

# Landscape and education

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- ***Landscape education: the case study of Marathon***
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# Schinias-Marathon, 45 km N-E of Athens



*Land area of 9 km<sup>2</sup>, variety of natural habitats, more than 320 species of flora, freshwater fish, amphibians, reptiles, many threatened resident and migrating birds*



*Sand dunes covered by Pinus pinea and Pinus halepensis forest, pristine rocky peninsula covered by Mediterranean maquis*



*Freshwater spring, coastal wetland*



*Ecological habitat formation and function, valuable natural and cultural landscape*

- Freshwater from Makaria spring
- Stagnation and fine balance of fresh and brackish water in the wetland during many months of the year
- Coastal forest persistence and regeneration
- Land and aquatic wildlife diversity
- Outstanding scenery
- Maintains characteristics of the classic Attica coastal landscape
- Famous archeological sites in the area of Marathon



*In 1953, 4 years after the end of Greek Civil War, an American Navy communications base (operative until 1990) established on the wetland*

- Small power plant (4 diesel machines, 6 transformers), warehouses, fuel containers, auxiliary buildings
- On March 23, 2001, parts of the transformers were stolen, the perpetrators emptied the toxic liquid that served as insulator on the ground, 450 m<sup>2</sup> of the wetland's soil heavily polluted by PCBs





*Abandoned power plant,  
photograph taken by the author (2004)*



*Abandoned fuel containers,  
photograph taken by the author (2004)*



*Solid waste disposal in the wetland*



*Uncontrolled car parking, camping, building-1*



*Uncontrolled car parking, camping, building-2*



*Litter left by summer visitors in the coastal forest*



*Uncontrolled noise, hunting, fishing, grazing, motocross, etc.*



- Landscape degradation
- Natural habitat fragmentation
- Limited regeneration of *Pinus pinea*
- Decrease of bird populations
- Risk of extinction of endemic fish population
- The founding of a National Park aiming at the control and reduction of illegal and environmentally harmful activities that constituted a long-lived status quo

*Protecting and upgrading this site seemed impossible in the middle of the 1990s*

- Adverse local interests
- Restoring the flow of water to the wetland: minimally probable
- High cost

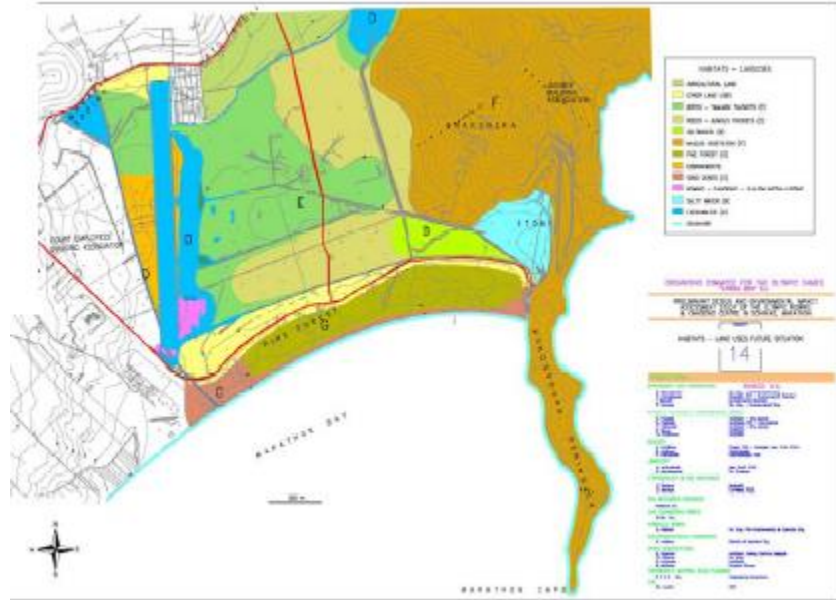


*A major event changed the picture*

- The Olympic Games 2004 as a tool to achieve environmental goals
- Conditions became favourable for ambitious environmental design
- An Olympic Rowing Centre would upgrade hydrological conditions



*Schinias with the Rowing Centre: the small airport was removed, the Rowing Centre (2 interconnected semi-natural lakes) aimed at restoring ecosystem quality*



## *Restoration and cleaning*

- Water diverted from spring to the sea has been conducted to the new lakes; their overflow has been driven to the wetland
- Essentially a lifting of the drainage that had begun in 1923
- The creation of the new lakes increased the available freshwater water quantity and quality (by regulating its salinity)
- Tons of waste removed



## *Results: the best natural landscape in the last 90 years*

- Available quantity of freshwater in the wetland provides better hydrological conditions of groundwater
- Natural regeneration of Mediterranean and aquatic vegetation
- A future improvement of the forest's natural regeneration could be expected
- The natural annual fluctuation of the water's presence in the wetland increases the attractiveness of the area for the birds
- The decrease of disturbing activities and the environmental remediation strengthen the naturalness of the landscape
- The endemic *Pelasgus marathonicus* lives now in the water of the Rowing Centre
- 117 bird species were recorded in 1997; 243 species have recently been recorded

*Natural vegetation regeneration in the area enclosed by the old military fence, photograph taken by the author (2005)*

- The military facilities were demolished
- A considerable volume of potentially dangerous materials was removed, the area was covered by natural soil
- Chemical analysis did not indicate any significant toxic pollution in the following years



*National Park: a potentially attractive place for people living in Attica*

- Mild activities: hiking, cycling, swimming, bird watching and environmental education
- Very attractive for families with small children as well as for disabled people
- Necessary application of strict rules



*Control of car movement, speed and parking in the Park and other measures should restrict disturbing human pressures*



# *Environmental awareness*





*Ideal place for environmental education; visited by primary and secondary school classes of Attica*



*Significant number of university thesis; very advantageous place for multiple continuing landscape education*



*However, the process of landscape rehabilitation is extremely slow*

- 7 illegal taverns and bars were working at the edge of the forest and on the beach, powered by liquid hydrocarbon engines, presenting a continuous risk of causing a forest fire and draining waste water into the sea illegally



*Removal of these harmful facilities needed 14 years*

- They should have been demolished by the public authorities, according to judicial decisions of 2004 that remained unexecuted for many years
- Continuous pressure from EU
- They have been recently (January 2018) removed



*Innovative and complex human intervention in a valuable site: a technical and environmental success but a social failure*

- Ideal place for landscape education
- Unexpected lessons for landscape managers
- The technical project has proven to be successful for the upgrading of the natural landscape
- The National Park remains problematic
- Most NGOs were strongly opposed to what, according to their intransigent ecological positions, they considered as artificial constructions in a protected natural site; they refused to consider possible positive outcomes resulting from an environmentally friendly technical project

## *The social dimension*

- Rehabilitation of the wetland's water balance and measures that should restrict disturbing human activities met strong opposition by many people in the local community and neutral apathy by others
- Many inhabitants disagreed with the rules; they were annoyed by the restoration of the marsh, the control of car movement and parking, the limitation of building
- Local Government adopted a neutral or negative attitude, moving naturally together with the dominant desires of farmers, shepherds, hunters and land speculators who were opposed to any conservation measure
- Environmental concern of local community remains low, despite multiple efforts to develop it
- Significant lack of active support by the numerous potential users of the National Park
- When, some years later, land values fell due to the economic crisis, protests against the National Park slowly decreased

## *Time: an important factor*

- The local community needs a long time in order to, hopefully, adapt to the landscape management measures
- Continuing significant support from the EU
- Positive efforts of the staff of the National Park
- Keep the legal protection status without a strict application of all protection measures
- Landscape is been maintained in good condition by the solid and persistent technical works that offer a significant time prospect to the long-term effort; society may, gradually, acquire higher environmental concern

Landscape conservation measures need solid constructions...that cannot be easily destroyed!





## *Questions on landscape management*

- What should be the role of Public Authorities and Local Governments if a local community does not consent to measures that restrict disturbing human activities, because it gives higher priority to expected short-term economic benefits than to long-term environmental objectives?