

THE CRITERIA FOR ASSESSING THE FAVOURABLE CONSERVATION STATUS OF THE GREAT CRESTED NEWT *TRITURUS CRISTATUS* IN THE BALTIC REGION

PROJECT REPORT

“Protection of *Triturus cristatus* in Eastern Baltic region”
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LARS BRIGGS
RIINU RANNAP



ESTONIAN MINISTRY OF THE ENVIRONMENT

VEJLE AMT



NORTH KARELIA
REGIONAL
ENVIRONMENT CENTRE

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Introduction

Triturus cristatus is listed in Annexes II and IV of the Habitats Directive, which encourages member states to restore the species to a favorable conservation status across the EU. Thus the determination of the criteria for assessing the favorable conservation status of *Triturus cristatus* for Estonia, Denmark and Finland has been one of the targets of the LIFE-Nature project “Protection of *Triturus cristatus* in Eastern-Baltic region”. In the frame of this project the experts from participating countries (Estonia, Denmark and Finland) have simultaneously worked out the criteria for assessing the favorable conservation status of *Triturus cristatus*. This work has been based on several activities carried out in the project. First of all the results of the evaluation of breeding ponds gave the wider understanding of the species habitat demands. This action provided new knowledge about the preferable water bodies and terrestrial habitat components of *Triturus cristatus*, the key characteristics of the aquatic habitat, the preferable density of the water bodies, and the structure and type of aquatic and terrestrial habitat characteristic of a viable meta-population. Also the monitoring methods, worked out in the abovementioned LIFE project, make possible to assess the status of *Triturus cristatus*. Thus this report is closely connected with other paper elaborated in this project. The criteria for assessing the favorable conservation status of *Triturus cristatus* could also be followed in the whole Boreal Region as well as in other EU member states.

Favourable conservation status

When assessing the favourable conservation status of *Triturus cristatus*, the density of adult specimens per pond in relation to terrestrial habitat, effective population size, structure of meta-populations (number of ponds, distance between ponds) and other parameters have been taken into account.

In the course of the project, we have come to recognise that there are mainly two types of *Triturus cristatus* population structures present in Estonia, Denmark and Finland:

1. Isolated populations that do not have possibilities for immigration. Each isolated population is dependent on a single breeding pond or very few ones.
2. Meta-populations formed by several sub-populations of *Triturus cristatus*, which are connected to one another by migration corridors and ponds, functioning as stepping stones for the newts. Thus, individuals can migrate freely between sub-populations. Even if each sub-population has only a single breeding pond, the whole meta-population system offers several breeding possibilities for newts due to connectivity.

The criteria for assessing the favourable conservation status of *Triturus cristatus* differ according to the type of population structure.

Isolated population

- The population must have annual stable breeding success in at least 5 ponds.
- The ponds must be free of fish, with slopes of 20°–40° and with clear water. Shallow water (up to 50 cm) should form at least 25% of the total area of the pond. Low vegetation (less than 1 m high) should be present on the edges of the pond (more than 25%). 25%–50% of the total surface of the pond should be covered with floating vegetation.
- Effective population size must be at least 500 adults, which means that the population must count at least 1,000 adults.
Depending on the quality of terrestrial habitat, the average pond (eutrophic, fish-free, spring depth of 1.5 m) can support different amounts of adult newts. As *Triturus cristatus* is known to be flexible in its feeding behaviour, in cases of poor terrestrial habitats (fields with intensive agriculture and scrub) water bodies are important not only as a breeding place, but also as a feeding ground. Thus, the area of aquatic habitat in such situations must be relatively larger in order to sustain a favourable conservation status.
In Denmark, for example, where the terrestrial habitat is relatively poor, often consisting of large intensively managed fields, the average pond with water table of 500 m² can support a population of 100 adult newts.
In Estonia, where the aquatic habitat is often surrounded by forest or unfertilised grassland, an average pond with water table of 250 m² can support 100 adult newts.
In Finland, where the ponds are natural and often very large (2,500 to 5,000 m²) and surrounded by deciduous and coniferous forest, one such pond can contain a large population of up to 1,000 adults. In very remote places with stable habitat conditions and without human impact, 1,000 newts can probably also live in aquatic habitats smaller than 2,500 to 5,000 m².
- The habitat components (breeding and foraging ponds, terrestrial foraging area and hibernation sites) must be safeguarded in the area where the population occurs.
- In the case of poor terrestrial habitats, each site with a newt population should contain either 10 ponds or alternatively a water surface of 5,000 m². If the terrestrial habitat is richer (containing forests, grasslands, pastures), the water surface could be 2,500 m² for one newt population.
- Agricultural land should be provided with a buffer zone (uncultivated land) with a minimum width of 5 m around each pond.

Meta-population

If several newt populations of less than 1,000 adults are connected to one other (the distance between two such sub-populations being 0.5 to 1 km), they form a meta-population network. In the case of a meta-population, the individual sub-population can have less than 1,000 adults, because the network of 20 sub-populations of approximately 100 adults could form a meta-population of 2,000 adults.

- Each sub-population must have annual stable breeding success in at least 3 ponds.
- The ponds must be free of fish, with slopes of 20°–40°. Shallow water (up to 50 cm) should form at least 25% of the total area of the pond. Low vegetation (less than 1 m high) should be present on the edges of the pond (more than 25%). 25%–50% of the total surface of the pond should be covered with floating vegetation.
- The habitat components (breeding and foraging ponds, terrestrial foraging area and hibernation sites) must be safeguarded in the area where the sub-population occurs.
- The distance between two sub-populations should be 0.5 km and definitely not more than 1 km.
- Migration possibilities between sub-populations have to be assured for newts by creating and restoring fish-free water bodies and maintaining terrestrial habitats (by cutting the scrub).
- Agricultural land should be provided with a buffer zone (uncultivated land) with a minimum width of 5 m around each pond.

Examples from the project

During the LIFE-Nature project, several *Triturus cristatus* populations have been restored to achieve favourable conservation status. The following provides some examples from each country.

Denmark

Tinnet

The Danish site of Tinnet had, before the start of the project, an isolated *Triturus cristatus* population inhabiting 5 breeding ponds with an estimated population size of 500 adults. The site has large amounts of terrestrial habitat in the form of extensively grazed dry grassland and coniferous forest, as well as several hibernation possibilities. In the framework of the LIFE-Nature project and with additional finances from the Danish Forest and Nature Service, additional 6 breeding ponds were created in 2006. Due to habitat management, it is estimated that in 10 years there could be an isolated population of a minimum of 1,000 adult newts in 11 ponds, and annual breeding success in a minimum of 5 ponds. If such circumstances occur, the population will be considered to have reached favourable conservation status. Nevertheless, the aim should still be to connect the isolated population in Tinnet to other populations outside this Natura 2000 site.

Mosso

The Danish site of Mosso had, before the project started, 2 ponds with *Triturus cristatus* in them. One of these was a breeding pond and the other one just had some adults, but no

breeding success because of the presence of gray fish in the pond, threatening the population. The estimated total population is about 100 adult newts. The site is evaluated to have large amounts of terrestrial habitat in the form of unfertilised grassland (grazed and ungrazed), deciduous and coniferous forest, and several hibernation places. In the framework of the LIFE-Nature project, 5 ponds were dug in 2006 and additional 4 ponds will be dug in 2007. This site will provide a habitat for a minimum of 1,000 *Triturus cristatus* adults after the LIFE project ends (in 2008). Hopefully, in 10 years time the population will reach up to 1,000 adult newts and annual breeding success will be recorded in at least 5 ponds – then the population status could be considered favourable.

Estonia

Haanja Landscape Park

In Haanja LP, the terrestrial habitats of *Triturus cristatus* consist mostly of deciduous and coniferous forests, unfertilised grassland (grazed or mowed), fens, small gardens and farmyards. Nevertheless, in some parts of the landscape park there is a lack of good aquatic habitat and breeding ponds. Thus, there are still some very isolated *Triturus cristatus* populations within the bigger meta-population. Therefore, the situation is similar to the Tinnet and Mosso Natura 2000 sites located in Denmark. Each of these isolated populations needs to have at least 10 potential breeding ponds in order to grow to a size of 1,000 adult newts, and a minimum of 5 ponds with annual breeding success. Only in this case can the conservation status be considered favourable.

In the southwestern part of Haanja LP, there are about 10–20 small sub-populations all within 500 to 1,000 m from one other. In this part of the park, it is possible to improve the meta-population of 20 small sub-populations so that each sub-population will consist of 100 to 200 adult newts in the future. To meet this aim, additional ponds should be created or existing ones restored in each sub-population in order to strengthen the population of newts. In addition, several ponds should be added to the landscape situated in-between the sub-populations to facilitate migration routes. In 2005 and 2006, 70 ponds was restored or newly dug to support 10–20 sub-populations in Haanja LP. Thus, it is expected that the meta-population will develop to a total size of 2,000 adults (as a minimum) divided into 10–20 sub-populations situated within migration distance of each other. If this is the case, the meta-population can be considered to have favourable conservation status. Nevertheless, the situation must be monitored regularly (every second or third year), and action should be taken if the number of breeding ponds or the number of sub-populations starts to decline, for example, due to the release of fish.

Piusa sandpit

The Piusa sandpit has a small isolated *Triturus cristatus* population, which existed only in a single pond at the beginning of the LIFE project. Fishermen released fish to the pond in 2002–2003 and as a result, the breeding success of *Triturus cristatus* was obstructed from

2004 to 2006. In the framework of the LIFE project, 6 ponds with different size and depth were dug in the autumn of 2006 in order to improve *Triturus cristatus* breeding conditions. The terrestrial habitat consists of large sandy areas with scarce vegetation and coniferous forests. In addition, hibernation possibilities are very good and situated close to the breeding ponds. If five out of six ponds prove to have annual *Triturus cristatus* breeding success, the population will be considered to have a favourable conservation status.

Finland

In Finland, most of *Triturus cristatus* populations are situated in forested areas often having only one large (5,000 m²) fish-free breeding pond. These types of populations are often isolated, but due to stable habitat conditions (both terrestrial and aquatic), they have existed for thousands of years. The capture of a large number of adult newts in 2005–2006 indicated that there might be more than 1,000 adults in one breeding pond. The conservation status of such populations is favourable, despite the existence of only one single breeding pond. Nevertheless, the populations that are dependent on only a single breeding pond are extremely vulnerable. Thus, these ponds functioning as a breeding habitat along with their surroundings must be secured for thousands of coming years.

The LIFE-Nature project experts identified two main threats to those vulnerable populations:

1. Clear-cutting of deciduous forest within 50 to 100 m surrounding the pond
2. Release of fish into the pond

Nature conservation legislation can currently provide a 30 m cutting-free zone of deciduous forest around the pond, which partly limits this particular threat. Nevertheless, for achieving favourable conservation status, the zone around the pond should be at least 50 m wide (in view of *Triturus cristatus*' moving ability).

The threat from fish release is not obvious just now since most of the ponds are remote. However, it can happen anyway due to increasing recreational activities and people's interest in angling. Releasing fish will cause the extinction of local isolated populations. The only way to avoid the fish release is to annually monitor such populations with the aim of determining breeding success and the presence of fish. This way, it is possible to eliminate the fish immediately, if they appear.

If a wider protection zone around the pond is designated and monitoring for the presence of fish is initiated, these populations can achieve favourable conservation status.

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