

Habitats of protected species in the zone of the planned construction of a 400 kV, 1000 MW overhead power line in the Lithuanian-Polish borderland

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Background

The presented preliminary study was performed in spring- summer 2013, as no action was undertaken by the responsible institutions after they were provided with initial information about a potential new habitat of *Emys orbicularis* in the EIA sectors of the planned overhead power line (hereafter - OHL). The Association Rudamina Community (hereafter -RC) suspected that the SEA and EIA¹ conducted by a private company were inappropriate.² Indeed, although no data on *Emys orbicularis*³ in the OHL section between Lakes Žuvintas (LTALY0005) and Galadusys (PLH200007) was provided in the EIA report approved in early 2011, a turtle was accidentally found in Rudamina village in May 2011. Despite the neighboring Meteliai Regional Park was informed about this finding and other potential sites and they promised to put their efforts to investigate the suggested sites⁴, this never happened neither in 2011, nor in 2012. Therefore, in early 2013 the RC surveyed the local people in a shorter OHL section between Lakes Galadusys [54.227252, 23.381997] and Rimietis [54.304805, 23.493855]. On May 21 the RC applied to the Environmental Protection Agency (EPA) under the Ministry of Environment for permission to perform a field study on *Emys orbicularis* and *Hyla arborea* in the area. However, this application was rejected by the EPA on July 9.⁵

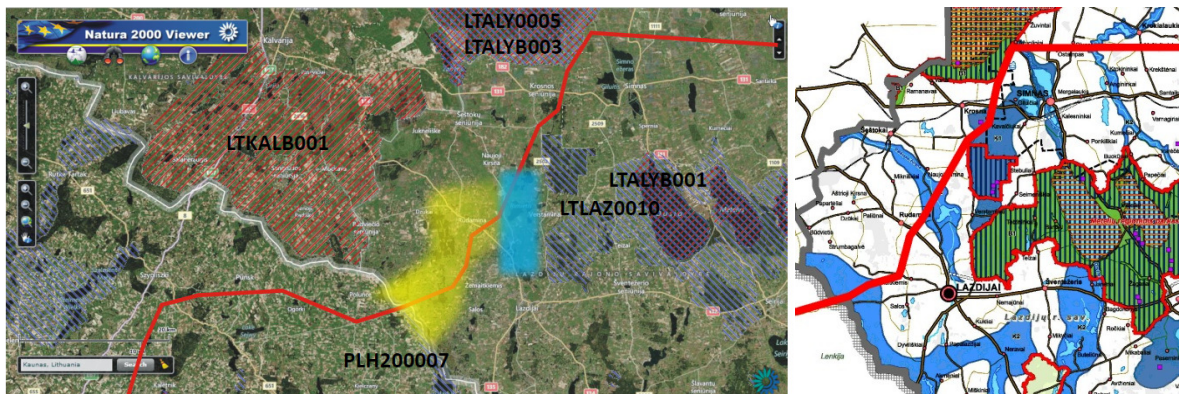


Figure 1. Schematic representation of the disputed OHL route. Left- the planned OHL (red line) with respect to Natura 2000 sites. Light blue- a new important bird area linked to LTALYB003, identified during the EIA. Yellow- the previously unknown habitats described in the present report. Right- the OHL with respect to ecological corridors (blue areas) defined in the master plan of Alytus County.

Thus, any further research of the potential habitats was possible only by observing the terrain from roads and paths. It is important to stress, that the RC therefore had no possibility to explore the entire area in detail. The present report is a result of 5 half-day visits and accidental observations.⁶ The very valuable section (in terms of biodiversity) between Lakes Rimietis and Žuvintas was not verified at all. Therefore, the number of protected species and/or the size of their populations are very likely larger than described in this report.

¹ The EIA report, <http://www.litpol-link.com/en/environment/-eia-documents/lithuania.html>, (retrieved June-September 2013).

² The organizers failed to engage the public participation at the earliest stages of the planning as required by the Aarhus convention. For example, see the list of participants in one of the meetings at Lazdijai municipality: http://www.litpol-link.com/uploads/File/documents/SPAV%20ataskaita/Susirinkimo_protokolas_Lazdijai.pdf

³ Page 126 at the EIA report: „European pond terrapin *Emys orbicularis* [...] Viable populations are found almost exclusively in South Lithuania – in the Meteliai and Veisiejai regional parks and their close environs. Also found in Žuvintas reserve but abundance is low. There is almost no information about spreading in the PEA area, mainly through the lack of special studies. Suitable habitats are found in the Žuvintas reserve and in the environs of Galadusio lake.“

⁴ Emailing with the Director of the Meteliai Regional Park from June 6, 2011 (copies available), follow-up phone calls.

⁵ The decision by EPA stated that „based on the data of the Ministry, the area around Rudamina has been investigated in detail by the Nature Research Centre and the Lithuanian Fund for Nature (LFN), and therefore there is no purpose to expose the protected species to disturbance and potentially negative impacts.“ From the previous contacts with the LFN, the RC was informed that at least by early July that NGO had not investigated the area concerned. The above statement is also contradicting with the EIA report, see above.

⁶ The contacts of the interviewees, maps, coordinates of the animal finding spots, in some cases- photographs, videos, can be provided.

General characteristics of the area

The disputed OHL route stretches about 31 km in South Lithuania, between four Natura 2000 sites (Figure 1). The immediate OHL impact zone physically borders three of them. About 85 % of its length in Lazdijai municipality coincides with the so-called ecological framework, designated in the master plans to consolidate the protected areas (not shown) and is a landscape of outstanding beauty. The planned new heavy infrastructure (no analogs in that region) would also intersect several identified ecological migration corridors (Figure 1). The main argument by the authorities for choosing this environmentally sensitive area for the project was that consideration of any OHL route beyond Alytus County would require additional administrative procedures, whereas the project schedule is set by the current EU's financial framework.⁷

Protected species

Emys orbicularis

The EIA report states that there is no data on this species in the disputed OHL section Lake Žuvintas- Lake Galadusys. However, based on the present survey, adult turtles have been found by the local people at least 10 times in the area concerned since the beginning of the project procedures in 2009 (Figure 2). Out of these cases, 3 were documented by photographs/video, including the latest case in May 2013 (Figure 3). Also, a few cm-sized shell of a young turtle was found in Lake Galadusys in 2012. The highest frequency or recent findings of the turtles in Sector 1 (most of them- on the asphalt road ~900 m from the planned OHL) suggests that there is a migration route from Lake Galadusys toward the forest area in the north (crossing the OHL belt). The speculative total number of the turtles in the area concerned can be estimated from ten up to several tens.

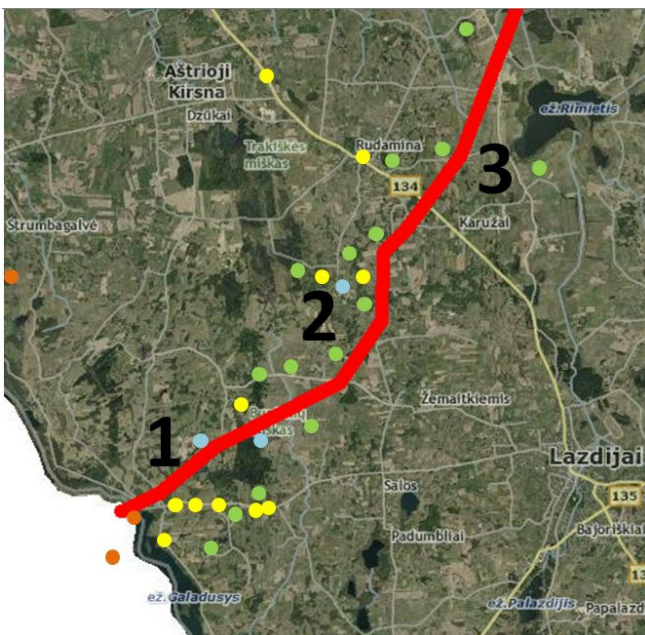


Figure 2. Approximate map of finding sites of three protected species with respect to the planned 400 kV OHL (red line). Big numbers indicate arbitrary sectors, mentioned throughout the text. Yellow- *Emys orbicularis*, found by interviewees since launching the project in 2009. Green- *Emys orbicularis*, found by interviewees from 1940ies till 2000ies. Blue- *Bombina bombina*, found by the authors in 2013. Orange- *Hyla arborea* sites suggested by interviewees.

This would be a significant number as compared to the total population of this species in Lithuania, up to 400. It is important to stress, that the area comprises a system of ponds, marshy lakes, ditches, etc., **an ecological network that is very suitable for habitation, laying eggs and migration.** *Emys orbicularis* has been found here regularly for decades, an indicative of a viable population. Thus, it has the potential to increase provided adequate measures are undertaken to stop the negative development of the very recent years-planting of artificial forests, excavation of gravel, intensifying agriculture, planned heavy infrastructure (the OHL, gas pipeline, wind power parks, etc.).

Emys orbicularis is listed as a protected species also in site PLH200007 (PL) that together with the area concerned forms one ecosystem. Also, in the east, the area borders another new habitat identified in a recent MSc thesis.⁸ Via the latter habitat⁹, it connects to Veisiejai and Meteliai regional parks with the main habitats of *Emys orbicularis* in Lithuania. To the best of

⁷ Contrary to the misleading statements in T-PVS/Files (2013) 42, page 7, an alternative, 10 km shorter OHL route identified by the RC, Prof. Paulius Kavaliauskas (landscape research, Vilnius University) and Lazdijai municipality was never properly analyzed. It would allow grouping the OHL with the existing infrastructures and, following the examples of Denmark, enables partial undergrounding in important bird migration areas. Also, no SEA was performed for the entire program of energy-related projects (the OHL is only one of them) launched by the Parliament of the Republic of Lithuania in 2007 (X-1046), noncompliance with the Directive 2001/42/EC.

⁸ Matulevičiūtė D. European Pond Turtle Distribution, Habitats and Protection in South Lithuania: Master's research work in forestry speciality, forestry specialization / Mentor doc. dr. G. Brazaitis; LŽŪU. – K., 2009. – 57 p.: 35 illustr. Bibliogr.: 43 titles.

⁹ Some interviewees also informed about *Emys orbicularis* found a few km east of Sector 1 (not shown), a good agreement with the existence of the ecological corridor, see Figure 1.

our knowledge, there is no scientific data on how these different populations and their habitats are dependent on each other.



Figure 3. Three turtles found in Sectors 2-3 in (left to right) 2013, 2011 and around 2008. Photos by the local people.

Bombina bombina

The spots of hearing this species during visual inspection of the area are indicated in Figure 2. In particular, it was very well heard in the marshy water system in Sector 1 in June-July 2013. Plenty of fully developed young frogs (Figure 4) were found in the same spots in August. These particular spots would be situated immediately under the OHL or ~100 m from it. This species is likely also spread around Lakes Rimietis and Žuvintas. Photos, video/audio available. The presence in Sectors 1-3 not mentioned in the EIA report.

Triturus cristatus

Found in August 2013 in the same spot in Sector 1 as *Bombina bombina* (Figure 4) ~150 m from the OHL and also (by accident) in several other spots 2-4 km from the OHL. The interviewed local people also confirmed this species is regularly found in and around the area concerned. The presence in Sectors 1-3 not mentioned in the EIA report.

Pelobates fuscus

Found in August 2013 close to the same spot in Sector 1 as *Bombina bombina* (Figure 4), ~150 m from the OHL, and in Sector 3, 1,5 km west of the OHL. Tens of these amphibians could be counted during a single rainy night in August on the new asphalt road along Lake Galadusys intersecting with Sector 1, Figure 3. The presence in Sectors 1-3 was not mentioned in the EIA report.



Figure 4. Left to right- *Bombina bombina* (turned upside down), *Triturus cristatus*, *Pelobates fuscus*, and *Bufo viridis* found in the area concerned during August 2013. Photos by Ramūnas Valiokas.

Hyla arborea

It is likely that two interviewees found this species in two spots during the summer 2012 and spring 2013, Figure 2. Another interviewee revealed that it has been regularly seen during the past few years around his farm situated 4 km west from the OHL, the last time – during the spring 2013. However, this information could not be confirmed when visiting the farm in August 2013, likely, due to unusually dry summer. Bearing in mind that the most important habitat of this species in Lithuania is 20 km east from the OHL, it is possible, that Sector 1 is interlinked with it via site PLH200007 (PL).

Other amphibians and reptiles

This brief investigation revealed that almost all amphibian and reptile species of Lithuania were represented in Sectors 1-3, uniqueness of the area that is not properly reflected in the EIA report. For example,

the water system in Sector 1 (100-200 m from the OHL) also is favorable for spawning and migration of **Bufo bufo**: plenty of semi-metamorphosed toads were found in July (video available). **Bufo viridis** could be found in August-September in several spots in a distance of 4-5 km in all directions of the OHL (outside Sectors 1 and 3, respectively), around 10 individuals (Figure 4). **Rana arvalis** and **Rana ridibunda** could be found on the asphalt road along Lake Galadusys starting ~200 m from the OHL. **Lacerta agilis** is abundant in Sectors 1-3.

Birds

Although the main focus of the undertaken preliminary investigation was on the amphibians and reptiles, additional information was collected on protected bird species in Sectors 1-3 that are not mentioned in the EIA report. The list of the observed birds is given in Table 1.

Table 1. Protected bird species in Sectors 1-3 observed during 2013.

Species	Finding details	Identified in the EIA	Comments
<i>Botaurus stellaris</i>	Regularly heard by the interviewees in two spots in Sector 2, a bog 2,2 km west of the OHL and also 1,5 km east.	Not in Sector 2	The revealed spots together with the EIA data suggest that the total number of hatching couples could be 3-4 in Sectors 1-3.
<i>Ciconia nigra</i>	Regularly seen by the local people for several years around Trakiškė forest (Sector 2) and west of it. The last time- this spring, around 1,3 km from the OHL.	Not in the disputed section	A local person showed a place where a nest was seen as late as in 2011, 4,7 km west of the OHL. However, no tree with the nest was found when checking in August, most likely it was cut. One more nest was known in Sector 2, 2,7 km from the OHL. In August, the other interviewee informed that the entire square of the forest (with the nest site) was cut down. The recently started two massive excavations of gravel in the area (see below) are also negative factors for this species in the area concerned.
<i>Crex crex</i>	Valiokas, in June, heard in Sector 2, ~1 km from the OHL. Valiokas, in July, seen in Sector 1, ~200 m from the OHL . Valiokas and Zelevas, in August, seen in Sector 1, ~200 m from the OHL.	Not in Sectors 1-3	The entire area from Lake Žuvintas to Galadusys seems to be favorable for this species.
<i>Egretta alba</i>	Valiokas, in June- August, 2 spots in Sector 1, 0-200 m from the OHL, photos. Valiokas and Zelevas, in August, 3 spots in Sector 1 , 0-200 m from the OHL, photos.	No	At least 4 birds counted in one day, likely a colony is establishing in the area. Also seen several times in Lake Galadusys. Mentioned by the local people near Punkskas (PL) and in the on-line bird watching diary of Žuvintas Reserve.
<i>Falco tinnunculus</i>	Valiokas and Zelevas, in May, Sector 2, 1,3 km from the OHL. Valiokas and Zelevas, in August, Sector 1, 200 m from the OHL and in Sector 2, 900 m from the OHL.	Not in the disputed section.	Seen also in August, 5 km west of the OHL in Sector 1.
<i>Grus grus</i>	Valiokas and Zelevas, in April-August, Sectors 1-3, photos of adults and chicks.	Not in Sectors 1-3	In the immediate vicinity of the OHL stretching 12 km through Sectors 1-3, the total number of hatching crane couples could be around 15 and certainly it can be larger if the entire EIA area is considered.
<i>Porzana parva</i>	Valiokas and Zelevas, in August, Sector 1, ~200 m from the OHL.	Not in Sectors 1-3	Preliminary identification of an escaping bird.
<i>Tringa glareola</i>	Valiokas, in August, Sector 1, 150 m from the OHL, photo.	No	Other <i>Scolopacidae</i> (5 birds) have been observed in the same bog but not identified.
<i>Upopa epops</i>	Regularly seen during spring-summer 2013 by an interviewee in a farm in Sector 2, 1,5 km from the OHL.	No	The described behavior of the observed birds suggests hatching. Also, in August seen in another farm, 4 km west of Sector 1

Other data on birds

Alcedo atthis could be regularly seen during 2000-2009 by an interviewee in a marshy lake in Sector 2, 1,5 km from the OHL. The interviewee has not visited this area since then. This species not mentioned in the EIA report. *An eagle* (*Aquila clanga*, *Haliaeetus albicilla*, or similar) observed by Valiokas and Zelevas in August 2013, hunting in Sector 1. Could not be identified from a long distance (low resolution photos). Hunting *Circus pygargus* and/or *Circus cyaneus* could be seen in Sectors 1-3 regularly during all the visits of Valiokas and Zelevas in April- August 2013. Also, more common species like *Circus aeruginosus*, *Buteo buteo*, were well represented in the Sectors 1-3.

Plant habitats

The following plants habitats under the Directive 92/43/EEC found in the area concerned are mentioned in the EIA report: 6450 Northern boreal alluvial meadows; 6510 Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*; 9080 Fennoscandian deciduous swamp woods; 91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno Padion*, *Alnion incanae*, *Salicion albae*); 9050 Fennoscandian herb-rich forests with *Picea abies*. There is a realistic risk of destroying/damaging them during the construction and service works of the OHL.¹⁰

Directive 92/43/EEC and the affected Natura 2000 sites

In the opinion of the RC, there was no mandatory EIA made specifically for sites LTALY0005, LTALYB003, LTALYB001, LTLAZ0010 and PLH200007 as requested by the Directive 92/43/EEC articles 6 and 7. The doubtful quality of the available EIA report can be illustrated by description of bird migration in the environs of Žuvintas UNESCO Biosphere Reserve: „No exact transit routes have been determined through the lack of observations. Spring flights were observed in April 2010 and the findings have shown no obvious locations of accumulation of migration flows. Therefore it is difficult to plan any permanent transit migration investigations with the available data. Autumn migration is also active in the continental part of the country and its observations are very important for the objective evaluation of potential impact. (pages 116-117)“.

Related threats to protected species

Extensive excavations ([54.29708, 23.422424] and [54.251026, 23.365414]) and transportation of gravel in the area. A new asphalt road and spontaneous urbanization along Lake Galadusys, i.e. PLH200007, is especially unfavorable for amphibians, reptiles and water birds. During the spring-summer 2013, the changes of the lake-side terrain were already remarkable (photos available), a notorious project noted also by media. Also, according to private communication, habitats of *Emys orbicularis* have being damaged even in Natura 2000 sites, e.g. changes in the hydrological regime in site LTLAZ0035 by extensive gravel excavation [54.147575, 23.925883]. The latter example reveals the degree of the danger caused by the started and planned activities in the area concerned, first of all, due to the incapability of the responsible Lithuanian authorities.

Conclusions

1. The presented study has identified a new habitat of *Emys orbicularis* in Lithuania.
2. A rich biodiversity has been revealed in the area that has never been properly investigated before. It provides favorable habitats for protected plants, amphibians, reptiles and birds and has to be properly protected and managed. The responsible authorities did not take adequate measures to identify and protect them. Instead, based on an EIA report of questionable quality they approved a project in an environmentally sensitive area, thus creating a risk of damage to many protected species.
3. Among the fundamental failures of the performed OHL planning procedures was breaking the article 3 of the Directive 85/337/EEC stating: “the environmental impact assessment will identify, describe and assess in an appropriate manner [...]”.¹¹
4. The EIA in a transboundary context was not performed despite the immediate connection of the area concerned to site PLH200007 and the existence of other potential ecological corridors between protected areas in Lithuania and Poland.

¹⁰ http://www.litpol-link.com/uploads/File/documents/EIA%20report_LT/4_tekstinis_priedas_1.jpg,
http://www.litpol-link.com/uploads/File/documents/EIA%20report_LT/4_tekstinis_priedas_2.jpg

¹¹ The very recent survey by the LFN mentioned in T-PVS/Files (2013) 42, page 9, can not be treated as an adequate measure of identification. Based on personal communication with the LFN, it can be stated that the survey could be a couple of days-long visual inspection of the terrain in a very narrow belt. The LFN stressed, that it was carried out not in a suitable season and not according to the methodology, important circumstances that are omitted in the response by the Ministry of Environment.