre, organized a cleanup activity at Oroklini Lake. The activity was aimed at removing litter and other waste from the wetland area.

The cleanup activity was a success, with a large amount of waste being removed from the area. This activity is part of the LIFE10NATCY716 initiative, which aims to improve the environmental quality of the wetland and its wildlife.

68 **tribuna** Εβδομαδιαίο Περιοδικό

**Saturday of Love for Children offers free theatrical activities**

The Municipality of Limassol, in cooperation with the Cyprus Environmental Centre, organized a Saturday of Love for Children activity at Oroklini Lake. The activity was aimed at providing children with a fun and educational experience.

The activity included various theatrical performances, games, and other activities. The children were also given information about the wetland and its wildlife.

### Tribute to Oroklini Lake

The Municipality of Limassol, in cooperation with the Cyprus Environmental Centre, organized a tribute to Oroklini Lake. The tribute was aimed at raising awareness about the importance of the wetland and its wildlife.

The tribute included various activities such as birdwatching, nature walks, and educational programs for children and adults. The activities were held at Oroklini Lake, providing visitors with a unique view of the wetland and its wildlife.

### Oroklini Lake education packs

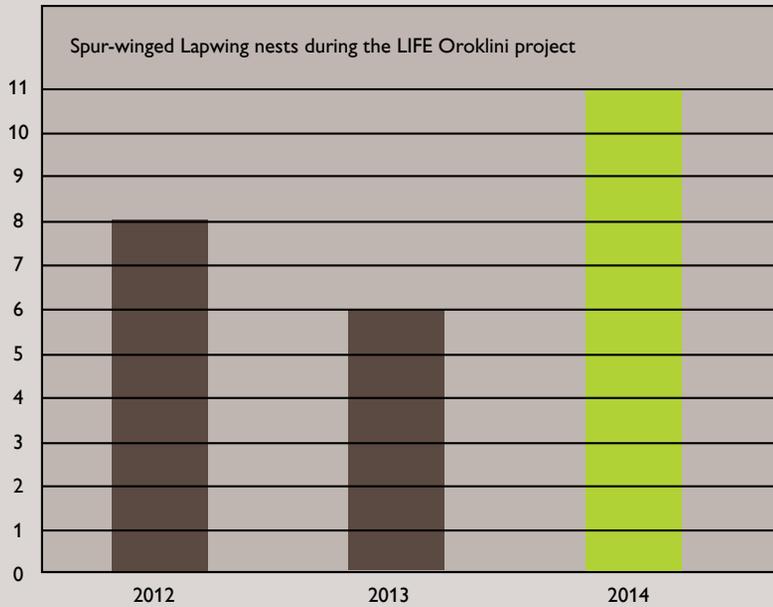
The Municipality of Limassol, in cooperation with the Cyprus Environmental Centre, has developed education packs for Oroklini Lake. The packs are aimed at providing visitors with information about the wetland and its wildlife.

The packs include various materials such as brochures, maps, and other educational resources. They are available for free to all visitors to Oroklini Lake.

The packs are part of the LIFE10NATCY716 initiative, which aims to improve the environmental quality of the wetland and its wildlife. They are expected to be a valuable resource for visitors to the wetland.

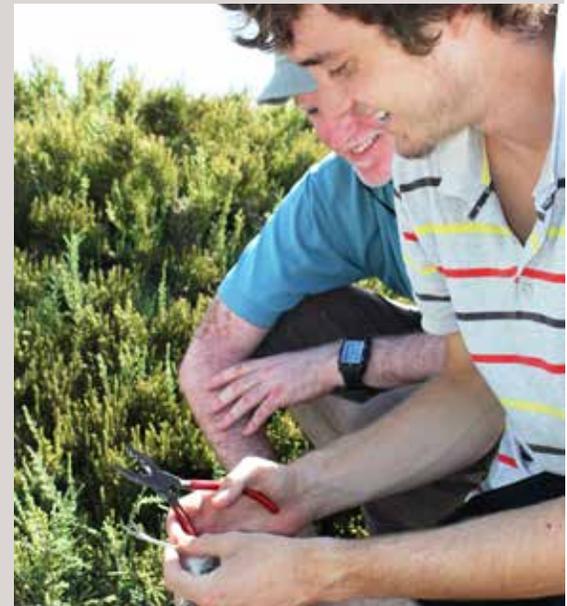
## Monitoring bird populations

Regular monitoring of breeding activity, migratory and wintering species as well as nest monitoring, are key elements to create a database and measure changes through time. This data helps in the assessment of the effectiveness of management actions.



Despite the exceptionally low rainfall on the island in the winter of 2013, the fencing, the water management works and the creation of nesting islets resulted in an increase of the Spur-winged Lapwing breeding pairs in spring 2014.

During the winter of 2014, one of the larger flocks of Spur-winged Lapwing was recorded at Oroklini Lake, with 85 birds.



## The future of Oroklini Lake

Upon completion, the LIFE Oroklini project leaves behind fundamental tools for continuing the management of Oroklini Lake. The project has set the right foundations for the long-term conservation of the site for the benefit of birds and people.



© L.Kapsali

Oroklini Lake was included in the list of water bodies monitored by the Water Development Department and all project partners are committed to continue managing the wetland within an agreed management framework.

### Action Plan for Oroklini Lake

An Action Plan for Oroklini Lake was developed as part of the LIFE Oroklini project. This Action Plan includes the guidelines for the future management of Oroklini Lake Special Protection Area. Competent authorities and specialists on site management were involved in the preparation of the Action Plan and existing and new knowledge gained during the project was used. The Action Plan was agreed by competent authorities and adopted with a Ministerial Decree.



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## Achievements of the LIFE Oroklini project

Transformation of Oroklini Lake to a haven for important species on a European level, including the Spur-winged Lapwing and Black-winged Stilt.

Creation of appropriate infrastructure and conditions for visitors, and transformation of Oroklini Lake in an outdoor classroom for children.

Spreading the word among the public about the need to safeguard nature.

Provision of suitable tools (i.e. Action Plan) aiming to ensure the sustainable management of Oroklini Lake in the future.

A good example of effective use of resources and a cooperation model between government bodies, non-governmental organisations and local community.

Efficient and effective management of an important site with specific conservation objectives, especially on the issue of hydrological management of a seasonal wetland which can be used as a management model for other areas in Cyprus that need protection.



Black-winged Stilt © A. Stoecker

# Acknowledgements

Making this project work would have been impossible without the active involvement and support of dedicated people and bodies. We owe a big 'Thank you' to:

- The European Commission for providing 50% of the funding through the LIFE financial instrument
- The Tasso Leventis Conservation Foundation for its financial support to BirdLife Cyprus without which the participation of the organisation in the project would be impossible
- The external monitoring team for their valuable support from the start of the project until its completion
- All the collaborators from the five project partners (Game and Fauna Service, BirdLife Cyprus, Environment Department, Department of Forests, Voroklini Community Council)
- All the researchers, contractors and other collaborators who contributed over the three project years during their working or personal time in various actions of the project
- The Water Development Department for their participation in the Project Steering Committee and their valuable support during project implementation
- All the people, educators, birdwatchers, pupils and concerned citizens who participated in the project events, visiting Oroklini Lake and becoming ambassadors of this important wetland
- RSPB for their on-going support and the expertise they provided in many important aspects of the project and also to BirdLife partners of Greece, Slovenia, Spain, France, Italy and BirdLife International for sharing experiences and knowledge
- To the Voroklini Community Council we owe a special thank you for embracing and supporting the LIFE Oroklini project throughout its duration



## Project's awareness raising publications



Photo album  
'Oroklini Lake all through  
the year'



Education pack for  
Oroklini Lake



Documentary 'Oroklini Lake  
– a wetland of European  
importance'



Project leaflet and sticker



Brochure for visitors

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Project partners