Favourable Conservation Status of the European pond turtle *Emys orbicularis* (Linnaeus, 1758)

Martina Anne Claire Meeske, Centre for Nature Conservation, University of Göttingen (AGUG)

Why do we need the favourable conservation status for *Emys orbicularis*?

• EU Council Directive 92/43/EEC (the Habitat Directive) for the ensurance of the biological diversity by conservation of natural habitats and wild flora and fauna for all EU Member States
• Natura 2000 as ecological network of species areas including natural habitat types and habitats of species
• Designing of measures to maintain or restore favourable conservation status as well as undertake the surveillance of the conservation status.
• Suitable indicators have to be described and defined for assessing and maintaining the conservation status.
• Species in Annexes II and IV of the Habitats Directive like *Emys orbicularis* encourages member states and accession countries to restore the species to a favourable conservation status across EU.

Individual numbers for conservation status of *Emys orbicularis*

A > 50 individuals ⇒ excellent (favourable on long term)

B 30-50 individuals ⇒ well (favourable on short term)

C 10-30 individuals ⇒ medium (unfavourable) (too small populations or declining)

D < 10 individuals ⇒ bad (highly unfavourable up to nearly extinct) (too small populations, declining, no or too small reproduction success)

E 0 individuals ⇒ extinct

What kind of information do we need to evaluate the favourable conservation status? – Example for Lithuania

	A	B	C	D
Status of populations	excellent	well	medium	bad
Population evidence Age structure	> 50 adults of different age classes	30-50 adults of different age classes	10-30 adults	< 10 adults
Population structure	> 12 subadults, in addition juveniles existing	at least 7-12 subadults, in addition juveniles existing	at least 7 subadults and/or juveniles	< 3 subadults and/or juveniles
Integration				
Distance to the next population	< 500-1000 m	1000-2000 m	2000-3000 m	> 3000 m

	A	B	C	D
Habitat quality	excellent	well	medium	bad
Water habitat				
Structure of the water bodies/ of the system of water bodies with summer habitats, winter habitats, shallows zones with rich vegetation	all components of the annual habitat optimal	a few components of the annual habitat not optimal	several components not optimal and pond is uniform respectively	most components not optimal and pond is uniform respectively
relative number of suitable basking sites	all possible abundantly available	like **A** but partly shaded or not so abundant	almost only sunny shores, water surface appears „tidy" and lack of basking sites respectively	almost only sunny shores, water surface appears „tidy" and big lack of basking sites respectively

	A	B	C	D
Habitat quality	excellent	well	medium	bad
Land habitat				
Characteristics of the bank vegetation	optimal	only in places too open or too dense	large-area either too dense or too open	almost all area either too dense or too open

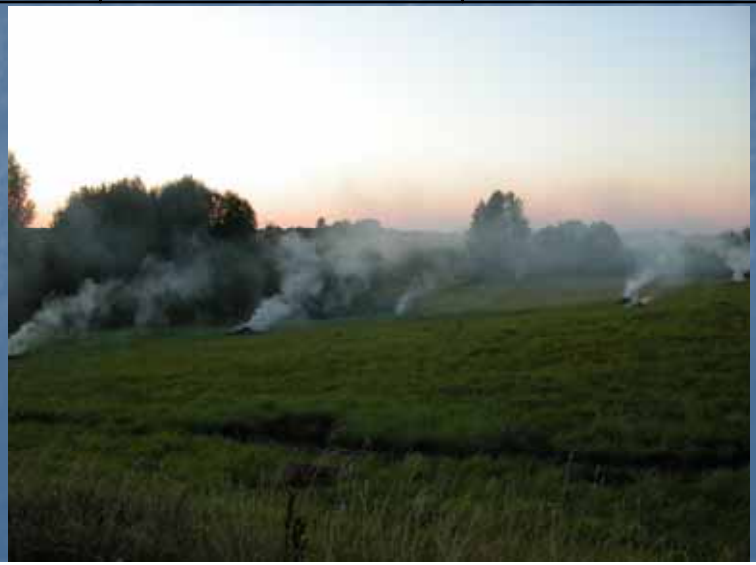
	A	B	C	D
Habitat quality	excellent	well	medium	bad
Nesting sites				
Distance to water	< 300 m	300-600 m	> 600 m	> 1000 m
Microclimate (sun exposition, southern location on a slope, windbreak)	very favourable	favourable, a few aspects suboptimal	microclimate unfavourable, several aspects suboptimal	microclimate very unfavourable, most aspects suboptimal
Number of potential nesting sites	numerously existent	sufficiently existent	barely existent	barely existent up to nonexistent
Predation risk (e.g. foxes, racoon dogs)	marginal (e.g. protection measures)	medium	high	very high

	A	B	C	D
Impairments	none up to marginal	medium	intense	very intense
General				
Pressure of leisure	none or infrequent	regularly at shores and in the range of nesting sites respectively	regularly at shores and water-based and in the range of nesting sites respectively	intensively, regularly at shores and water-based and in the range of nesting sites respectively
Application of fertilisers and pesticides	not ascertainable	not ascertainable	ascertainable	ascertainable

	A	B	C	D
Impairments	none up to marginal	medium	intense	very intense
Water habitat				
Utilisation of fishery	no utilisation	marginal and not dangerous for the species respectively	different	numerous
Utilisation of water habitats e.g. cattle drinking	no utilisation	marginal and not dangerous for the species respectively	different	numerous

	A	B	C	D
Impairments	none up to marginal	medium	intense	very intense
Water habitat				
Water regime	undisturbed	marginally disturbed	intensely disturbed (meliorations)	very intensely disturbed (lots of meliorations, afforestations)
Water habitat destruction e.g. overgrowth, gravel pit construction	no water habitat destruction	no water habitat destruction	partly threatened by water habitat destruction	heavy threatened by water habitat destruction

	A	B	C	D
Impairments	none up to marginal	medium	intense	very intense
Land habitat				
Habitat destruction e.g. succession, afforestation, building	no land habitat destruction	no land habitat destruction	partly threatened by land habitat destruction	heavy threatened by land habitat destruction



	A	B	C	D
Impairments	none up to marginal	medium	intense	very intense
Nesting sites				
Succession at nesting sites	none/ regular, species-appropriate assured care	marginal, vegetation encroachment nonserious	progressing, vegetation encroachment serious/ impairment by not species-appropriate care	quickly progressing, vegetation encroachment very serious/ impairment by not species-appropriate care
Human disturbances by hay cutting, grazing and trampling of cattle and horses	none or infrequent	less, but regularly	regularly	intensively, regularly

	A	B	C	D
Impairments	none up to marginal	medium	intense	very intense
Isolation				
Road ways in the land habitat/ adjacent	not existent	existent, scarcely frequented	existent, moderately frequented	existent, numerously frequented
Inter- and intraspecific competition				
Allochthonous individuals	not existent	not existent	existent	existent
Exotic turtle species	not existent	not existent	existent	existent

How is the favourable conservation status of turtle populations in Lithuanian project area?

Project area	Year	*Emys orbicularis*
L01 Zuvintas	2005	**Conservation status D / E** no evidence
	2008	**Conservation status D / E** no evidence
L02 Slavantai	2005	**Conservation status D / E** no evidence
	2008	**Conservation status D / E** no evidence
L03 Petroskai	2005	**Conservation status B** > 30 individuals (adults, subadults and juveniles) Danger: lack of sunny ponds and nesting sites, high nest predation rate, road/path
	2008	**Conservation status B** > 30 individuals (about 15 subadults and juveniles) Danger: lack of sunny ponds and nesting sites, high nest predation rate, road/path

Project area	Year	*Emys orbicularis*
L04 Meteliai/ Juodobale herpetological reserve	2005	**Conservation status B** > 30 individuals (adults, subadults and juveniles) Danger: overgrowth and silting up of ponds, lack of nesting sites, high nest predation rate, road
	2008	**Conservation status B** > 30 individuals (adults, subadults and juveniles) Danger: overgrowth and silting up of ponds, lack of nesting sites, high nest predation rate, road
L04 Meteliai/ Didyjis	2005	**Conservation status D** < 10 individuals (adults, subadults and juveniles) Danger: big lack of ponds and nesting sites, high nest predation rate, road
	2008	**Conservation status D** < 10 individuals (adults, subadults and juveniles) Danger: big lack of ponds and nesting sites, high nest predation rate, road

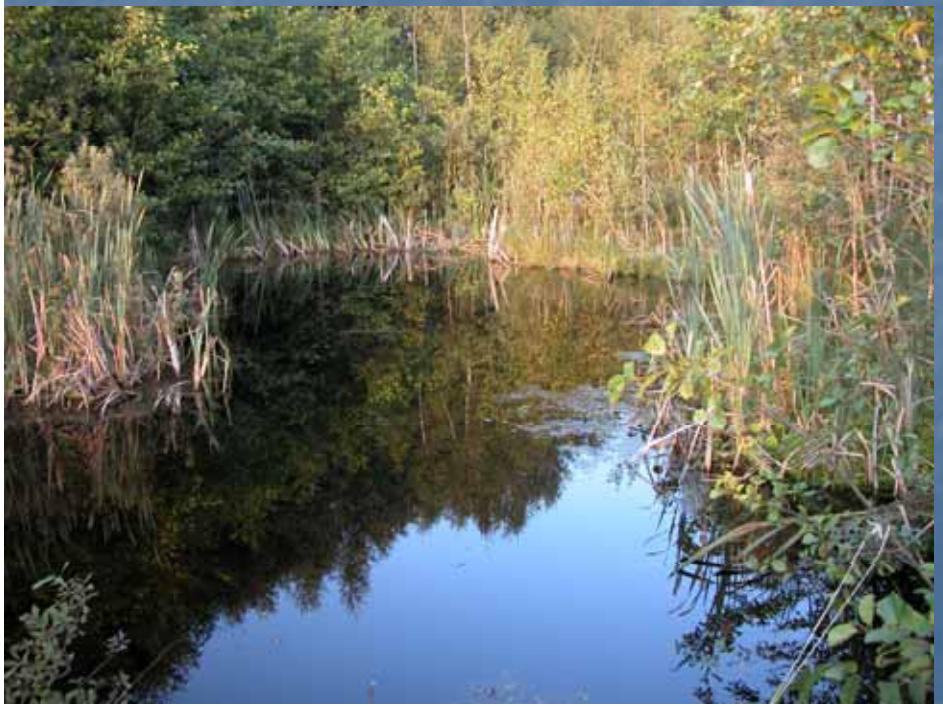
Project area	Year	*Emys orbicularis*
L06 Straciunai/ herpetological reserve	2005	**Conservation status D / E** no evidence
	2008	**Conservation status D / E** no evidence
L06 Straciunai/ turtle pond	2005	**Conservation status C** about 20 individuals (mostly adults) Danger: overgrowth and silting up of main pond, lack of ponds and nesting sites, road, village, waste disposal in/near pond
	2008	**Conservation status C / D** less than 20 individuals (mostly adults) Danger: overgrowth and silting up of main pond, lack of ponds and nesting sites, road, village, waste disposal in/near pond

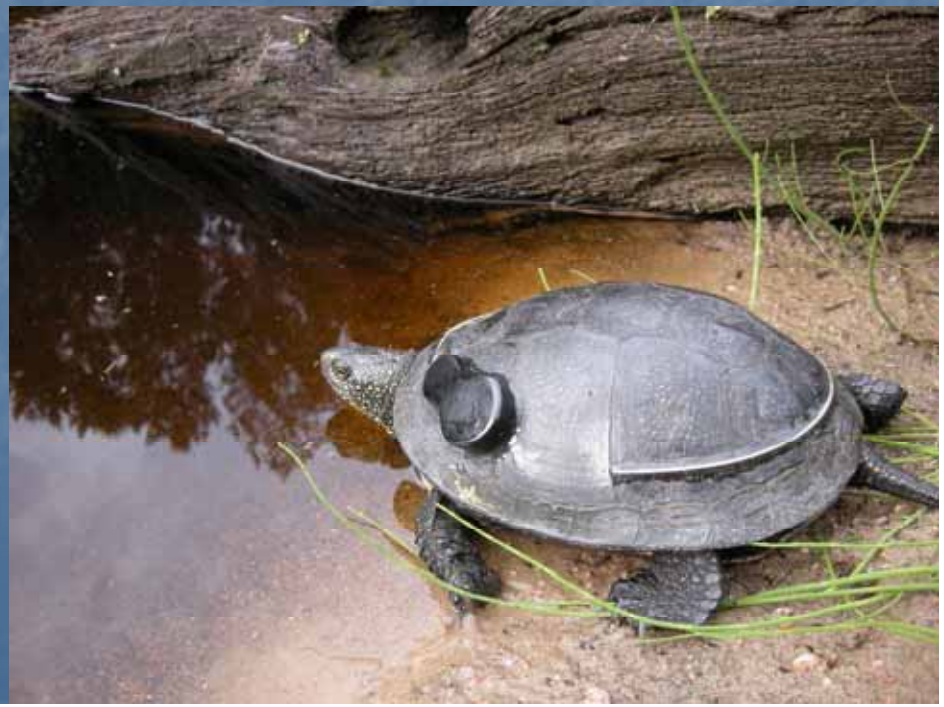
Project area	Year	*Emys orbicularis*
L05 Kuciuliske	2005	**Conservation status A** 60-70 individuals (about 50 adults and about 15 juveniles and subadults Danger: loss of open areas, lack of nesting sites, high nest predation rate
	2008	**Conservation status A** > 70 individuals (> 50 adults and > 20 juveniles and subadults Danger: loss of open areas, lack of nesting sites, high nest predation rate
L07 Bestraigiske	2005	**Conservation status C** about 20 individuals (mostly adults, no juveniles) Danger: isolation, silting up of main pond, big lack of ponds and nesting sites, forest management, high nest predation rate
	2008	**Conservation status C** about 20 individuals (> 16 adults, at least 2 subadults, no juveniles) Danger: isolation, silting up of main pond, big lack of ponds and nesting sites, forest management, high nest predation rate

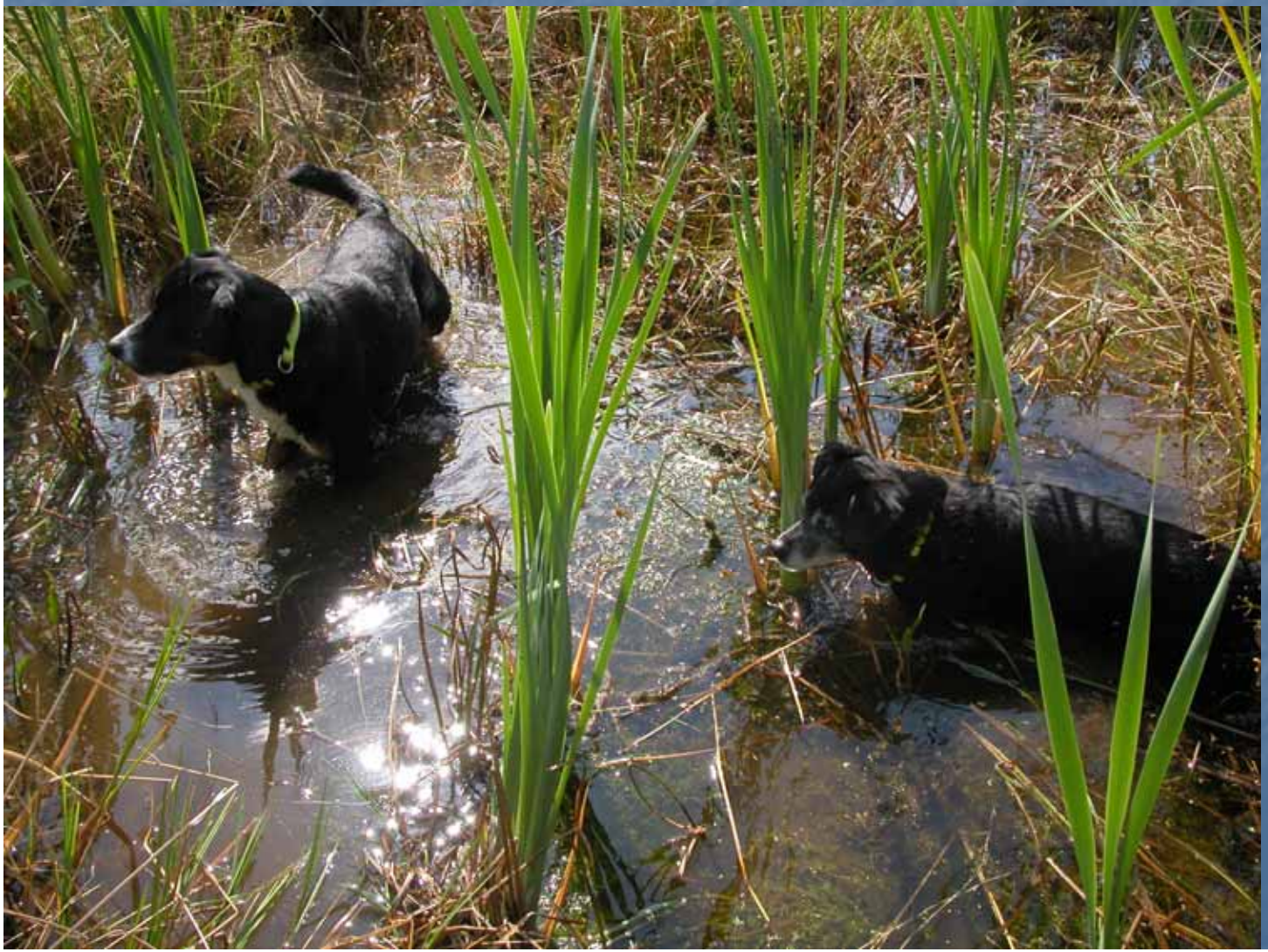
Summary

• only 1 local population has favourable conservation status A, 2 local populations status B, 2 local populations status C, 1 local population status D and 3 local populations D or E (1 area was never turtle area!)

• threats of most of the local populations similar: lack of ponds e.g. due to silting up and overgrowth and lack of nesting sites as well as a high predation rate on nests







Thank you very much for your attention!