

## **Proposals to the lithuanian *Emys orbicularis*-Monitoring methods**

### **Monitoring of *Emys orbicularis* in Lithuania**

#### **Number/Recording of individuals:**

- Two visual controls per season and area in distance of 10-20 days between April und first half of May,
- Visual control/Countings from the distance with binoculars,
- Remarks to individual differences for observed animals e.g. size, damages at carapace, etc..

#### **Critics to Number/Recording of individuals:**

- To small number of countings,
- No consideration of local conditions (different visibilities of ponds due to pond size, pond form, shore vegetation (reed, bushes, trees, etc.) as well as seasonal changes in space use and habitat requirements of a population e.g. some ponds and pond parts are inhabited by turtles only during short period,
- No appropriate determination of the current population status/ population structure is possible as well as no appropriate determination of population changes in future e.g. after habitat destruction or habitat restoration are possible without capture-/recapture-methods and individual registration but only with pure visual controls: no real identification of individual number (population size), individual distribution, sex ratio, age structure, juvenile share, reproduction success as well indications of state of health e.g. physical injuries, affected by parasites, etc..

#### **Action at the nesting sites:**

- Control of known and potential nesting sites at least once per season (end of June up to first decade of July),
- Photos und data acquisition at nesting sites and nests: coordinates, distance to ponds, inclination, exposition,
- Additional countings of predated nests,
- Protection of nests with metal grids against predators.

#### **Critics to the actions at the nesting sites:**

- It is impossible to find nests without direct observation of nesting females. Later only nests after predation can be found. Controls have to be conducted during nesting season (end of May and middle/end of June) and of course should be done only by experts,
- Exact egg numbers can be recorded only by direct observations of nesting females or digging out of fresh nests within the first 24 h (but with a lot of risks!). It is very difficult to determine egg numbers of destroyed nests for experts, too.,
- Predation on nests and hatching success can be estimated only with real good information on the real number of nests which needs very good and intensive data,
- Nests have the biggest risk to be destroyed during the first days, therefore nest protections measures have to be carried out after egg-laying.

## **Summary of critical remarks to the monitoring methods**

The described monitoring methods are insufficient. The Data acquisition of nests is quite ok, but this has to be done by experts. The protection of nests is insufficient and with this described method (nesting site controls several weeks after nesting period!) not realisable. The persons for monitoring are very often unexperienced and have in this case no real chance for a good practice under these conditions. The deficit of experiences makes it more difficult to choose and evaluate turtle habitats (known and potential ponds and nesting sites) and to determine the population structure (countings of adults and juveniles) only with visual observations. This leads to the difficulty to a suitable estimation of natural and anthropogenic disturbances in turtle habitats and finally the development of appropriate management actions.

Unfortunately, the monitoring method considers more simpleness and rapidness of method than the biological and ecological conditions of the species (reproduction, spatial distribution, habitat requirements in the course of the year) (a few, not complex controls without significance!). Due to the lack of appropriate data of the population structure and the reproduction success, a substantiated knowledge on the current status of populations is impossible to determine as well as controls of negative or positive impacts to the populations because of habitat destructions or management actions.