Grossmuscheln - Large freshwater mussels
Unionoida in the border area of Bavaria, Saxonia and the Czech Republic
LIFE02 NAT/D/008458

Project description

Background

Although the Annex II freshwater mollusc Margaritifera margaritifera is colloquially named the freshwater pearl mussel, only one in 7 000 of these sensitive mussels produces tiny pearls. Some 30 000 of the species, 20% of the total population in Germany, live in streams in the project area, a species rich man-made landscape located at the border of Bavaria, Saxony and the Czech Republic. The streams are also home to another Annex II mussel, Unio crassus (common river mussel). Once sparsely populated and with little industry, the project area has seen increasing modernisation and urbanisation since emerging from the shadow of the “Iron Curtain”. For the highly sensitive molluscs, this has spelt danger: even mild contamination from pollutants and nutrients can lead to the absence of offspring and the death of older mussels. Discharges of polluted water, increased drainage of adjacent land into the streams (precipitating iron oxides) and cattle being driven through the streams have all contributed to a decline in population (the Unio crassus population in the project area was only 100 strong) and premature aging of surviving mussels.

Objectives

The project aimed to improve the habitat for the molluscs and the host fish (Salmo trutta fario, Phoxinus phoxinus) that their parasitic larvae, the small
glochidia, depend upon during the reproductive cycle. Following improvements to the habitat, the aim would be to increase the mussel population in the project area. River restoration steps to be taken in the first phase of the project would include construction of silt traps, drainage openings, a ‘mussel ditch’ and fords for cattle. The most visible measure would be to free the last 400 metres of a stream from its drainage corset to let it meander. The second phase of the project would see the release of infected host fishes and juvenile mussels. The project would be evaluated through monitoring of sediment load, monitoring of mussel development and monitoring of fish-stock and young mussel development. A series of dissemination and public awareness actions was also planned.

Results

The project reached the main objective, the improvement of the habitat conditions for Margaritifera margaritifera and Unio crassus. Some 3.26 ha of land was purchased, eight silt traps were constructed, five drainage pipes opened and the sediment structure of the ditch foreseen as young mussel habitat was improved. In addition, three fords for cattle were built. The project succeeded in reducing the silt and flocculent ferric hydroxide load in the streams, and managed to improve the habitat conditions for host fishes. Young freshwater pearl mussels were released in five campaigns in the Südliche Regnitz and Zinnbach creeks and on two occasions in the Höllbach and Mähringsbach creeks. Some 342 000 Margaritifera margaritifera were released in total. In addition, autochthonous infection of Phoxinus phoxinus with young common river mussels was undertaken three times, a total of 115 000 Unio crassus being released. It could not be determined before the project end if the project was successful in the rejuvenation of the mussel populations, because during the first years of life mussels are too small to allow a meaningful population control.

Results of the project were disseminated through a series of measures including information events for the local public, guided tours, workshops, leaflets, information boards and a travelling mussel exhibition.

Further information on the project can be found in the project's layman report (see "Read more" section).

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Environmental issues addressed:

Themes

Species - Invertebrates
Biodiversity issues - Ecological coherence

Keywords

drainage system, animal corridor, aquatic ecosystem, ecological assessment,
environmental impact of agriculture, freshwater ecosystem, monitoring, renaturation, site rehabilitation, hydrographic basin, water quality improvement, waste water treatment, integrated management, water monitoring, sustainable development, development planning, pollution prevention, agricultural pollution, environmental impact assessment, pollutant elimination, risk management, land purchase, restoration measure, diffuse pollution, conflicting use, management contract, population dynamics, river management

Target EU Legislation

- Water
- Nature protection and Biodiversity
  - Directive 92/43 - Conservation of natural habitats and of wild fauna and flora- Habitats Directiv ...
  - Decision 93/626 - Conclusion of the Convention on Biological Diversity (25.10.1993)
  - COM(95) 189 - "Communication on the judicious use and conservation of wetlands" (12.12.1995)
  - COM(98)42 -"Communication on a European Community Biodiversity Strategy" (05.02.1998)
  - COM(2001)162 -"Biodiversity Action Plan for the conservation of natural resources (vol. I & II)" ...
- Land & Soil
  - Regulation 1257/1999 - Support for rural development from the European Agricultural Guidance and ...

Target species

Margaritifera margaritifera   Unio crassus

Natura 2000 sites

Not applicable

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Beneficiaries:

Coordinator       Bayerisches Staatsministerium für Umwelt, Gesundheit und Verbraucherschutz
Type of organisation       Regional authority
Description
The Bayrisches Staatsministerium für Landesentwicklung und Umweltfragen is the Bavarian regional ministry for rural development and environment. It is the highest competent authority in Bavaria for all nature conservation and Natura 2000 issues. One of its activities is the technical and administrative coordination and monitoring of LIFE-Nature projects.

Partners
Bezirk Oberfranken, Germany
Landkreis Hof, Germany
Naturpark Erzgebirge/Vogtland, Germany

Administrative data:

Project reference  LIFE02 NAT/D/008458
Duration  01-AUG-2002 to 31-JUL -2007
Total budget  1,056,158.00 €
EU contribution  528,079.00 €
Project location  Bayern(Deutschland)

Read more:

Project web site  Project's website (DE, EN, CZ)
Publication: Layman report  Title: Layman report (CZ) Year: 2007 No of pages: 8
Publication: Layman report  Title: Layman report (EN) Year: 2007 No of pages: 8
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