Conservation management in Greece—
experience from the Axios Delta
Management Authority

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Axios Delta

- Wetland complex overall 46.800 ha
- 4 river estuaries (Gallikos, Axios, Loudias, Aliakmonas)
  - 3 coastal lagoons:
    - Kalohori
    - N. Agathoupoli
    - Alyki Kitrous
- Extended coastal area & Salt marshes
Legal Status

- Ramsar site (1974)
- NATURA 2000 sites
  - SPA (1986)
  - 2 SCIs (2006)
- National Park (2009)
Maintaining Favorable Conservation Status of Species & Habitat types

- 17 habitat types, Annex I 92/43/EEC
- 20 animal species, Annex II 92/43/EEC
- 85 bird species, Annex I 79/409/EEC
Key Habitat types

- **1150** Coastal lagoons
- **1310 Salicornia** and other annuals colonizing mud and sand
- **1410** Mediterranean salt meadows (Juncetalia maritimi)
- **1420** Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetalia fruticosi) (>15% for Greece)
- **2110** Embryonic shifting dunes
- **2120** Shifting dunes along the shoreline with *Ammophila arenaria*
- **92A0** *Salix alba* and *Populus alba* galleries
- **92D0** Southern riparian galleries and thickets (Nerio-Tamaricetalia and Securinegion tinctoriae)
Ecosystem services

- Water source (city, agriculture etc) and purification
- Rice production (70%)
- Mussel production (80-90%)
- Fish, meat, fodder and agricultural products, salt
- Reservoir of biodiversity, education, research
- Flood control, micro-climate regulation, etc
- Recreational area, offering aesthetic and spiritual benefits…..
Next to Thessaloniki city: Pressures & Opportunities

- **Pressures**
  - city expansion
  - landfill with construction waste
  - water pollution
  - proximity to industrial area

  **VS**

- **Opportunities**
  People value the area for food provision, recreation, education, etc and demand its conservation
Axios Delta Management Authority (ADMA)

- One of 28 MA in Greece under the Ministry of Environment and Energy
- Created in 2002, Board of Directors 2003, staff 2006
- Board of Directors (9 members): central, regional and local government, farmers union, NGO, scientist
- Staff members (18 at present)
- Funding mainly via EU funds (2006-09, 2010-15)
- Open discussion on the form/role of the MA
- State funding approval for 2016
Managing... the Axios Delta

- Complex and dynamic system
- Many stakeholders, institutional constraints/gaps (55% of mussel farm units under expired licences) & negative opinion of landowners (farmers and locals) vs conservation
- Weak implementation of environmental legislation
- Lack of information
- Need of immediate action to be taken
- Need for strengthening ADMA’s mandate
- Limited resources
Integrated Protected Area Management

- ADMA key element to co-operate with all
- Need for participatory approaches
- Prioritise, focus, make strategic decisions
- Incorporate socio-economic objectives and benefits
Adaptive Management

1. Use the *Open Standards for the Practice of Conservation CMP* to guide our steps

2. “Recommended Strategic Plan For maintaining favourable conservation status of Natura 2000 areas in the Axios Delta in Greece (2009-2013)”
CONSERVATION TARGETS

1130, 1150*, 1160, 1310, 1410, 1420,
key species as the European Ground Squirrel, Avocet, Black-winged Stilt, Collared Pratincole, Mediterranean Gull, Gull-billed Tern, Common Shelduck, etc

3150, 3280, 6420, 72A0, 92A0, 92D0,
key species as the Otter, Night Heron, Squacco Heron, Little egret, Spoonbill, Italian crested newt (*Triturus carnifex*) etc
Prioritized Direct Threats

1. Water pollution
2. Intensive irrigation and dams
3. Legal and illegal urban and commercial development - building
4. Overgrazing and unsustainable practices
5. Garbage and Solid waste dumping
6. Poaching and illegal fishing
7. Illegal sand extraction
8. Invasive species
## Ranking threats

<table>
<thead>
<tr>
<th>THREATS</th>
<th>Agricultural ecosystem</th>
<th>Coastal ecosystem</th>
<th>Kalochori Lagoon</th>
<th>Protected Freshwater Fish</th>
<th>River and other freshwater</th>
<th>White-tailed eagle</th>
<th>Summary Threat Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water pollution</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>Very High</td>
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<tr>
<td>Intensive irrigation and dams</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
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<tr>
<td>Intense hunting - poaching</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Very High</td>
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<tr>
<td>Overgrazing</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
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<tr>
<td>Landfill with construction waste</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
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<tr>
<td>Improperly conducted and illegal sand extraction</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
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<td>Medium</td>
<td>Medium</td>
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<tr>
<td>Existing illegal buildings, arbitrary and legal</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
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<tr>
<td>Industrial water consumption</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
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<tr>
<td>Illegal fishing</td>
<td>Low</td>
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<td>Low</td>
<td>Low</td>
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<tr>
<td>Garbage dumping by municipalities</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
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<tr>
<td>Garbage</td>
<td>Low</td>
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<td>Low</td>
<td>Low</td>
<td>Low</td>
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<tr>
<td>Fires to riverine habitats and reed beds</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
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<tr>
<td>Disturbance by birdwatchers</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Summary Target Rating</td>
<td>Low</td>
<td>Very High</td>
<td>Medium</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>High</td>
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Strategies and Activities

- Garbage Strategy (clean-ups, education, removal of garbage etc)
- Patrolling the protected area and Informing competent authorities
- Consultations on Environmental Impact Assessment
- Monitoring biodiversity
- Communication plan incl. environmental education
- Improve and operate the infrastructure for visitors
- Co-operate with all stakeholders via common vision
Why choosing Garbage strategy for immediate implementation?

- involve citizen groups in “Habitat keeping” (clean-ups with volunteers)
- improve the perception & appreciation of the protected area (immediate results, noticed by public)
- built constituency of Axios Delta Authority
- getting potential allies in conservation

... never forget ecosystem degradation & the loss of habitat functions
Direct threat: landfill with construction waste
Result chains derived from participatory process (round tables with stakeholders)
Focus activities on objectives & monitor results

Objective 1: By 2015 adequate clean-ups conducted

Activities:
- call for clean-ups by municipalities,
- organize additional clean-ups with volunteers,
- implement a Core Zone A clean-up plan in the National Park (budget 100,000€)

Results:
✓ organized with success 17 Volunteer clean-ups (2011-2015), 50% of cleaned areas remain clean
✓ launch of the Zone A clean-up plan (3,820 m³ in 4 targeted areas)
Volunteer clean-up campaign, April 2013

Uncontrolled Dump Site in core zone A, close to the Aliakmonas River
Results achieved in Axios Delta

- Stopped illegal building construction
- Stopped illegal sand extraction
- Increased acceptance of ADMA and appreciation of the National Park
- More garbage-free areas & better attained infrastructure
- Reduced water pollution in Axios river
- More co-operation with municipalities, stakeholders, NGOs, university departments
- Wild Life Care Center run by “Action for Wild Life” (NGO)
Inspiration for better PA management & co-operation within EUROSITE

- PA managers have common issues to deal with
- Integrated protected area management is a difficult task
- Natura 2000 sites are core areas for nature conservation
- Must do better job to reach species and habitats in FCS
- Targeted actions-meaningful results
- Work together and learn from each other
- Exchange experiences
- Co-operation, networking & twinning!
Thank you!

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