

History of cultural landscape II. History of cultural landscape of the Czech lands

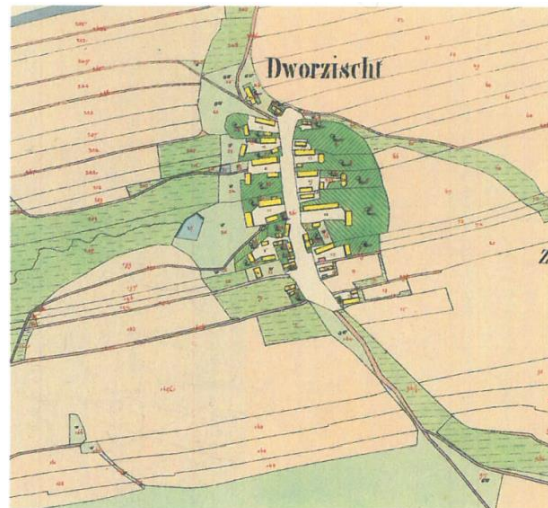
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Akademický atlas českých dějin

Introductory notes

- You do not have to memorize this
 - Neither the technical terms
 - Understanding of principles
 - You should have an idea that such things exist
- PDF will be available
 - home.czu.cz/fantav → teaching
- When in doubt, ask me
 - I am here to answer
- If you will disagree, tell me
 - I may be wrong

History of cultural landscape

1. Research methods

- Cultural landscape
- How to study history
- Methods 1: Historical geography
- Methods 2: Remote sensing
- Methods 3: Archaeology, paleobotany, geology

2. History of cultural landscape of the Czech lands

- Main changes
- Causes and consequences

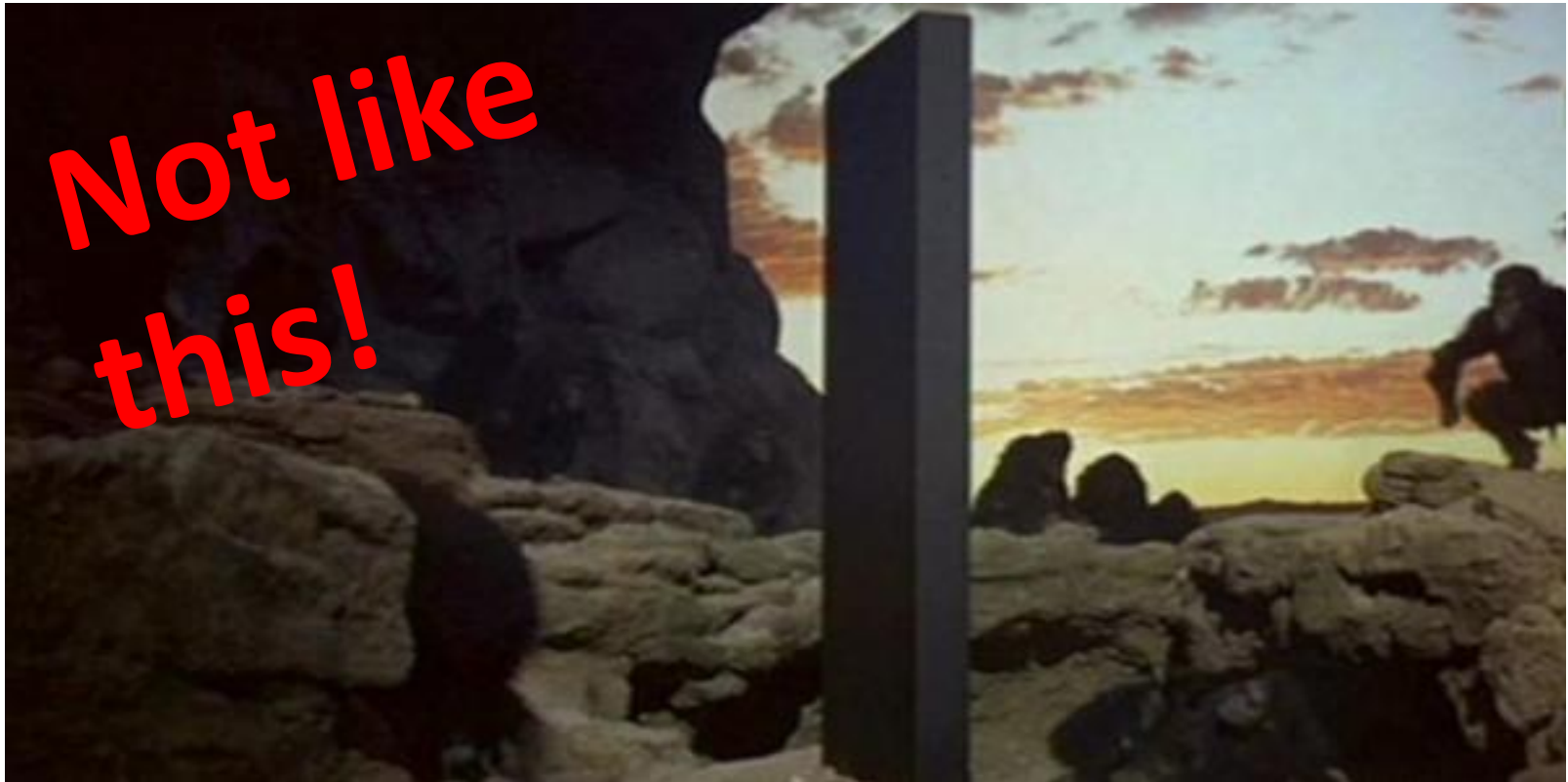
Previous lecture – repetition

- Cultural landscape
 - landscape affected by man
 - landscape designed / organically evolved / associative
- Historical research
 - reality → sources → interpretation of the sources
- Historical geography
 - old maps
 - motivation for mapping, interpretation
 - military mappings (end of 18th and 19th century), stable cadastre (half of 19th century), aerial ortophotographs (2nd half of 20th century)
- Remote sensing
 - orto- and oblique aerial photographs, vegetation signs
 - lidar – laser scanning
 - satellite images – spatial resolution X length of time series (Landsat, Sentinel)
 - ready products – CORINE Land Cover
- Archaeology, paleobotany, geology

Lecture objectives

- Main breakpoints in the history of cultural landscape of the Czech lands
 - Neolithic revolution
 - Medieval colonization
 - Baroque landscape
 - Industrial revolution
 - Socialism
 - Present times
- Landscape ecology and the landscape changes

Revolution?



→ long processes

2001: Space Odyssey

1. History of cultural landscape – main breakpoints

Cultural landscape

- Definition: cultural landscape is landscape affected by man
- Influence of man

mountains pastures fields villages mining factories towns



Start of the story – 10 000 years ago



Agriculture!



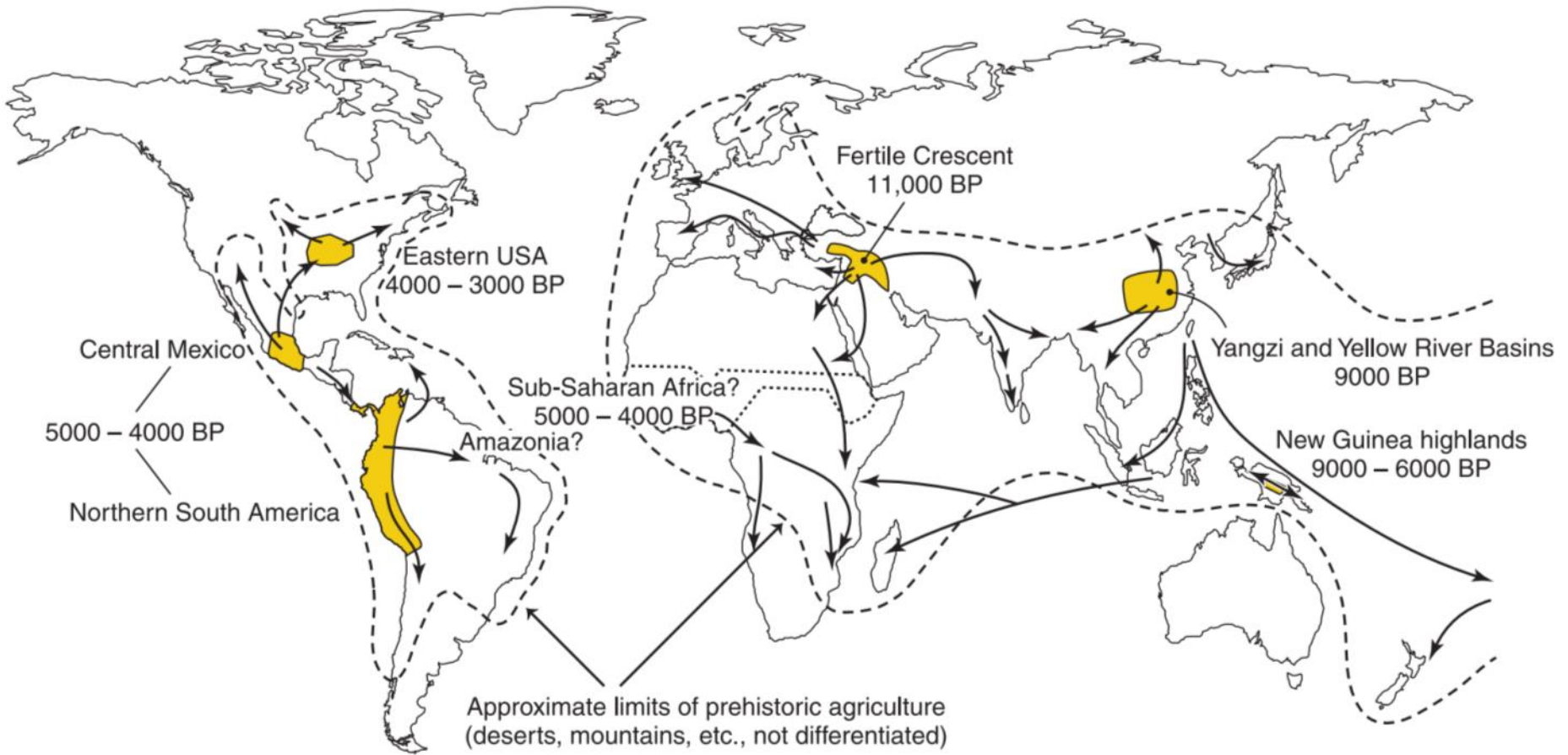


Fig. 1. Archaeological map of agricultural homelands and spreads of Neolithic/Formative cultures, with approximate radiocarbon dates.

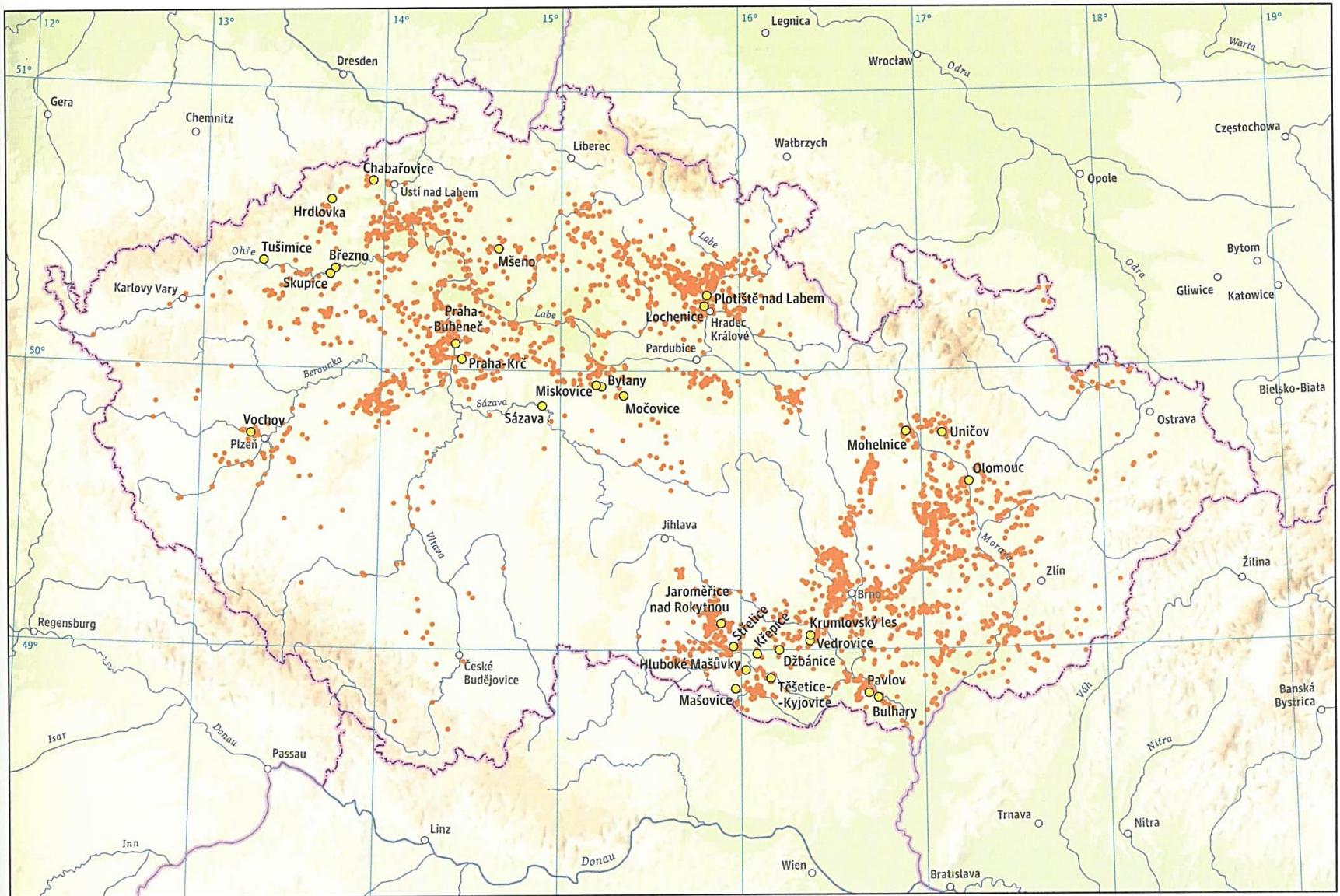
Diamond & Bellwood 2003

Neolithic revolution

- When: approx. 5000 years BC (Central Europe), 9000 BC (Middle East)
- What: agriculture
 - No ploughing, primitive agriculture
 - Irregular patches of fields
- Extent of settled area: fertile lowlands
 - Unstability
- Causes: import of technologies and people
- Consequences:
 - First stable settlements
 - Domestication of animals (cat, goat, sheep, pig, bovine)
 - Domestication of crops
 - Food surplus → specialization
 - Social stratification
 - Plenty of people and animals in close contacts → emergence of diseases
 - Population boom, decrease of life quality

Lokoč a kol. 2010

I.3a OSÍDLENÍ ČESKÝCH ZEMÍ V NEOLITU (MLADŠÍ DOBĚ KAMENNÉ; 5500-4300 PŘ. N. L.)



Neolithic period, 5500-4300 BC

Akademický atlas českých dějin



I.3 – 1. Dlouhý neolitický dům (v tomto případě z tzv. lengyelské kultury) byl stavebně rekonstruován v archeologické experimentální stanici a skanzenu Březno u Loun na místě, kde byl odkryt půdorys jeho pravěkého předchůdce

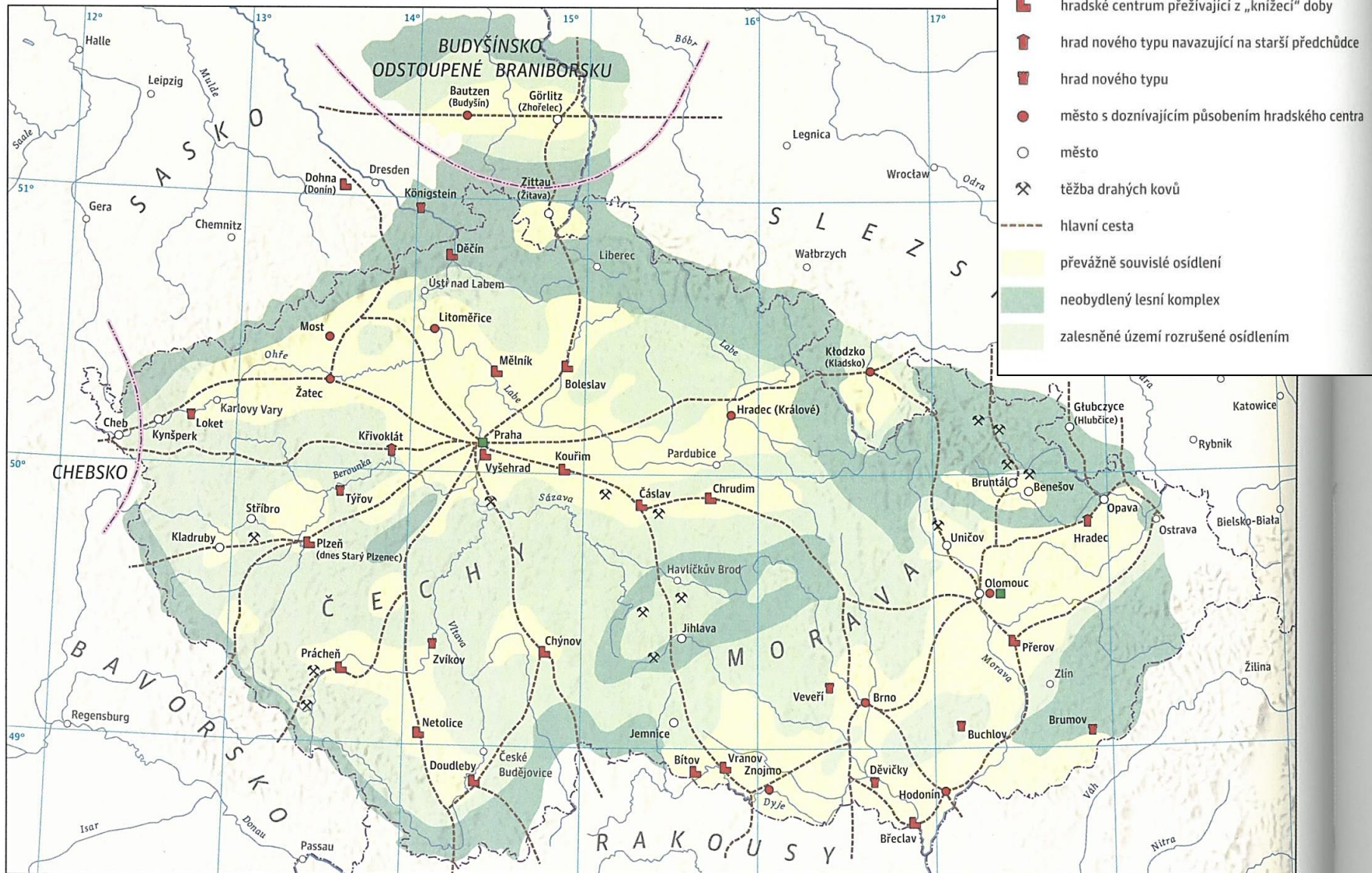
Akademický atlas českých dějin

Neolithical long house,
experimental archaeology

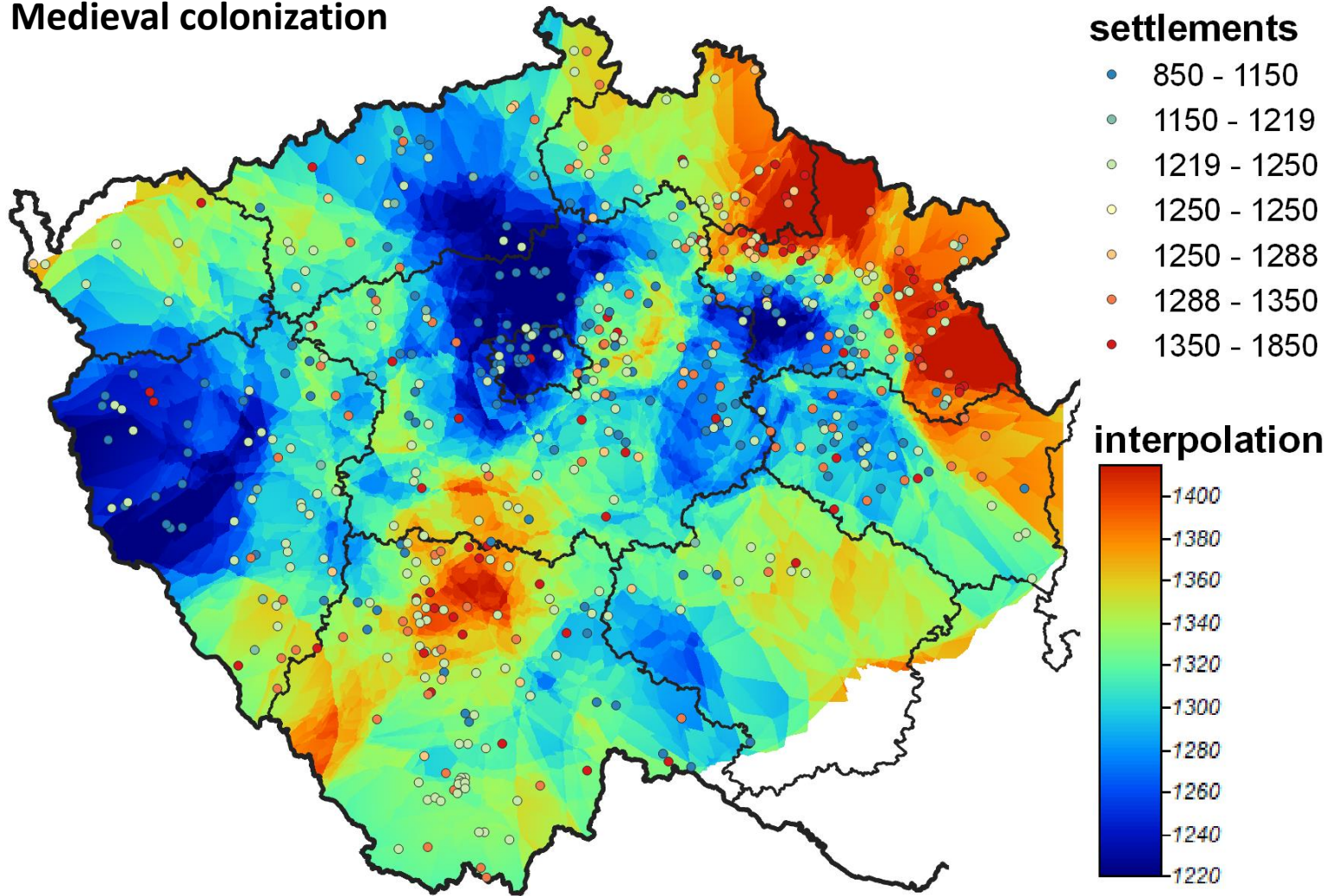
Medieval colonization

- When: 11th – 15th cent., mainly 13th and 14th cent.
- What: intensive establishing of new towns and villages
 - Legal organization of the colonization process
 - Agriculture – three field crop rotation
- Extent of settled area: advance into highlands
 - Unstable settlements, disturbances, translocations
- Causes: demographic growth, increase of agricultural yields, economic interests of nobility, migration of colonists from Western Europe
- Consequences:
 - Formation of basic spatial structure of Central European landscape
 - Towns foundation
 - Deforestation, erosion
 - Intensive use of landscape

Lokoč a kol. 2010



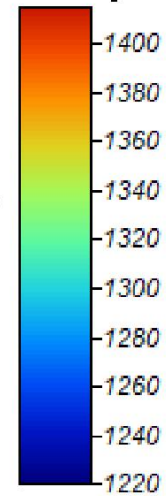
Medieval colonization



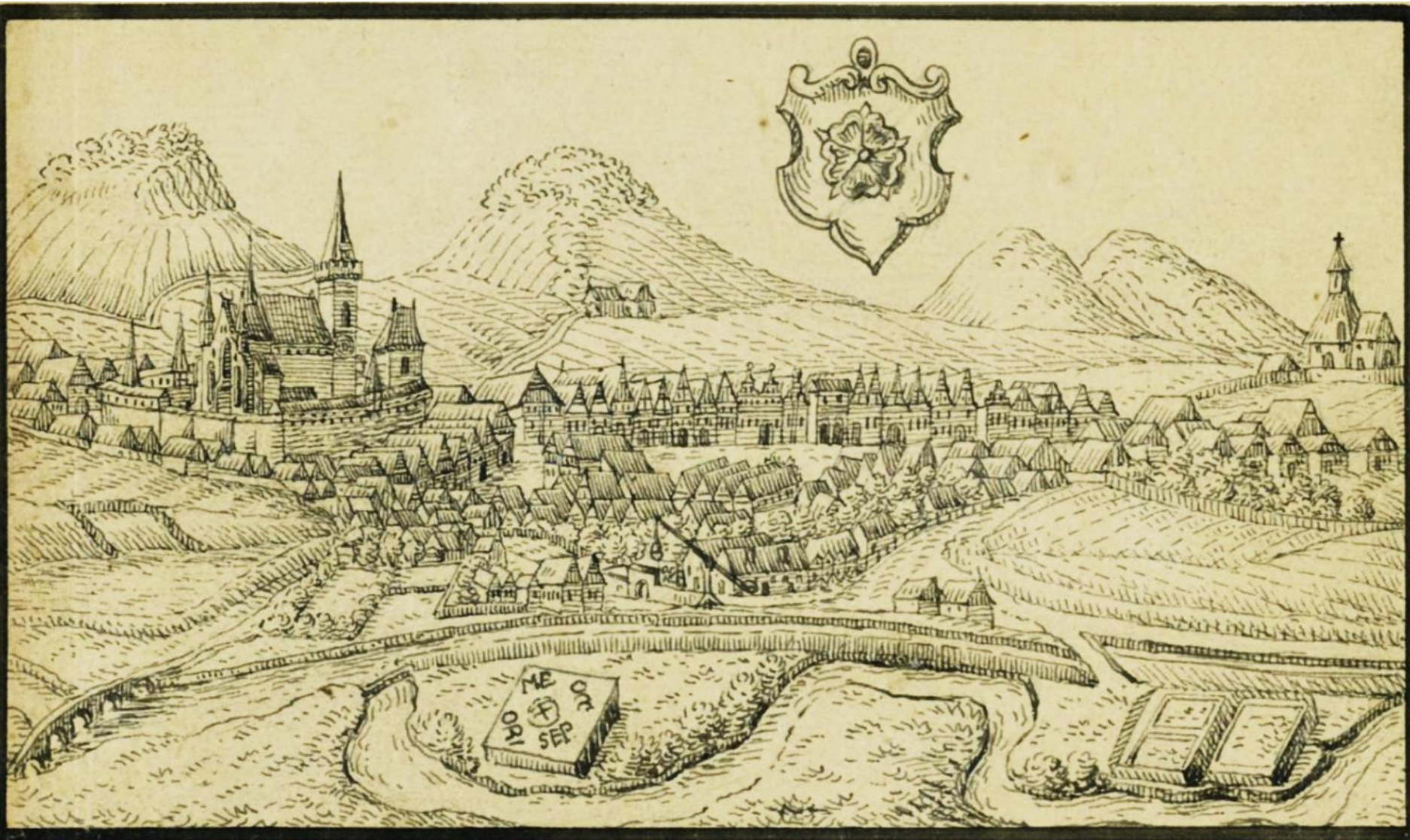
settlements

- 850 - 1150
- 1150 - 1219
- 1219 - 1250
- 1250 - 1250
- 1250 - 1288
- 1288 - 1350
- 1350 - 1850

interpolation



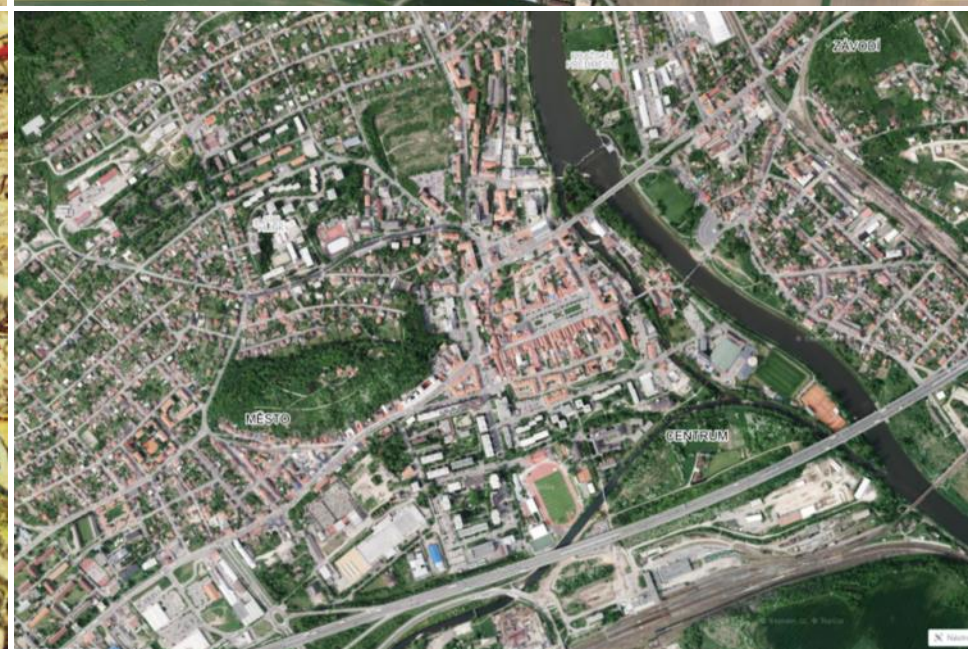
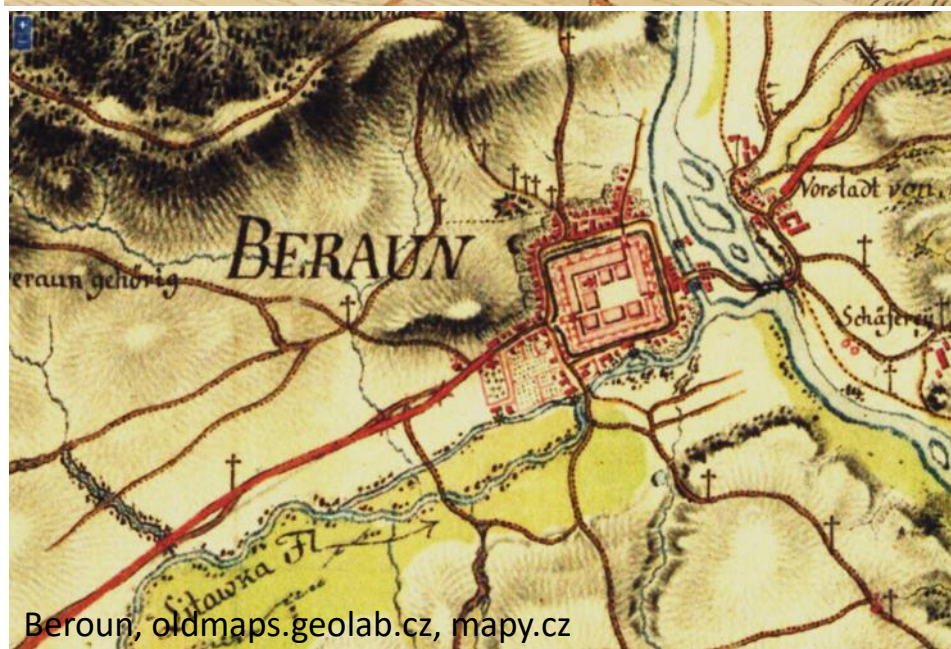
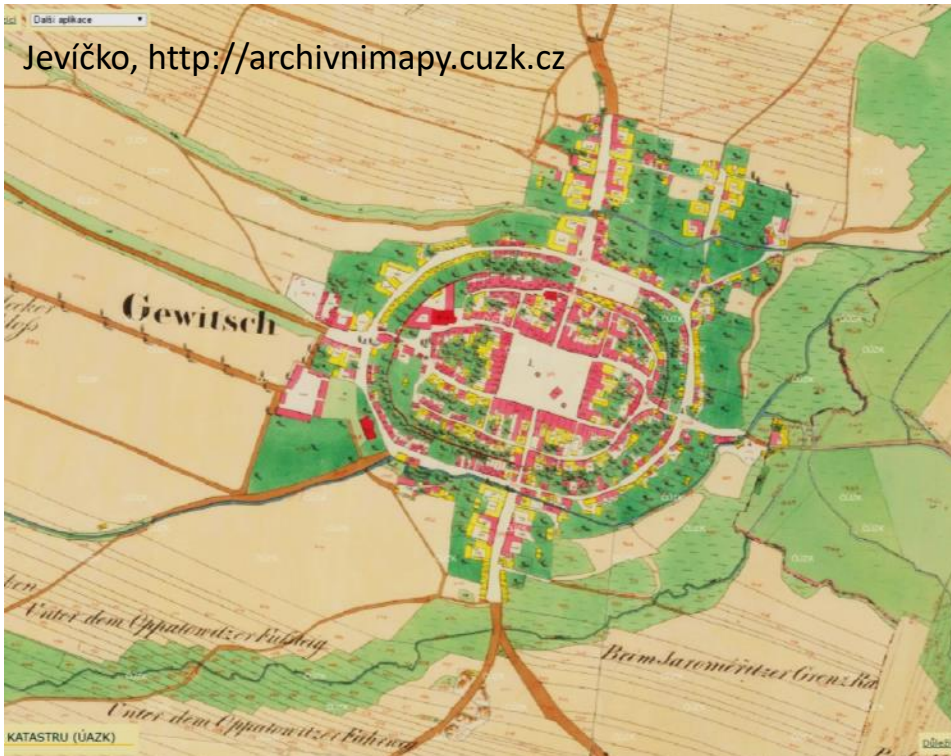
Fanta et al. 2020



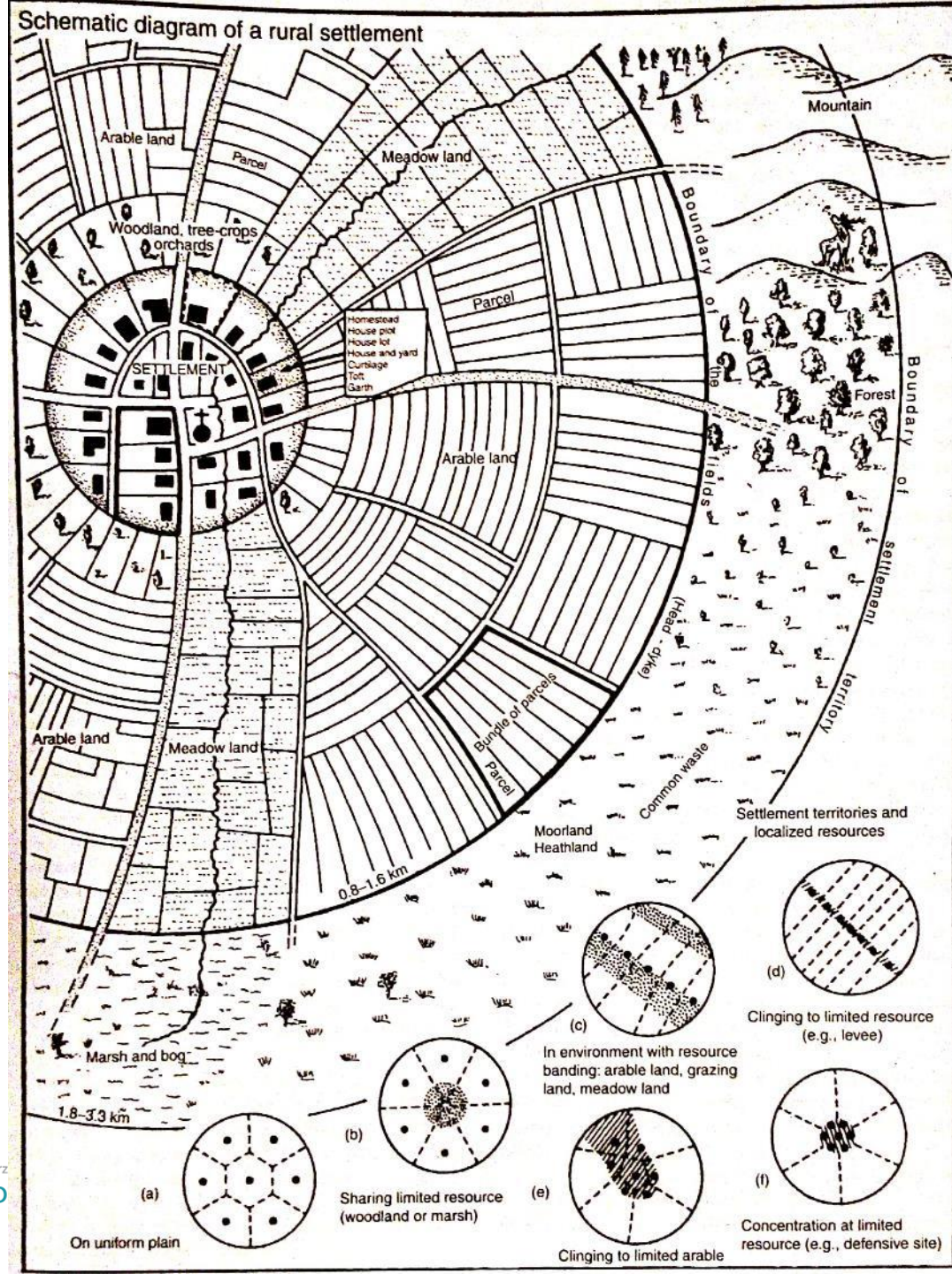
Seufgenommen von Joh. Willenberg. Anno 1600.

Original von C. Ruff. Anno 1820.

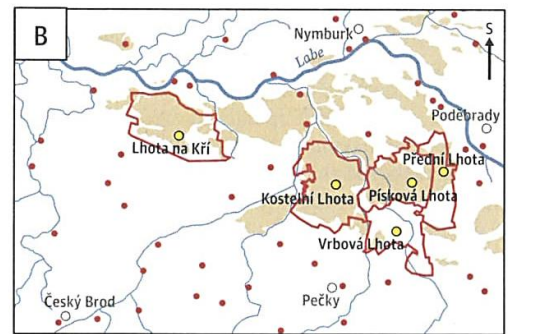
Jan Willenberg, Sedlčany, cca 1600, veduty.bach.cz



Beroun, oldmaps.geolab.cz, mapy.cz

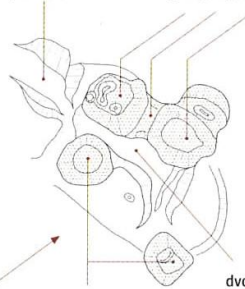


II.21 POZŮSTATKY ZANIKLÉ STŘEDOVĚKÉ VESNICE KŘÍ



mělký úvoz - relikt vjezdu na dvorové prostranství

relikt vícedílného obytného domu (jizba, síň, a komora)

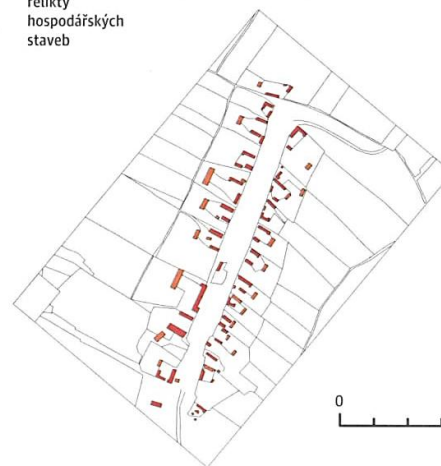


relikty hospodářských staveb



dvorové prostranství

D



E

A Zaniklá středověká vesnice Kří u Sadecké (založena kolem 1355, zanikla poč. 15. stol.). Znázornění antropogenních povrchových tvarů dodnes uchovaných v areálu zaniklé vesnice.

■ vyvýšeniny (pozůstatky obytných domů a hospodářských staveb)

■ sezónně zamokřená plocha

■ trvale zamokřená plocha (vodní nádrže na bývalé návsi a na parcelách zaniklých usedlostí, vodní příkop obklopující tvrz / motte apod.)

B Přírodní podmínky přiléhajícího mikroregionu - rozšíření navátých písků a hydrologické podmínky.

● Lhota

● vesnice doložené před polovinou 14. stol.

— obvod novověkého katastrálního území Lhoty (Pro Kří znázorněn přibližný rozsah předpokládané plužiny)

■ naváté písky

C Stavební relikty jedné ze zaniklých poddanských usedlostí.

D Ideální rekonstrukce stavební podoby této usedlosti (kresba D. Vodáková).

E Půdorys Vrbové Lhoty u Sadecké (podle raabizačního plánu z roku 1778). Tato vesnice vznikla ve stejné době jako později zaniklé Kří. Ve srovnání s ním bylo pro ni zvoleno rozsahově řešení menší, v principu ale totéž půdorysné řešení.

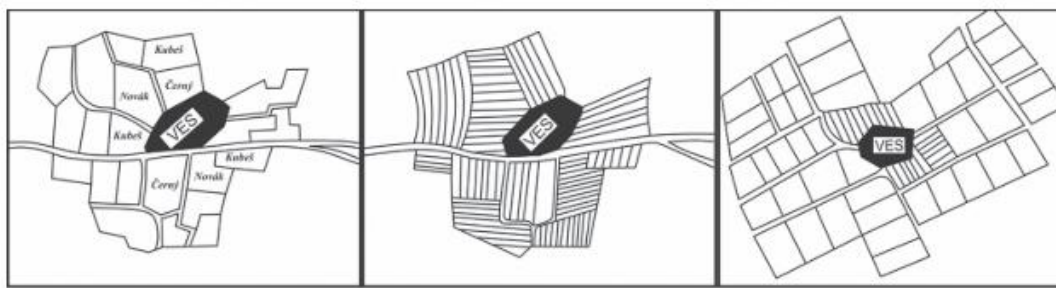
Medieval field pattern





Obr. 1. Letecký pohled na plužinový systém u Nové Vsi (Dolní Moravice, okr. Bruntál). Foto Markéta Hendrychová.

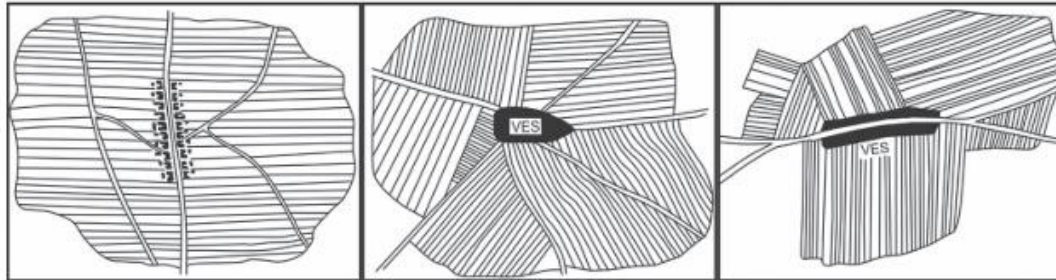
Abb. 1. Flugansicht auf das Flursystem bei Nová Ves (Dolní Moravice, Bezirk Bruntál). Foto Markéta Hendrychová.



1 úseková

2 scelených úseků

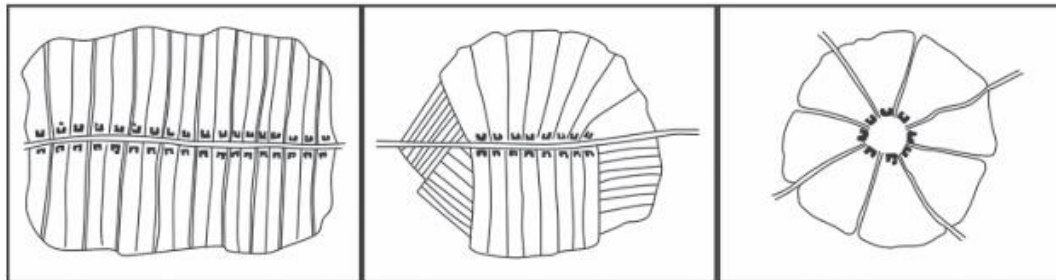
3 dělených úseků



4 délková

5 traťová

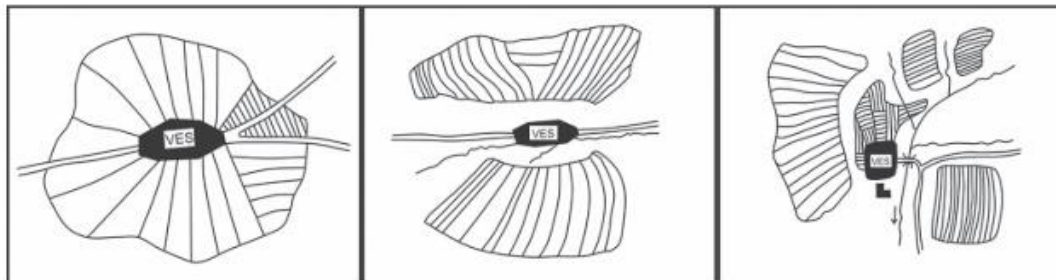
6 nepravá traťová



7 záhumenicová

8 záhumenicová

9 záhumenicová



10 kompaktní

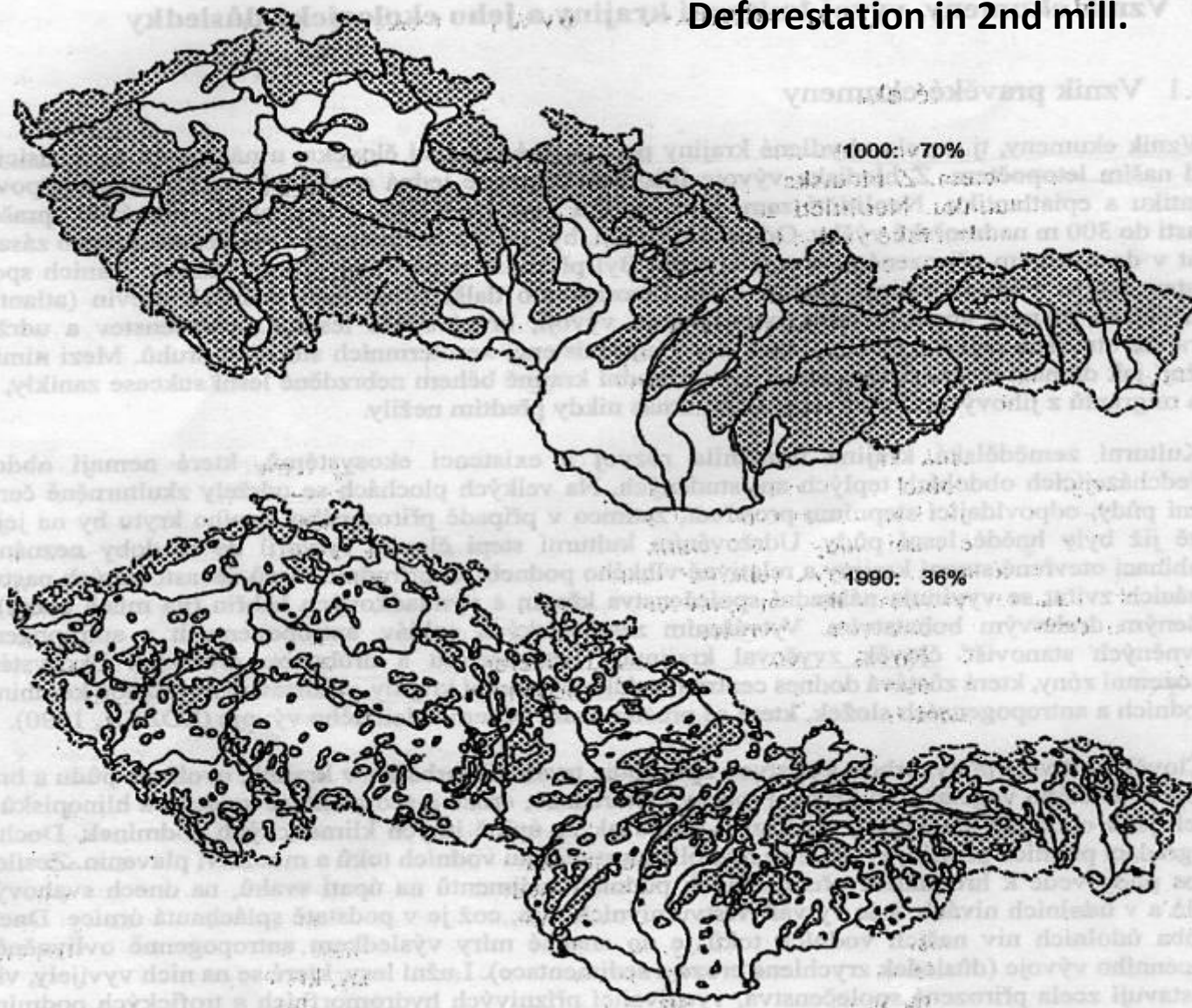
11 nesoudržná

12 nesoudržná

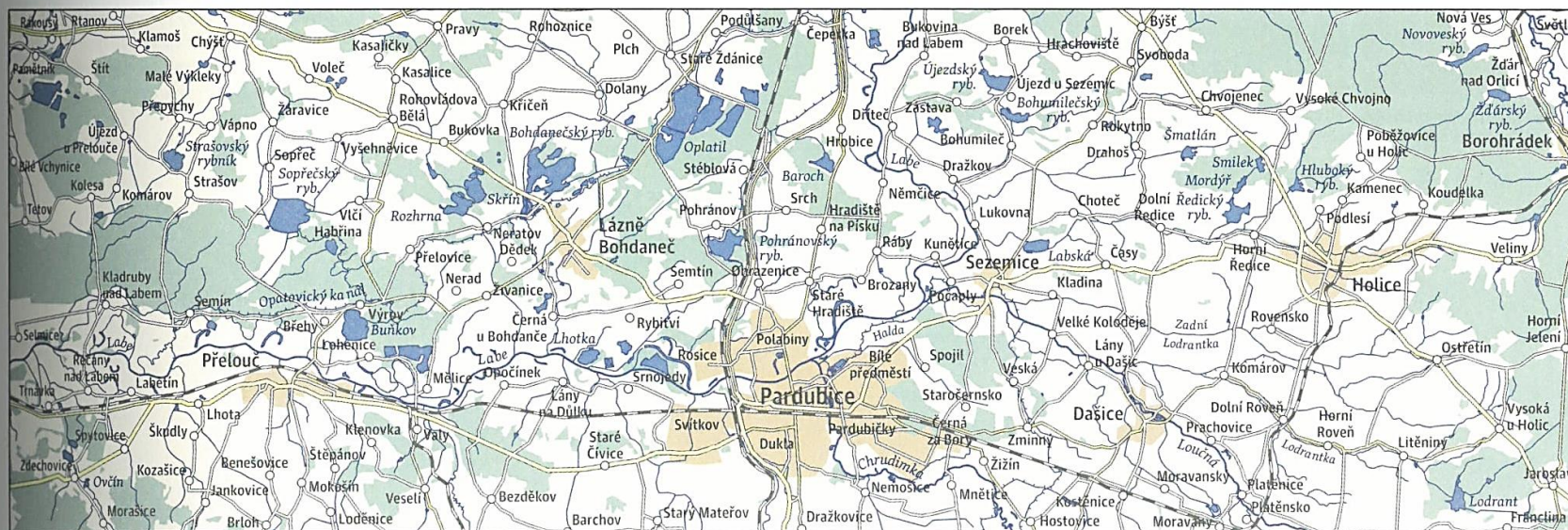
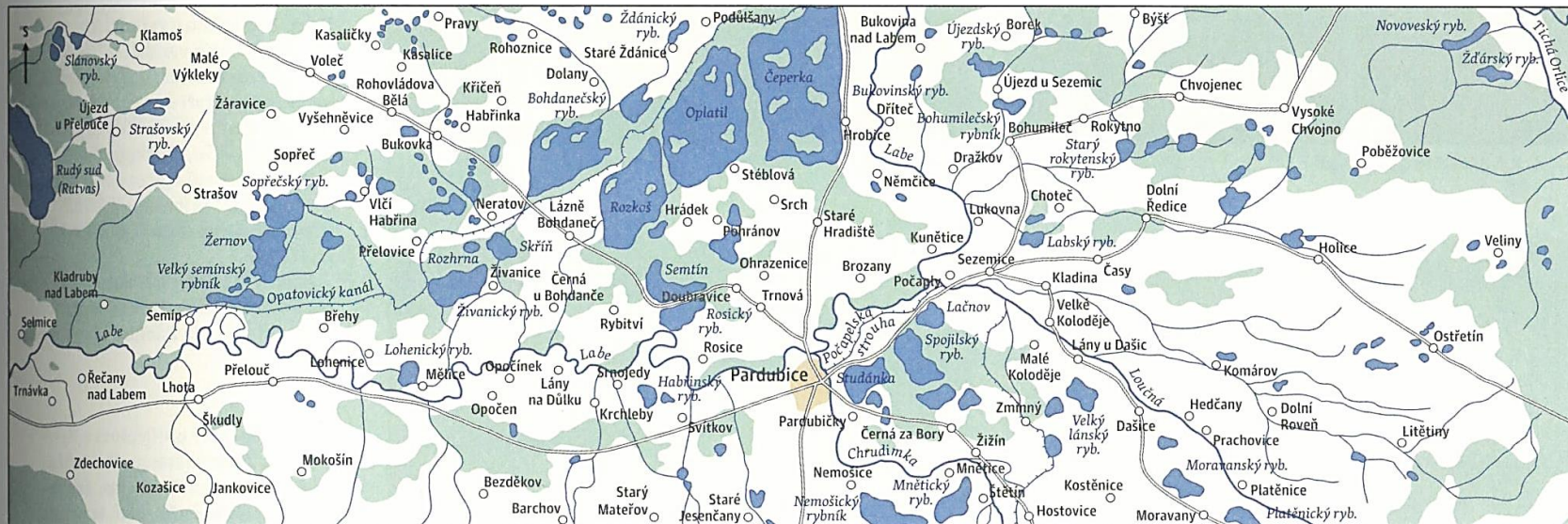
Typology of medieval fields patterns according to Dr. E. Černý

Šitnerová et al. 2020

Deforestation in 2nd mill.



III.7b PARDUBICKÁ RYBNIČNÍ SOUSTAVA V 16. STOLETÍ A POČÁTKEM 21. STOLETÍ



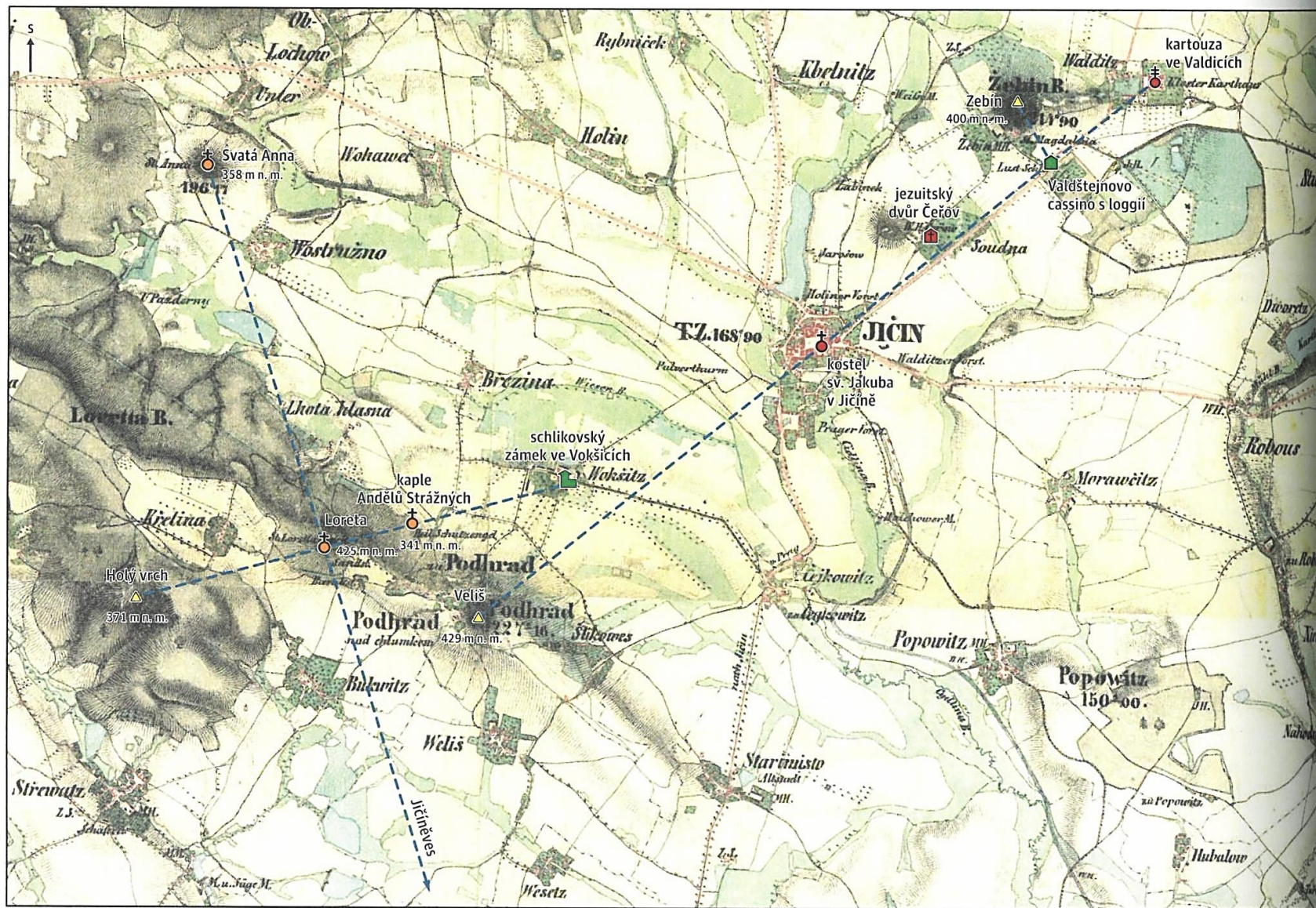
Ponds and their decrease between
16th – 21th cent.

Akademický atlas českých dějin

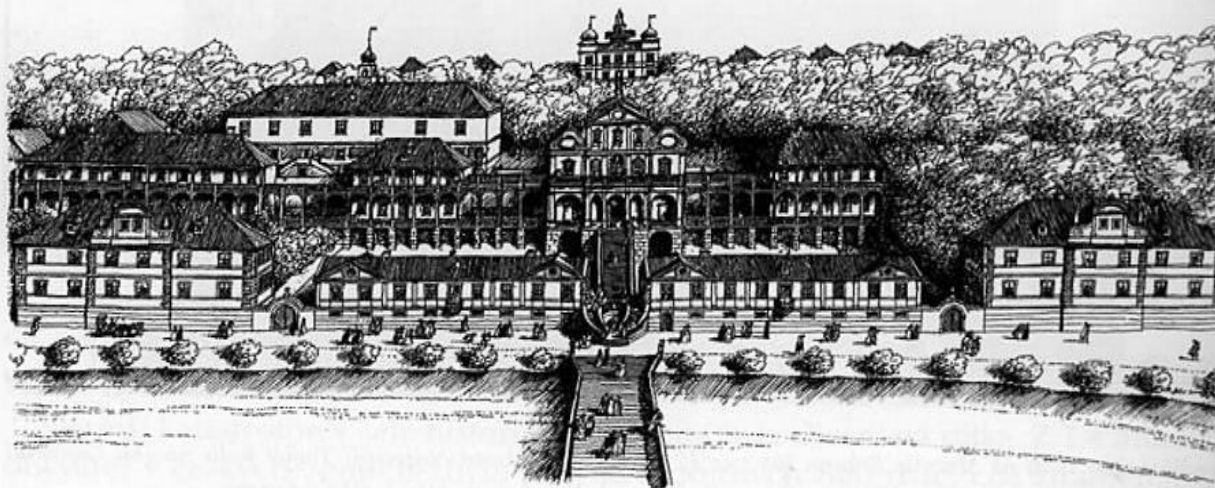
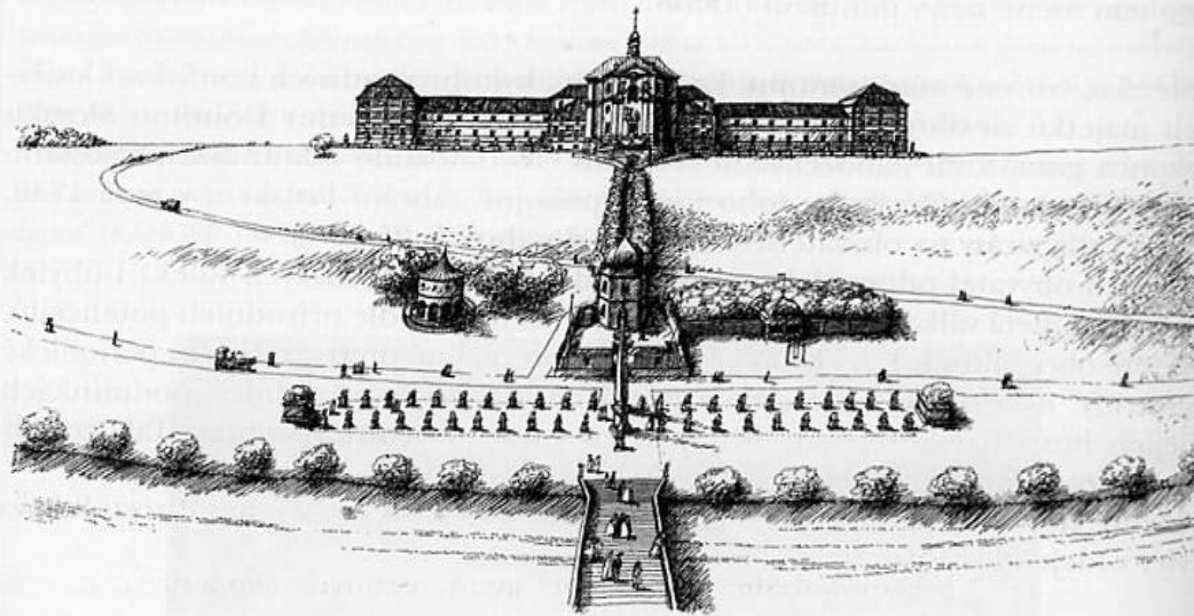
Baroque landscape

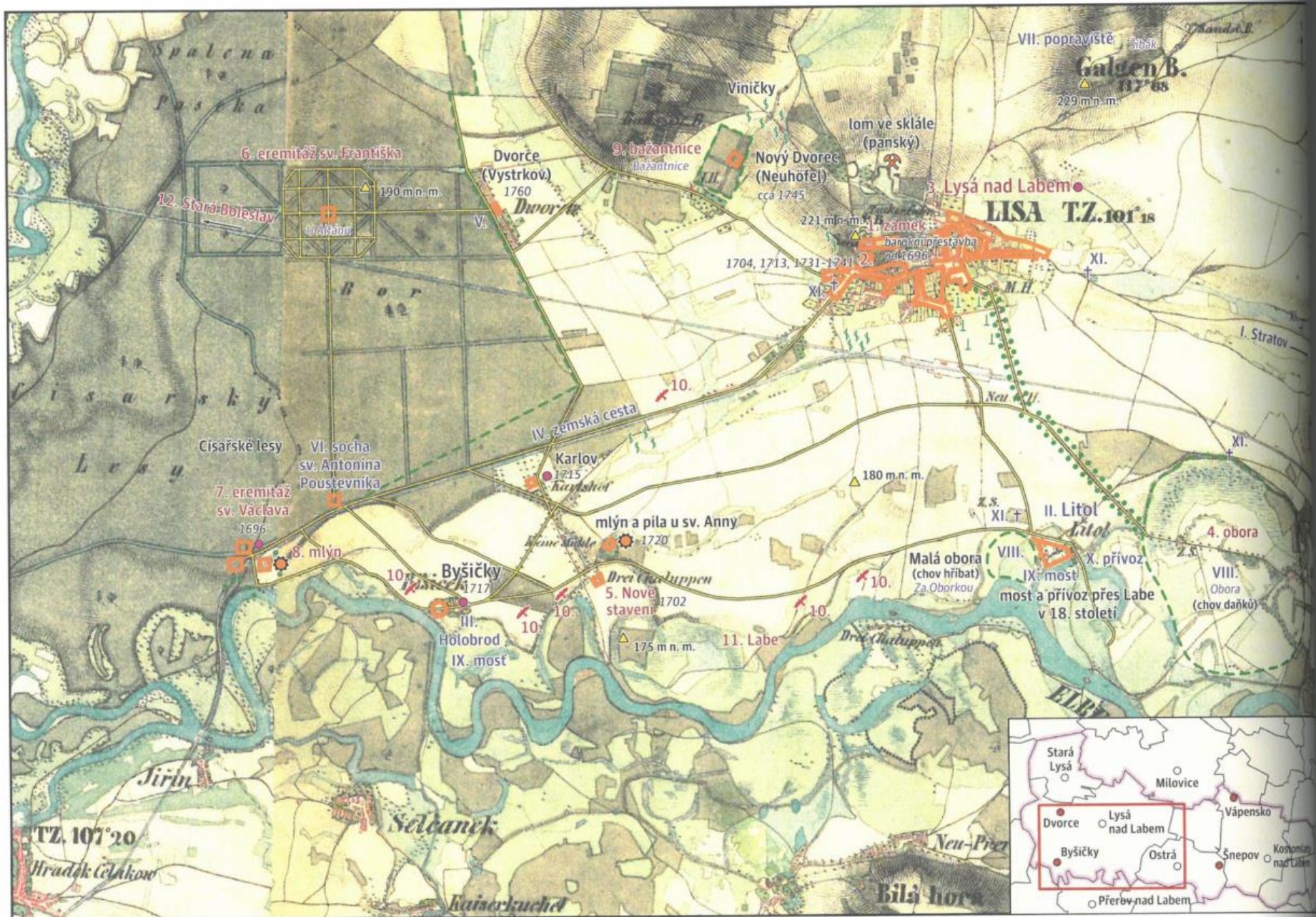
- When: 2nd half of 17th cent. – 18th cent.
- What: „baroque mysticism“ + rational landkeeping
 - New crops – e.g. potatoes
- Causes: recatolization, economic growth, Enlightenment
- Consequences:
 - Myriads of baroque churches, chapels, wayside crosses etc. – composition of whole landscape
 - Colonization of sub-montane areas
 - Land reforms „Raab’s land reform“ – Empress Maria Theresia
 - Foundation of new settlements
 - Agriculture in nobility-farms
 - Progress of manufactories





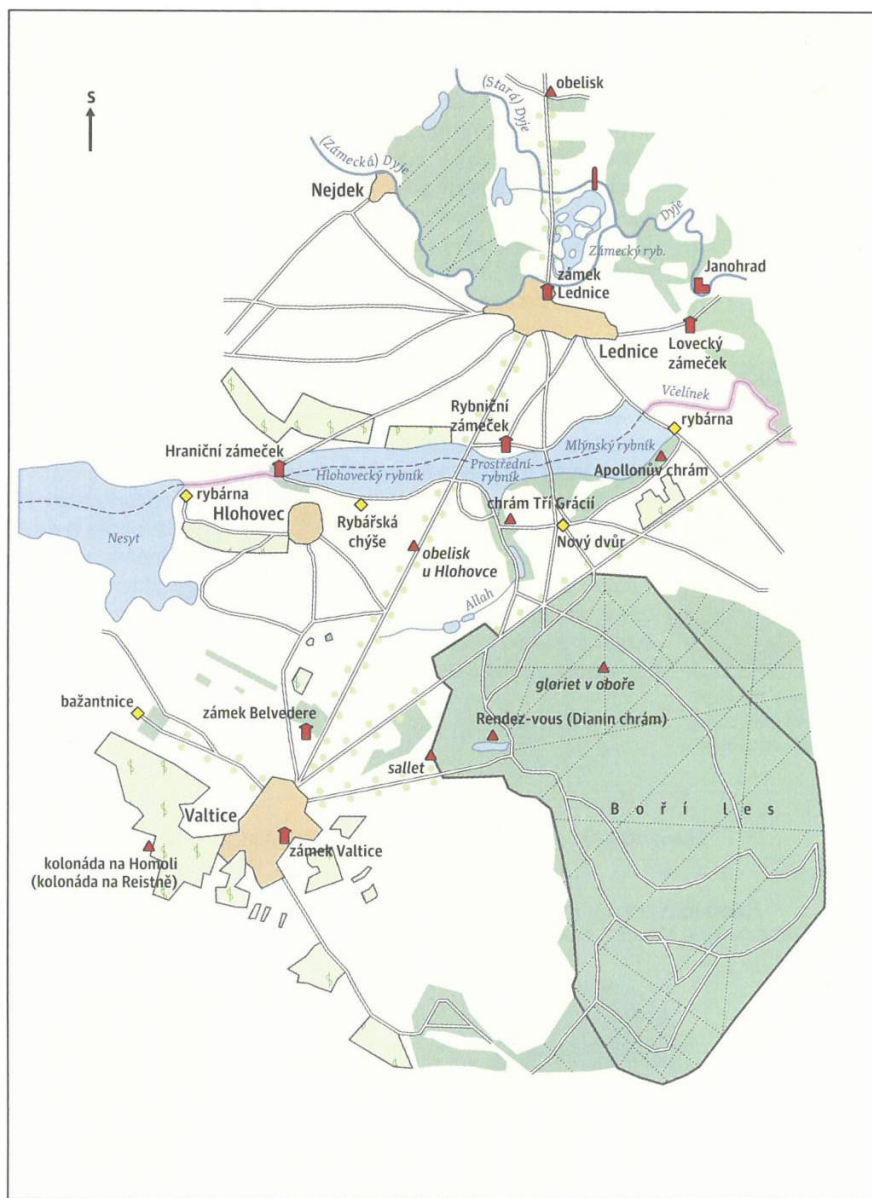
F. A. Špork:
Kuks, cca
1700





IV.80a LEDNICKO-VALTICKÝ AREÁL - STAV UPRAVENÉ KRAJINY V PRVNÍ POLOVINĚ 19. STOLETÍ

Valtice, Moravia



- ◆ hospodářský objekt
- ▲ drobná stavba
- minaret
- alej
- cestní síť
- ⋯ lesní průsek
- vodní tok
- zemská hranice mezi Moravou a Dolními Rakousy
- intravilán obce
- obora
- les, remíz
- vinice
- vodní plocha

Objekty popsané kurzívou v současnosti již neexistují



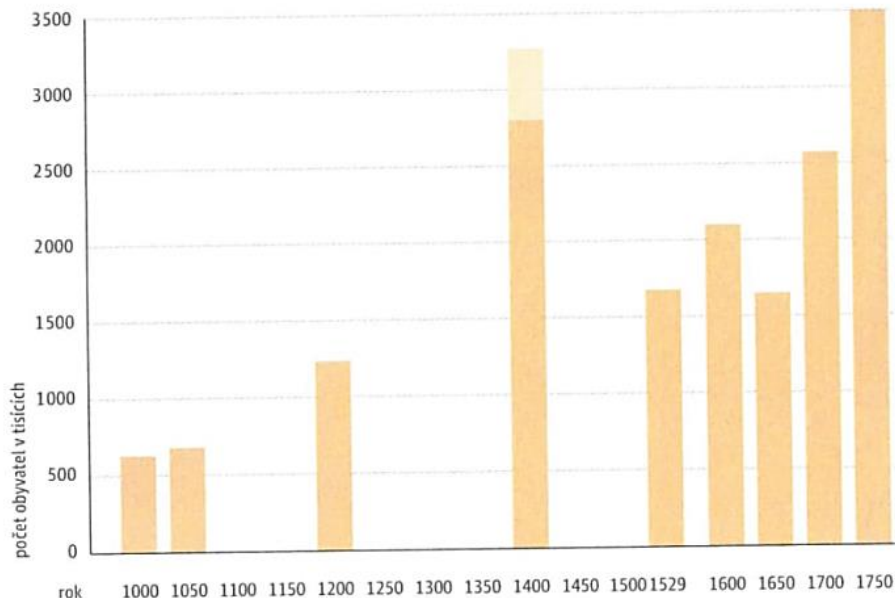
IV.80-1. Krajina v okolí Lednice

Demography – estimates of population in Czech lands till 1750

ODHADY POČTU OBYVATELSTVA ČESKÝCH ZEMÍ PO ROCE 1000

Počet obyvatel v tisících (do roku 1750 odhady)

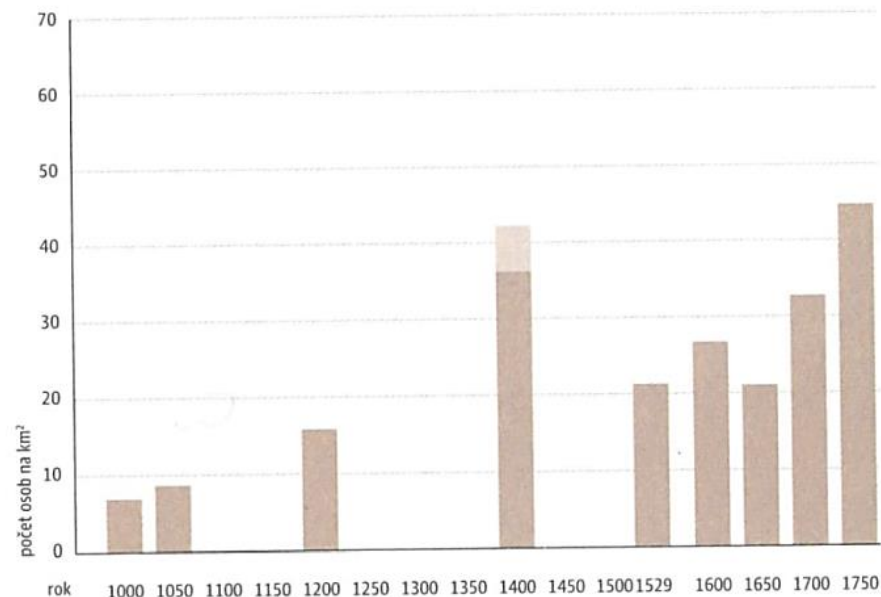
Population in thousands



ODHADY HUSTOTY OSÍDLENÍ ČESKÝCH ZEMÍ PO ROCE 1000

Počet osob na km² (do roku 1750 odhady)

Population density – per/km²



Poznámka: současné vymezení. Pramen: Boháč, Z.: Postup osídlení a demografický vývoj českých zemí do 15. století. *Historická demografie* 12, 1987, s. 59–87; *Dějiny obyvatelstva českých zemí*. Praha 1995.

Akademický atlas českých dějin

The century of steam is comming



James Eckford Lauder: *James Watt and the Steam Engine: the Dawn of the Nineteenth Century, 1855*

Industrial revolution

- When: 19th cent., 2nd half
- What: dramatic progress in science and technology
- Causes: steam engine, Enlightenment
- Consequences:
 - New crops
 - New agricultural methods and technologies
 - Fertilizers
 - Railway
 - Industrial companies
 - Intensive mining
 - Intensive housing development



First Military Survey, 1780s



Second Military Survey, 1840s

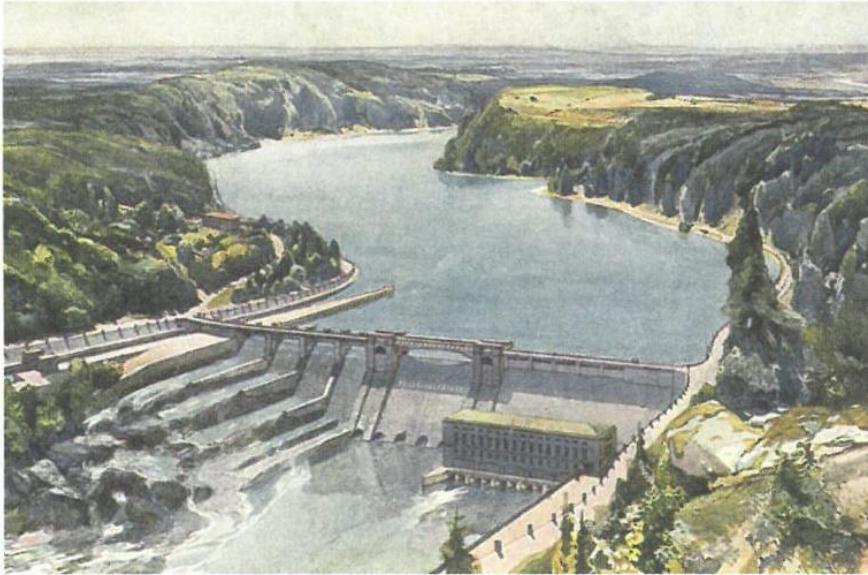


Third Military Survey, 1870s

Railways, end of 19th cent.

IV.62c LOKÁLNÍ ŽELEZNICE NA KONCI 19. A NA POČÁTKU 20. STOLETÍ

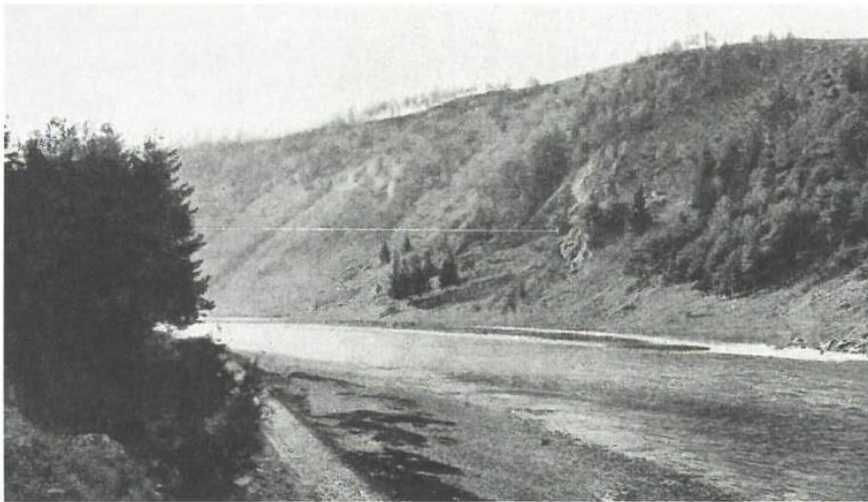




V.23 - 4. Návrh vltavské přehrady u Slap nad Svatojánskými proudy, 1926



V.23-7. Lužnice u Veselí nad Lužnicí před regulací, dvacátá léta 20. století



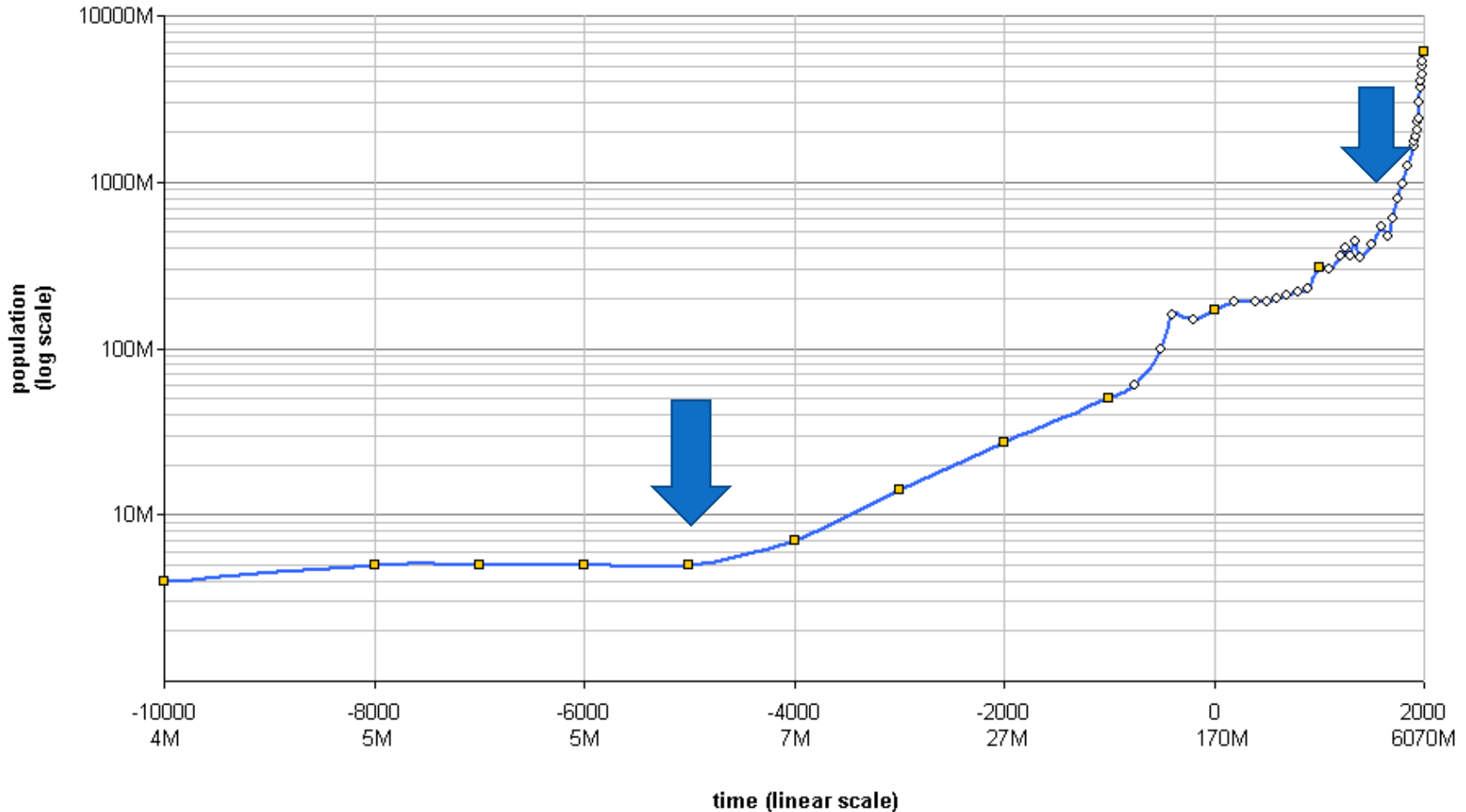
V.23 - 5. Výška hladiny vody u projektované Slapské přehrady, 1926



V.23 - 8. Lužnice u Veselí nad Lužnicí, regulovaná firmou Lanna, 1933



Demographical growth

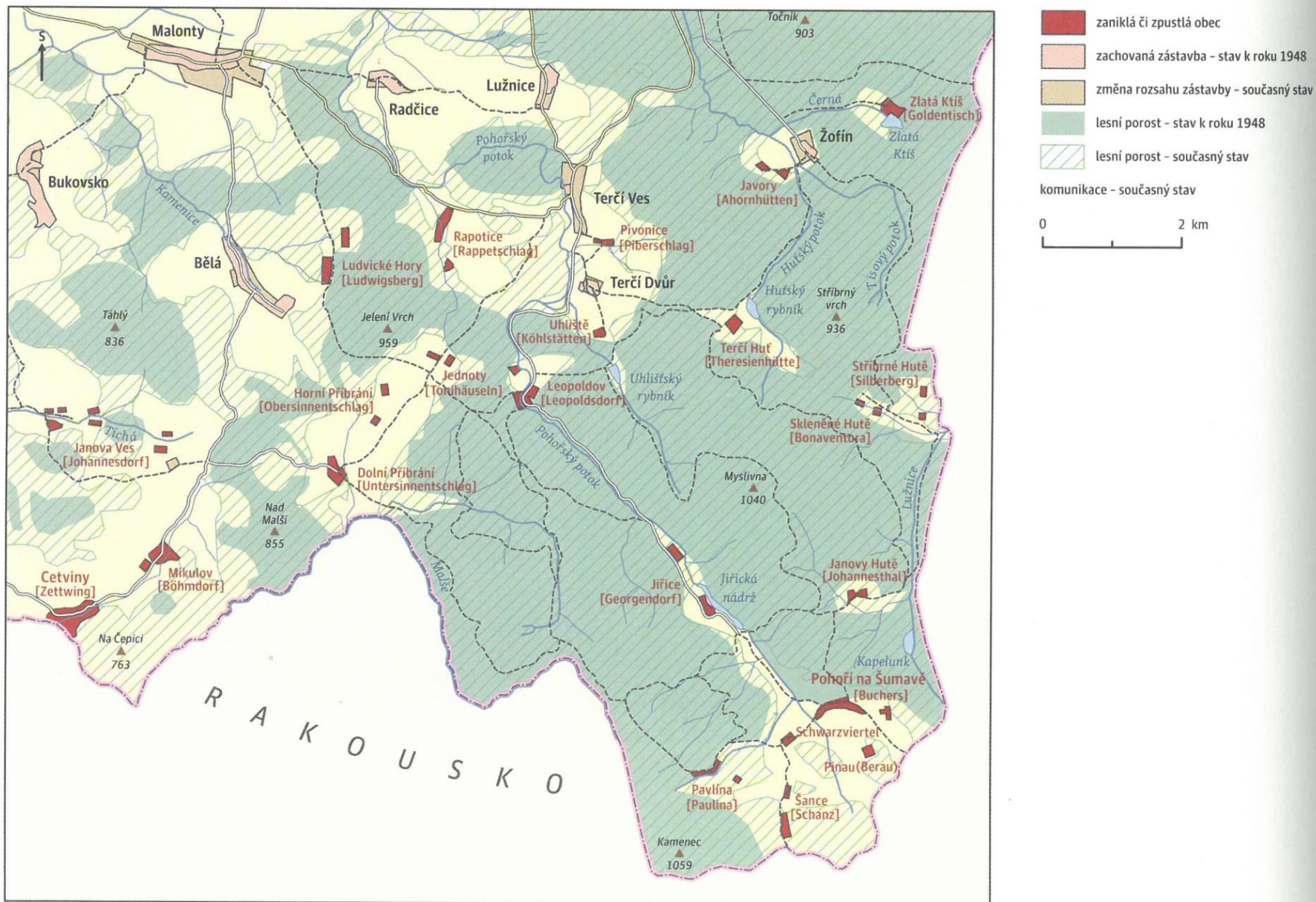


Socialism

- When: 1948 – 1989
- What: total change of social régime and economy
- Causes: communistic coup d'état in 1948
- Consequences:
 - Collectivization of agriculture
 - Break-up of centuries-old ownership structures
 - Change of human-landscape relation
 - Panel building housing estates
 - Heavy industry
 - Borderland zone, displacement of people, termination of villages

Collectivization of agriculture



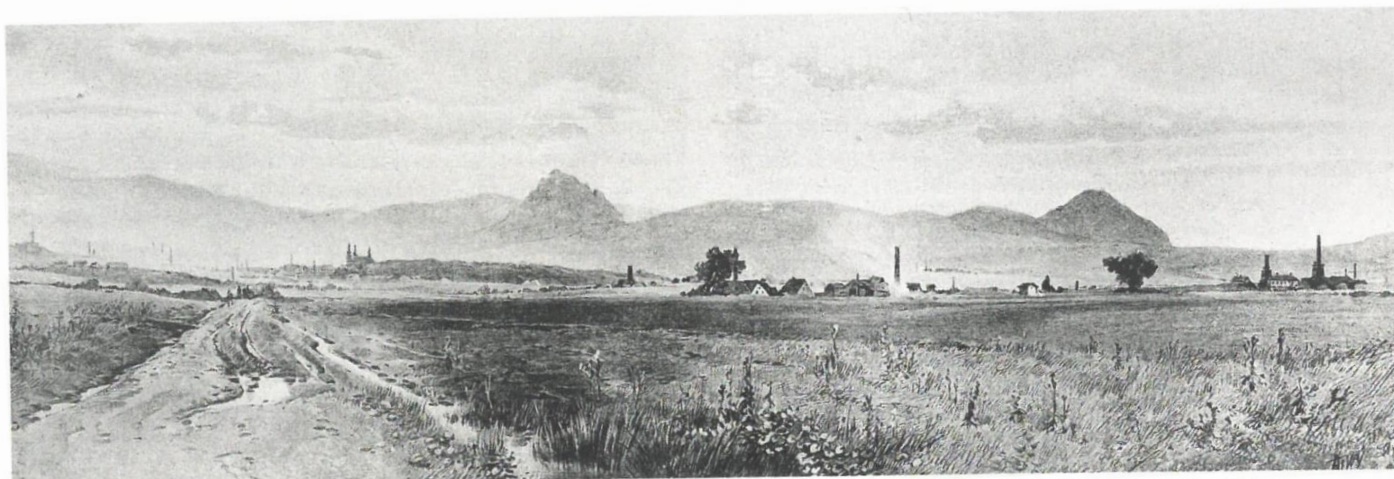




V.24 - 4. Pohoří na Šumavě kolem roku 1900



V.24 - 5. Prostor obce Pohoří na Šumavě počátkem 21. století



V.24 - 6. Pohled na Duchcov s okolím kolem roku 1900

Heavy industry



V.24 - 8. Elektrárna Počerady, letecký snímek 2008



V.24 - 10. Zemědělský areál se sily v Lenešicích u Loun, letecký snímek 2008

Panel building housing estates



Wikipedia

Present era...

- When: since 1989
- What: opening of economy, capitalism, new legislature
- Causes: fall of communist regime, return to market economy
- Consequences:
 - ???

Urban sprawl

„Urban sprawl, also called sprawl or suburban sprawl, the **rapid expansion** of the **geographic extent** of cities and towns, often characterized by:

- **low-density residential housing,**
- **single-use zoning,**
- **and increased reliance on the private automobile for transportation.“**

Residential X commercial urban sprawl

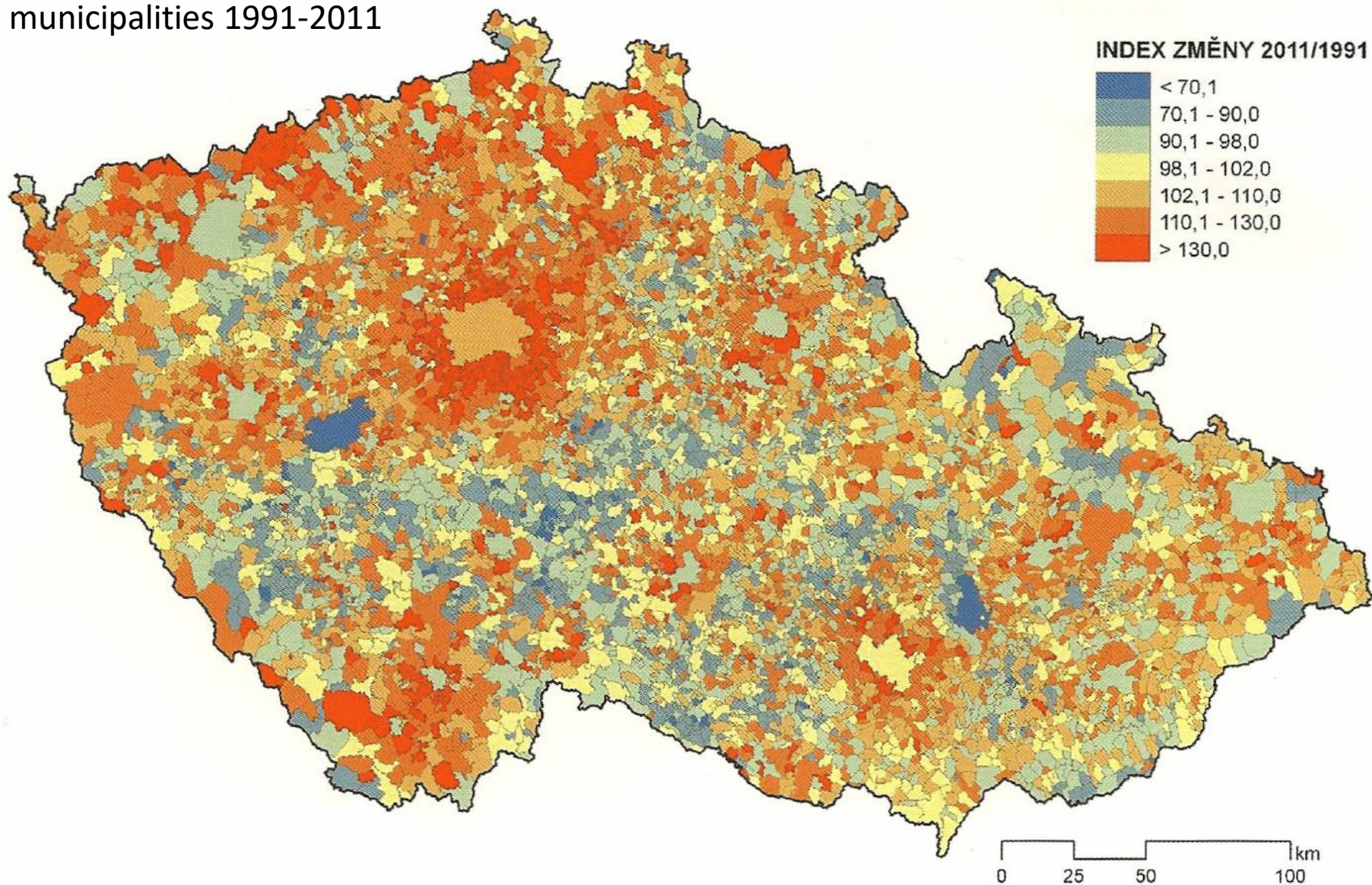


foto: Martin Ouředníček,
http://suburbanizace.cz/01-teorie_suburbanizace.htm

Consequences

- What are the consequences of urban sprawl?

Population change in municipalities 1991-2011



Obr. 4: Vývoj počtu obyvatel v obcích Česka 1991–2011

Economic growth X environmental and heritage protection



Jezeří Castle vs.
Surface mining

Motorway Praha – Dresden vs. Protected landscape area



Brownfields



New wilderness

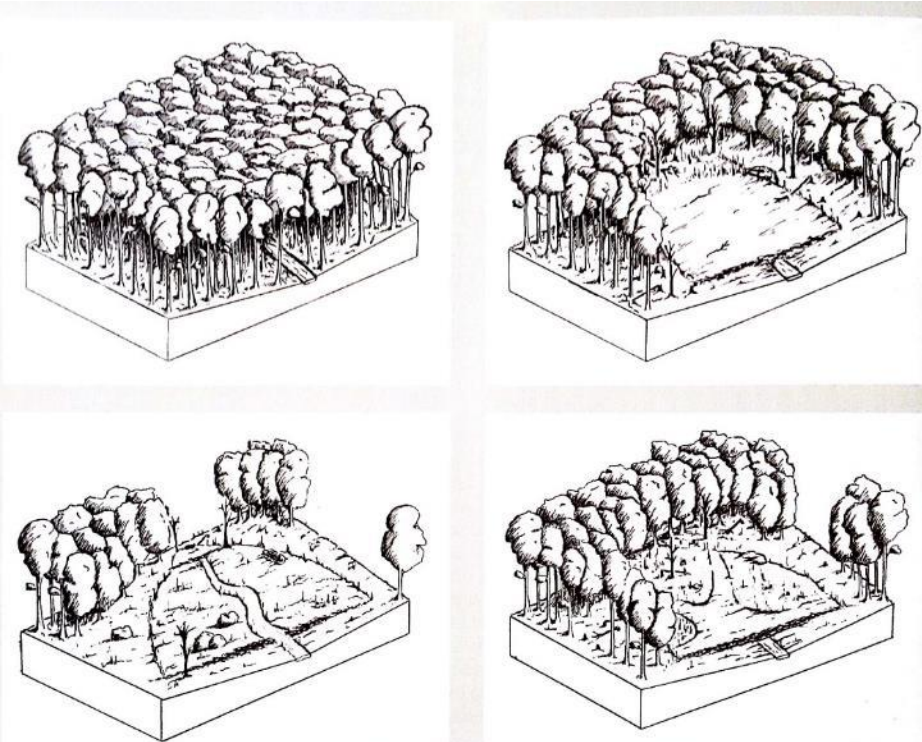


Abb. 15 Entstehung einer „Biberwiese“ in einer Bachaue.¹²³⁰ Links oben: Ausgangssituation; rechts oben: die Anhebung des Wasserspiegels durch den Biberdamm verursacht das Absterben von Bäumen und führt zur Bildung eines Sees; links unten: Verlandung des Sees, am Rande „Fällplätze“ des Bibers; rechts unten: Zustand, nachdem der Biber das Revier aufgrund einer Erschöpfung der Bau-nahen Winternahrungsvorräte verlassen hat (Zeichnung Kathrin Sagmeister).



Abb. 155 Eichhalde im Großen Lautertal bei Buttenhausen (Schwäbische Alb, Baden-Württemberg) im Jahr 1936 (oben) und 1997 (unten). Deutlich sind die Auswirkungen von Nutzung bzw. Nutzungsaufgabe zu erkennen. Mit Aufgabe der Beweidung ist die ehemals offene Schafweide verbuscht und mit Gehölzen bestockt (Foto 1936 Bothner, Landesmedienzentrum Baden-Württemberg; Foto 1997 Rainer Ressel).

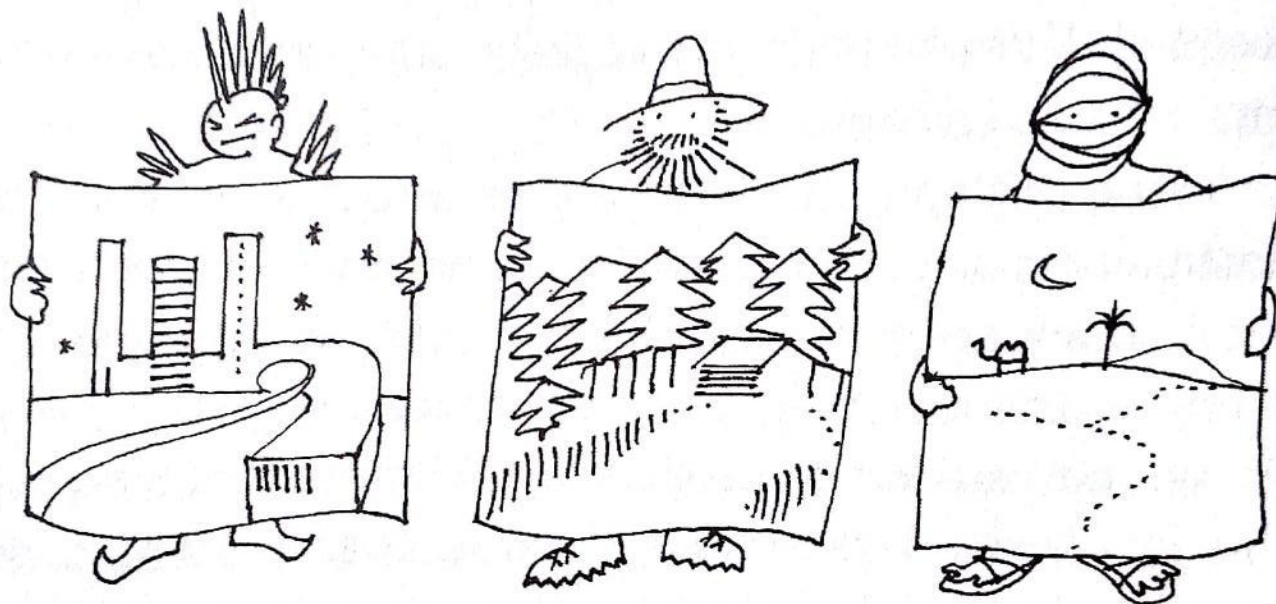
Poschold 2015

Today's problems and challenges

- Urban sprawl
- Economic growth X environmental and heritage protection
- New use for old places
- Conflict of interests
- Water in landscape
- Sustainable development
- Participation
- Alternative transport



mapy.cz



UNIVERZÁLNÍ ? KRÁSNA KRAJINA

*illustration Milan Valeš
Maier et al. 2012*

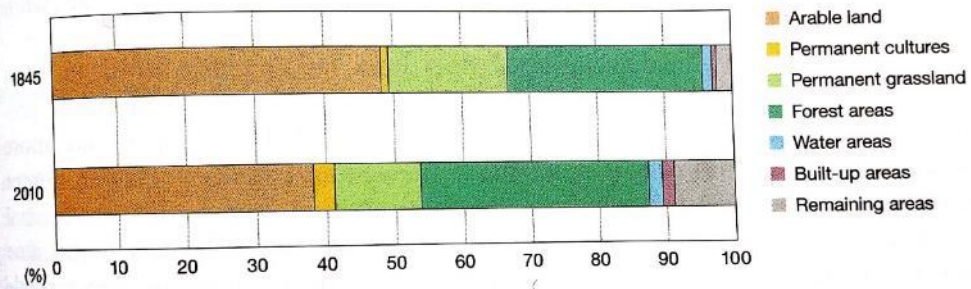


Fig. 6.38 Land use structure in Czechia between 1845 and 2010 (%). Source LUCC Czechia Database

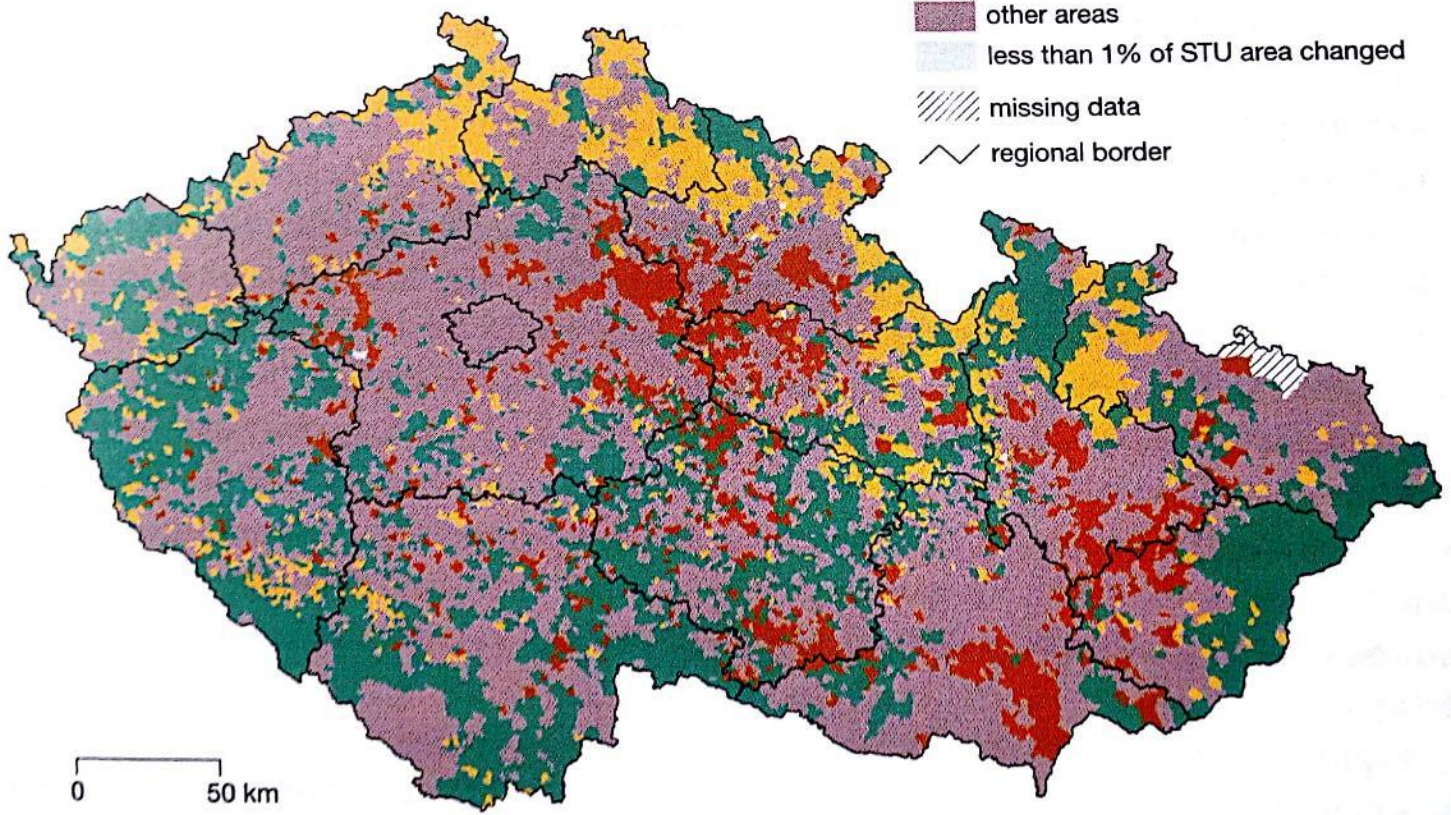


Fig. 8.3 Changes of land use structure between 1845 and 2010. Source LUCC Czechia Database

Lan cover 1839 Honbice (244 ha)



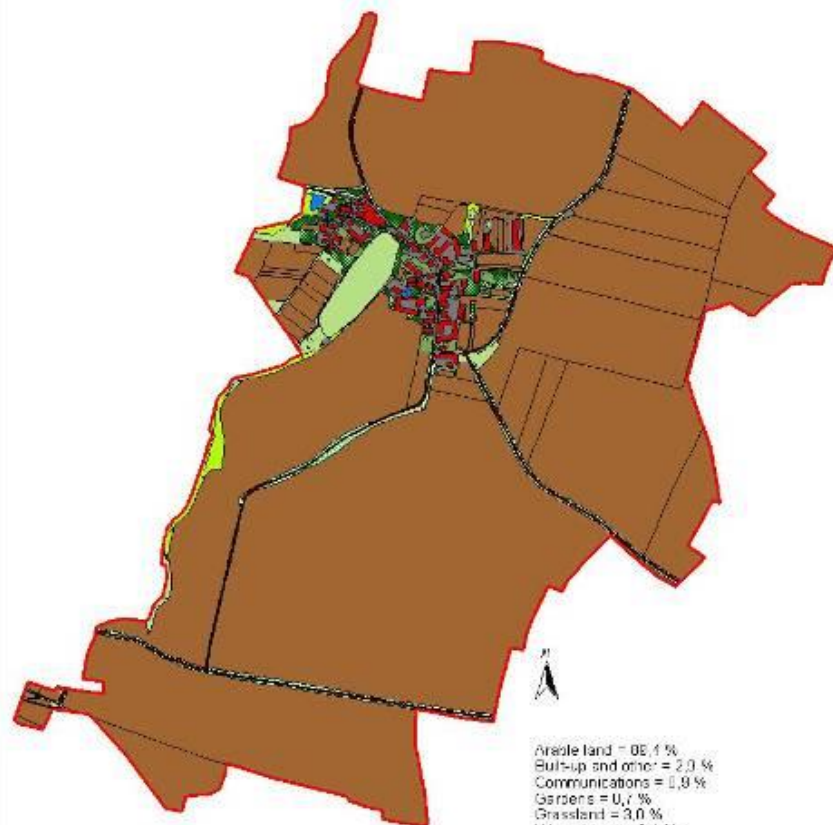
Arable land = 69 %
 Built-up and other = 1,6 %
 Communications = 2,2 %
 Grassland = 4,7 %
 Non-forest veg. village = 2,0 %

Legend

- Case study site
- Built-up areas
- Other areas
- Communications
- Arable land
- Non-forest veg. village
- Grassland

300 0 300 Meters

Land cover 2006 (Honbice, 244 ha)



Arable land = 66,1 %
 Built-up and other = 2,0 %
 Communications = 0,9 %
 Gardens = 0,7 %
 Grassland = 3,0 %
 Water areas = 0,1 %
 Non-forest veg. = 3,0 %

Legend

- Case study site
- Built-up areas
- Other areas
- Communications
- Arable land
- Gardens
- Scattered veg. landscape
- Non-forest veg. village
- Scattered veg. communications
- Grassland
- Water areas

300 0 300 600 Meters

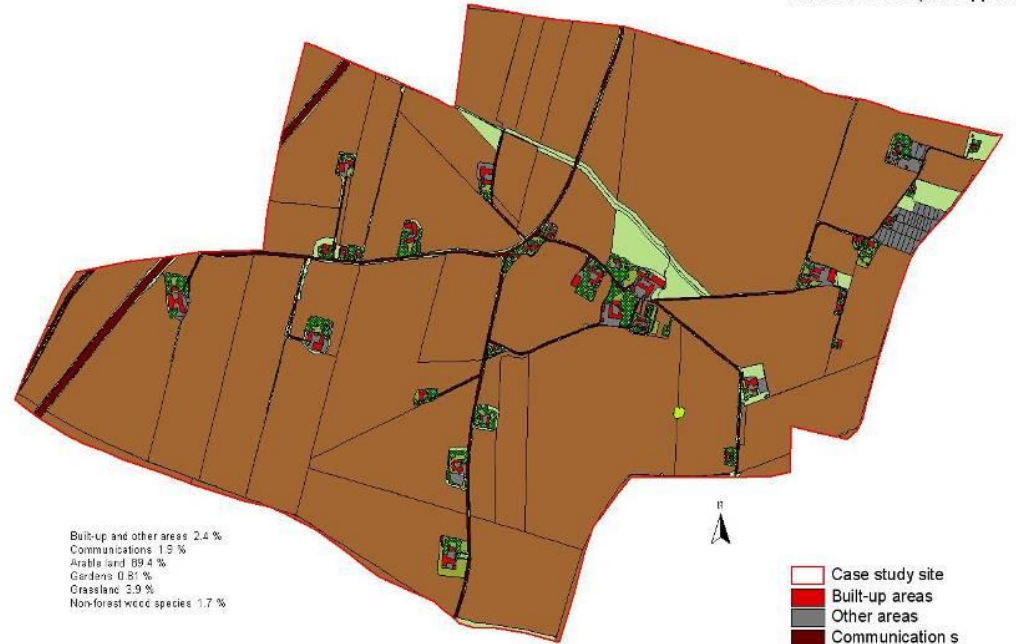
Land cover 1703 (Lilla Uppakra, 321 ha)



Built-up and other areas = 0.63 %
 Communications = 1.53 %
 Arable land = 69.9 %
 Grassland = 27.5 %
 Gardens = 0.4 %

200

Land cover 2006 (Lilla Uppakra, 321 ha)



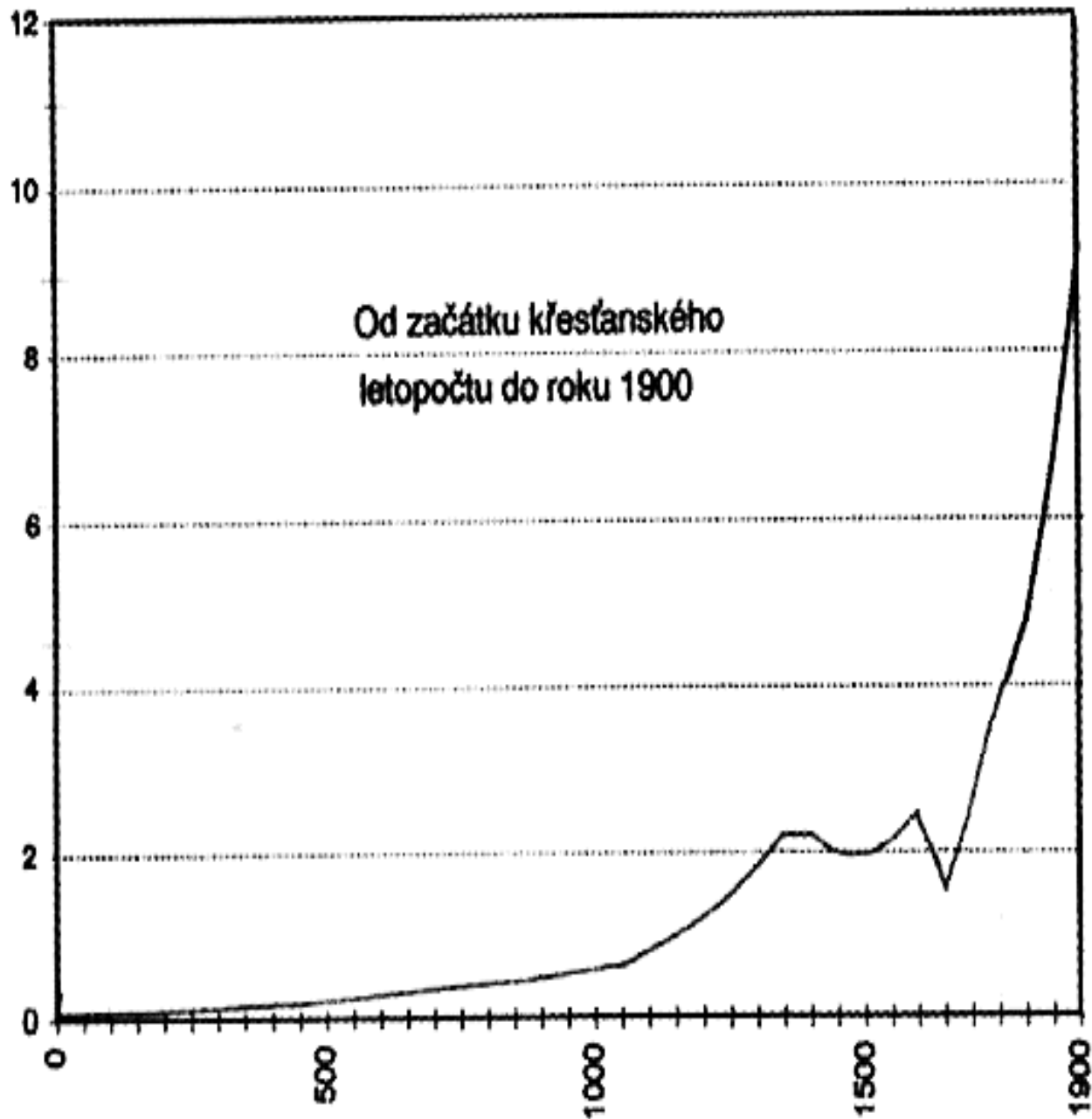
Built-up and other areas 2.4 %
 Communications 1.9 %
 Arable land 69.4 %
 Gardens 0.81 %
 Grassland 2.9 %
 Non-forest wood species 1.7 %



200 0 200 400 Meters

- Case study site
- Built-up areas
- Other areas
- Communication s
- Arable land
- Gardens
- Non-forest wood veg.village
- Scattered wood veg. landscape
- Scattered wood veg communications
- Grassland
- Water areas

mil. osob demography



2. Landscape ecology and landscape changes

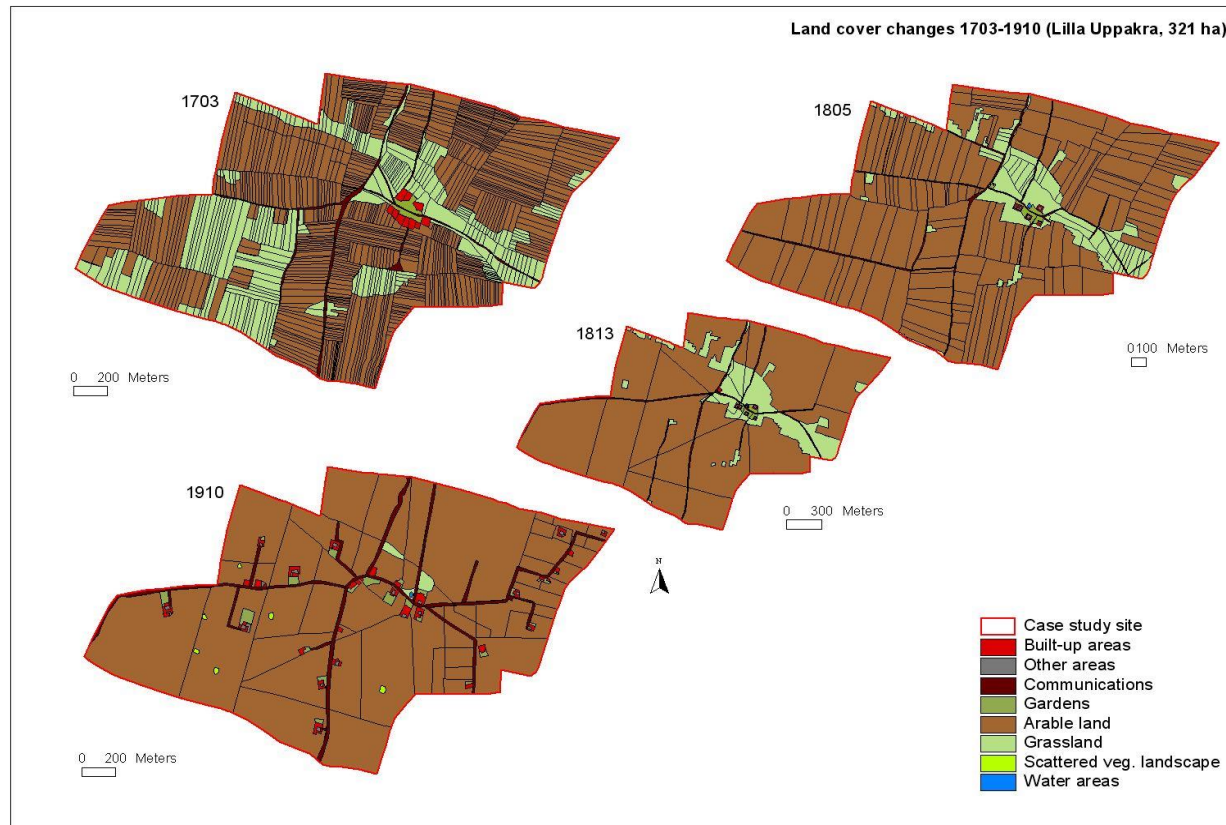
Presentation by Jan Skaloš

Topics of landscape ecology

- Landscape structure
- Landscape functionality
- Landscape dynamics

Landscape structure

- Landscape matrix, spatial arrangement of landscape segments



Question:
Causes and consequences of the observed changes?

Landscape dynamics



Why do landscape change?

- It makes sense to consider the changes in an individual landscape as a **response** of many natural elements (habitats) to the effect of natural and anthropogenic **factors**.
- We might call this „the law of action-reaction.“

Factors affecting landscape change

- ???

Factors affecting landscape change

- **Local and regional**
- **Proximate causes** (more direct), and **driving forces** (more abstract and acting indirectly)
(Geist, Lambin, 2002)
- **Driving forces** – political, economic, cultural, technological, natural/spatial
(Bürgi et al., 2004; Schneeberger et al., 2007)
- Factors as variables in the statistics – **explanatory** (natural, cultural, landscape), versus **response** variables (changes in hectares etc)

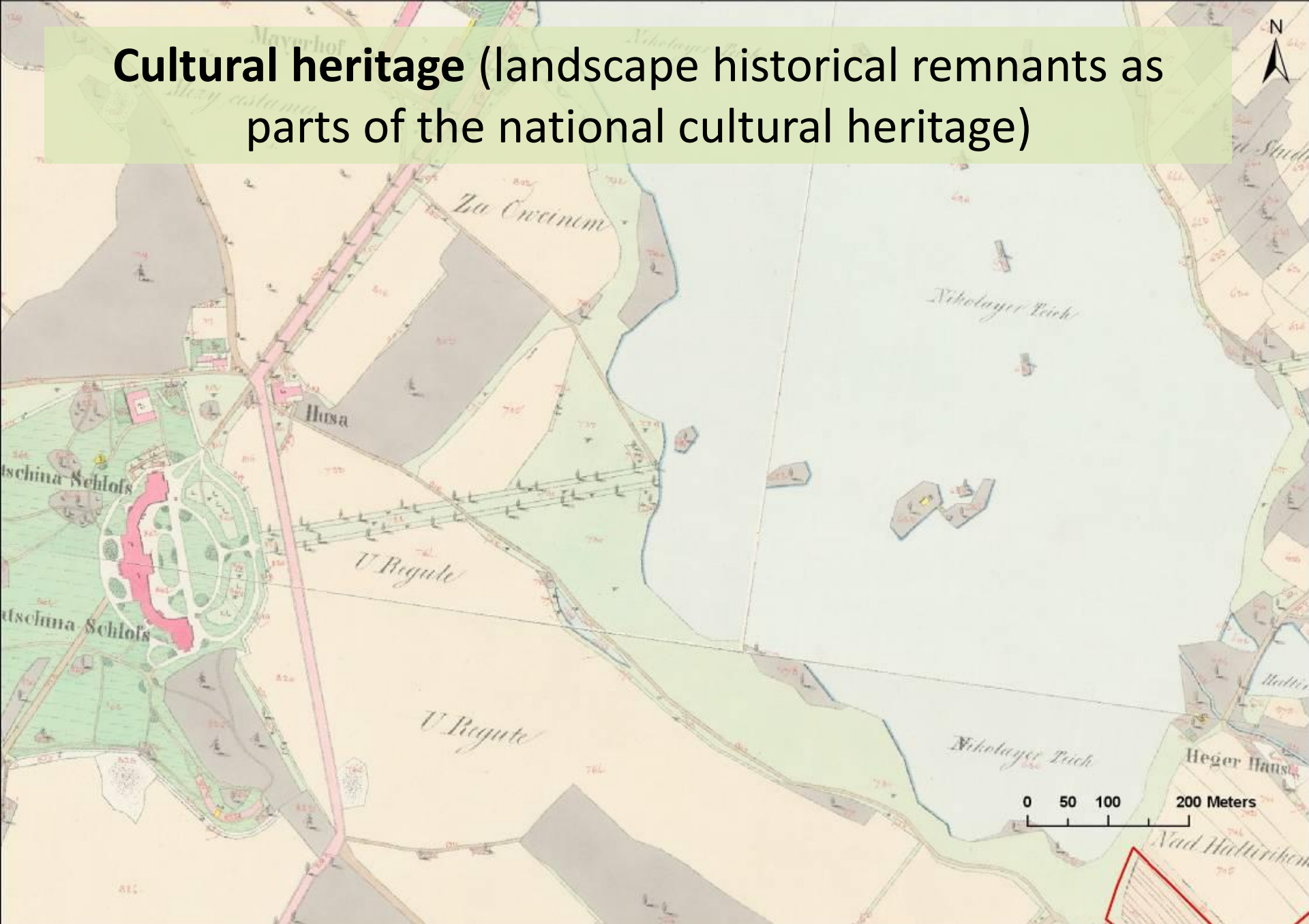
What we can do and what we cannot?

- We are good at describing structures
- But we are not as good at analyzing causes, driving forces behind the landscape change
- **And we are very weak at analyzing changes in landscape functioning.**

Reasons for studying landscape history

- **Educational** (landscape history as a part of the general national history)
- **Cultural heritage** (landscape historical remnants form a part of the cultural heritage)
- **Scientific** (becoming familiar with the historical landscape dynamics)
- **Practical** (avoiding negatives, repeating positive actions, habitat restoration, help in monitoring biotopes)
- **Legislative** (European Landscape Convention)

Cultural heritage (landscape historical remnants as parts of the national cultural heritage)







European Landscape Convention

- Florence, 2000
- Active participation of landscape users
- All landscapes are valuable
- Article 6 – Specific measures
 - C. Identification and assessment**
 1. With the active participation of the interested parties, as stipulated in Article 5.c, and with a view to improving knowledge of its landscapes, each Party undertakes:
 - a)
 - i) to identify its own landscapes throughout its territory;
 - ii) to analyse their characteristics and the forces and pressures transforming them;
 - iii) **to take note of changes;**

What is the landscape change?

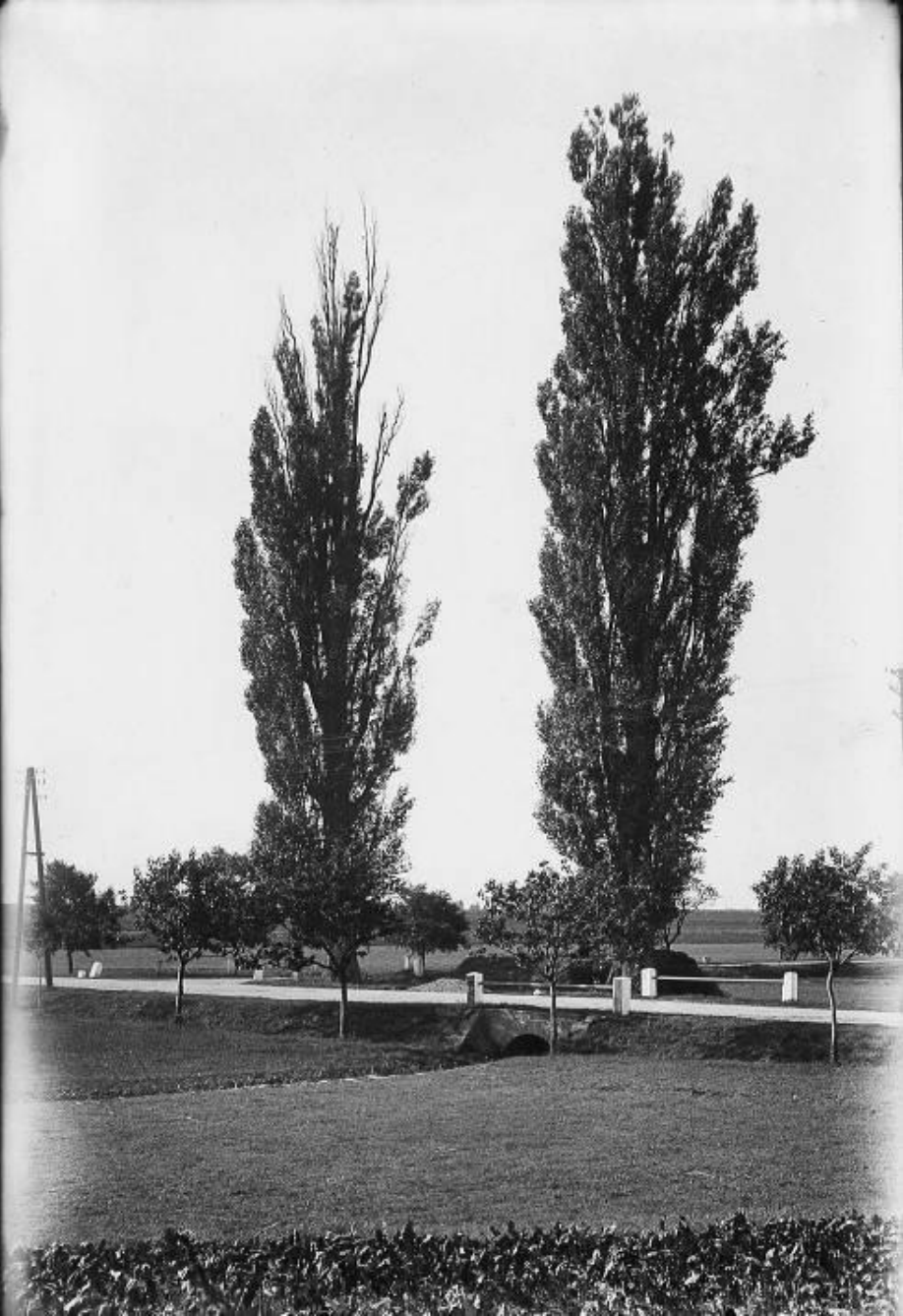
What is the landscape change?

- Landscape change refers to the **quantitative** changes of selected **parameters** describing **landscape elements**
- **Basic scientific questions:**
 1. What landscape elements?
 2. Driving forces behind landscape change?
 3. How much (quantification)?
 4. Change in quality?
 5. Frequentation of changes
 6. Trends?
 7. Evaluation of changes (positive, negative)
 8. Consequences for landscape planning

Staré fotografie z archivu Jana Skaloše:















ilustrace Milan Valeš, Maier a kol. (2012)

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