Ex-situ breeding of native unionoids in Lake Banyoles (Spain) as part of a LIFE project

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THE LABORATORY BREEDING NAIADS

In 2010 a laboratory for naid recovery was developed by the Consorci de l’Estany (LIFE Project Estany - LIFE08 NAT/ES/000078). In this facility we successfully reproduced three species (Unio marcus, Unio ravoisieri and Potomita littoralis) to repopulate Lake Banyoles, part of the Natura Web 2000 from the European Union. In 2014 we have initiated the project LIFE Fauna Potamo (LIFE12 NAT/ES/001091) whose main aim is the recovery and long-term preservation of several endangered species of river fauna of European interest (Habitats Directive).

In this new period 2014-2017 we are working with six different stocks of two species U. marcus (4 populations) and U. ravoisieri (2 populations). We are also innovating in production techniques and fattening youth, especially during the first year of life.

LIFE Projects

LIFE Project Estany [LIFE08 NAT/ES/000078]
http://www.consorcidestany.org

Project title: Improving the habitats and species of Banyoles Natura 2000: a demonstrative project.
Duration: 2010/01/01 to 2013/12/31
TOTAL budget: 1,020,352.00 € (Co-financed 50% European Union)
TOTAL budget for naids: 99,000.00 €

Description: It is a project aimed at large-scale intervention to combat, slow and reverse the decline in species and habitats of community interest in the Natura 2000 Network site by controlling invasive species and strengthening populations of native species such as Emys orbicularis, Mauremys leprosa, Barbus meridionalis and Unio elongatulus. The specific aims is based implementation of a set of actions designed to combat efficiently and sustainably the spread of invasive alien species in the following animal and plant groups: fish, reptiles and plants. Also the direct recovery of the populations of four species of community interest. Emys orbicularis, Barbus meridionalis and Unio elongatulus (U. marcus + U. ravoisieri), through captive breeding and/or restocking with stock from other nearby healthy populations is planned.

Location area: 1 natural sites of Natura 2000 network: Estany de Banyoles.

LIFE Potamo Fauna [LIFE12 NAT/ES/001091]
http://www.lifepotamofauna.org

Project title: Conservation of river fauna of community interest in Natura 2000 networks of the basins of rivers Ter, Fluvià and Muga.
Duration: 2014/01/01 to 2017/12/31
TOTAL budget: 1,900,262.00 € (Co-financed 50% European Union)
TOTAL Budget for naids: 180,164.00 €

Description: It is a project aimed at recovering and long-term conservation of several endangered species of river fauna of European interest. It will carry out habitat improvements and restocking population of species such as white-footed crayfish, naids and several fish, amphibia and aquatic tortoises. There will also be some actions to combat invasive alien species. The actions are placed in natural community interest basins of the rivers Ter and Muga (Lleida, SPAIN).

One of the main objectives of the project is the direct recovery of the main locations of Naid (Unio elongatulus + U. marcus and U. ravoisieri) in Natura 2000 areas of the basins of the rivers Ter and Muga reinforced by juveniles bred in captivity. The production processes of individuals of these species will be optimized and improved in the captive breeding center the Banyoles lake.

Location area: 11 natural sites of Natura 2000 network in north-east of Spain.

METHODOLOGY: A breeding Laboratory for the production of Unionoid Juveniles

This laboratory is composed by two units: internal and external. The internal is focused on the first phase of intensive production of unionoid juveniles: obtention of glochidia (larva), fish infection, infection period and collection of juveniles. Essays tests to improve the production methodology have been done indoor, too. On the other hand, the external unit is focused on extensive breeding and on the growing of juveniles, before sowing them on the lake.

In this laboratory, there’s a continuous water circulation lake incoming, without no treatment except an automatic temperature control to avoid the incoming of excessively warm water in summer. Thanks to this system, in the external unit no alimentation is supplied for mussels, but in the internal unit, several food supplements have been tested (algae, crushed leaves and others).

RESULTS

Juveniles production per year

Captive stock

Host fishes used: Mediterranean barbel, Squalius fluviatilis; Barbel; gravel; Squalius fluviatilis
Fish length: 10-30 cm
Juveniles/Fish: 320-750

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