

# BIODIVERSITY CONSERVATION THROUGH SUSTAINABLE USE OF NATURAL RESOURCES IN YAMMOUNEH

## OBJECTIVE

“To develop a complete document indicating the overall feasibility of establishing a management project for the Yammouneh Nature Reserve”.

## METHODS

- ✚ An assessment of the fauna and flora status,
- ✚ A socioeconomic survey reflecting the needs and concerns of the local community and their position regarding such a management project.

### Historic Significance

Yammouneh was declared protected at least four times through history. **The Roman Emperor Hadrian in year 134ac issued the first law, which was engraved on a rock in the upper west side of Yammouneh.**



### Cultural Heritage

Located on the old Roman road, Yammouneh linked the historical site of Baalbeck with the Afqa temples in Mount Lebanon. Roman Emperors used to spend their summer in Yammouneh for its healthy weather, its landscape and abundant water resources. Remains of a Roman temple are still found near the main river and waterfall. The Lebanese government recently excavated the site but their work was interrupted and excavations may still resume in the future. A few years ago, students from the Archeology department of the Lebanese University discovered a Roman statue near the waterfall. It was identified as the Goddess Venus. The statue is now exposed at the National Museum in Beirut.

*Team work: Mounir Abi Said, Ali Darwish, Corinne Deek, Karim El-Jisr, Nizar Rammal, Elsa J. Sattout, & Dany Lichaa El-Khoury.*



GREEN LINE ASSOCIATION  
A Scientific Association for Conservation

WORLD BANK GROUP



## GENERAL DESCRIPTION OF STUDY ZONE

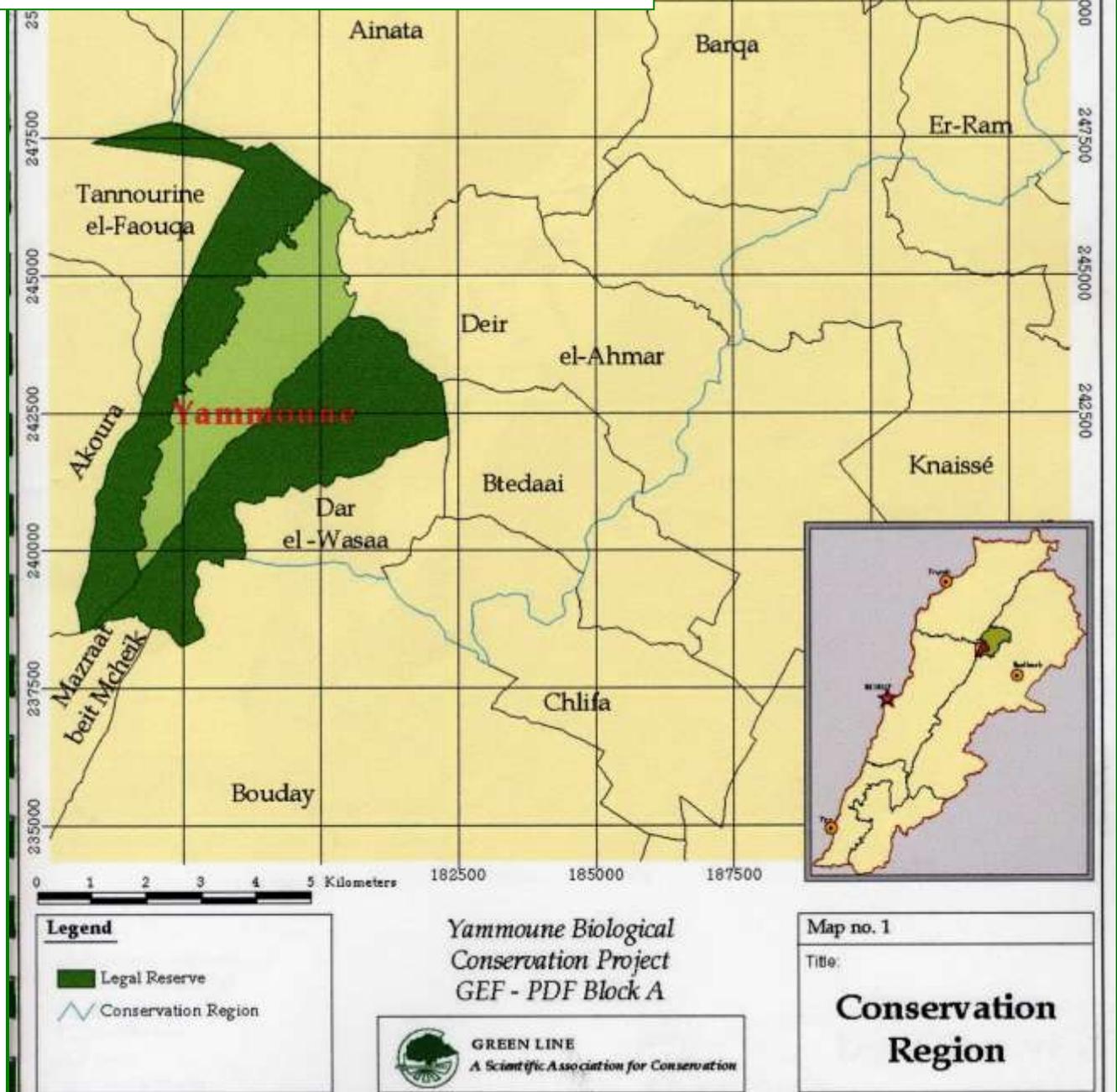
The region is located in north Lebanon on the eastern slopes of the Mount Lebanon chain, below the highest peak of Lebanon “Qornet El Saouda” (3083 meters above mean sea level), and covers approximately 170 km<sup>2</sup>.

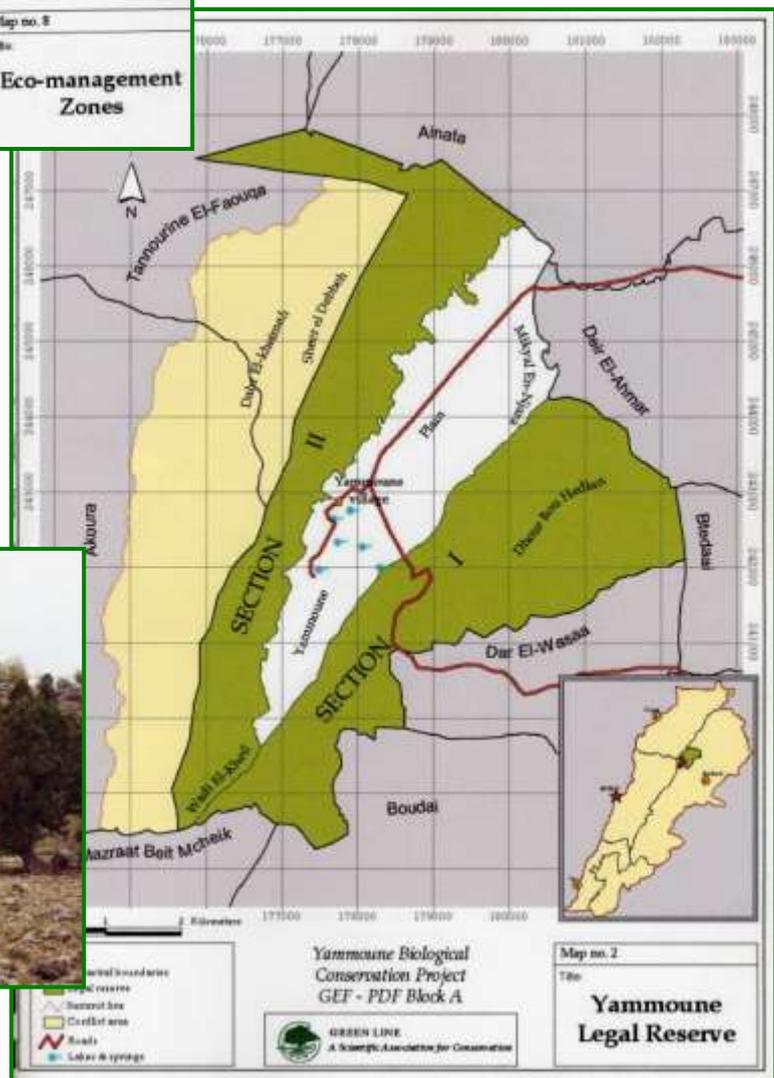
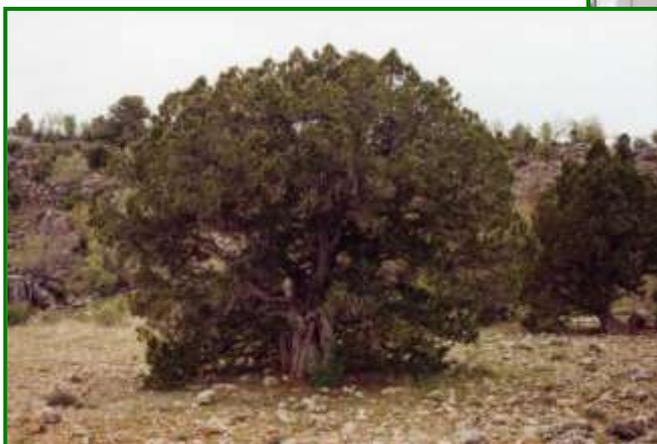
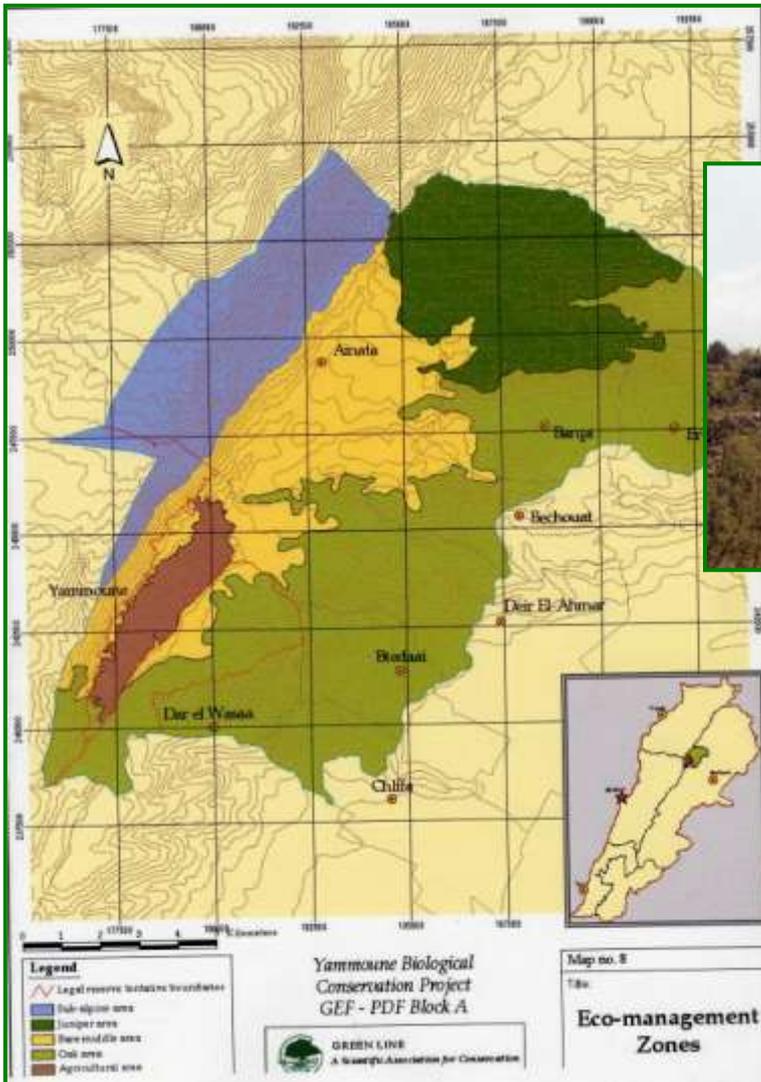
The study area is composed of two different regions:

-  The *Legal Reserve* (LR)
-  The *Conservation Region* (CR).

The Legal Reserve includes ten villages which fall within the administrative boundaries of the district of Baalbeck in the province of the Bekaa:

Deir El-Ahmar, Yammounch, Nabha, Ainata, Barqa, Er-Ram, Bechouat, Chlifa, Btedaai, and Dar el-Wasaa.





### Biological Importance

Based on the literature review and site visits, the floral diversity potentially harbors 369 plant species.

- ✚ 72 plants are potentially endemic (about 20% of total number of species)
- ✚ 8 species are endangered
- ✚ At least 18 plant species may have economic potential.



### Globally threatened bird sp.

- ✚ *Pelecanus crispus*
- ✚ *Milvus migrans*,
- ✚ *Aquila clanga*, and *A. helica*
- ✚ *Falco naumani*
- ✚ *Crex crex*
- ✚ *Chettusia gregaria*



### Species restricted wholly or largely to the Middle East

- ✚ *Glareola nordmanni*
- ✚ *Motacilla alba*
- ✚ *Pycnonotus xanthopygos*
- ✚ *Oenanthe finschii*
- ✚ *Hippolais languida*



### Mammals

Based on day and night-time field visits, baseline assessment of mammals in the region was prepared:

- ✚ *Hyaena hyaena syriaca*
- ✚ *Vulpes vulpes palaestina*
- ✚ *Hystrix indica indica*
- ✚ *Erinaceus concolor*
- ✚ *Meles meles canescens*

## SOCIO-ECONOMIC ASSESSMENT OF YAMMOUNEH

### OBJECTIVE

To draw the social map of the Yammouneh area

### METHODS

- ✦ Stakeholders identification
- ✦ Socio-economic status of the stakeholders including perceived/real impact from the declaration of the park
- ✦ Identification of sustainable alternative livelihoods including revenue generation activities.

### CONSTRAINTS

- ✦ Communication
- ✦ Political turmoil
- ✦ Social conflicts.

### Key village profiles include

- ✦ The late and the new mayor and
- ✦ Members of the municipal council,
- ✦ Three schoolteachers,
- ✦ The public school director,
- ✦ The Mokhtar
- ✦ Sub family leaders

*The younger generation is quasi absent from the social scene. Most of them live in Beirut or Baalbeck and those who are in Yammouneh are mainly farmers or drafted in the Lebanese Army.*

### Stakeholder groups

- ✦ Farmers
- ✦ Coal producers
- ✦ Municipality

### ECONOMIC STATUS

#### Main Economic Activities

- ✦ Traditional agriculture (including grazing)
- ✦ Illicit crops and trade.
- ✦ Cannabis production and trade were interrupted during the early 1990's.
- ✦ Tourist activities (marginal)
- ✦ Agricultural sector

## PERCEPTION OF THE ENVIRONMENT

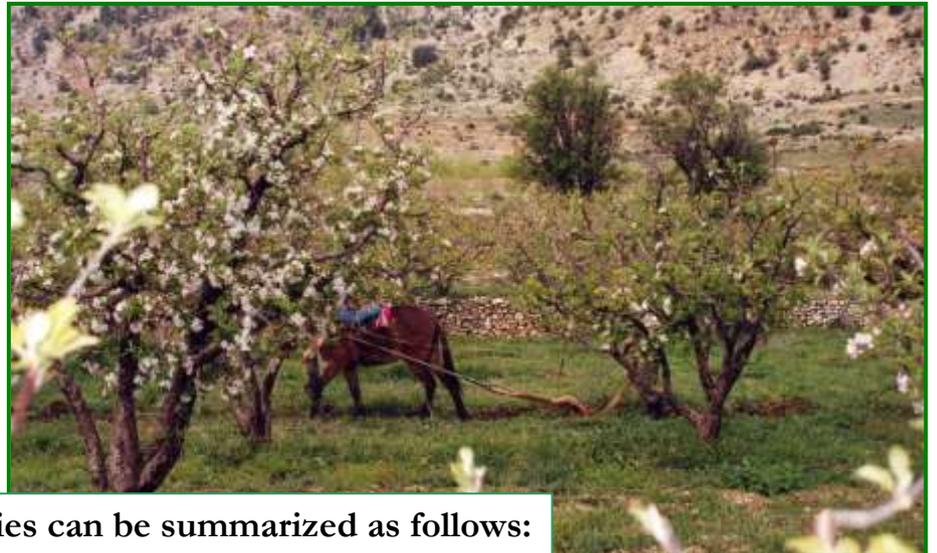
### The Lake Project

- ✚ Reviving the Lake could become a good source of income to local inhabitants as tourists will then target Yammounch and this will revive the whole economy of the village (Hotels, stores, cafés...).

### The Protected Area: Perceived Benefits and Threats

- ✚ Reviving the village,
- ✚ Generating much needed money to the municipality
- ✚ Improving the standard of living

*Villagers believe that they can prevent the establishment of the protected area “just by one word”. To them, the success of this protected area will depend on achieving widespread public involvement among local villagers.*



### Potential Livelihood activities can be summarized as follows:

- ✚ organic farming
- ✚ Excavation of the Archeological site.
- ✚ Wild fruits processing.
- ✚ Hiking activity
- ✚ Exploiting the Lake
- ✚ Bio-Medical Industry.
- ✚ Charcoal production



## SUGGESTED ACTIVITIES FOR AN MSP

### ✚ Demarcation of Boundaries

- Prepare land use master plans
- Demarcate reserve boundaries based on cadastral maps
- Revise legal extension and delineate conservation region

### ✚ Flora and Fauna Conservation: Initiate a flora and fauna monitoring program with technical assistance and support from:

- National Council for Scientific Research, the Lebanon
- IUCN- Thematic Biodiversity Center, Lebanon
- The local management team
- The Ministry of Environment.

The monitoring program would entail many activities summarized below:

- Survey and identification of plant species
- Identification of priority species
- Status assessment of endemic plant species
- Status assessment of juniper forests
- Building capacity of management team to conduct monitoring activities
- Establish a plant nursery for native plants
- Design and produce a user-friendly guide on indigenous plants
- Control/regulate hunting

### ✚ Integration of Economic Activities in Biodiversity Conservation

- Peer-to-peer transfer of know-how
- Support organic farming activities

### ✚ Management of the Reserve

- Training and Equipping RMT
- Build and equip a visitor/gatehouse facility