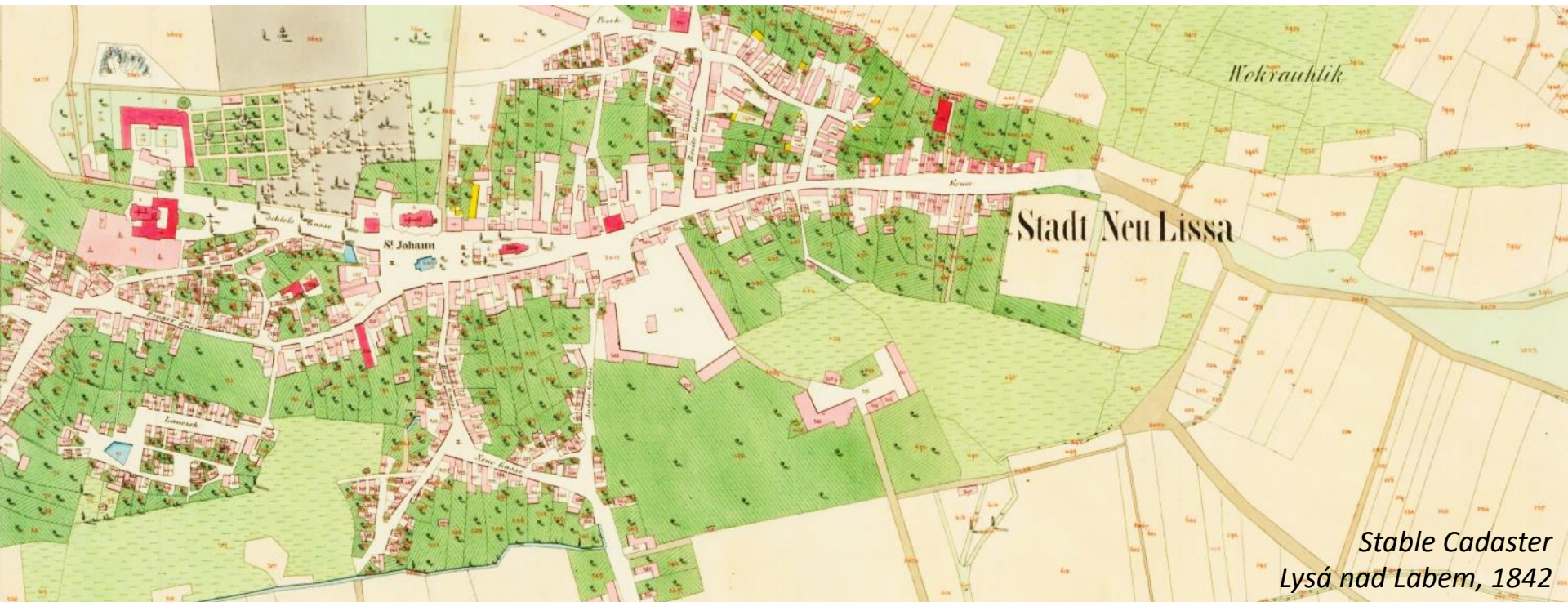


Land Management and Landscape Memory



Václav Fanta, fantav@fzp.czu.cz

PDF: home.czu.cz/fantav/ → Teaching

Content

1. Landscape memory
2. Historical values of landscape
3. History of cultural landscape of the Czech lands
4. Old maps of Central Europe
5. LIDAR
6. Applications to land management

1. Landscape memory

Landscape memory

What is landscape memory?

Is landscape memory important for us (as visitors, inhabitants, planners)? Why yes / Why not?



*Jan Willenberg,
Hněvín, 1602*

Memory

Ability to remember things for a long period.

- Memory of a person
 - “when I was young...”
- Memory of a family
 - “my grandfather told me about the WW2”
- Memory of a community / nation
 - “when Napoleon invaded Russia...”

living memory

written memory



books,
memorials,
songs,
cultural artefacts

Memory duration?

Memory changes?

Emotions?

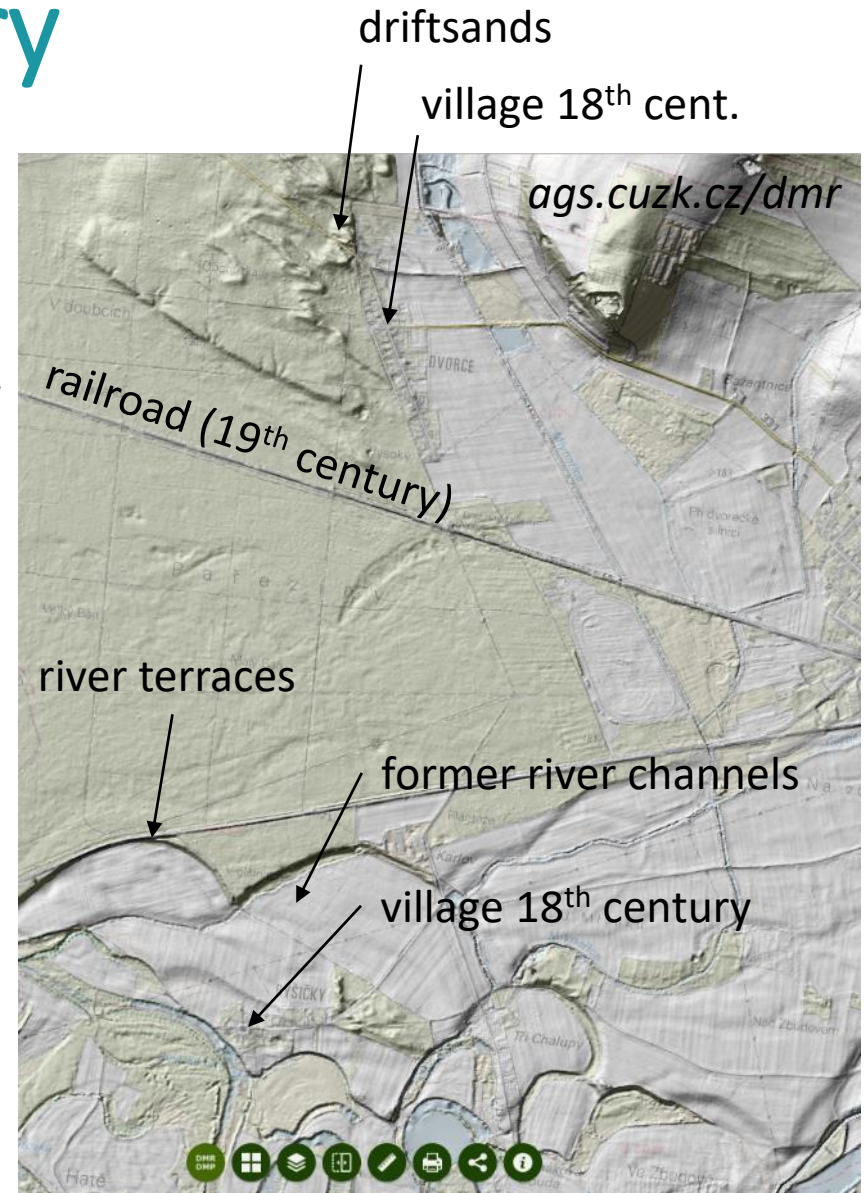
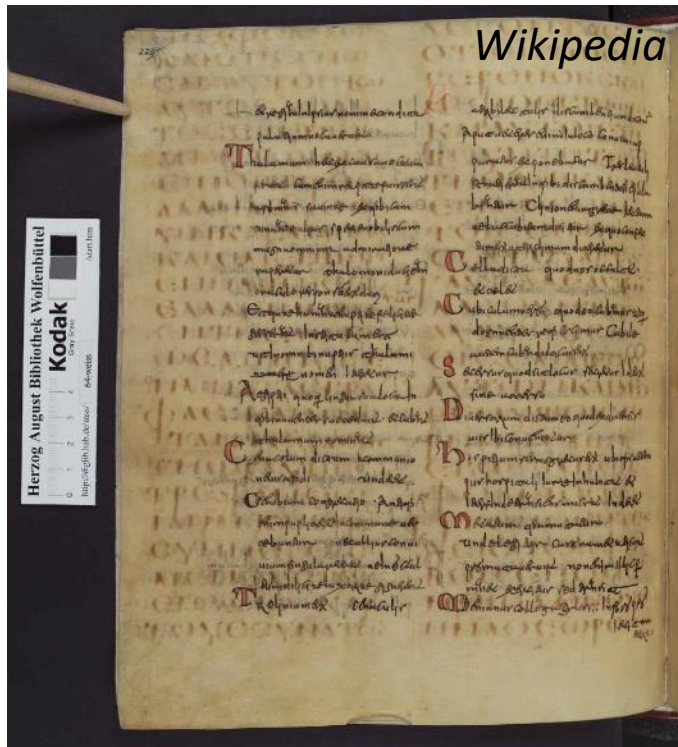
Assmann 1995, 2008, Vansina 1985

Written memory



Landscape memory

- Landscape as an artefact
- Connection with history
- Landscape as a *palimpsest*



How old are the landscape elements?

B.2 Stáří vybraných krajinných prvků

1:30000

0 500 1000 1500 m

LEGENDA

řešené území

vrstevnice (E = 5 m)

Typy krajinných prvků
vizualizace vlastnických vztahů

cesty

rybníky

lesy

sídla

Stáří krajinných prvků

od LS50 dč	since 1950
od SK do L	1840 – 1950
od 1VM do	1780 – 1840
před 1VM	before 1780

Poznámka: Tato mapa zobrazuje všechny krajinné prvky zachycené v příslušných mapových podkladech, tj. včetně zaniklých. Důvod zobrazení i zaniklých prvků je různá míra jejich "dochovanosti" (celek / relikt / stopa apod.).

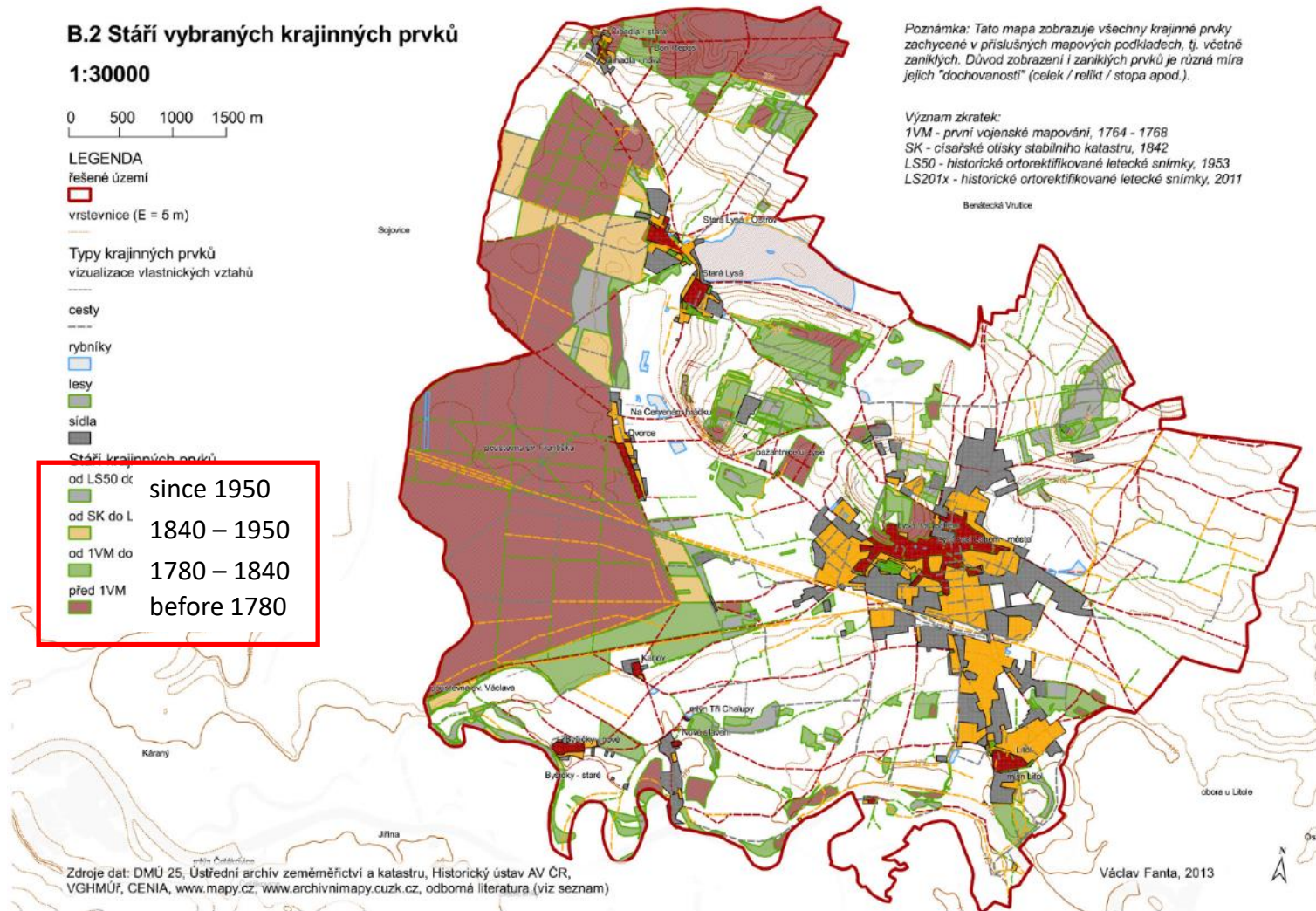
Význam zkratk:

1VM - první vojenské mapování, 1764 - 1768

SK - císařské otisky stabilního katastru, 1842

LS50 - historické ortorektifikované letecké snímky, 1953

LS201x - historické ortorektifikované letecké snímky, 2011



Zdroje dat: DMÚ 25, Ústřední archiv zeměměřictví a katastru, Historický ústav AV ČR, VGHMÚF, CENIA, www.mapy.cz, www.archivnimapy.cz, odborná literatura (viz seznam)

Václav Fanla, 2013

Landscape memory and historical values of landscape?

2. Historical values of landscape

Value

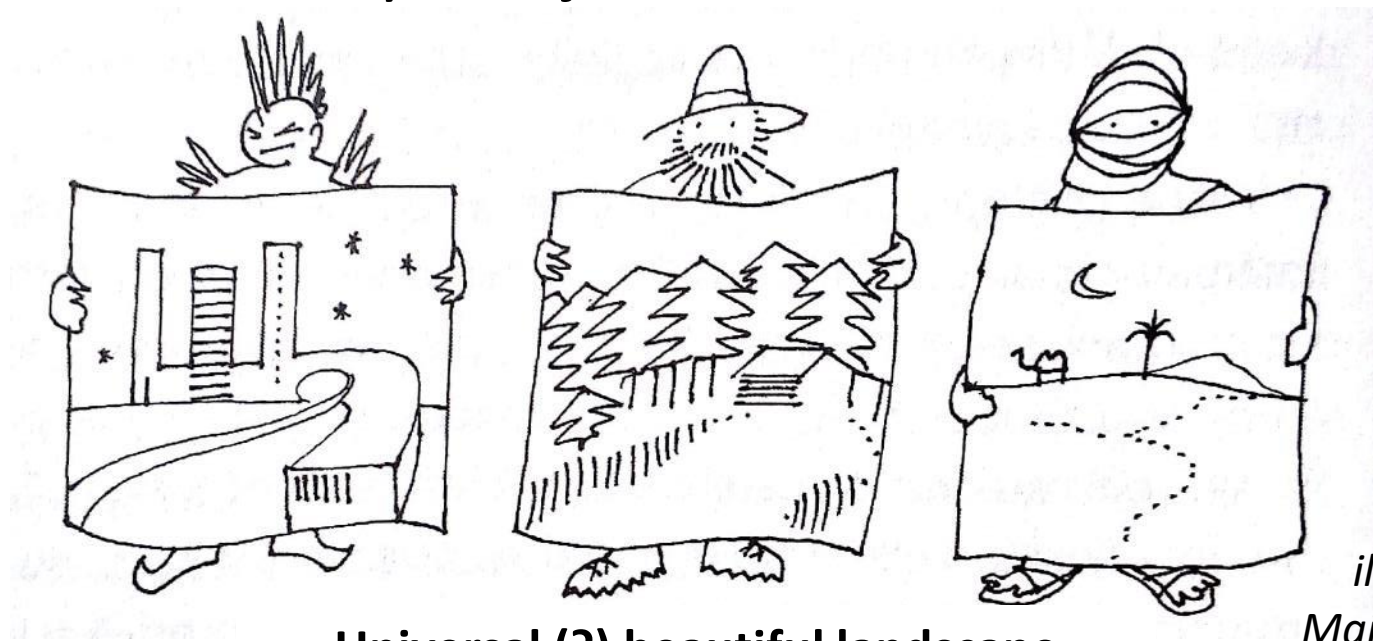
- meaning?

Values

Value = **characteristics** of an object · **relation** to that object
objective subjective

Value of something for someone.

→ Value is always subjective!



Universal (?) beautiful landscape

*ill. Milan Valeš
Maier et al. 2012*

Historical values of landscape

What is it?

Examples?

→ Typology of historical values (next slides)

(1) Symbolic value, association

- reference to something
- religion, historic events, art...
- places of spiritual importance, important events, pilgrimage
- places connected with literature/art

*UNESCO 2013,
Kupka 2010*



(2) Aesthetical and visual value

- sensory perception by people
- visual connections, dominant elements, landscape character

*Löw & Míchal 2003,
Kupka 2010*



(3) Landscape as a historical source

- landscape = common work of nature and man
- scientific value
- landscape archaeology



II.2. Libice nad Cidlinou 1 – hradiště, foto M. Gojda.

II.2 Libice nad Cidlinou 1 – hillfort, photographed by M. Gojda

Gojda et al. 2010

*UNESCO 2013,
Gojda 2000*

(4) Value of age

- monuments as stable elements in a changing world
- “noble aging”, degradation



*Hauserová 2011,
Láska 1995*

(5) Stability (spatial/functional)

- continuity of landscape
- landscape pattern

Trpáková 2013

forrest (no changes since 1780)

church (before 1219)



agricultural terrace (medieval)

ponds (end of 16th century)

(5) Stability (spatial/functional)



Typology of cultural landscapes

UNESCO (2008) definitions:

1. landscape designed and created intentionally by man
2. organically evolved landscape
 - a) a relict (or fossil) landscape
 - b) a continuing landscape
3. associative cultural landscape

Full description: <https://whc.unesco.org/archive/opguide08-en.pdf#annex3>, page 86

3. History of cultural landscape of the Czech lands

History of cultural landscape of the Czech lands

Most important changes:

- Neolithic revolution (8000 to 4000 BC)
- Medieval colonization (11th to 14th century)
- Baroque landscape (18th century)
- Industrial revolution (19th century)
- Socialism (1948 – 1989)
- Present (since 1990)

Medieval colonization (11th to 14th century)

22

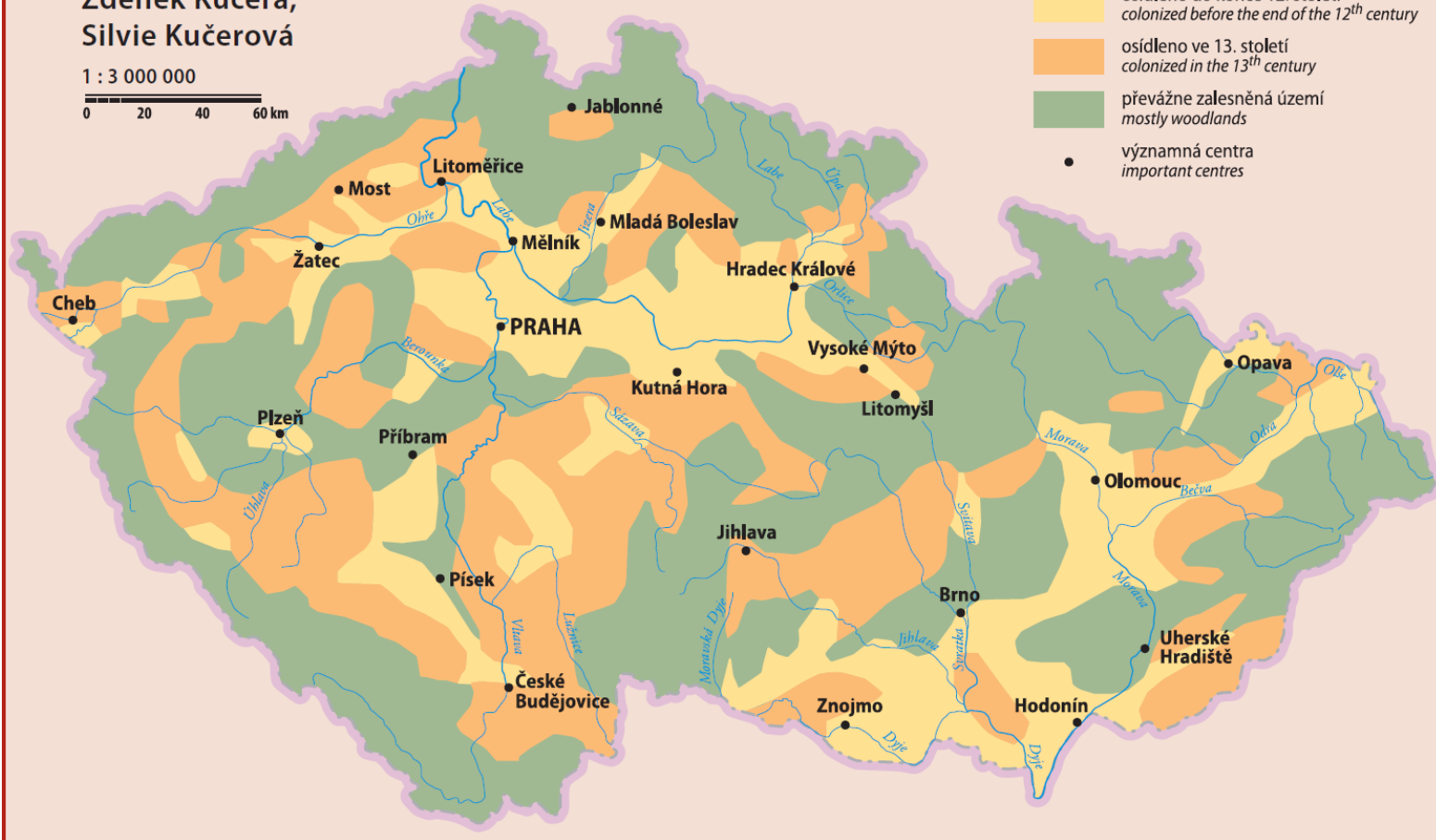
OSÍDLOVÁNÍ ÚZEMÍ KOLONIZACÍ VE 13. STOLETÍ AREAS COLONIZED DURING THE 13th CENTURY

Zdeněk Kučera,
Silvie Kučerová

1 : 3 000 000



- osídleno do konce 12. století
colonized before the end of the 12th century
- osídleno ve 13. století
colonized in the 13th century
- převážně zalesněná území
mostly woodlands
- významná centra
important centres



Landscape atlas of the Czech Republic (2009)

Medieval colonization (11th to 14th century)

23

OSÍDLOVÁNÍ ÚZEMÍ KOLONIZACÍ VE 14. STOLETÍ

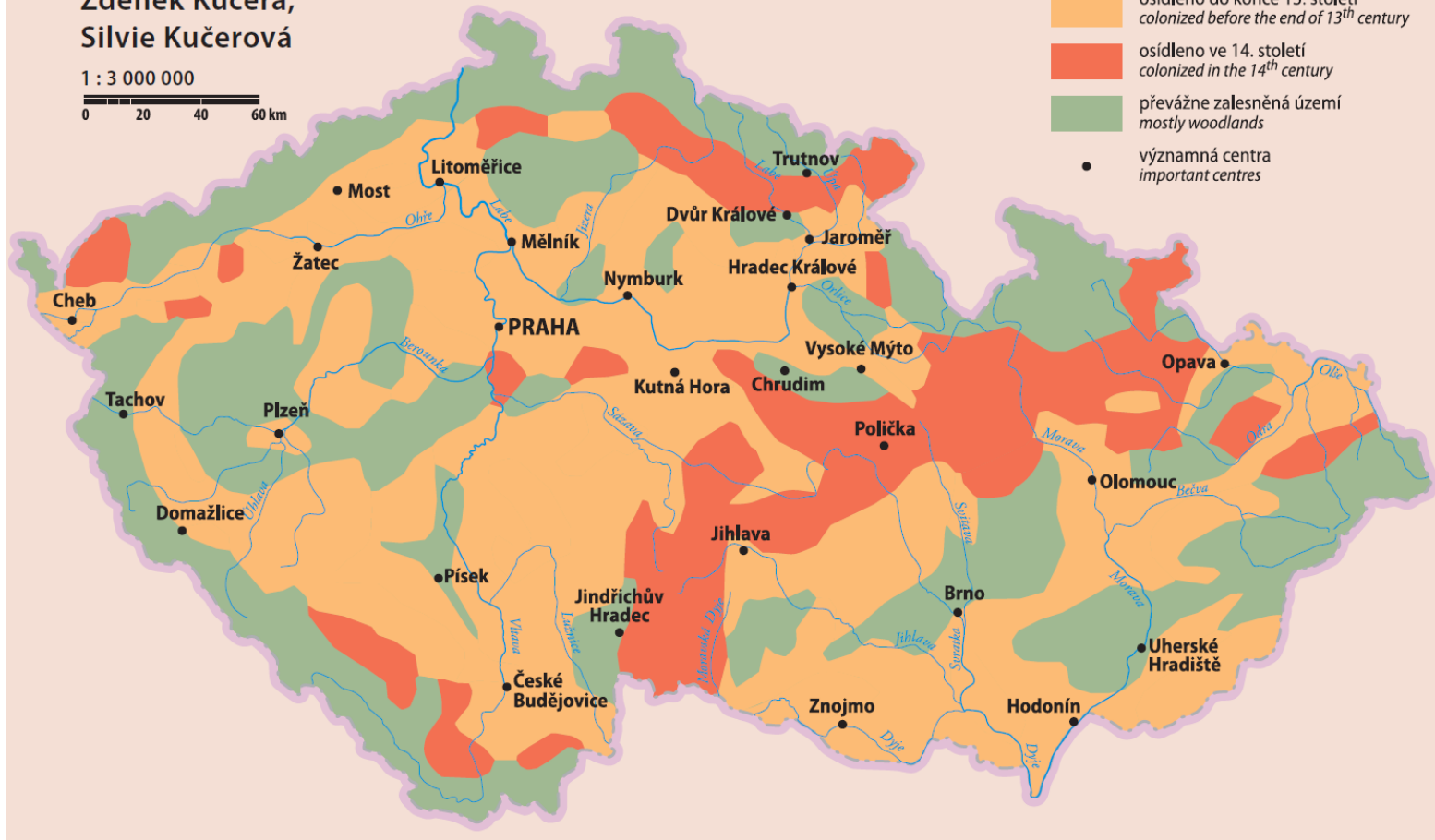
AREAS COLONIZED DURING THE 14th CENTURY

Zdeněk Kučera,
Silvie Kučerová

1 : 3 000 000



- osídleno do konce 13. století
colonized before the end of 13th century
- osídleno ve 14. století
colonized in the 14th century
- převážně zalesněná území
mostly woodlands
- významná centra
important centres



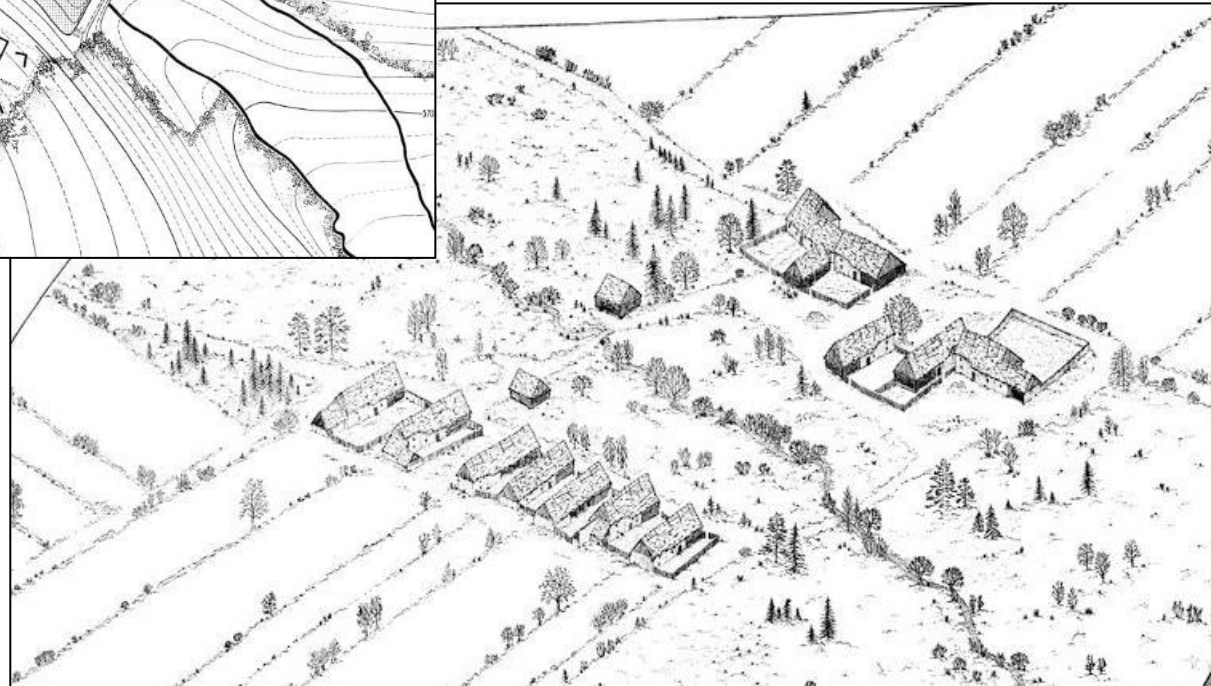
Landscape atlas of the Czech Republic (2009)

Medieval villages

Pfaffenschlag, Southern Bohemia
destroyed during the Hussite wars
(15th century)

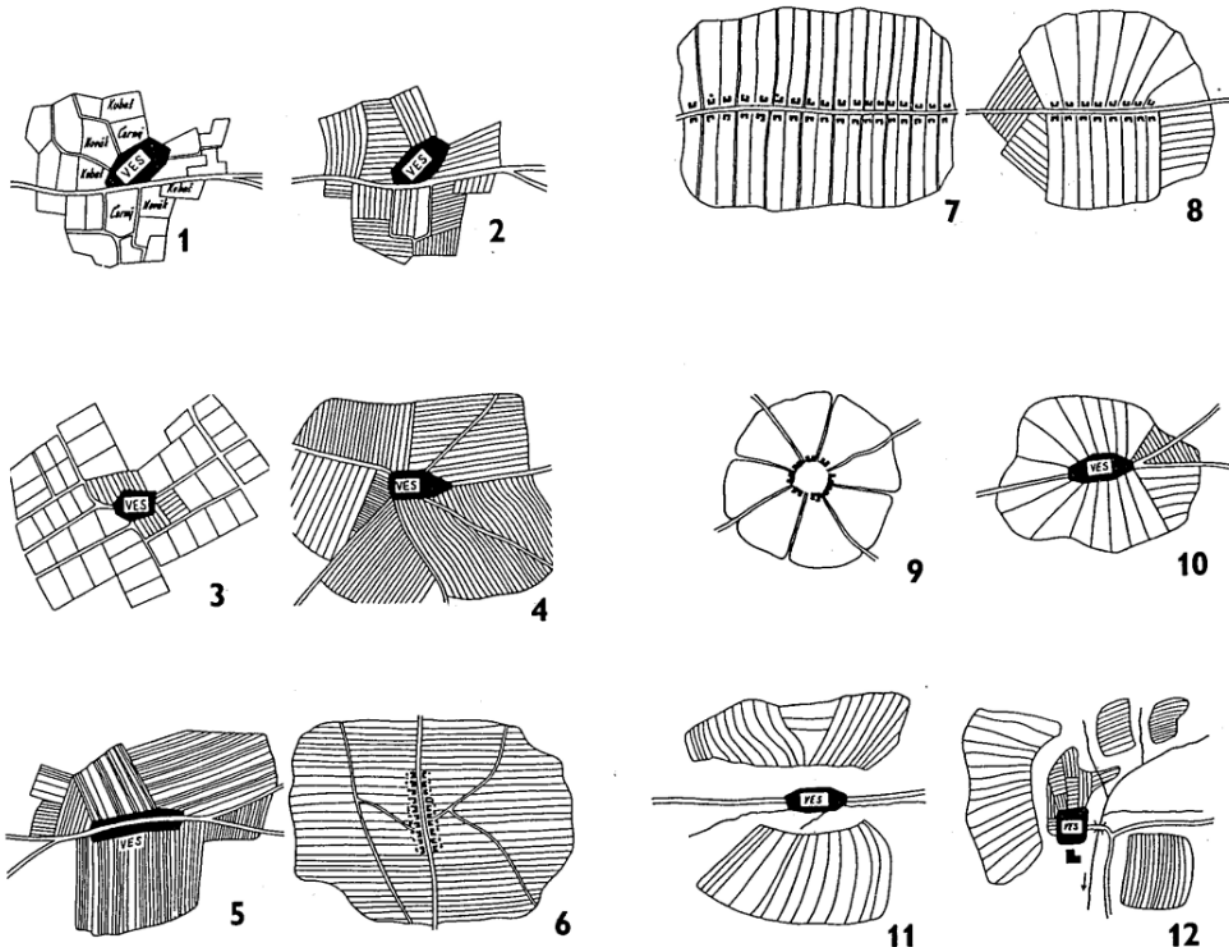


Kuna et al. 2015
archeologickyatlas.cz



Village types

Černý 1979



Obr. 3: Typologie plužiny podle E. Černého (1979). 1 - plužina úseková; 2 - plužina dělených úseků; 3 - plužina scelených úseků; 4 - plužina traťová; 5 - plužina nepravá traťová; 6 - plužina dělková; 7 - záhumníková plužina lesní lánové vsi; 8 - záhumníková plužina klínová (severně) a pásová (jižně) se třemi přídatnými tratěmi u krátké dvojradé lesní lánové vsi; 9 - paprčitá záhumníková plužina lesní návěsí vsi; 10 - kompaktní plužina; 11 - rozštěpená plužina; 12 - rozptýlená plužina.

Medieval field pattern (Czech: *plužina*)



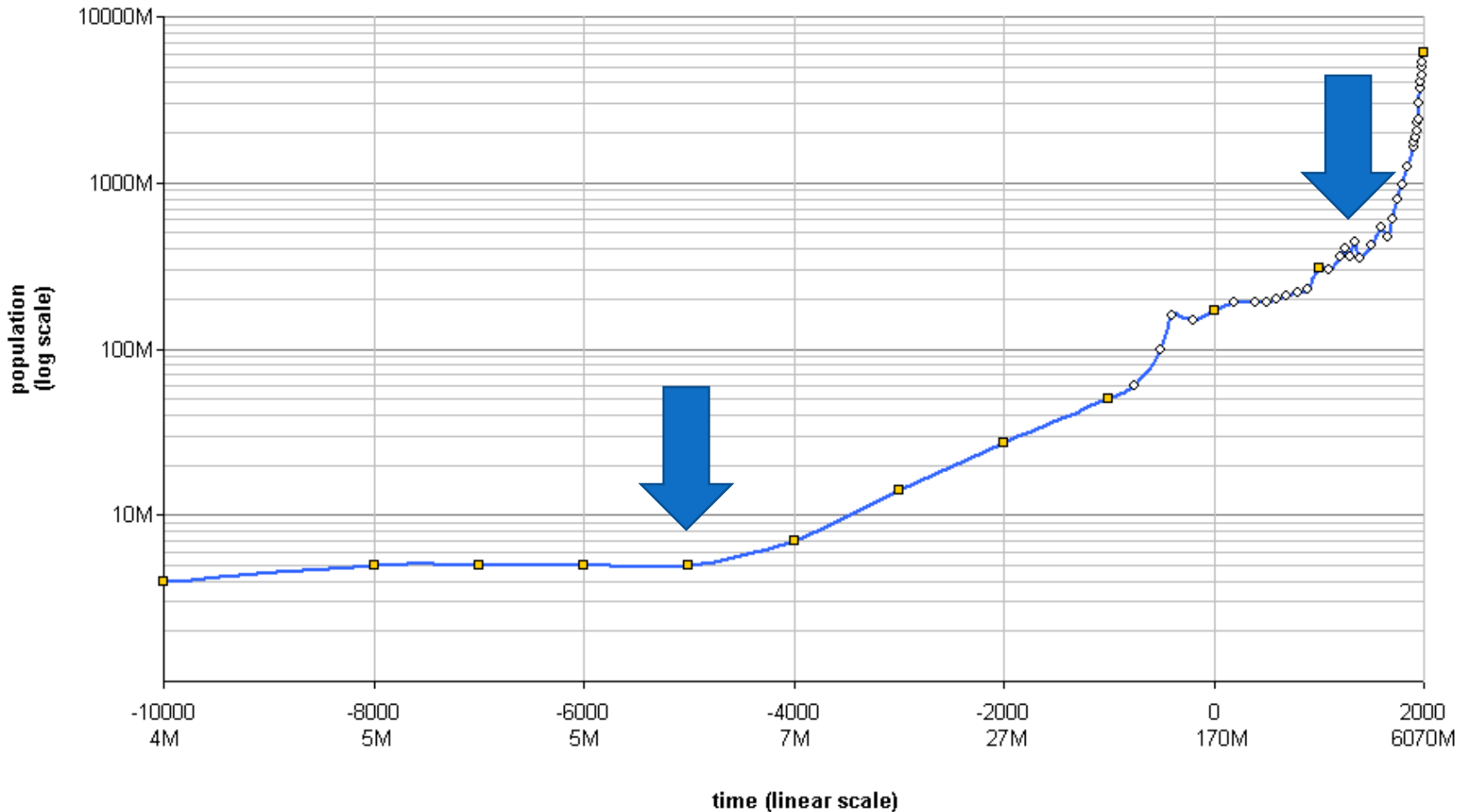
Kuna et al. 2015
archeologickyatlas.cz

Industrial revolution (19th century)



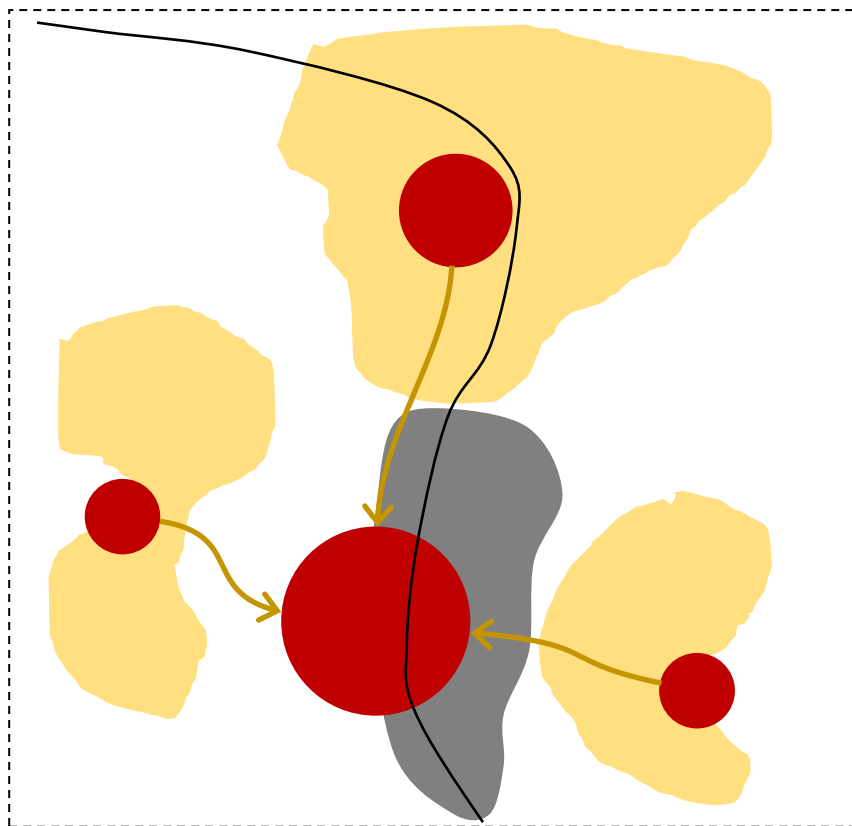
James Eckford Lauder: *James Watt and the Steam Engine*, 1855

Population development



[https://commons.wikimedia.org/wiki/File%3AWorld_population_growth_\(lin-log_scale\).png](https://commons.wikimedia.org/wiki/File%3AWorld_population_growth_(lin-log_scale).png)

Industry



settlement



food



farming area



railway



industry



Praha – Smíchov, 1872



Engine 354.7, production 1920s, photo P. Holub.,
zelpage.cz

First Military Survey, 1780s



Second Military Survey, 1840s



Third Military Survey, 1870s

Socialism (1948 – 1989)

- Heavy industry
- Collective farms
- Rapid urbanization

→ change in the relation between man and landscape

Results of collective farming

Ecological consequences?



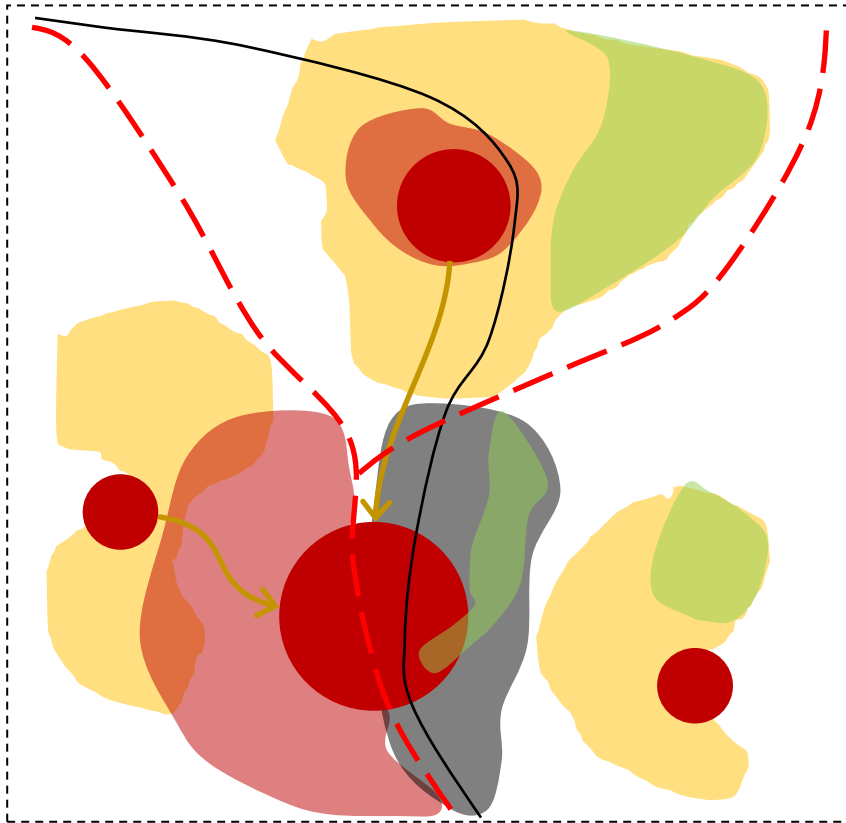
kontaminace.cenia.cz

Recent years...




Motorway Praha – Dresden vs.
Protected landscape area


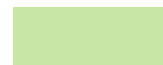


Scientific and technological progress →
new use for old environment (places,
buildings, landscapes)



 settlement
 farming area
 former industry

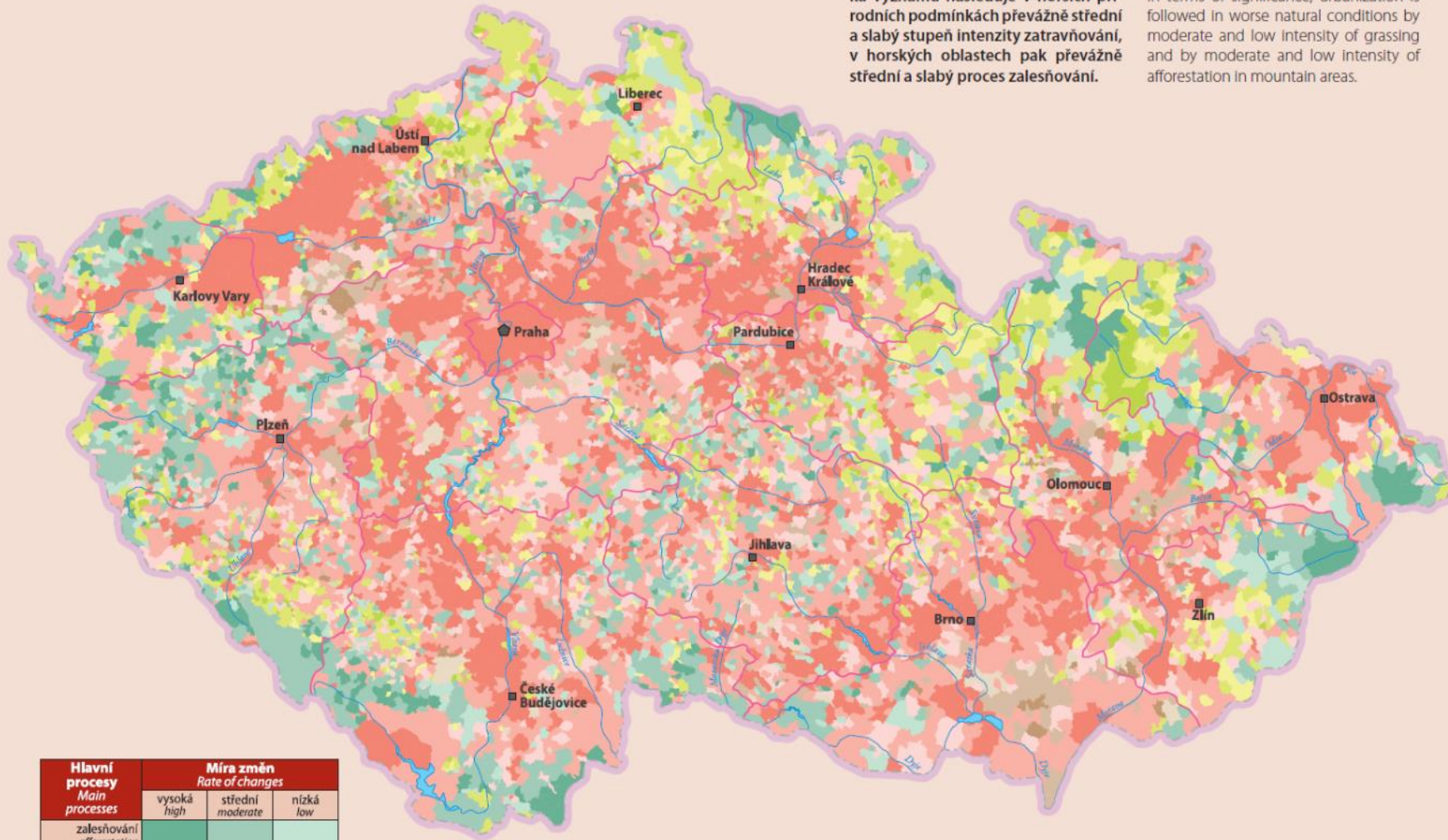
 food
 railway
 highway

 urban sprawl
 new wilderness

1948–2000

Hlavní procesy ukazují dominující proces urbanizace ve třech stupních intenzity v letech 1948–2000. Z hlediska významu následuje v horších přírodních podmínkách převážně střední a slabý stupeň intenzity zatravňování, v horských oblastech pak převážně střední a slabý proces zalesňování.

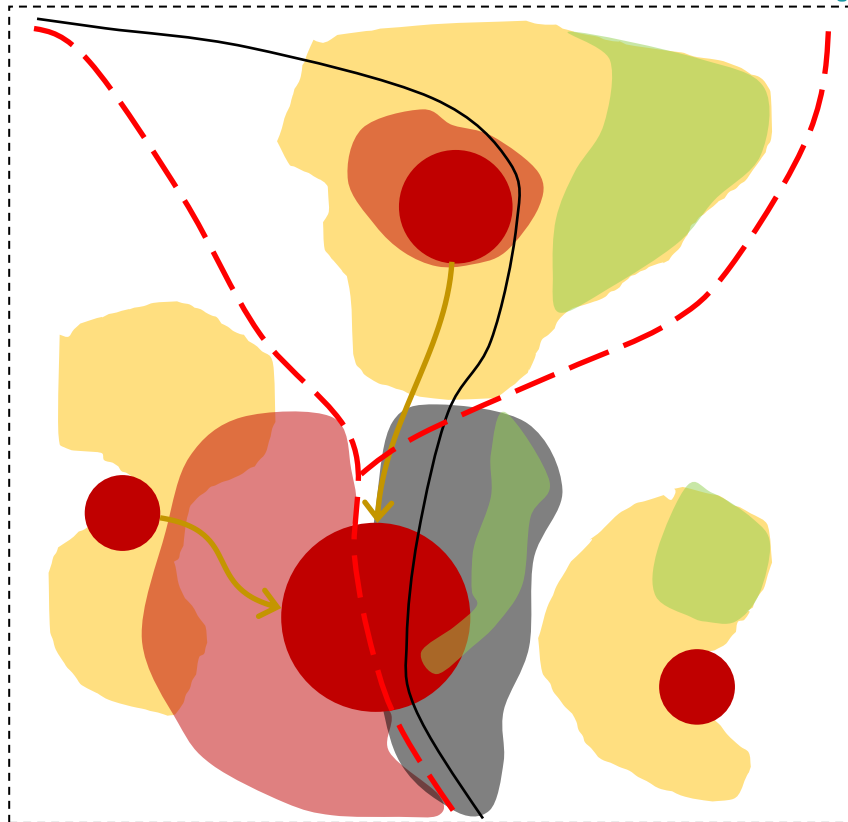
The main processes show a dominant process of urbanization in all three levels of intensity in the period from 1948–2000. In terms of significance, urbanization is followed in worse natural conditions by moderate and low intensity of grassing and by moderate and low intensity of afforestation in mountain areas.



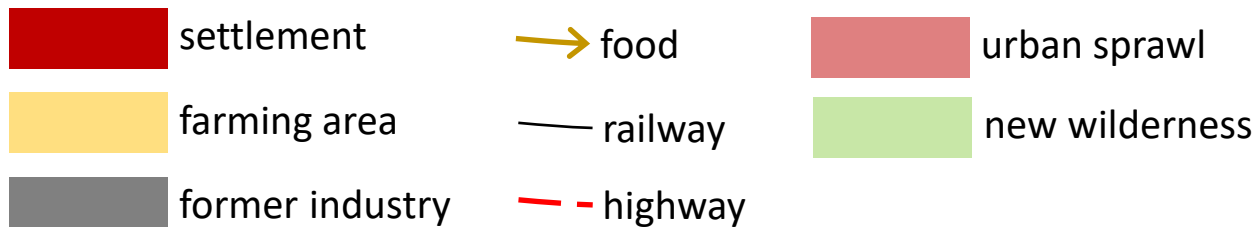
Hlavní procesy Main processes	Míra změn Rate of changes		
	vyšoká high	střední moderate	nízká low
zalesňování afforestation			
zatravňování grassing			
urbanizace urbanization			
zornění share of arable land			

nerozlišená změna na < 1 % plochy území
proportion of changes < 1 % of area

New use for old places



- former industrial areas – brownfields
- former agricultural areas – „new wilderness“



Brownfields



New wilderness

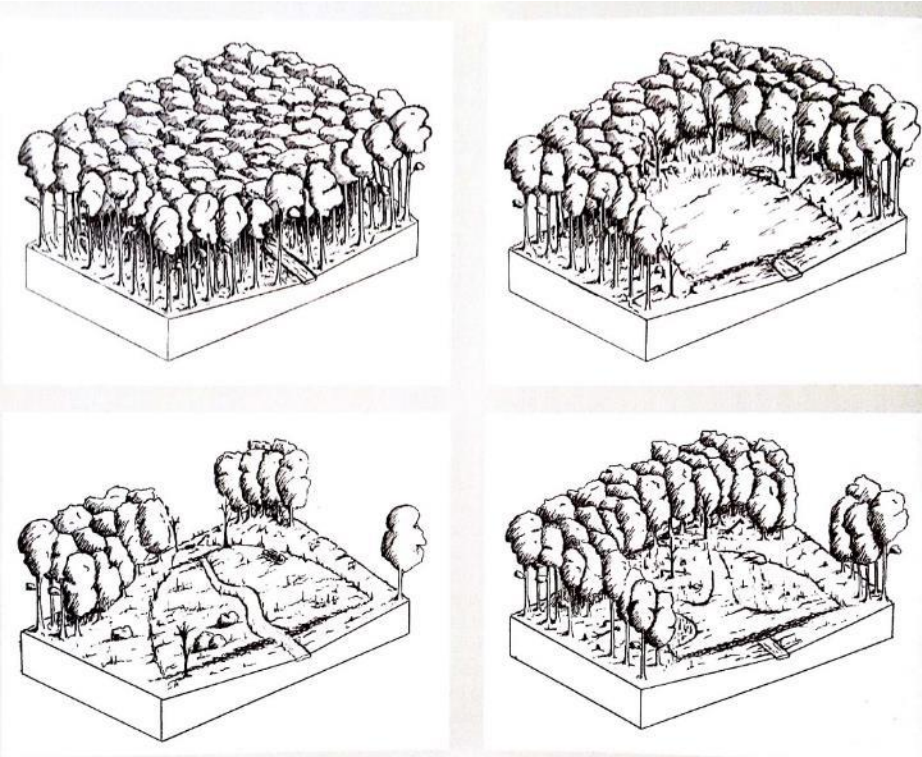


Abb. 15 Entstehung einer „Biberwiese“ in einer Bachaue.¹²³⁰ Links oben: Ausgangssituation; rechts oben: die Anhebung des Wasserspiegels durch den Biberdamm verursacht das Absterben von Bäumen und führt zur Bildung eines Sees; links unten: Verlandung des Sees, am Rande „Fällplätze“ des Bibers; rechts 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

Problems

- Urban sprawl
- Economic growth X environmental and heritage protection
- New use for old places
- Overpopulation
- Tourism
- Conflict of interests



Challenges

- Sustainable development
- Participation
- Alternative transport
- New technologies
- How do we *use* the town?

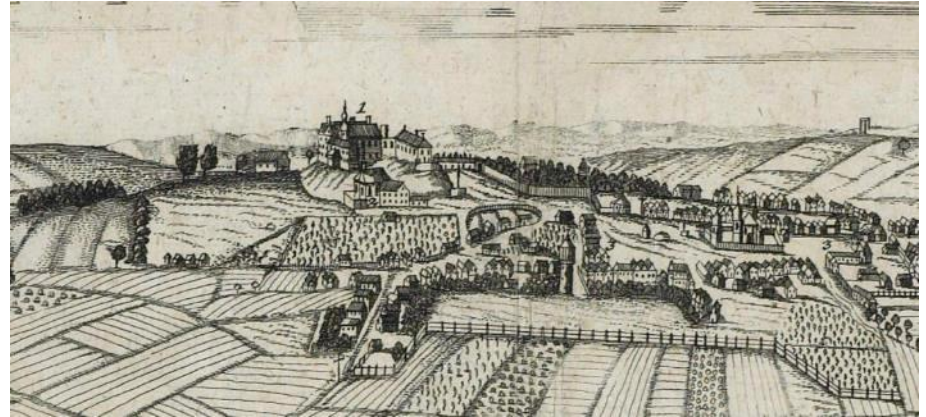
mapy.cz

4. Old maps of Central Europe

Old maps of Central Europe

Historical sources

- written sources
- artefacts (archaeology)
- narrative sources
- pictures / maps
 - individual
 - comparative



zdroj: veduty.bach.cz, oldmaps.geolab.cz

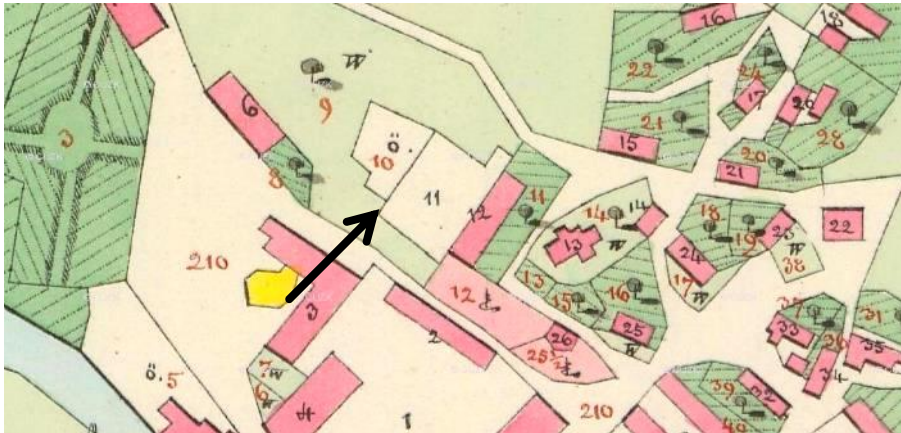
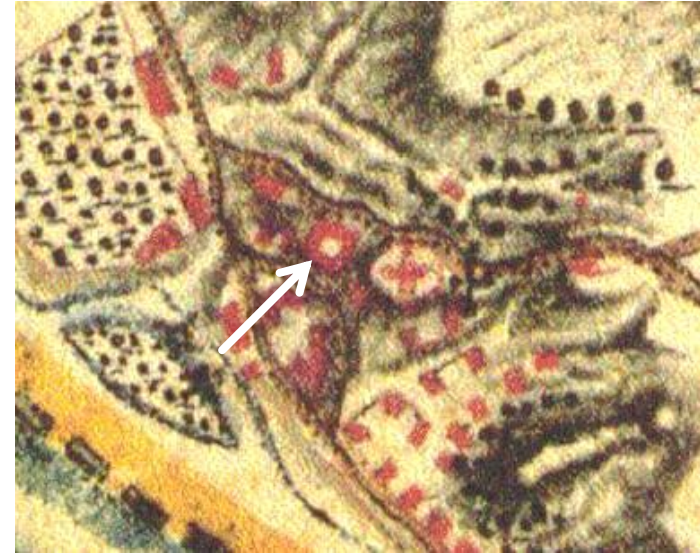
Specific context of origin!

Motivation for mapping

- Financial, taxes payment
- Administrative, economical
- Strategic, military
- Representative
- Etc...

Context of mapping → interpretation
(understanding) of a historical source

Interpretation of a map...



castle Chvatěruby

*sources: hrady.cz, oldmaps.geolab.cz,
archivnimapy.cuzk.cz*

M. Rykl, pers. comm.

Important maps

- Müller's map of Bohemia (1720), Müller's map of Moravia (1716)
- Maps of dominions (for some areas only, 18th century)
- Military mapping (approx. 1780, 1840, 1870)
- Stable cadastre (approx. 1840)
- Aerial ortophotographs (since 1930s)

Müller's maps (1716, 1720)

- Military and administrative reasons
 - Scale 1 : 132 000, resp. 1 : 180 000
 - Geodetic inaccuracy
 - Digitalized
- oldmaps.geolab.cz



zdroj: oldmaps.geolab.cz

Maps of dominions (18th century)

- Administrative and economic reasons
- Different scales
- Only some of them digitalised
- No central depository
- For some areas only



zdroj: SOkA Nymburk, foto autor

First military mapping (1760s and 1780s)

- Military reasons
 - Whole Habsburg Empire
 - Scale 1 : 28 800
 - Geodetic inaccuracy
- oldmaps.geolab.cz
- mapire.eu



zdroj: oldmaps.geolab.cz

Mapire.eu

mapire About Maps English

Subscribe

Opacity: 100% More maps

Königreich Böhmen (1764-1767) - First Military Survey

Königreich Ungarn (1782-1785) - First Military Survey

Galizien und Lodomerien (1779-1783) - First Military Survey

Großfürstentum Siebenbürgen (1769-1773)

Europe in the XVIII. century

- Administrative Maps of Hungary (1914)
- Europe in the XIX. century
- Europe in the XIX. century (with the Third Military Survey)
- Europe in the XVIII. century
- Galicia and Bucovina (1861-1864) - Second military survey of the Habsburg Empire
- Galizien und Lodomerien (1779-1783) - First Military Survey
- Habsburg Empire (1869-1887) - Third Military Survey (1:25000)
- Habsburg Empire (1869-1887) - Third Military Survey (1:75000)
- Habsburg Empire - Cadastral maps (XIX. century)

Europe in the XVIII. century

Base maps

Stable Cadastre (1824 – 1843)

- Administrative reasons, tax payment
 - Whole Habsburg Empire
 - Scale 1 : 2 880
 - High geodetic accuracy
- archivnimapy.cuzk.cz
- mapire.eu



zdroj: archivnimapy.cuzk.cz

Mapire.eu



Habsburg Empire - Cadastral maps (XIX. century)

Base maps

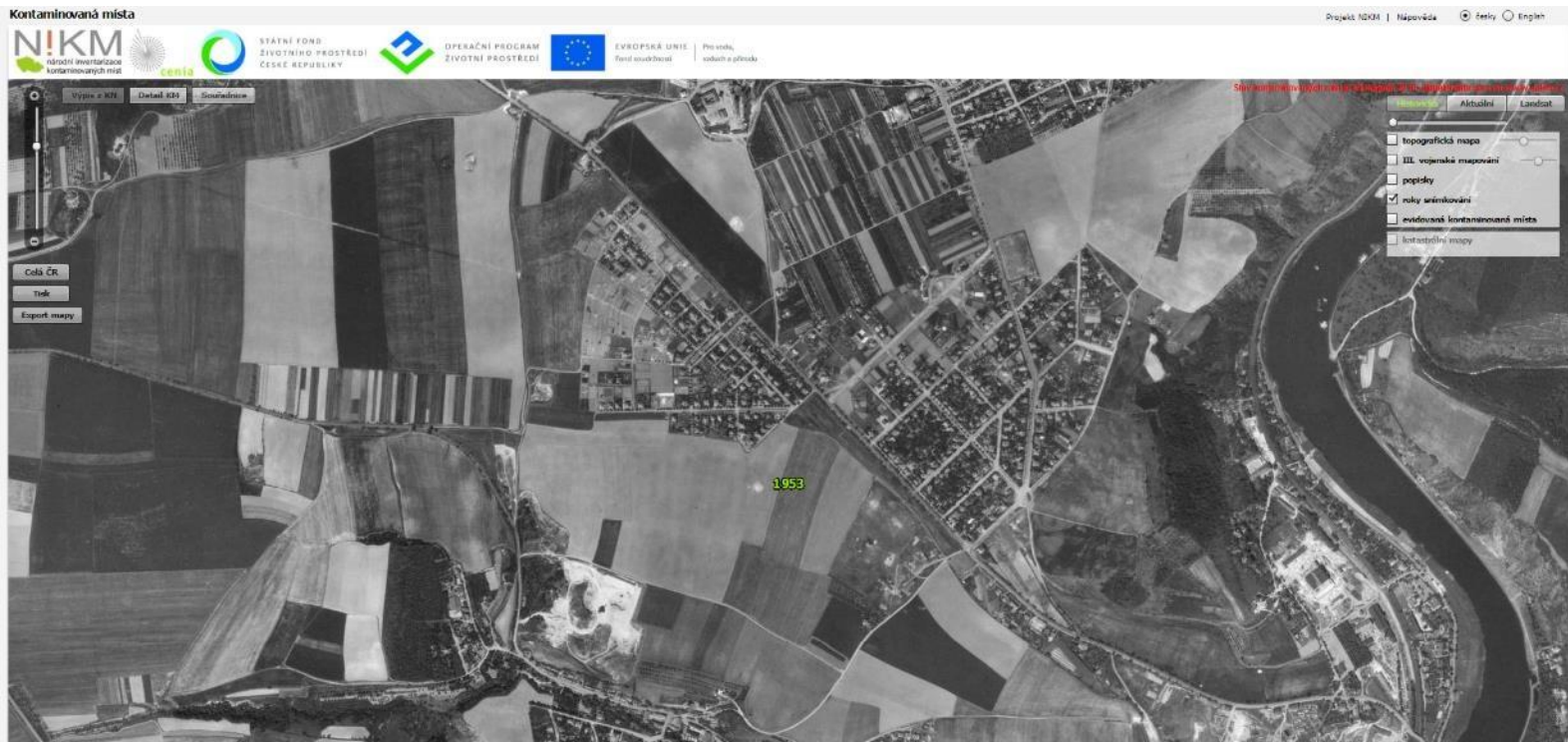


Aerial ortophotographs (1950s)

- 1930s – military reasons
- 1950s – whole country

→ **kontaminace.cenia.cz,**

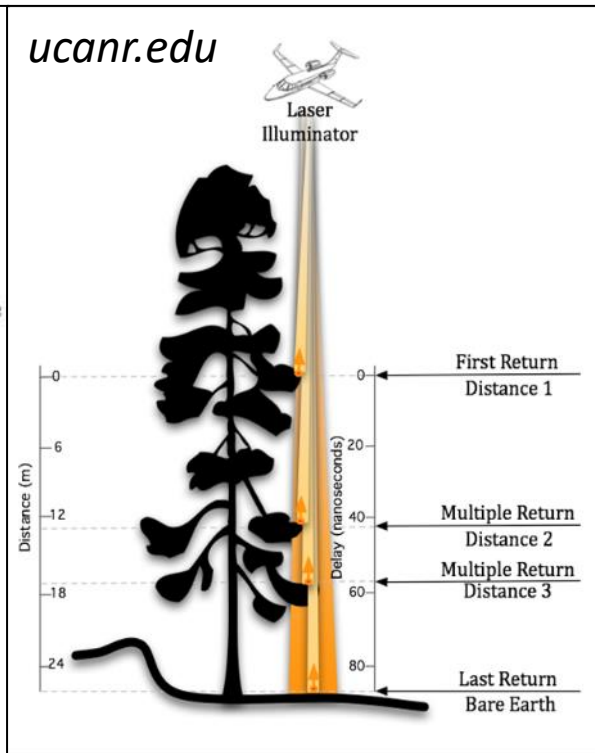
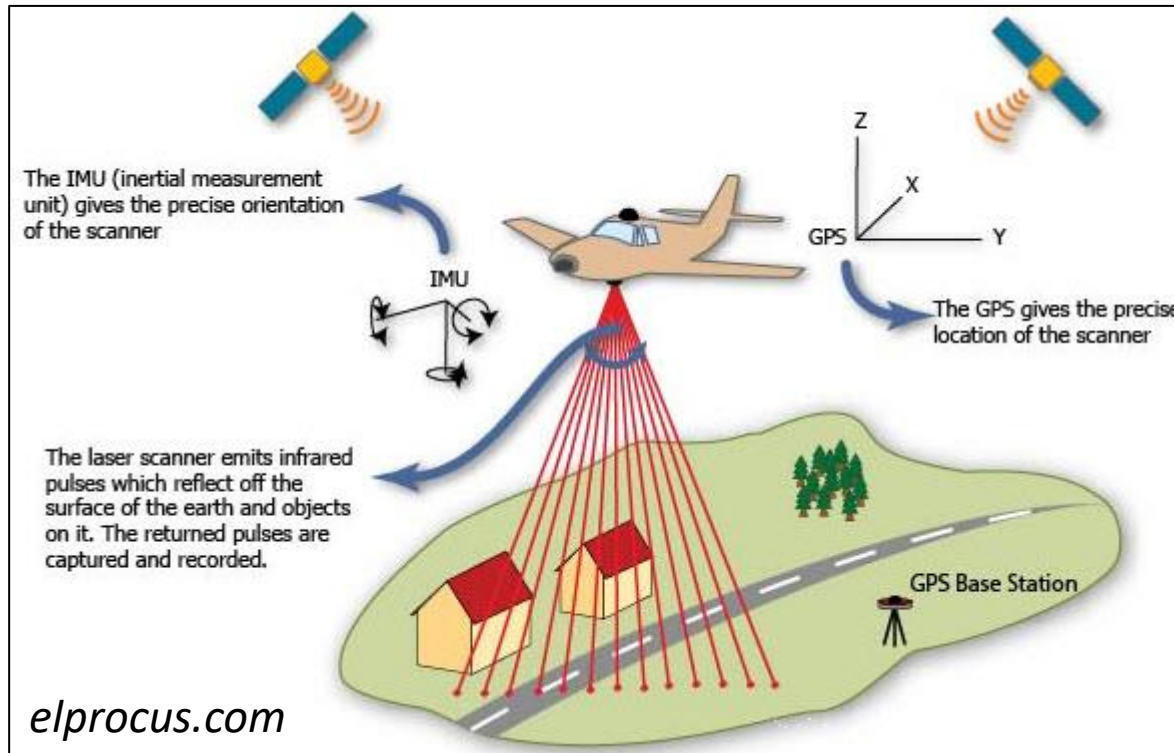
https://lms.cuzk.cz/lms/lms_prehl_05.html



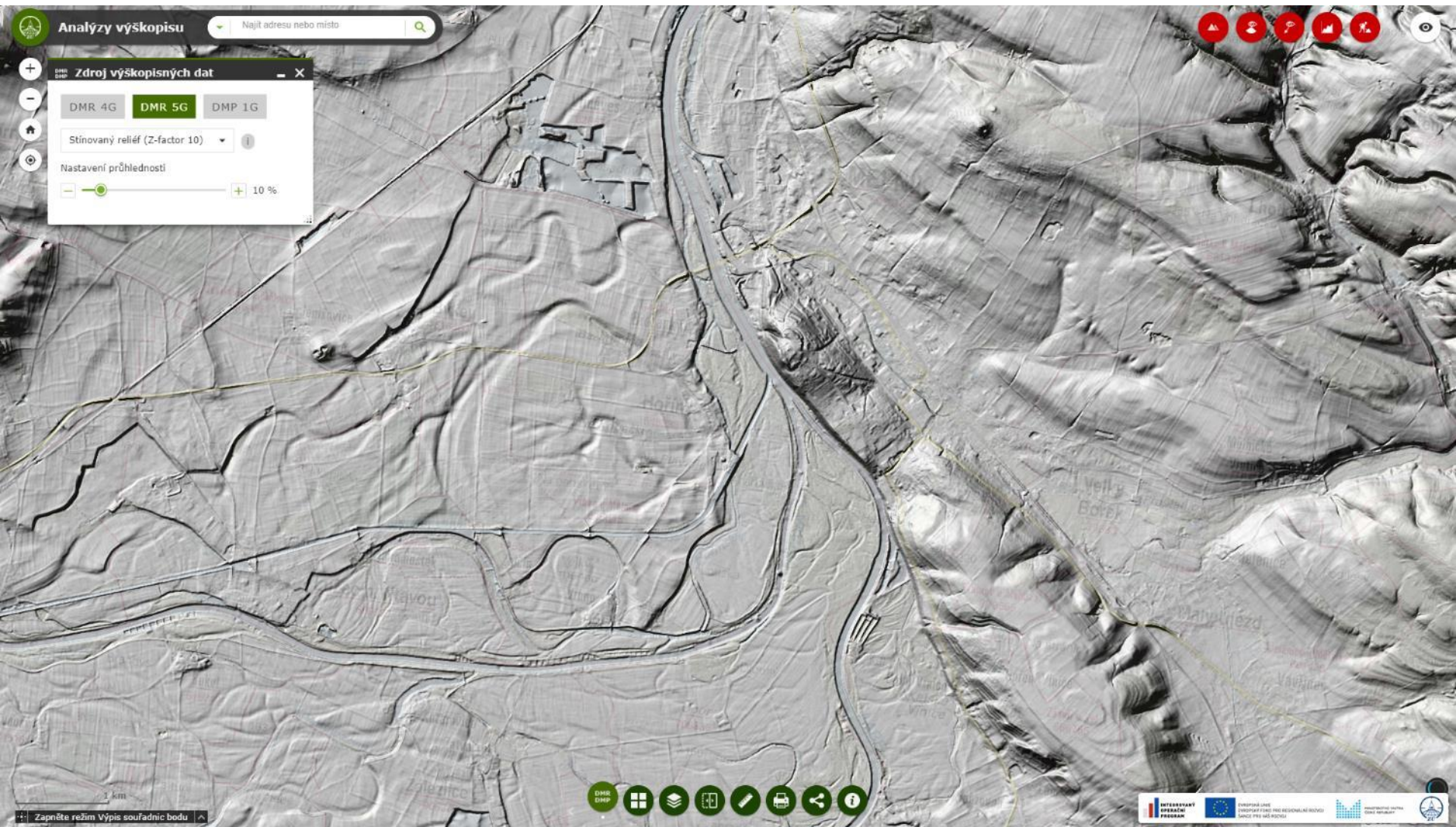
5. LIDAR

LIDAR

Light Detection And Ranging



ags.cuzk.cz/dmr



6. Applications to land management

Applications to land management

Cultural landscape protection

- Heritage preservation / cultural monuments protection
- Nature conservation

Landscape character

(Czech: *Krajinný ráz*)

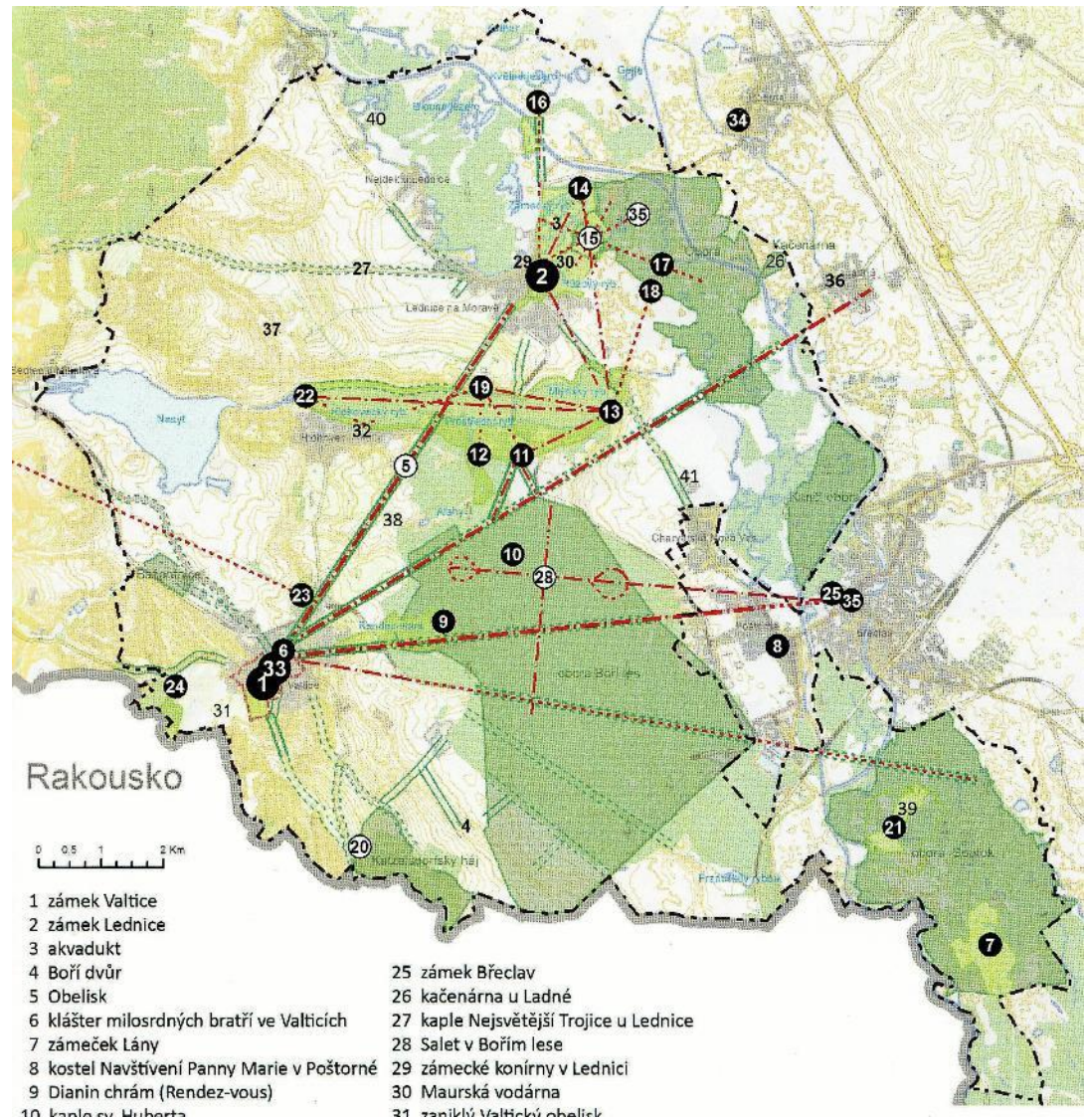
Landscape heritage zone

(Czech: *Krajinná památková zóna*)

Landscape heritage zone

example:

Lednice-Valtice
cultural landscape



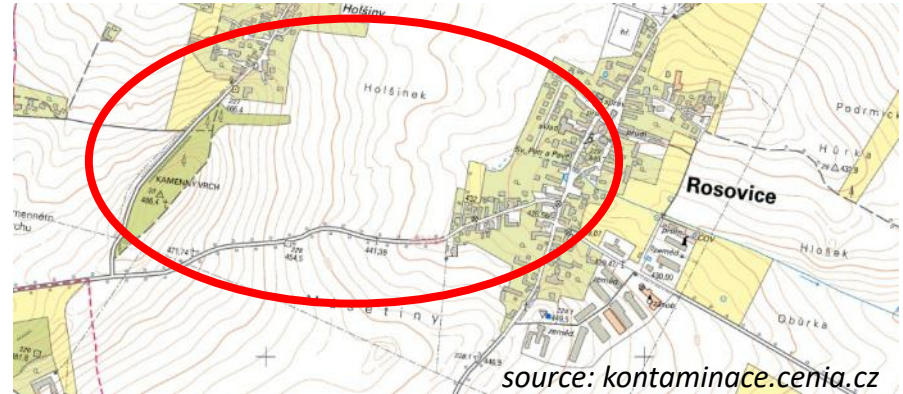
Kuča et al. 2015

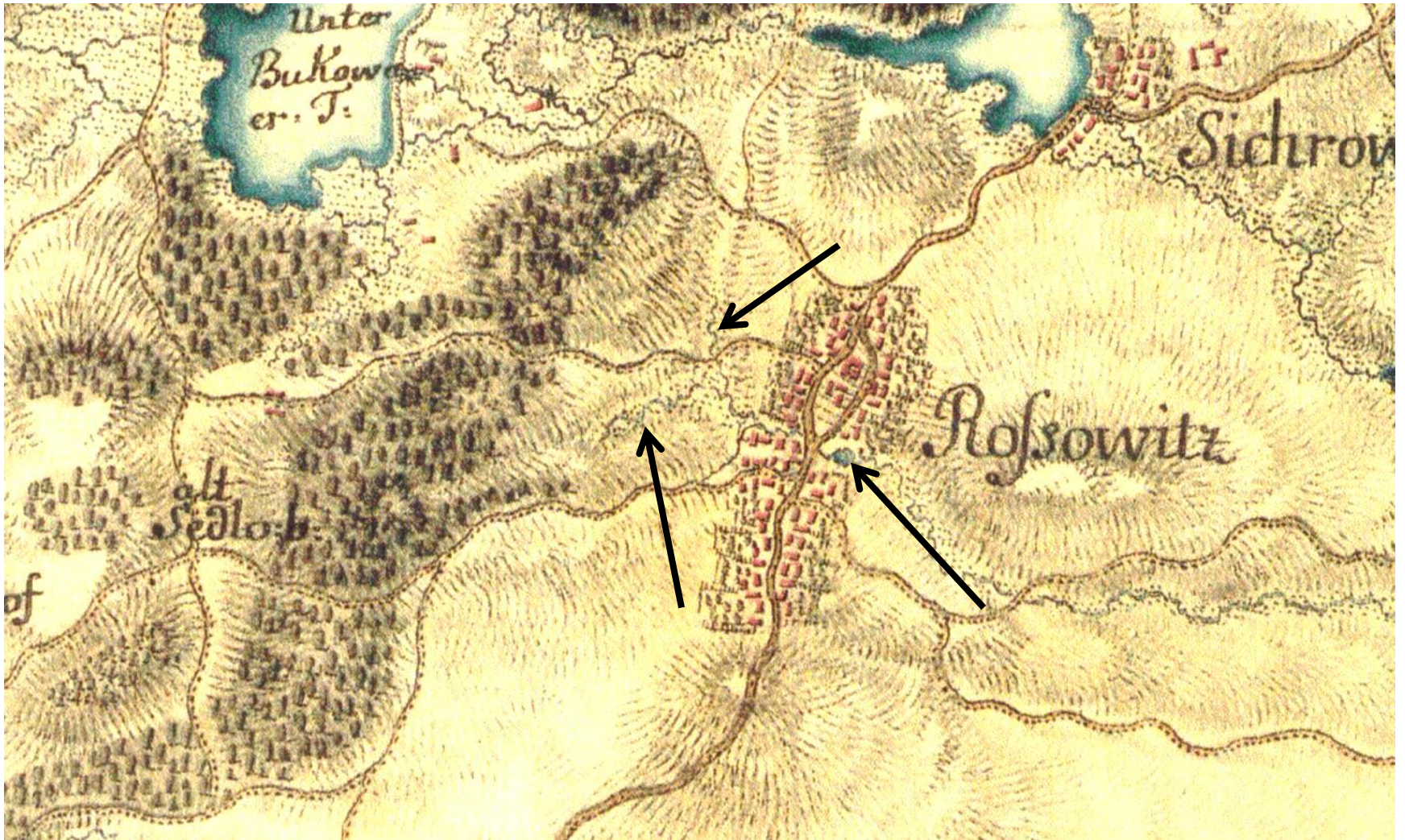
Case study: Rosovice, Central Bohemia

Author: U-24 planning studio

Spatial planning

Floodplain revitalization



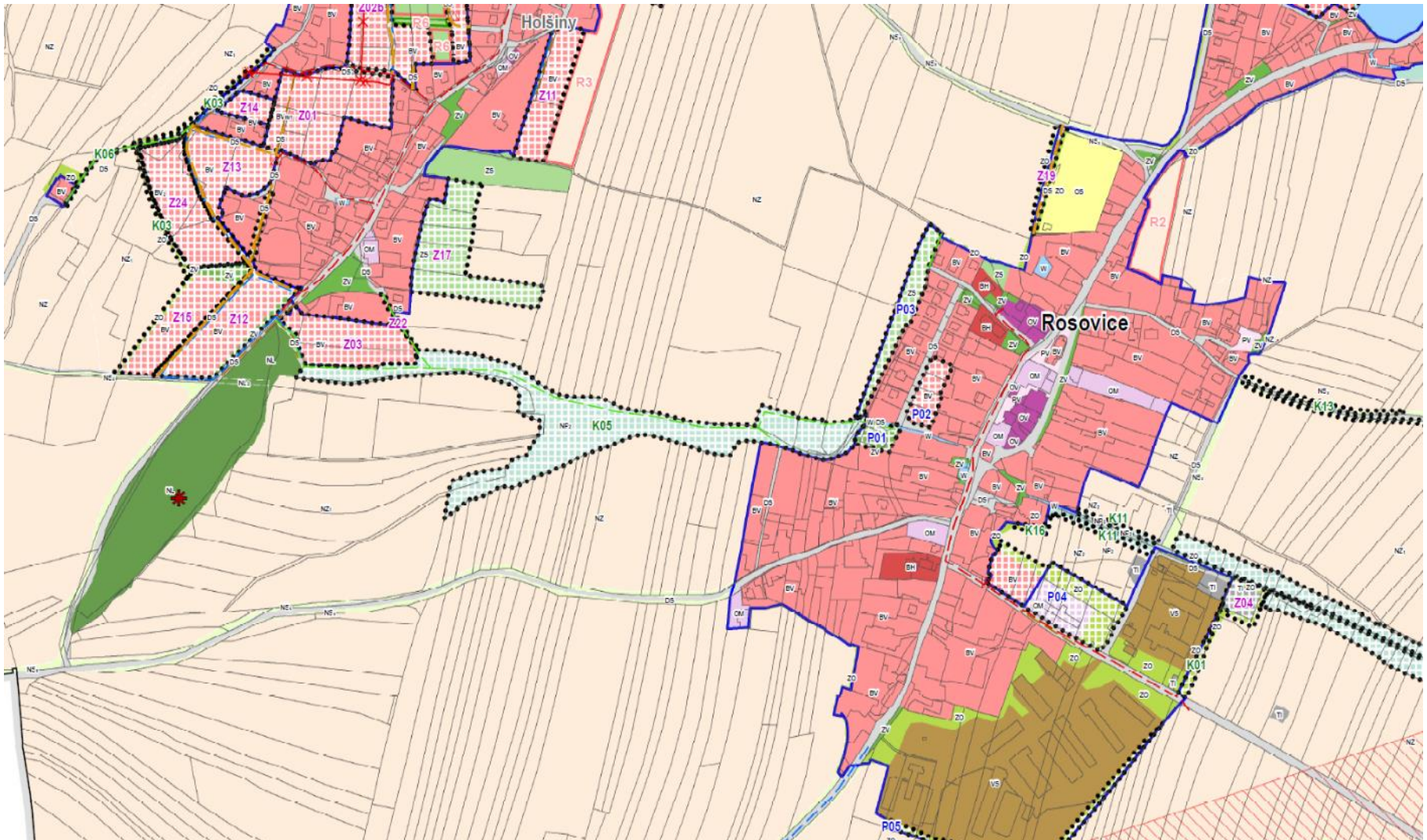


source: oldmaps.geolab.cz



source: archivnimapy.cz

Historical experience



source: U-24, s.r.o.

Case study: Spálené Poříčí, Pilsen region

Author: arch. Klára Salzmann

Renewal of historical pathway

Třešňová alej

old cherry tree allee

Nejkratší spojnice mezi městy

the shortest linking of the cities

Projekt Nadace VIA

Realizace TOPLAND BRD

The whole work was done and accomplished by the local citizens



Cesta otevřená, TOPLAND BRD, o.s. M = 1:25 000

source: <https://rm.coe.int/19th-council-of-europe-meeting-of-the-workshops-for-the-implementation/1680744d66>

Před...before



source: <https://rm.coe.int/19th-council-of-europe-meeting-of-the-workshops-for-the-implementation/1680744d66>