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Appendix of diploma thesis

Optimalization of ecological network near Vyskov due to biota
migration to the Dražanská highland

Diploma Thesis

Content

Appendix No. 1	1
Elements of TSES.....	4
The actual state of plant communities within my Study Area.....	15
Evaluation of ecological stability of my Study Area	16
Appendix No. 2	17
Appendix No. 3	18

Appendix No. 1

There are located the photos of original general maps (Fig. 1–4.) of TSES from the Department of Environment, Municipal Authority of Vyškov town and



Fig. 1. “General of TSES” within main of my study area, or in other words general map of TSES from the Department of Environment, municipal authority of Vyškov town

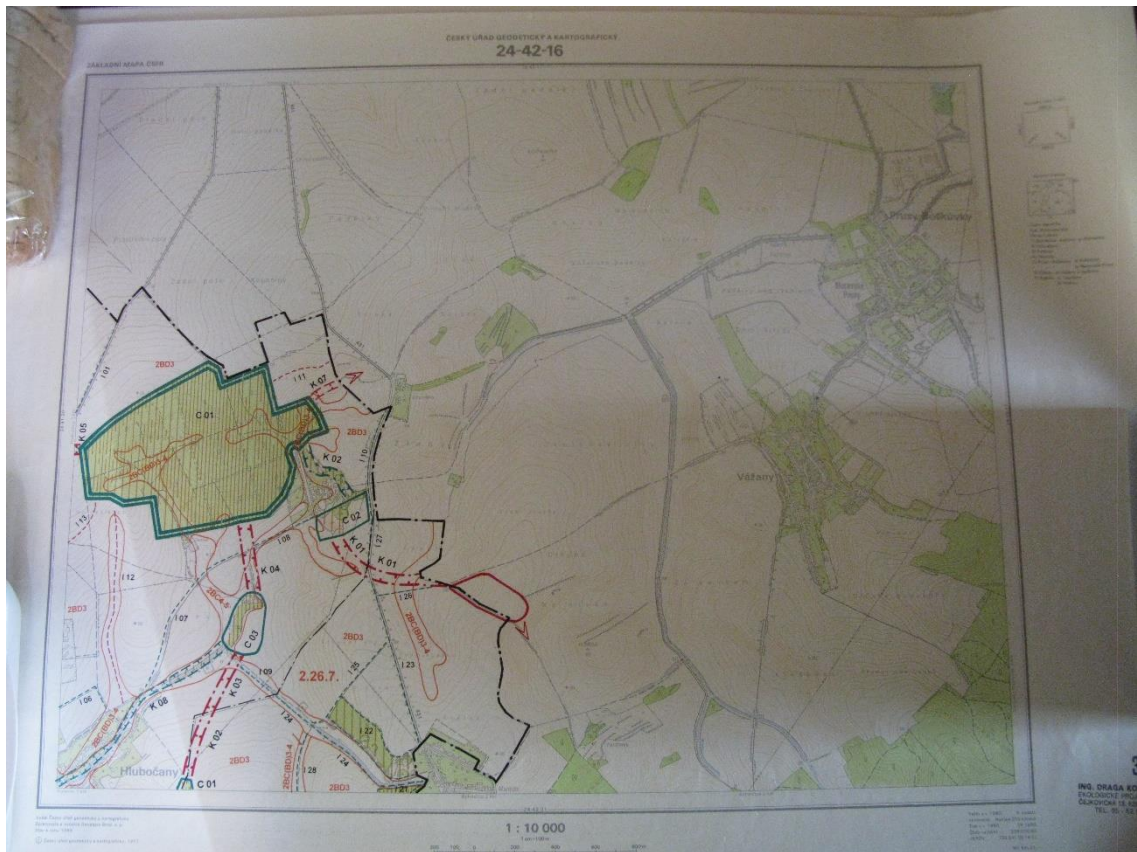


Fig. 2. “General of TSES” within the rest of my study area, or in other words general map of TSES from the Department of Environment, municipal authority of Vyškov town

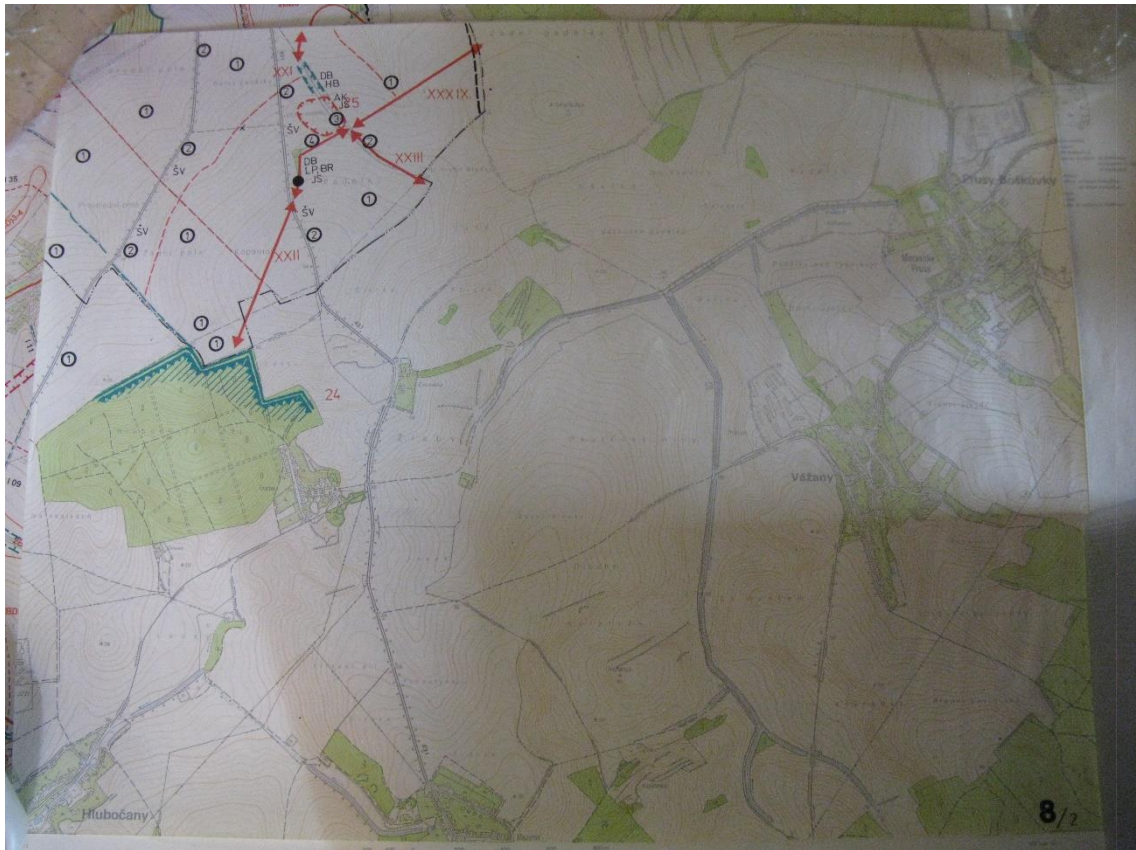


Fig. 3. “General of TSES” within the rest of my study area, from the Department of Environment, municipal authority of Vyškov town



Fig. 4. “General of TSES” within the rest of my study area, from the Department of Environment, municipal authority of Vyškov town

Elements of TSES

There are former elements of TSES (Fig. 1–4.) compared with the latest ones delimited in the municipal plans of the Rostěnice-Zvonovice village, Hlubočany village and Vyškov town (Fig. 12 – 17) with the complex description (updated with my field observations):

Name of the feature: **C 01 Nad Kačencem**

Name in the municipal plans: LBK No. 5 U Hlubočanského potoka (stream)

Territory: Rostěnice-Zvonovice village

Territory overlap: Hlubočany village (C 05)

Specification: local biocentre placed in the route of supra-regional biocentre, clearly localized, Northwest from the Rostěnice village

Geobiocoenology: 2 BC 4–5 and 2 BD 3

Total area: 4 ha (3,16 ha within Rostěnice village territory)

Total area in municipal plans:

Degree of Ecological Stability: 1, 3

Backbone of ecological stability, Legislative protection: 329 K Bohdalickému potoku (stream)

Forest stands: B – 481B

General characteristics: an alluvial plain with adjacent slopes

Conditions: part of windbreak (poplar, maple, birch, oak, linden, hornbeam, undergrowth: European fly honeysuckle and Siberian peashrub) and water flow (discontinuous vegetation coverage, willows and poplars, black elder strongly ruderalized, nettle)

Target vegetation communities: permanent grasslands with woods

Proposal of basic measures: halt the further progress of ruderalization, support the development of autochthonous woody species (Kolářová, 1996b; Zemanová, 2013).

Name of the feature: **C 01 Terešov** (Terešovský háj)

Name in the municipal plans: RBC No. 061 Terešov

Territory: Hlubočany village

Territory overlap: no

Specification: regional biocentre placed in the route of supra-regional biocentre, clearly localized, Northwest from the Hlubočany village

Geobiocoenology: 2 BD 3 and 2 BC(BD) 3–4

Total area: 76.65 ha

Degree of Ecological Stability: 3, 4

Backbone of ecological stability, Legislative protection: 322 Hlubočanský háj (grove)

Forest stands: Y – 236, 237, 238, 239

General characteristics: considerably horizontally and vertically diverse area

Conditions: uneven age forest communities, mostly close to nature up to natural composition (dominant trees are hornbeam, ash, sessile oak, Scotch pine, often admixed with maple, linden, and partly beech, birch, aspen and larch)

Target vegetation communities: forest

Proposal of basic measures: tending felling to support the autochthonous natural woody composition (Kolářová, 1996a; Low et al., 2014)

Name of the feature: **C 02 Kutálek**

Name in the municipal plans: LBC No. 2 U Výrovny

Territory: Rostěnice-Zvonovice village

Territory overlap: no

Specification: local biocentre placed in the route of supra-regional biocentre, clearly localized, Northward from the Rostěnice village

Geobiocoenology: 2 BD 3 and 2 BC 4–5

Total area: 5.28 ha

Degree of Ecological Stability: 1, 3, 4

Backbone of ecological stability, Legislative protection: 329 K Bohdalickému potoku (stream) and delimited ecologically significant landscape element (EVSK)

Forest stands: B – 481B

General characteristics: shallow valley with wetland

Conditions: core is formed by the rest of a floodplain forest (tree level: alder, poplar, oak, shrub level: black elder, undergrowth: mainly common nettle) and silted bottom of former water reservoir

Target vegetation communities: forest

Proposal of basic measures: plant autochthonous woody species, left for natural development (Kolářová, 1996b; Zemanová, 2013).

Name of the feature: **C 02 Na Skalkách**

Territory: Hlubočany village

Territory overlap: no

Specification: local biocentre placed in the route of supra-regional biocentre, clearly localized, Northward from the Hlubočany village

Geobiocoenology: 2 BD 3

Total area: 5 ha

Degree of Ecological Stability: 1

Backbone of ecological stability, Legislative protection: no

Forest stands: no

General characteristics: slope

Conditions: arable land

Target vegetation communities: forest

Proposal of basic measures: plant autochthonous woody species (Kolářová, 1996a; Low et al., 2014).

Name of the feature: **I 01**

Name in the municipal plans: Interaction element

Territory: Hlubočany village

Territory overlap: Vyškov town territory

Specification: interaction element, clearly localized, Northward from the Hlubočany village

Geobiocoenology: 2 BD 3

Total length: 800 m

Degree of Ecological Stability: 2

Backbone of ecological stability, Legislative protection: no

Forest stands: no

General characteristics: slopes

Conditions: cherry alley with permanent grassland

Target vegetation communities: permanent grassland with woods

Proposal of basic measures: support natural grass-herb communities, prefer autochthonous woody species composition for regeneration (Kolářová, 1996a; Low et al., 2014).

Name of the feature: **I 02**

Name in the municipal plans: Interaction element

Territory: Hlubočany village

Territory overlap: no

Specification: interaction element, clearly localized, Northward from the Hlubočany village

Geobiocoenology: 2 BD 3

Total length: 1300 m

Degree of Ecological Stability: 2

Backbone of ecological stability, Legislative protection: no

Forest stands: no

General characteristics: slope

Conditions: cherry alley with permanent grassland

Target vegetation communities: permanent grassland with woods

Proposal of basic measures: support natural grass-herb communities, prefer autochthonous woody species composition for regeneration (Kolářová, 1996a; Low et al., 2014).

Name of the feature: **I 02**

Name in the municipal plans: Interaction element

Territory: Rostěnice-Zvonovice village

Territory overlap: no

Specification: interaction element, clearly localized, Northwest from the Rostěnice village

Geobiocoenology: 2 BD 3

Total length: 500 m

Degree of Ecological Stability: 2

Backbone of ecological stability, Legislative protection: no

Forest stands: no

General characteristics: mild slope

Conditions: field (unpaved) road with eutrophic grass-herb patches

Target vegetation communities: permanent grassland with woods

Proposal of basic measures: plant autochthonous woody species, halt the further progress of eutrophication (Kolářová, 1996b; Zemanová, 2013).

Name of the feature: **I 14**

Name in the municipal plans: Interaction element

Territory: Hlubočany village

Territory overlap: no

Specification: interaction element, clearly localized, Northward from the Hlubočany village

Geobiocoenology: 2 BD 3

Total length:

Degree of Ecological Stability: 1

Backbone of ecological stability, Legislative protection: no

Forest stands: no

General characteristics: slope

Conditions: arable land

Target vegetation communities: permanent grassland with woods

Proposal of basic measures: create permanent vegetation formations to control erosion, allow development of natural seeding of autochthonous woody species (particularly shrubs) (Kolářová, 1996a; Low et al., 2014).

Name of the feature: **I 15**

Name in the municipal plans: Interaction element

Territory: Hlubočany village

Territory overlap: no

Specification: interaction element, clearly localized, Northward from the Hlubočany village

Geobiocoenology: 2 BD 3

Total length:

Degree of Ecological Stability: 1

Backbone of ecological stability, Legislative protection: no

Forest stands: no

General characteristics: slope

Conditions: arable land

Target vegetation communities: permanent grassland with woods

Proposal of basic measures: create permanent vegetation formations to control erosion, allow development of natural seeding of autochthonous woody species (particularly shrubs) (Kolářová, 1996a; Low et al., 2014).

Name of the feature: **K 01**

Name in the municipal plans: NRBK 08 (MH)

Territory: Rostěnice-Zvonovice village

Territory overlap: no

Specification: supra-regional biocorridor, clearly localized, Northwest from the Rostěnice village

Geobiocoenology: 2 BD 3 and 2 BC 4–5

Total length: 700 m

Degree of Ecological Stability: 3

Backbone of ecological stability, Legislative protection: 329 K Bohdalickému potoku (stream)

Forest stands: B – 481

General characteristics: overflow ridge

Conditions: planted tree lines (poplars, maples, birch, oak, hornbeam, linden, and European fly honeysuckle, black elder and Siberian peashrub in the understory)

Target vegetation communities: stands of woods

Proposal of basic measures: left for natural development (Kolářová, 1996b; Zemanová, 2013).

Name of the feature: **K 02**

Territory: Rostěnice-Zvonovice village

Territory overlap: Vyškov town territory

Specification: supra-regional biocorridor, clearly localized, Northward from the Rostěnice village

Geobiocoenology: 2 BD 3

Total length: (450 m in the Rostěnice village territory)

Degree of Ecological Stability: 1

Backbone of ecological stability, Legislative protection: no

Forest stands: no

General characteristics: slope, Southwest exposition

Conditions: arable land threatened by the erosion

Target vegetation communities: stands of woods

Proposal of basic measures: create permanent vegetation formation with the protective function against erosion (Kolářová, 1996b; Zemanová, 2013).

Name of the feature: **K 05**

Name in the municipal plans: LBK No. 5

Territory: Rostěnice-Zvonovice village

Territory overlap: no

Specification: local biocorridor, clearly localized, going through the Rostěnice village

Geobiocoenology: 2 BC 4–5

Total length: 1900 m (in municipal plan for LBK No. 5 only 1170 m)

Degree of Ecological Stability: 1, 3

Backbone of ecological stability, Legislative protection: 330 K Rostěnický potok (stream)

Forest stands: no

General characteristics: an alluvial plain

Conditions: Rostěnický potok (stream) bed in the village with the spare occurrence of diverse woods, beyond the village is located one sided patch of woods on the bank of the stream (poplar, aspen, alder)

Target vegetation communities: stands of woods

Proposal of basic measures: plant the autochthonous woody species on the stream banks and also complementary species, halt the over eutrophication and ruderalization (Kolářová, 1996b; Zemanová, 2013).

Name of the feature: **K 05**

Name in the municipal plans: NRBK 08 (MH)

Territory: Hlubočany village

Territory overlap: no

Specification: supra-regional biocorridor, clearly localized, Northward from the Hlubočany village

Geobiocoenology: 2 BD 3

Total length: 700 m

Degree of Ecological Stability: 1 (2)

Backbone of ecological stability, Legislative protection: no

Forest stands: no

General characteristics: slope, West exposition

Conditions: partly arable land, partly newly planted native woody species in lines (linden, common dogwood, hornbeam and oaks)

Target vegetation communities: stands of woods

Proposal of basic measures: plant the autochthonous woody species (Kolářová, 1996a; Low et al., 2014).

Name of the feature: **K 06**

Name in the municipal plans: NRBK 08 (MH)

Territory: Hlubočany village

Territory overlap: no

Specification: supra-regional biocorridor, clearly localized, Northward from the Hlubočany village

Geobiocoenology: 2 BD 3

Total length: 700 m

Degree of Ecological Stability: 1 (2)

Backbone of ecological stability, Legislative protection: no

Forest stands: no

General characteristics: slope, West exposition

Conditions: partly arable land, partly newly planted native woody species in lines (field maple and black elder)

Target vegetation communities: stands of woods

Proposal of basic measures: plant the autochthonous woody species (Kolářová, 1996a; Low et al., 2014).

Name of the feature: **K 06**

Name in the municipal plans: LBK No. 6

Territory: Rostěnice-Zvonovice village

Territory overlap: Vyškov town

Specification: local biocorridor, clearly localized, Northward from the Rostěnice-Zvonovice village

Geobiocoenology: 2 BC 4–5

Total length: 2000 m (800 m in the territory of Rostěnice-Zvonovice village, 500 m for LBK No. 6)

Degree of Ecological Stability: 3

Backbone of ecological stability, Legislative protection: 330 Rostěnický potok (stream)

Forest stands: no

General characteristics: an alluvial plain

Conditions: regulated waterflow with the vegetation on the stream banks (poplars, alders, willow), eutrophication

Target vegetation communities: stands of woods

Proposal of basic measures: plant the autochthonous woody species (Kolářová, 1996b).

Name of the feature: **11 Rostěnický potok** (stream)

Name in the municipal plans: LBK No. 5, LBK No. 6, and LBK No. 12

Territory: Vyškov town and Rostěnice-Zvonovice village

Specification: EVKP – ecologically important landscape feature

Biogeography importance: local

Geobiocoenology: 2 BC – C 4

Total length: 2900 m

Description of ecotope and biota: regulated waterflow with the vegetation on the stream banks. Part of the stream, going from Rostěnice village up to the pond Kačenec, an alluvial plain in the direction North-north-east, in the elevation between 258 – 250 m. a. s. l. The vegetation of the regulated stream is formed by the black poplar (*Populus nigra* L.), Canadian poplar (*Populus x canadensis* Moench), aspen (*Populus tremula* L.), alder (*Alnus glutinosa* (L.) Gaertn.), white willow (*Salix alba* L.), and goat willow (*Salix caprea* L.). After the highway was built, the stream bed was translocated, strongly regulated and sparsely planted by the complementary vegetation

Proposal of measures: threatened by the run-off enriched by the nitrogen from the surrounding fields.

Culture: water flow with the vegetation on the banks

Surveyor, year: Chalupa 87, Koukal 89, Novotný 93

(Novotný and Stejskalová, 1993; Zemanová, 2013; Dubina et al., 2015a; Dubina et al., 2015b)

Name of the feature: **K 07**

Name in the municipal plans: LBK No.3

Territory: Rostěnice-Zvonovice village

Territory overlap: Hlubočany village K 09

Specification: local biocorridor, clearly localized, Eastward from the Rostěnice-Zvonovice village

Geobiocoenology: 2 BC 4–5

Total length: 1200 m (1200 m in the territory of Rostěnice-Zvonovice village), 1500 (LBK No. 3)

Degree of Ecological Stability: 3

Backbone of ecological stability, Legislative protection: no

Forest stands: no

General characteristics: an alluvial plain

Conditions: discontinuous vegetation on the stream banks (prevalence of poplar, sparsely willow), strong eutrophication

Target vegetation communities: stands of woods

Proposal of basic measures: halt the further progress of eutrophication, plant the autochthonous woody species (Kolářová, 1996b; Zemanová, 2013).

Name of the feature: **K 08 Bohdalický potok** (stream)

Name in the municipal plans: LBK No. 8

Territory: Rostěnice-Zvonovice village

Territory overlap: Hlubočany village and Vyškov town

Specification: local biocorridor, clearly localized, Northeast from the Rostěnice-Zvonovice village

Geobiocoenology: 2 BC 4–5

Total length: 1600 m (600 m in the territory of Rostěnice-Zvonovice village, 550 m in the case of LBK No. 8)

Degree of Ecological Stability: 3

Backbone of ecological stability, Legislative protection: delimited ecologically significant landscape element (EVSK)

Forest stands: no

General characteristics: an alluvial plain

Conditions: discontinuous vegetation on the stream banks, prevalence of willow and poplar, strong eutrophication, the upper course

Target vegetation communities: stands of woods

Proposal of basic measures: halt the further progress of eutrophication, plant the autochthonous woody species (Kolářová, 1996b; Zemanová, 2013).

Name of the feature: **K09 Bohdalický potok** (stream)

Name in the municipal plans: LBK No. 3

Territory: Hlubočany village

Territory overlap: Rostěnice-Zvonovice village K08 and Vyškov town

Specification: local biocorridor, clearly localized, Northwest from the Hlubočany village

Geobiocoenology: 2 BC 4–5

Total length: 1200 m (1200 m in the territory of Hlubočany village), 1500 m (LBK No. 3)

Degree of Ecological Stability: 3

Backbone of ecological stability, Legislative protection: no

Forest stands: no

General characteristics: an alluvial plain

Conditions: discontinuous vegetation on the stream banks (prevalence of poplar, sparsely willow), strong eutrophication

Target vegetation communities: stands of woods

Proposal of basic measures: halt the further progress of eutrophication, plant the autochthonous woody species (Kolářová, 1996a; Low et al., 2014).

Name of the feature: **K 10 Bohdalický potok** (stream)

Name in the municipal plans: LBK No. 2

Territory: Hlubočany village

Territory overlap: Rostěnice-Zvonovice and Vyškov town (LBK No. 13)

Specification: local biocorridor, clearly localized, Northwest from the Hlubočany village

Geobiocoenology: 2 BC 4–5

Total length: 1600 m (600 m in the territory of Hlubočany, 560 m for LBK No. 2)

Degree of Ecological Stability: 3

Backbone of ecological stability, Legislative protection: delimited ecologically significant landscape element (EVSK)

Forest stands: no

General characteristics: an alluvial plain

Conditions: discontinuous vegetation on the stream banks, strong eutrophication, the upper course

Target vegetation communities: stands of woods

Proposal of basic measures: halt the further progress of eutrophication, plant the autochthonous woody species (Kolářová, 1996a; Low et al., 2014).

The actual state of plant communities within my Study Area

The prevailing plant communities are cultural plants used by agriculturists (Fig. 5.). According to my observation they used to plant regularly corn (*Zea mays* L.), common wheat (*Triticum aestivum* L.), rapeseed (*Brassica napus* L.) and barley (*Hordeum vulgare* L.).

The present state of plant communities of my Study Area

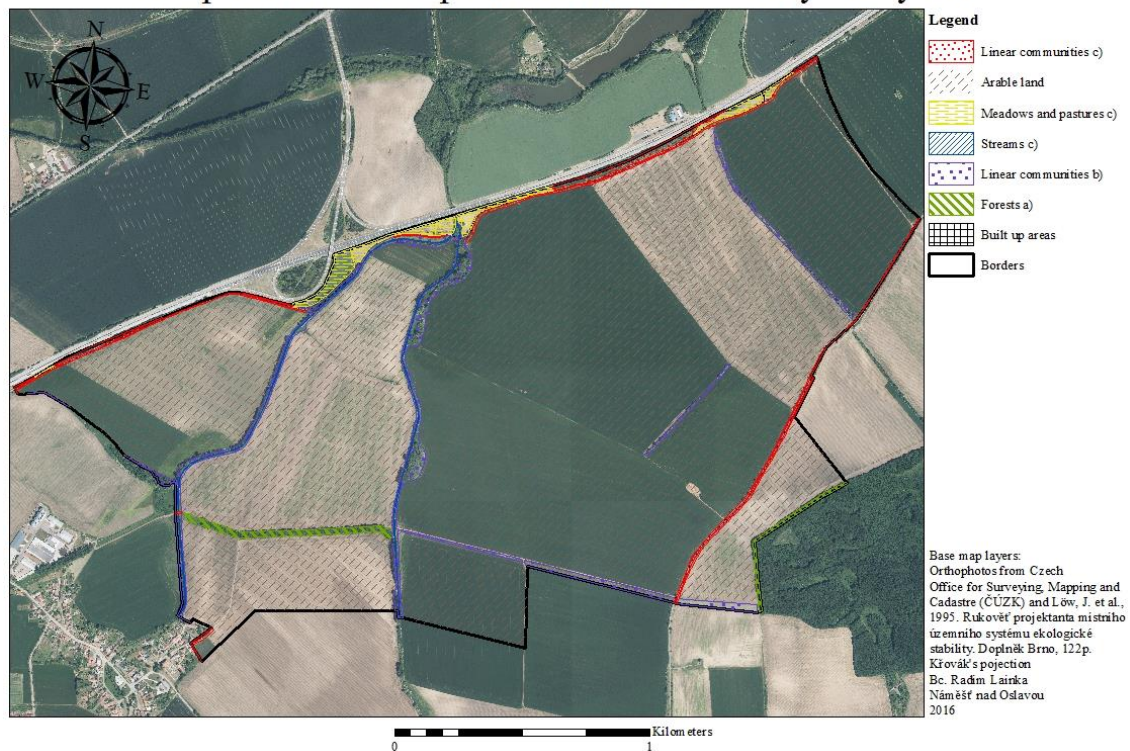


Fig. 5. The present state of plant communities

Evaluation of ecological stability of my Study Area

Overall ecological stability of my area is low in general (between 1 and 2), as you can see in the Fig. 6. However, I proposed the new elements of TSES (LBC U Dálnice etc.), thus the current situation could be improved sufficiently. Although the best option is that all the proposed TSES elements will be realised, the 2 missing local biocentres (LBC No. 5 U Hlubočanského potoka and LBC No. 8 Horní Lusy), the missing parts of supraregional biocorridor NRBK08 (MH), and all the proposed interaction elements.

The Evaluation of Ecological Stability

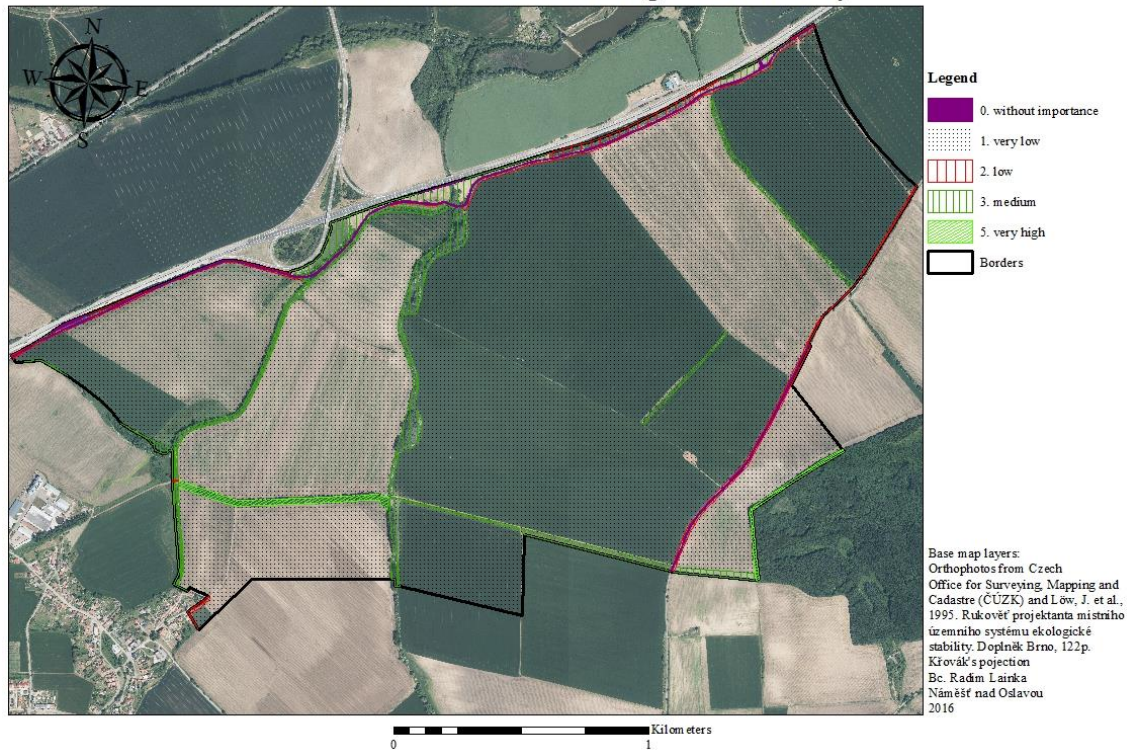


Fig. 6 The Evaluation of Ecological Stability within my study area

Appendix No. 2

There are two tables with track records of dogs (Tab. 1 and Tab.2). Everytime the dogs were followed by their owners or the people in charge, thus quite a lot of track of wildlife were damaged, some of them totally lost.

Tab. 1 Dogs occurrence during my research on wildlife tracks, part 1

Species	Date (week) from 11 th May to 13 th July									
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th
Dog (<i>Canis lupus f. Familiaris</i> L.)	x		x		x	x				x

Tab. 2 Dogs occurrence during my research on wildlife tracks, part 2

Species	Date (week) from 20 th July to 21 st September									
	11 th	12 th	13 th	14 th	15 th	16 th	17 th	18 th	19 th	20 st

Dog (<i>Canis lupus f. Familiaris</i> L.)	X	X	X		X			X	X	X
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Appendix No. 3

This Appendix is devoted to the process of fragmentation within my study area, I prepared the maps about so called polygons of UAT (Unfragmented Area by Traffic) from the year 2008 up to 2025 as the forecast of the wider area of my study area (Fig. 7–9.).

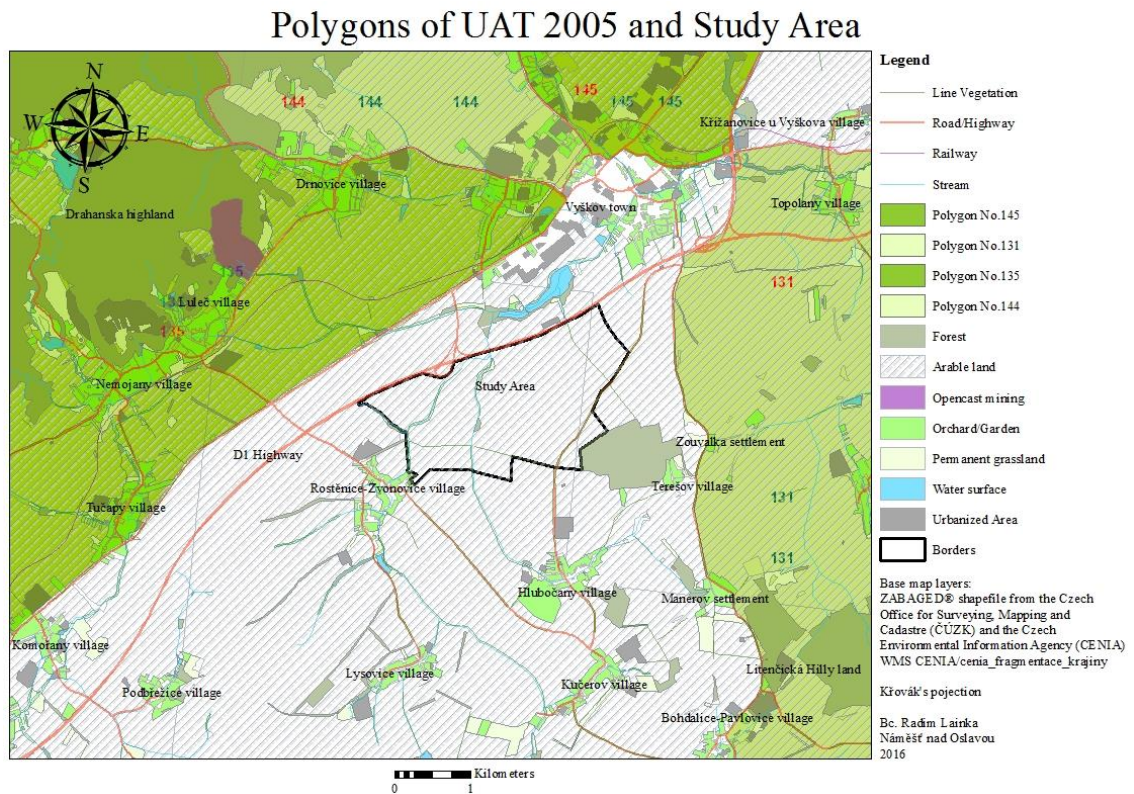


Fig. 7 Polygons of UAT, wider range of my Study Area, year 2005

Predicted Polygons of UAT for the year 2012 and Study Area

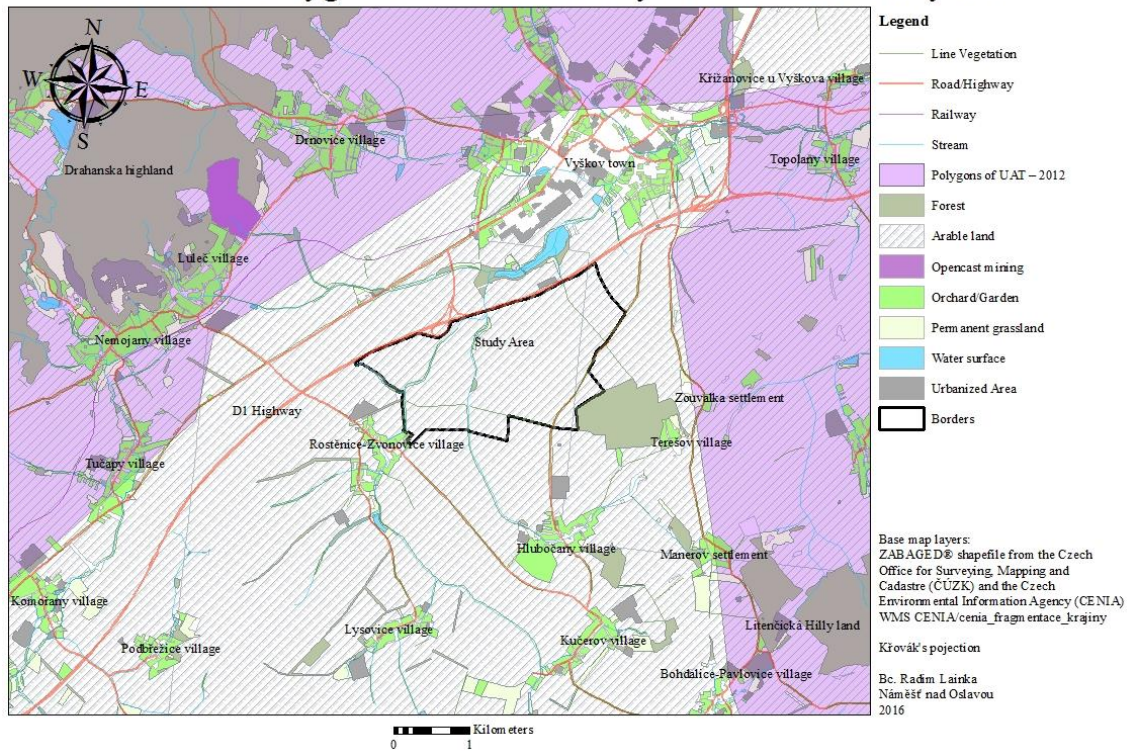


Fig. 8 Polygons of UAT, wider range of my Study Area, year 2012

Predicted Polygons of UAT for the year 2025 and Study Area

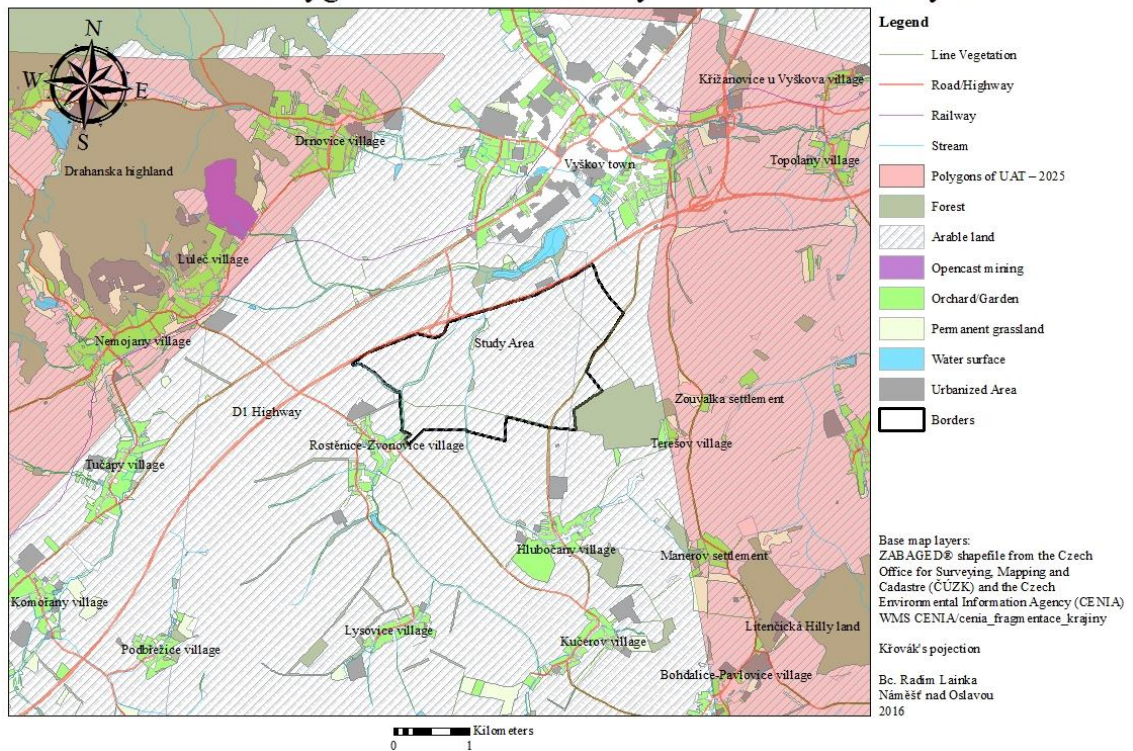


Fig. 9 Polygons of UAT, wider range of my Study Area, forecast for the year 2025