Restoration of several types of floodplain habitats on the Slovak section of the Danube

Tomáš Kušík, Karolína Sobeková, Daniela Pilchová and Matúš Kúdela

Regional Association for Nature Conservation and Sustainable Development (BROZ)

European River Restoration Conference, October 27 – 29, 2014
Vienna, Austria
Project LIFE Danube birds conservation

• Project site:  SK – SPA Dunajské luhy  
  HU – SPA Szigetköz

• Duration:  2009 – 2014

• Project partners:
  1) BROZ
  2) Water management construction , s.e. (SK)
  3) Comenius University in Bratislava, Faculty of natural sciences (SK)
  4) EDUVIZIG (HU)
  5) Association for Nature Conservation of Szigetköz –SZITE (HU)
Project goals and objectives

1) Restoration actions:
   • reconnection of river branches to Danube
   • river branch systems, oxbows
   • wetlands and marshes
   • river banks
   • lowland meadows
   • floodplain forests

2) Awareness actions:
   • education
   • promotion
   • stakeholders

improvement of awareness about river restoration actions, Natura 2000, LIFE projects
Lowland meadows – in the past

• In 19th century meadows covered significantly large area of Danube lowland
Lowland meadows – in the past

- many species evolved in accordance with traditional lowland meadows management
- high biodiversity of Danube lowland ecosystem
Lowland meadows – in the past
Lowland meadows

• In 20th century the majority of meadows were:
  – changed to arable fields
  – transformed into forests
  – left abandoned and overgrown by invasive species
Expert study on restoration of lowland meadows

Restoration of lowland meadows has been carried out since 2009:
• grazing
• combination of removing of invasive tree species and grazing
• change of arable land to grasslands by seeding natural grasslands species
Restoration of lowland meadows

- in 2009 - 70 cows, 100 sheep and 20 goats purchased
- 2010 - herd of 8 Hucul horses purchased
- grazing by BROZ
- cooperation with local farmers
Restoration of lowland meadows
Restoration of lowland meadows
Restoration of lowland meadows
Veľkolelsky ostrov island

Since 2009 meadows have been restored on 5 localities within Danube floodplains

Total size of the restored lowland meadows is 210 ha
Total size of the restored lowland meadows is 210 ha.
Restoration of floodplain forests

Construction of water dam and water power plant Gabčíkovo

Fixed weirs – lines constructed

Enabled access to whole area of Danube inland delta

Intensive forestry within Danube floodplains
Restoration of floodplain forests

Plantations of hybrid poplars had replaced natural forests in large part of the area

- short rotation period
- no lateral branches
- do not provide suitable refuge and nesting conditions for birds
- extremely low biodiversity
Restoration of floodplain forests

1st step: Expert study on restoration of floodplain forests

1. Planting groups of native tree species between and into the plantations of hybrid poplars

2. Planting of whole forest stands of native trees in the areas where hybrid poplars were logged and removed
## Restoration of floodplain forests

Planted 30,000 trees (9 species), 55,300 seeds of oaks

<table>
<thead>
<tr>
<th>Tree species</th>
<th>2009</th>
<th>2010</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Quercus robur</em></td>
<td>300</td>
<td>200</td>
<td>5,000</td>
</tr>
<tr>
<td><em>Fraxinus excelsior</em></td>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Populus alba</em></td>
<td>350</td>
<td>950</td>
<td></td>
</tr>
<tr>
<td><em>Populus x canescens</em></td>
<td>600</td>
<td>14,350</td>
<td></td>
</tr>
<tr>
<td><em>Populus nigra</em></td>
<td>2,000</td>
<td>2,400</td>
<td></td>
</tr>
<tr>
<td><em>Acer pseudoplatanus</em></td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Salix alba</em></td>
<td>1,000</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td><em>Alnus glutinosa</em></td>
<td>1,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Acer platanoides</em></td>
<td>800</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>30,000</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Restoration of floodplain forests

- breeding habitats (White-tailed Eagle, Black Stork)
- high biodiversity forests
Awareness raising activities - river restoration - information panels -

• 20 information panels installed within Danube floodplaines (SK, HU, EN)
Awareness raising activities - river restoration -
bird watching towers -

- 2 places
- 2 types of watching towers
- Čunovo (low)
- Baka (high)
Awareness raising activities - river restoration
- bird watching towers -

- Bratislava – Čunovo (low)
Awareness raising activities - river restoration
- bird watching towers -

• completed 03/2014
Awareness raising activities - river restoration
- bird watching towers -

- close to the tourist and cycling paths
Awareness raising activities - river restoration
- bird watching towers -
Awareness raising activities - river restoration
- map brochure of Danube floodplains -

- map brochure – SK, HU, EN, DE
- information on Danube floodplains, LIFE project and interesting places
- 2nd edition included changes based on successful restoration actions
Awareness raising activities - river restoration
- interactive travelling exhibition -

- more than 30 000 participants
- 32 visited places
### Awareness raising activities - river restoration
- presentations and field excursions -

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Events</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation for students</td>
<td>15</td>
<td>300</td>
</tr>
<tr>
<td>Excursions for students</td>
<td>20</td>
<td>366</td>
</tr>
<tr>
<td>Presentation for public</td>
<td>25</td>
<td>1000</td>
</tr>
<tr>
<td>Excursions for public</td>
<td>25</td>
<td>400</td>
</tr>
</tbody>
</table>
Awareness raising activities - river restoration
- presentations and field excursions -
Awareness raising activities - river restoration
- presentations and field excursions -
Awareness raising activities - river restoration
- communication with media -

- 17 conferences
- 5 press conferences
- 23 press releases
- 50 articles
- 12 radio interviews
- 15 TV shots
We bring Life back to Danube River