

SUMMARY DESCRIPTION OF THE PROJECT (Max. 3 pages; to be completed in English)**Project title:**

Actions for improved conservation status of The thick shelled river mussel (*Unio crassus*) in Denmark

Project objectives:

This project targets The thick shelled river mussel (*Unio crassus*) (1032) in the Continental biogeographical region of Denmark. The project works with this highly threatened species in one Natura 2000 area which is Suså (in DK006Y275). SAC DK006Y275 in Suså is designated for the thick shelled river mussel under the Habitats Directive.

According to the most recent article 17 report the conservation status of The thick shelled river mussel (*U. crassus*) (1032) is unfavourable and bad (U2) in Denmark and the geographical area concerned by this project.

Until recently the species was considered to be extinct in Denmark. However in 2004 the species was discovered only in one major watercourse (Odense Å) and recently (2007) also in the watercourse Torpe Kanal. Torpe Kanal is a tributary to Suså.

The project is presented by the local Danish environmental authority Næstved Municipality who is the coordinating beneficiary. The municipality is the only beneficiary in the project.

The duration of the project is from mid-2016 to end of 2021.

The main objective is to contribute to obtain a favourable conservation status of The thick shelled river mussel (*U. crassus*) in Denmark and in the Continental biogeographic region. This will occur by increasing the number of biotopes for the river mussel and to reintroduce the species in the watercourse of Suså. At the moment the watercourse only hosts dead mussels as empty shells. At a secondary level the project will also be in the benefit of the water courses of plan to montane level (3260), hydrophilous tall herb fringe communities (6430), *Lampetra planeri* (1096), and *Cobitis taenia* (1149) being part of the designation for the specific SAC.

At present the projects watercourse is unfavourable to the river mussel due to a number of threats such as poor physical conditions and lack of continuity. In addition the host fishes (*Phoxinus phoxinus* and *Cottus gobio*) for larvae (glochidia) of the river mussel is not present in the watercourse. Through the project activities the present unfavourable situation should be changed towards a well-functioning watercourse capable of supporting a reproductive population of The thick shelled river mussel (*U. crassus*).

Actions and means involved:

The project involves a number of concrete conservation and management actions to be able to obtain the projects objective. To perform the best possible implementation of the concrete conservation actions relevant biological and technical documentation will be collected and elaborated and national experts will be involved to deliver the most recent knowledge on river mussel management.

The actions will take place on app. 18 km of watercourses distributed in 2 subproject areas. The concrete conservation actions are focused on the watercourses which are designated in the N-2000 plan.

The two subprojects have been prepared carefully in order to present a realistic and viable project. This includes studies of the biology and distribution of The thick shelled river mussel (*Unio crassus*) in Denmark and a survey of solutions for reintroducing the species in the watercourses.

To be able to support a development towards a favourable conservation status of The thick shelled river mussel (*U. crassus*) the following actions will take place:

- 3 private landowners on 6 ha will be compensated by one-off compensation to be able obtain areas for watercourse restoration and continuity measures (bring fishing and power production by water to an end),
- the physical conditions of the watercourses will be improved. This will occur by creating appropriate bottom substrate conditions (on 3.500 m), decrease water temperature fluctuations (on 500 m), create continuity and restore watercourse (on 880 m) as well as improve the communities of submerged plants (on 880 m),
- reintroduce The thick shelled river mussel (*U. crassus*) on app. 18 km of watercourses by reintroducing the mussels host fishes Minnow (*Phoxinus phoxinus*) and European Bullhead (*Cottus gobio*) infected by mussel larvae (glochidia). This requires stocking of the fishes and infection by mussel larvae under controlled conditions prior to the reintroduction.

A comprehensive monitoring scheme will document conservation status improvements of The thick shelled river mussel (*U. crassus*). Special attention is paid to illuminate the socio-economic and ecosystem functions of the project and the projects replicability.

The project operates with a project period of 66 months. This includes a buffer period to make sure that agreements can be obtained with the private landowners and to make sure that the stocking, infection with mussel larvae, and release of the host fishes will be successful.

Expected results (outputs and quantified achievements):

The project contributes to obtain a favourable conservation status of The thick shelled river mussel (*U. crassus*) (1032) in Denmark as follows:

- a) By physical improvements of the watercourses on app. 18 km making the appropriate bottom substrate and continuity conditions for both the river mussel and its host fishes.
- b) By a comprehensive stocking program of the river mussels host fishes. Minnows and European Bullhead infected by mussel larvae and released in the watercourses will create the starting point for rebuilding a viable and reproductive population of the river mussel on app. 18 km of watercourses.
- c) The population of the river mussel (*U. crassus*) is expected to increase from zero individuals to about 0,1-0,2 individuals / m² of watercourse during the course of the project and the reintroduction program. This is equivalent to about 10.000 new individuals.
- d) By the combined efforts of improved physical conditions and reintroduction the project will result in coverage of The thick shelled river mussel (*U. crassus*) in one additional watercourse systems compared to the present two watercourse systems in Denmark. The population and the gene pool will be markedly more robust at the national level.
- e) By reintroducing the host fishes in the watercourses the reproductive cycle of The thick shelled river mussel (*U. crassus*) is secured in an After-LIFE perspective.
- f) After project implementation the watercourses will still be protected by the Nature of protection Act. Together with the N-2000 designation of the project sites this will ensure the highest legal protection of the project initiatives.
- g) Increase the diversity of water courses of plan to montane level (3260) and hydrophilous tall herb fringe communities (6430) and support the populations of *L. planeri* (1096), and *C. taenia* (1149).
- h) In a socio-economic context the project will increase public awareness of watercourse biodiversity in Denmark and EU by establishing information boards, public meetings, public boards and a website.

i) In an ecosystem function context the project supports improved genetic diversity and acts as a facilitator for ecotourism.

j) Best management and restoration practice by networking with similar projects in Europe. Through this activity the project will create EU added value within the effort for management of The thick shelled river mussel (*U. crassus*). In addition focus is on replicability by creating a project database displaying good examples of river mussel management.

Is your project significantly climate-related?

Yes No

The proposal addresses the following project topic(s):

- Projects aimed at improving the conservation status of habitat types or species (including bird species) of Community Interest, targeting the Natura 2000 sites proposed or designated for these habitat types or species.
- Projects aimed at improving the conservation status of habitat types in Natura 2000 sites or species (including bird species) of Community Interest, provided, their status is not "favourable/secure and not declining" or "unknown" according to the most recent overall assessments that Member States have provided at the relevant geographic level according to Article 17 of the Habitats Directive or to the most recent assessments according to Article 12 Birds Directive and EU-level bird assessments.

Reasons why the proposal falls under the selected project topic(s):

In relation to the LIFE multiannual work programme for 2014-2017 the present project fits to the following topic 1 and 2 contributing to Target 1 (nature conservation and restoration of the Biodiversity Strategy) to implement the Habitats Directive. The project can be considered to be a best practice project.

Topic 1

The present project aims to improve the conservation status of The thick shelled river mussel (*U. crassus*) in one N-2000 area in Denmark representing two project sites. In the N-2000 area The thick shelled river mussel (*U. crassus*) is part of the designation.

The european Bullhead (*C. gobio*) is considered extinct in Denmark. Prviously the specises occured only in Suså (DK006Y275). The SDF will be updated accordingly, if the species is recognized at the end of the project (cf. Form A8).

Topic 2

According to the most recent Article 17 report concerning the Continental biogeographic region of Denmark, the conservation status of The thick shelled river mussel (*U. crassus*) is unfavourable and bad (U2).