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2nd Progress Report

Annex 3:

Action A3. Favourable conservation status for project target specis in North European lowlands …… 10 Pages

Favorable Conervation Status for Emys orbicularis in North European lowland

To be developed further by Martina Meeske, Norbert Schneeweiss and Lars Briggs.

Favourable conservation status

There are mainly two types of European pond turtle population structures:

1. Isolated populations, which does not have possibilities for immigration. Each isolated population is dependent on an isolated relative few number and squaremeteres of ponds (pond suitable for both adult and juvenile turtles as both summer and hibernation habitat) and single nesting site breeding or very few one nesting sites.
2. Meta-populations, formed by several sub-populations of European Pond Turtles with pond suitable for both adult and juvenile turtles as both summer and hibernation habitat, which are connected to each other with migration corridors swampy terrain and ponds dryer landscapes functioning as stepping stones for the European pond turtle. Thus the individuals can migrate between sub-populations. Even each sub-population has only a single pond and single nesting site or a group of ponds and nesting sites; the whole meta-population system offers several nesting possibilities and many types of summer and hibernation ponds for European Pond Turtle due to the connectivity.

The criteria for assessing the favourable conservation status of European Pond turtle are different depending on the type of population structure.

Isolated population

- In case of isolated population there have to be a stable breeding success with young turtles hatching successfully as a minimum every 5 years, with distances between nesting sites and ponds for juvenile feeding no more than 200 m apart. Some of ponds must be fish free and not bigger than 2000 m2, with the slopes of 5°- 20° and with good water quality but with a dark buttom and mud good for hiding for turtles. The shallow water (up to 50 cm) should form at least 50% of the total area of the pond. There have to be swamp vegetation (less than 1 m high) present in the edges of the pond (more than 25%). 25%-50% of the total surface of the pond should be vegetated with

floating vegetation (for example potamogeton natans or Glyceria fluitans), which covers maximum 50 % of the water surface inside its own vegetation zone. Other larger ponds can be larger than 2000 m2 and deeper with fish. Its importent that some of the ponds have the structures nessesary for turtle hibernation.

- The effective population size should be at least 500 adults on long term and 50 adults on the short term, which means that
  the population must count at least 1000 adults on long tern and 100 turtles on the short term. Depending on the quality of foraging ponds and swamps and the quality of nesting sites, there should be a miminum of 5000-50000 m2 of smaller and partly temporary character and shallower ponds (natural eutrofic, fish free, spring depth of 0,5-1.5 m) and a minimum of 10000-100000 m2 of larger permanent ponds rich in structure but with a maximum depth so also fish populations are present.

- The habitat components (smaller temporary fish free ponds and larger ponds, nsting sites should be safeguarded in the area where the population occurs.

- In agricultural land there should be a buffer zone (uncultivated land) at least 50 m wide, around of each pond and each nesting sites and preferably also such zone around good migration habitats as wet forest.

Meta-population

If several European Pond turtle populations of less than 1000 adults are connected to each other (distance between two such sub-populations is 1.0 to 2.0 km), they form a meta-population network. In case of meta-population the individual sub-population can have less than 1000 adults, because the network of 20 sub-populations of approximately 100 adults could form a meta-populations of 2000 adults.

- In case of each isolated sub population there have to be a stable breeding success with young turtles hatching successfully as a minimum every 10 years, with distances between nesting sites

and ponds for juvenile feeding no more than 200 m apart. Some of ponds must be fish free and not bigger than 2000 m2, with the slopes of 5°- 20° and with good water quality but with a dark buttom and mud good for hiding for turtles. The shallow water (up to 50 cm) should form at least 50% of the total area of the pond. There have to be swamp vegetation (less than 1 m high) present in the edges of the pond (more than 25%). 25%-50% of the total surface of the pond should be vegetated with floating vegetation (for example potamogeton natans or Glyceria fluitans), which covers maximum 50 % of the water surface inside its own vegetation zone. Other larger ponds can be larger than 2000 m2 and deeper with fish. Its importent that some of the ponds have the structures nessesary for turtle hibernation.

- The effective population size should be at least 50 adults on long term and and there shoud be at least 20 sub populations forming a total of 1000 adult. Depending on the quality of foraging ponds and swamps and the quality of nesting sites, in each sub population (with effective pop. Size of 50 adults and actual pop. Size of 100 adults) there should be a miminum of 5000 m2 of smaller and partly temporary character and shallower ponds (natural eutrofic, fish free, spring depth of 0,5-1.5 m) and a minimum of 10000 m2 of larger permanent ponds rich in structure but with a maximum depth so also fish populations are present.

- The habitat components (smaller temporary fish free ponds and larger ponds, nsting sites should be safeguarded in the area where the population occurs.

- In agricultural land there should be a buffer zone (uncultivated land) at least 50 m wide, around of each pond and each nesting sites and preferably also such zone around good migration habitats as wet forest.
- The ponds must be fish free, with the slopes of 5°- 20° and with clear water. The shallow water (up to 50 cm) should form at least 50% of the total area of the pond. There have to be swamp vegetation (less than 1 m high) present in the edges of the pond (more than 25%). 25%-50% of the total surface of the pond should be vegetated with floating vegetation (for example potamogeton natans or Glyceria fluitans), which covers maximum 50 % of the water surface inside its own vegetation zone.
- The distance between two sub-populations should be maximum 2.0 km and definitely not more

than 2 km.

- The migration possibilities between sub-populations have to be assured for European Pond Turtle by creating and restoring fish free water bodies and maintaining open semi-natural terrestrial habitats, and securing wet and dry forest with logs as good foraging, hibernation and migration.
- In agricultural land there should be a buffer zone (uncultivated land) at least 50 m wide, around of each pond.

Favorable Conervation Status for Bombina bombina in North European lowland

Lars Briggs

Favourable conservation status

There are mainly two types of Fire bellied toad population structures:

3. Isolated populations, which does not have possibilities for immigration. Each isolated population is dependent on a single breeding pond or very few ones.
4. Meta-populations, formed by several sub-populations of Fire bellied toads with breeding ponds, foraging ponds and hibernation sites, which are connected to each other with migration corridors and ponds functioning as stepping stones for the fire bellied toads. Thus the individuals can migrate freely between sub-populations. Even each sub-population has only a single or a group of breeding ponds; the whole meta-population system offers several breeding possibilities for fire bellied toads due to the connectivity.

The criteria for assessing the favourable conservation status of fire bellied toads are different depending on the type of population structure.

Isolated population

- In case of isolated population there have to be an annual stable breeding success, at least in 3 ponds, with distances between ponds no more than 300 m. However, in some natural floodplain landscapes, natural forest meadows habitats or city landscapes, the number of ponds with annual breeding success might be lower due to natural topography or urbanisation and with little chance to chance the situation.
- The ponds must be fish free, with the slopes of 5°- 20° and with clear water. The shallow water (up to 50 cm) should form at least 50% of the total area of the pond. There have to be swamp vegetation (less than 1 m high) present in the edges of the pond (more than 25%). 25%-50% of the total surface of the pond should be vegetated with floating vegetation (for example potamogeton natans or Glyceria fluitans), which covers maximum 50 % of the water surface inside its own

vegetation zone.

- The effective population size should be at least 500 adults, which means that the population must count at least 1000 adults. Depending on the quality of foraging ponds and swamps and the terrestrial habitat, the average pond (natural eutrofic, fish free, spring depth of 0,5-1.5 m) can support different amount of adult fire bellied toads. The fire bellied toad can be flexible in its feeding behaviour and extend its terrestrial feeding period if ponds dry up early in the seasons as they do on relative more sandy flat terrain compared to moraine hills formed of clay. The fire bellied toad can use wet forest, dried out swamps, piles of logs and stone fences as hiding and terrestrial foraging habitat. So in areas with relative few ponds and ponds of drying out character the other terrestrial habitats become more important. In those situations the area of good terrestrial habitat can compensate for relative few and poor quality of foraging ponds in order to sustain a favourable conservation status.

- The habitat components (breeding and foraging ponds, terrestrial foraging area and hibernation sites) should be safeguarded in the area where the population occurs.
- In case of poor terrestrial habitats, each site with a population of fire bellied toads should contain minimum 10 potential breeding ponds with a yearly breeding success in 3 ponds or alternatively, water surface of breeding waters of minimum of 5000 m^2. When terrestrial feeding habitats are poor (as fields or pine plantations) the amount of foraging waters should be 50 m2 per adult frog meaning an total area of foraging waters of 50.000 m2 (including the 5000 m2 of breeding ponds) are desirable. If the terrestrial habitat is richer (wet forest, wet grassland, pasture), the water surface could be 25 m^2 per adult frog thus with a need of 25000 m2 (including the 5000 m2 of breeding ponds) for one fire bellied toad population.
- In agricultural land there should be a buffer zone (uncultivated land) at least 20-50 m wide, around of each pond and preferably also such zone around good foraging habitats as wet forest.

Meta-population

If several fire bellied toad populations of less than 1000 adults are connected to each other (distance between two such sub-populations is 1.0 to 2.0 km), they form a meta-population network. In case of meta-population the individual sub-population can have less than 1000 adults, because the network of 20

sub-populations of approximately 100 adults could form a meta-populations of 2000 adults.

- Each sub-population must have an annual stable breeding success, in at least one ponds.
- The ponds must be fish free, with the slopes of 5°- 20° and with clear water. The shallow water (up to 50 cm) should form at least 50% of the total area of the pond. There have to be swamp vegetation (less than 1 m high) present in the edges of the pond (more than 25%). 25%-50% of the total surface of the pond should be vegetated with floating vegetation (for example potamogeton natans or Glyceria fluitans), which covers maximum 50 % of the water surface inside its own vegetation zone.
- The habitat components (breeding and foraging ponds, terrestrial foraging area and hibernation sites) should be safeguarded in the area where the sub-population occurs.
- The distance between two sub-populations should be 1.0 km and definitely not more than 2 km.
- The migration possibilities between sub-populations have to be assured for fire bellied toads by creating and restoring fish free water bodies and maintaining open semi-natural terrestrial habitats, and securing wet and dry forest with logs as good foraging, hibernation and migration.
- In agricultural land there should be a buffer zone (uncultivated land) at least 20-50 m wide, around of each pond.

Favorable Conervation Status for Great Crested Newt in North European lowland.

Lars Briggs

Favourable conservation status

There are mainly two types of crested newt's population structures present in Lithuania, Poland, Germany and Denmark.

5. Isolated populations, which does not have possibilities for immigration. Each isolated population is dependent on a single breeding pond or very few ones.
6. Meta-populations, formed by several sub-populations of crested newt, which are connected to each other with migration corridors and ponds functioning as stepping stones for the newts. Thus the individuals can migrate freely between sub-populations. Even each sub-population has only a single breeding pond; the whole meta-population system offers several breeding possibilities for newts due to the connectivity.

The criteria for assessing the favourable conservation status of crested newt are different depending on the type of population structure.

Isolated population

- In case of isolated population there have to be an annual stable breeding success, at least in 5 ponds, with distances between ponds no more than 500 m. However, in some natural forest landscapes, mountainous or city landscapes, the number of ponds with annual breeding success might be lower.
- The ponds must be fish free, with the slopes of 20°- 40° and with clear water. The shallow water (up to 50 cm) should form at least 25% of the total area of the pond. There have to be swamp vegetation (less than 1 m high) present in the edges of the pond (more than 25%). 25%-50% of the total surface of the pond should be covered with floating vegetation.
- The effective population size should be at least 500 adults, which means that the population must count at least 1000 adults. Depending on the quality of terrestrial habitat, the

average pond (eutrofic, fish free, spring depth of 1-1.5 m) can support different amount of adult newts. As the crested newt is known to be flexible in its feeding behaviour, in cases of poor terrestrial habitats (fields with intensive agriculture, scrub) water bodies are important not only as a breeding place, but also as a feeding ground. Thus in those situations the area of aquatic habitat should be relatively larger to sustain a favourable conservation status.

For example, in Denmark and Germany, where the terrestrial habitat is relatively poor, consisting often large intensively managed fields, the average pond with water table of 500 m^2 can support a population of approximately 100 adult newts.
In some cases much more than 100 adult newts can live in a 500 m2 pond, but in an average Danish/German pond one should not expect more than 100 adult newts.
The habitat components (breeding and foraging ponds, terrestrial foraging area and hibernation sites) should be safeguarded in the area where the population occurs.

- In case of poor terrestrial habitats, each site with a population of newts should contain either 10 ponds or alternatively, water surface of 5000 m^2. If the terrestrial habitat is richer (forest, grassland, pasture), the water surface could be 2500 m^2 for one newt's population.
- In agricultural land there should be a buffer zone (uncultivated land) at least 5 m wide, around of each pond.

Meta-population

If several newt populations of less than 1000 adults are connected to each other (distance between two such sub-populations is 0.5 to1 km), they form a meta-population network. In case of meta-population the individual sub-population can have less than 1000 adults, because the network of 20 sub-populations of approximately 100 adults could form a meta-populations of 2000 adults.

- Each sub-population must have an annual stable breeding success, in at least three ponds.
- The ponds must be fish free, with clear water and slopes of 20°- 40°. The shallow water (up to 50 cm) should form at least 25% of the total area of the pond. There have to be swamp vegetation (less than 1 m high) present in 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) should 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.
- The migration possibilities between sub-populations have to be assured for newts by creating and restoring fish free water bodies and maintaining open semi-natural terrestrial habitats.
- In agricultural land there should be a buffer zone (uncultivated land) at least 5 m wide, around of each pond.