

TEMATSKE KARTE

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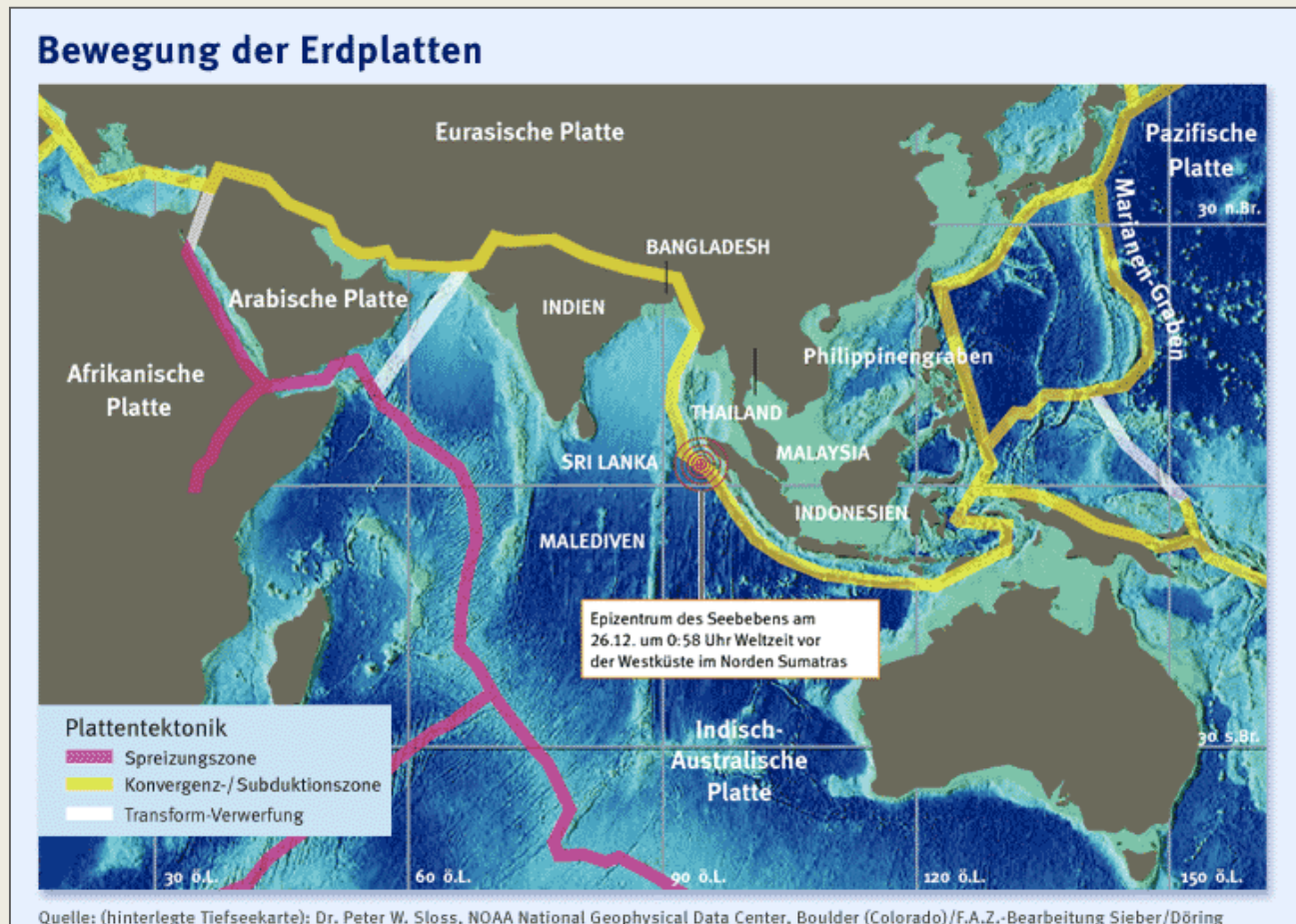
Tematske karte – zašto ih koristimo?

Informacije



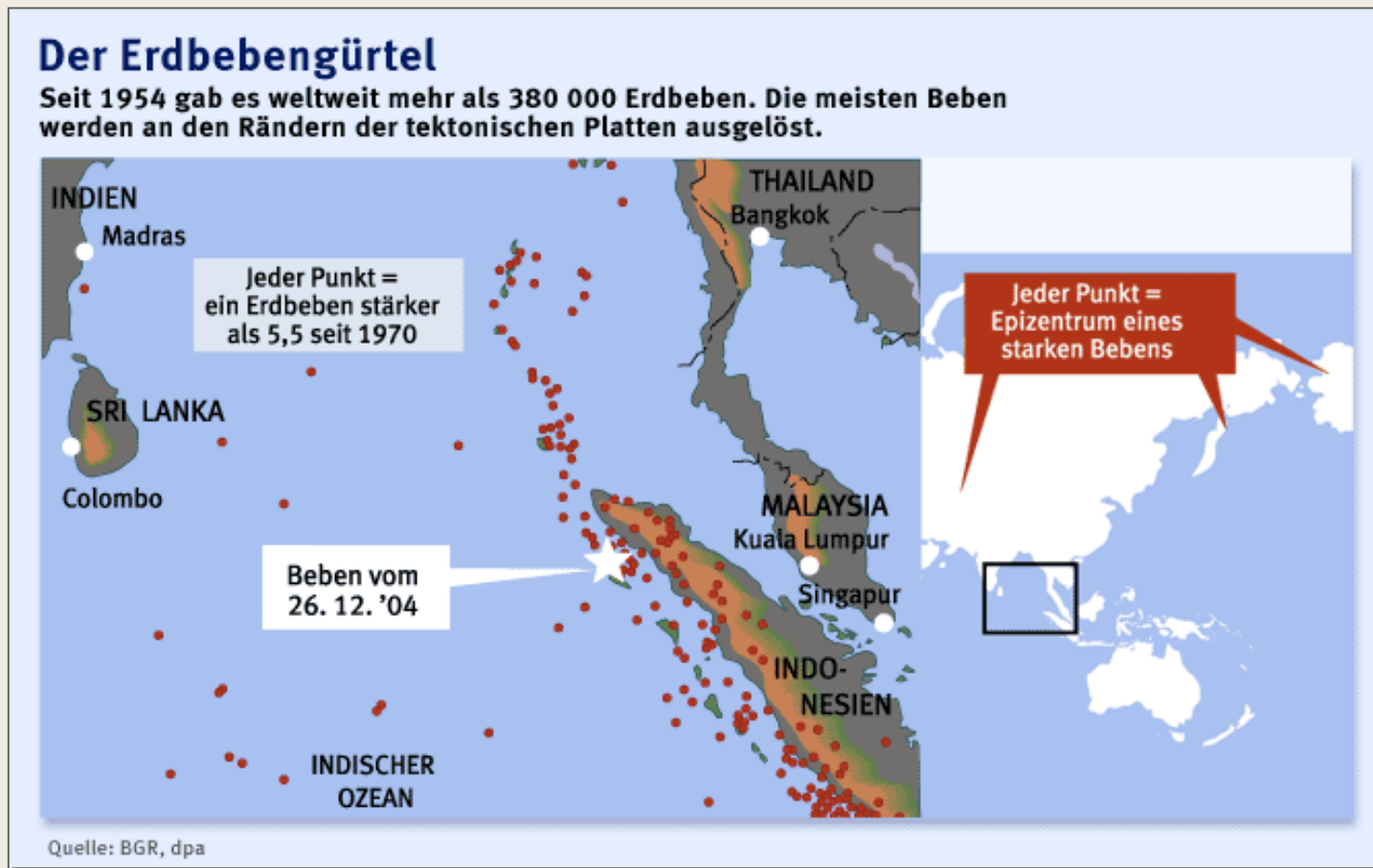
Tematske karte – zašto ih koristimo?

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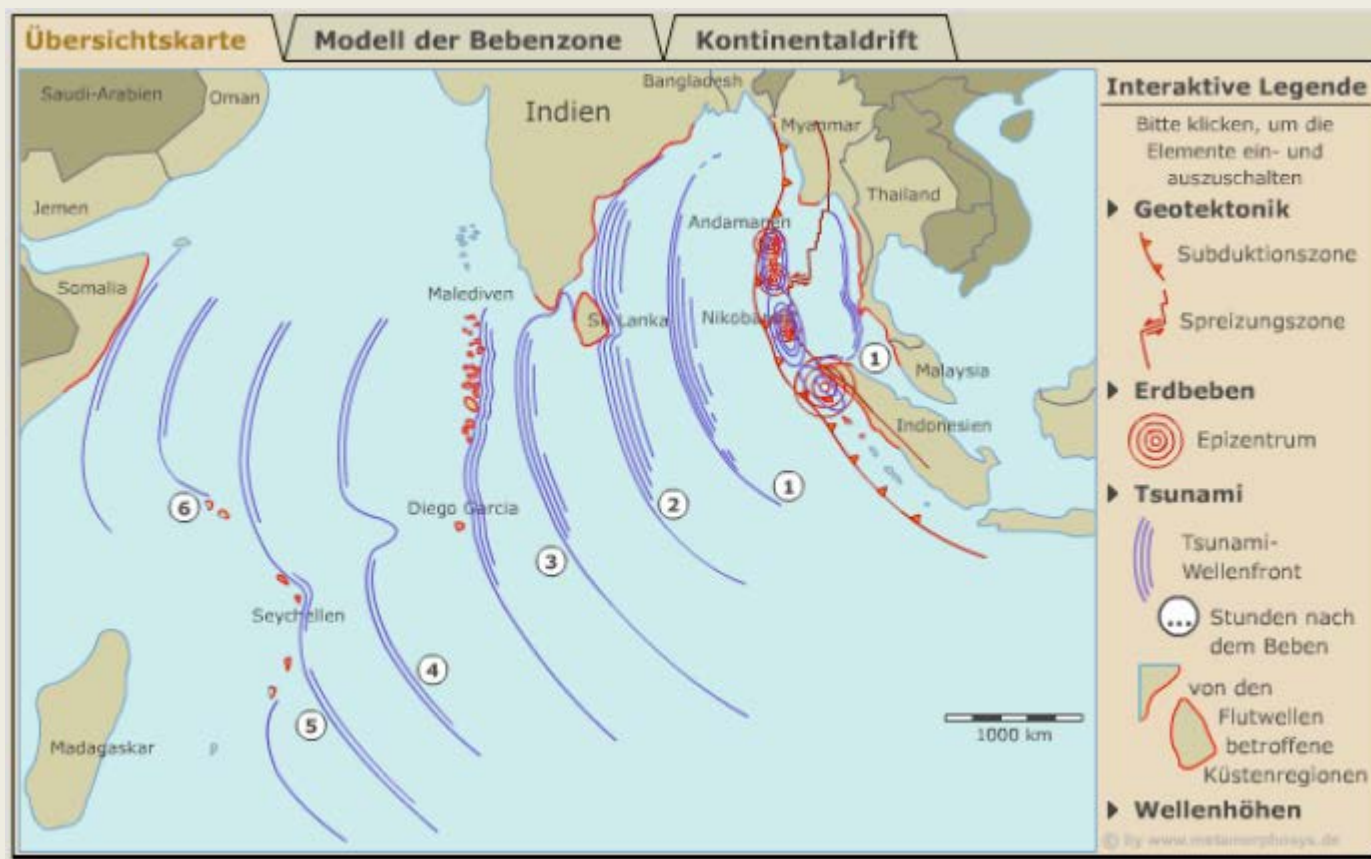
Tematske karte – zašto ih koristimo?

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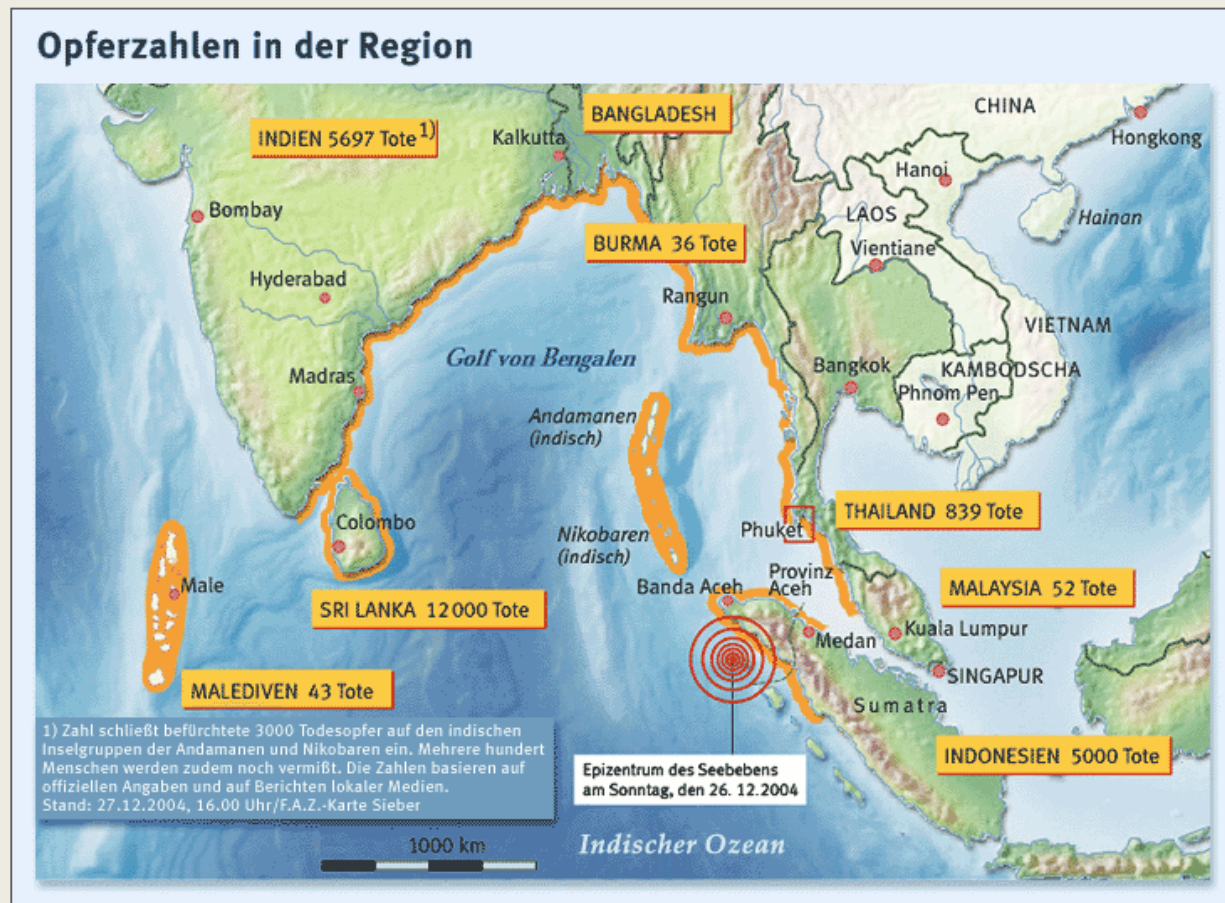
Tematske karte – zašto ih koristimo?

- Informacije



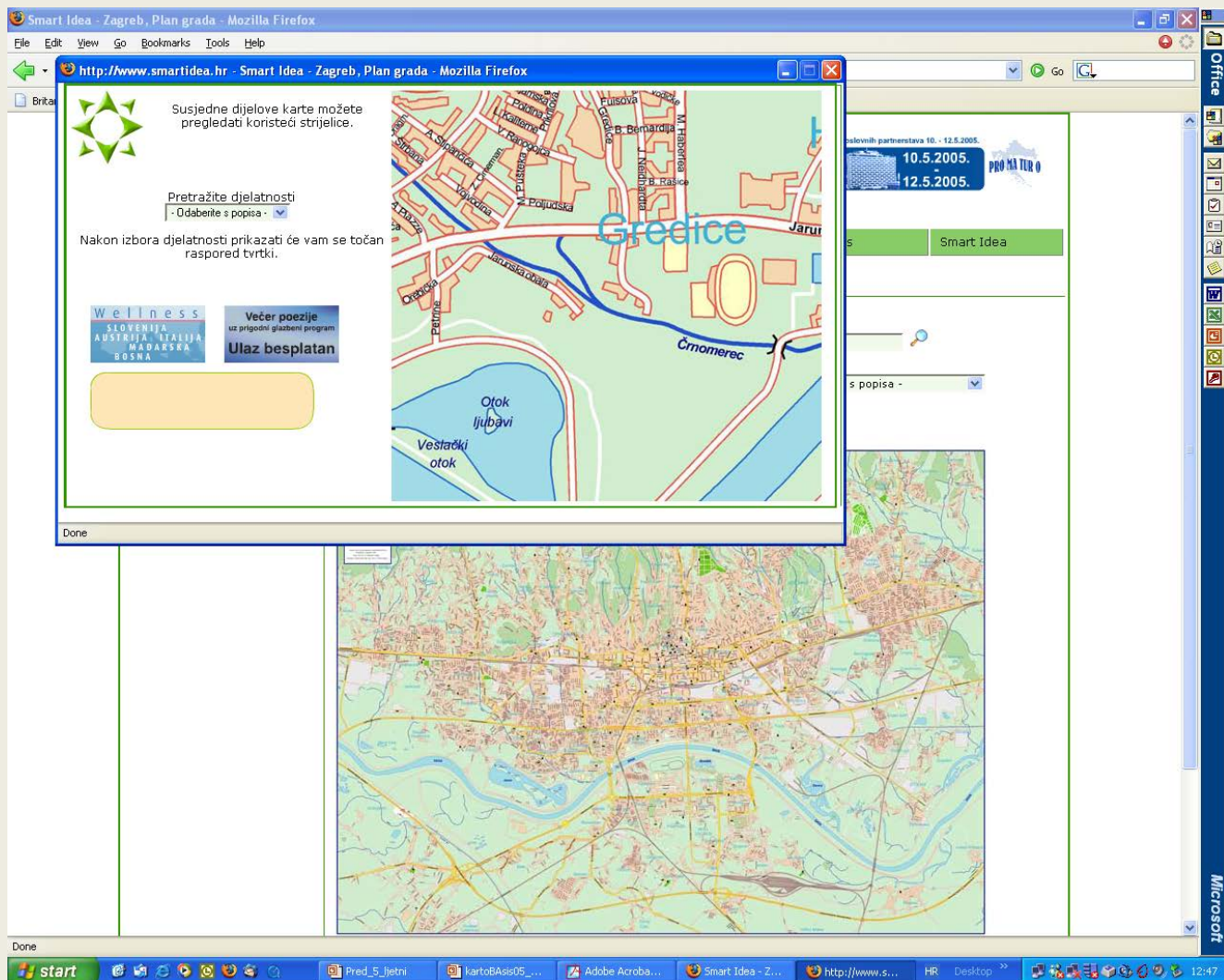
Tematske karte – zašto ih koristimo?

- Informacije



Tematske karte – zašto ih koristimo?

- Određivanje lokacije



Tematske karte – zašto ih koristimo?

- <http://www.smartidea.hr/plan/index2.asp?grad=4&Kategorija=119>



Tematske karte – zašto ih koristimo?

- Informacije o sustavima s prostornom komponentom



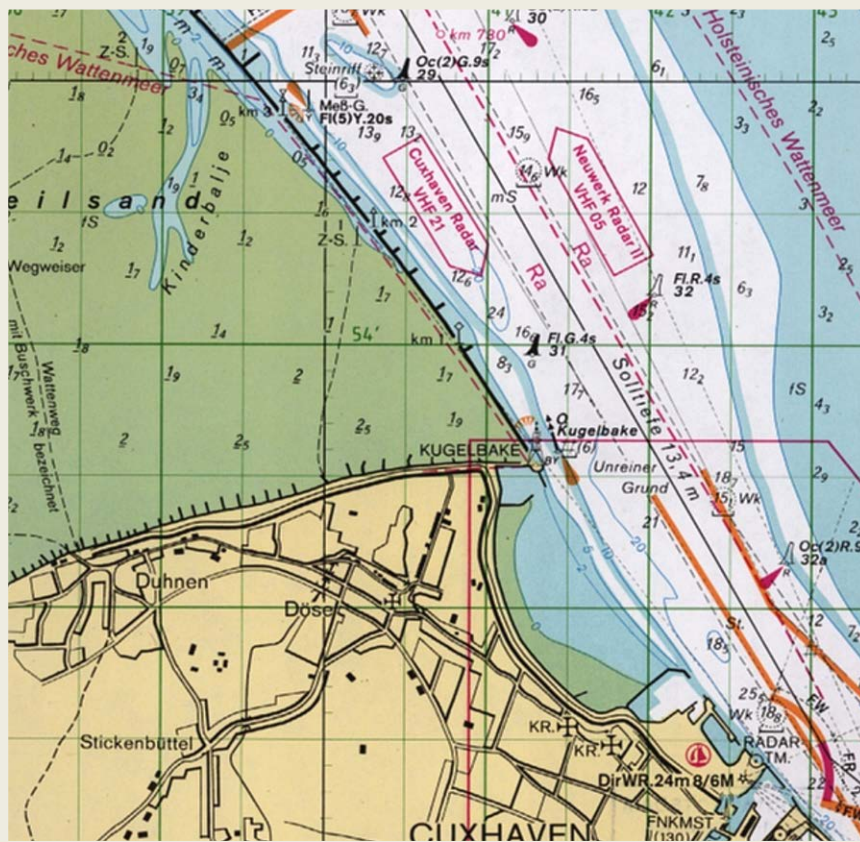
Tematske karte – zašto ih koristimo?

- Informacije o objektima



Tematske karte – zašto ih koristimo?

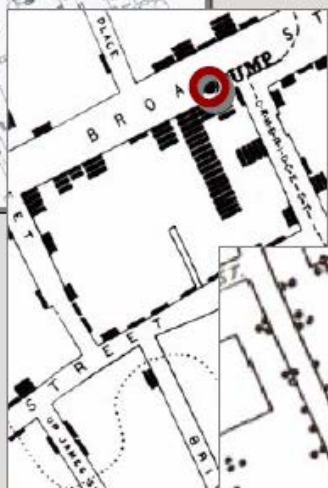
- navigacija



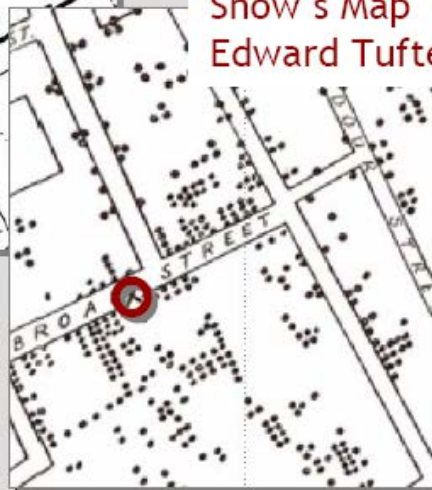
Tematske karte – zašto ih koristimo?



Map of Cholera
Deaths in Broad
Street Area
John Snow, M.D.
(1854)

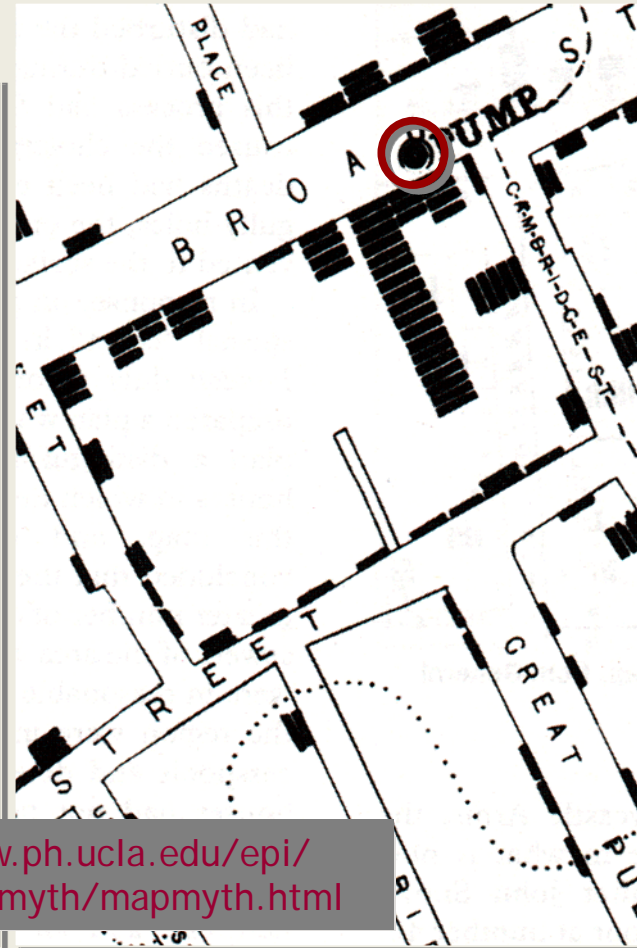


Redesign of John
Snow's Map
Edward Tufte (1983)



- Istraživanje prostornih pojava i procesa
- Karta pojave kolere u Londonu - Dr. John Snow

Tematske karte – zašto ih koristimo?



Izvor: www.ph.ucla.edu/epi/snow/mapmyth/mapmyth.html

Istraživanje prostornih pojava i procesa

- Muđuovisnost pojave kolere (broj oboljelih) i vodoopskrbnog sustava (Soho, London, 1854.g. – broj oboljelih 854, broj pumpi 13)



Zašto tematske karte?

- Potreba vizualizacije prostornih podataka najrazličitijih tema stvarnog svijeta (prostornih/neprostrornih) – stalnoprисutna činjenica
- Raznolikost prostornih tema zahtijeva specifične, svakoj **temi prilagođene kartografske modele** (razlika TK)
- **Specifični kartografski model prilagođen namjeni karte**
- **Raznovrsnu vizualizaciju** prostornih tema omogućuju brojna sredstva kartografskog izražavanja
- Više od 85% svih karata su karte sa specifičnim temama: **tematske karte.**



Carte Figurative des pertes successives en hommes de l'Armée Française dans la campagne de Russie 1812-1813.

Dessiné par M. Minard, Inspecteur Général des Ponts et Chaussées à l'époque Paris, le 20 Novembre. 1869

Les nombres d'hommes présents sont représentés par les longueurs des zones colorées à raison d'un millimètre pour dix mille hommes; ils sont de plus écrits en lettres des zones. Le rouge désigne les hommes qui entrent en Russie, le noir ceux qui en sortent. Les renseignements qui ont servi à dresser la carte ont été puisés dans les ouvrages de M. M. Chiers, de Legur, de Fezandac, de Chambray et le journal inédit de Jacob, pharmacien de l'Armée depuis le 28 Octobre. Pour mieux faire juger à l'œil la diminution de l'armée, j'ai supposé que les corps de l'armée Jérôme et du Maréchal Davoust qui avaient été détachés sur Minsk et Mohilew et qui rejoignirent Orel et Witbek, avaient toujours marché avec l'armée.

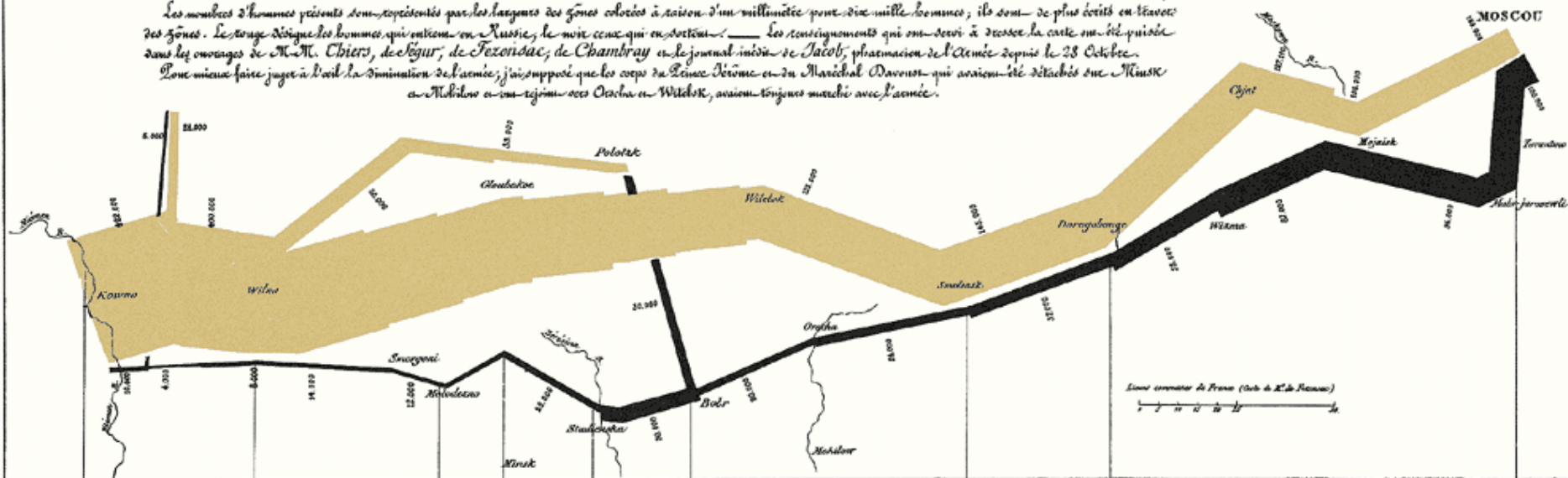
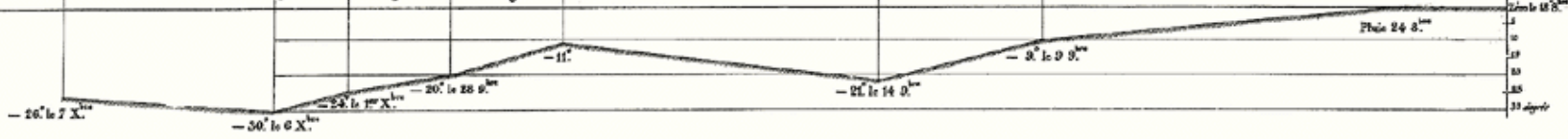


TABLEAU GRAPHIQUE de la température en degrés du thermomètre de Réaumur au dessous de zéro.



Dessiné par Régisier, à Paris, le 17 Mars 1813.



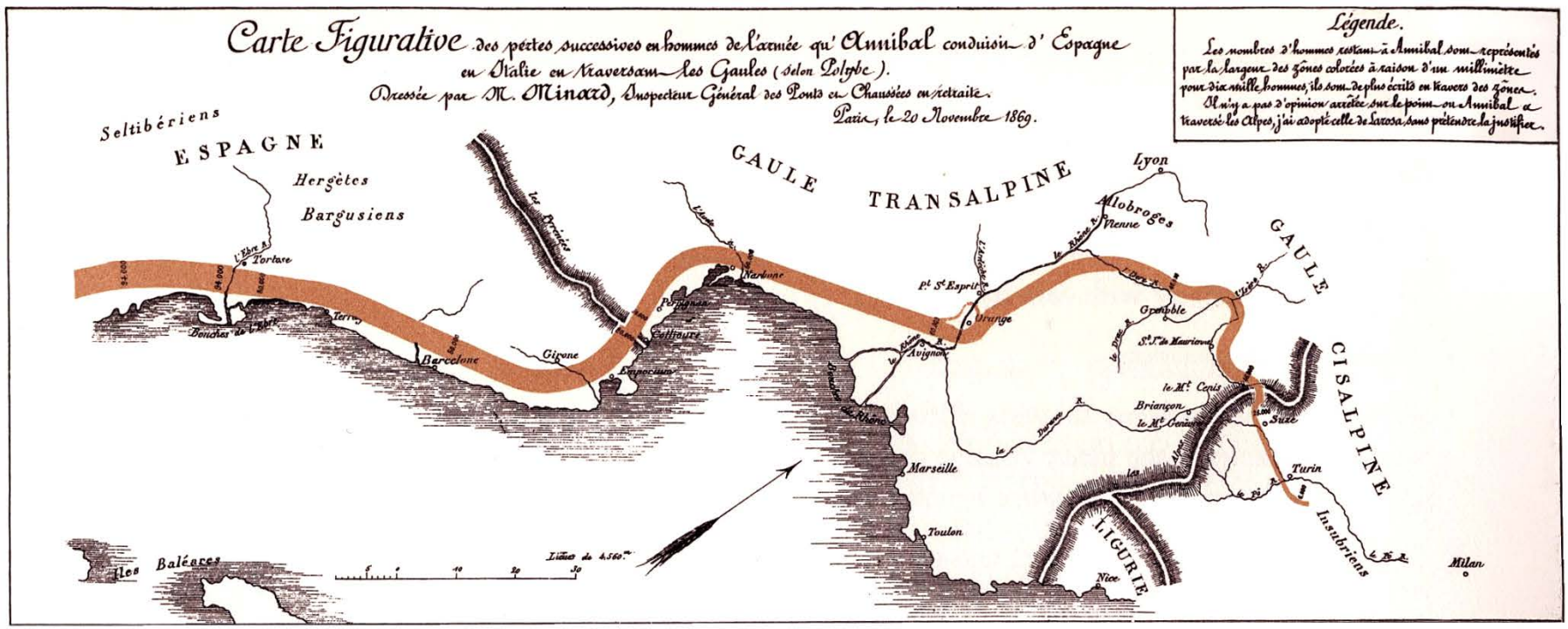
Carte Figurative des pertes successives en hommes de l'armée qu'Annibal conduisit d'Espagne en Italie en traversant les Gaules (selon Lolybe).

Dressée par M. Minard, Inspecteur Général des Ponts et Chaussées en retraite.

Paris, le 20 Novembre 1869.

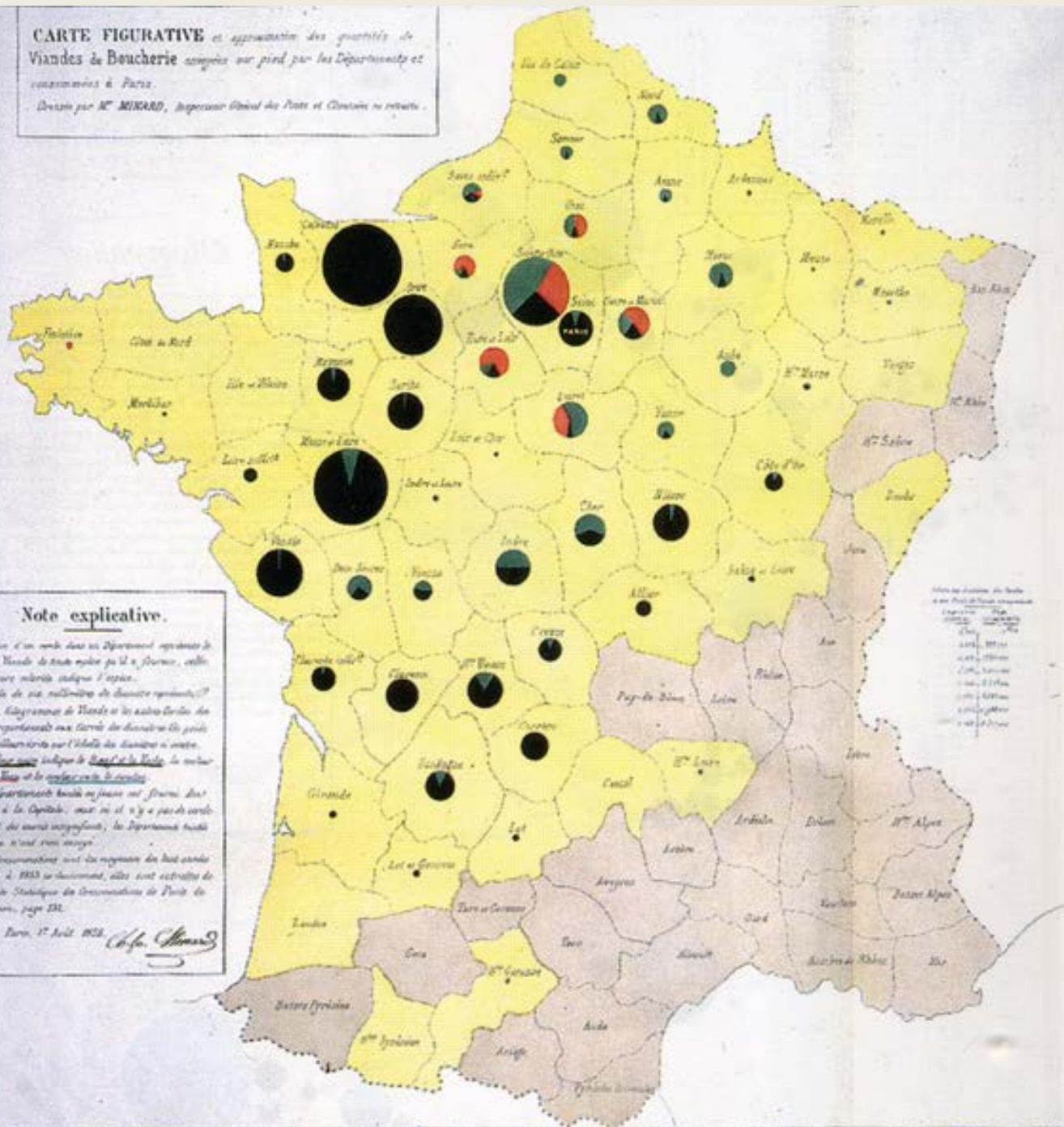
Légende.

Les nombres d'hommes restant à Annibal sont représentés par la largeur des zones colorées à raison d'un millimètre pour dix mille hommes; ils sont de plus écrits en travers des zones. Il n'y a pas d'opinion arrêtée sur le point où Annibal a traversé les Alpes; j'ai adopté celle de Livius sans prétendre la justifier.



CARTE FIGURATIVE et approximation des quantités de Viandes de Boucherie consommées sur pied par les Départements et communales à Paris.

Dessiné par M^r MINARD, Inspecteur Général des Ponts et Chaussées en retraite.



Note explicative.

La surface d'un cercle dans un Département représente le poids de Viande de Boucherie consommée sur pied, celle de l'autre moitié indique l'espèce.

Un cercle de six millimètres de diamètre représente 100 000 kilogrammes de Viande et les autres cercles de poids proportionnels aux cercles de diamètre six fois tant et autant de fois tant.

La couleur noire indique le Bœuf, le rouge le Veau, le vert le Mouton et le blanc le Porc.

Les Départements hachés en jaune ont fourni des Bœufs à la Capitale, mais si il n'y a pas de cercle, ont fait des vaches engraissees, les Départements hachés en brun n'ont rien envoyé.

Ces Observations ont été rédigées de nos années de 1845 à 1853 inclusivement, elles sont extraites de l'Annuaire Statistique des Communes de Paris de M^r Buisson, page 132.

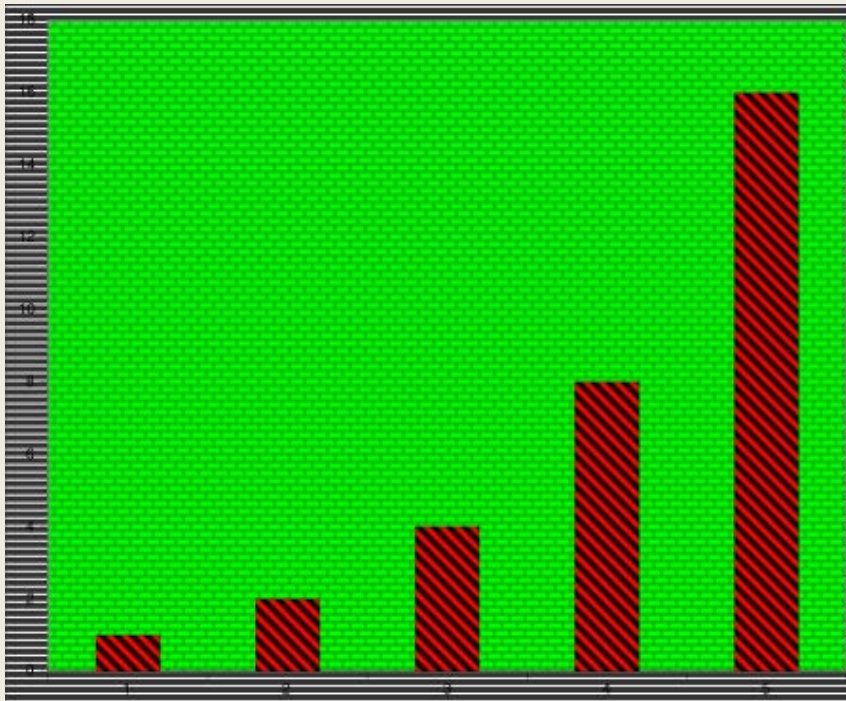
Paris, 17 Août 1853.

Ch. Minard

Tableau des diamètres des cercles et des poids de viande correspondants.

Diamètre (mm)	Poids (kg)
6	100 000
12	400 000
18	900 000
24	1 600 000
30	2 250 000
36	2 880 000
42	3 480 000
48	4 080 000
54	4 680 000
60	5 280 000





Tematske karte - definicija

- Karte na kojima se na temelju pojednostavljene topografske temeljne karte, prikazuju raznovrsna područja prirodnog, privrednog, društvenog i kulturnog prostora.
- Veliki broj tema, raznolikost metoda kartografskog prikaza i vrlo raznolika namjena rezultira raznovrsnošću koju nemaju topografske karte (Witt, 1979)



Tematske karte - definicija

- Prikazuju objekte i stanja prirodne sredine te ekonomske i društvene sfere, ali ne na način kako to čine topografske karte (Bollman/Koch, 2002.)



Tematske karte - sastavnice

1. Temeljna karta
2. Tematski sadržaj

Izbor temeljne karte ovisi o tematskom sadržaju



Usporedba tematske – topografske karte

- **Topografske karte** – model najbliži stvarnoj slici prostorne stvarnosti (konkretnost i statičnost prikaza)
- **Tematske karte** – mogu se prikazivati i apstraktne pojave i statističke mjere (gustoća, strukture, frekvencije, korelacije) – prikazuje dinamiku razvoja pojave (vremensku i prostornu)



Tematske karte - **pojam**

- **Specifičnost:** predmet prikaza može biti apstraktan sadržaj, za razliku od topografskih karata
- **Problem:** nema jasne granice između tematskih i topografskih karata (koje su pretežno orijentirane prema definiranju položaja i opisnih obilježja geoobjekta
 - U doslovnom smislu topografski objekti predstavljaju jednu “temu”
 - Postoje različite prijelazne forme između tematskih i topografskih karata (planinarske karte, planovi gradova)



Tematske karte - **pojam**

- Termin “tematske karte” upotrijebio je 1934. Schumacher
- Kao termin prihvaća se poslije 2. sv. r.
- Stariji termini: “primjenjene karte”, “specijalne karte”, “problemske karte” i dr.
- Thematic map, carte thematique, tematische karte



Tematske karte

- Predočivanje položaja, rasprostranjenosti, svojstva, trajanja, kretanja, usmjerenosti, učestalosti, količine (apsolutnih/relativnih, srednjih vrijednosti), odnosa geoobjekata/pojava/stanja (struktura)
- Predočivanje recentnih, budućih i prošlih pojava, struktura i procesa
- Prikazivanje prostorno uvjetovanih hipoteza, tendencija, mogućnosti, projekata, pretpostavki
- Donošenje prostornih odluka

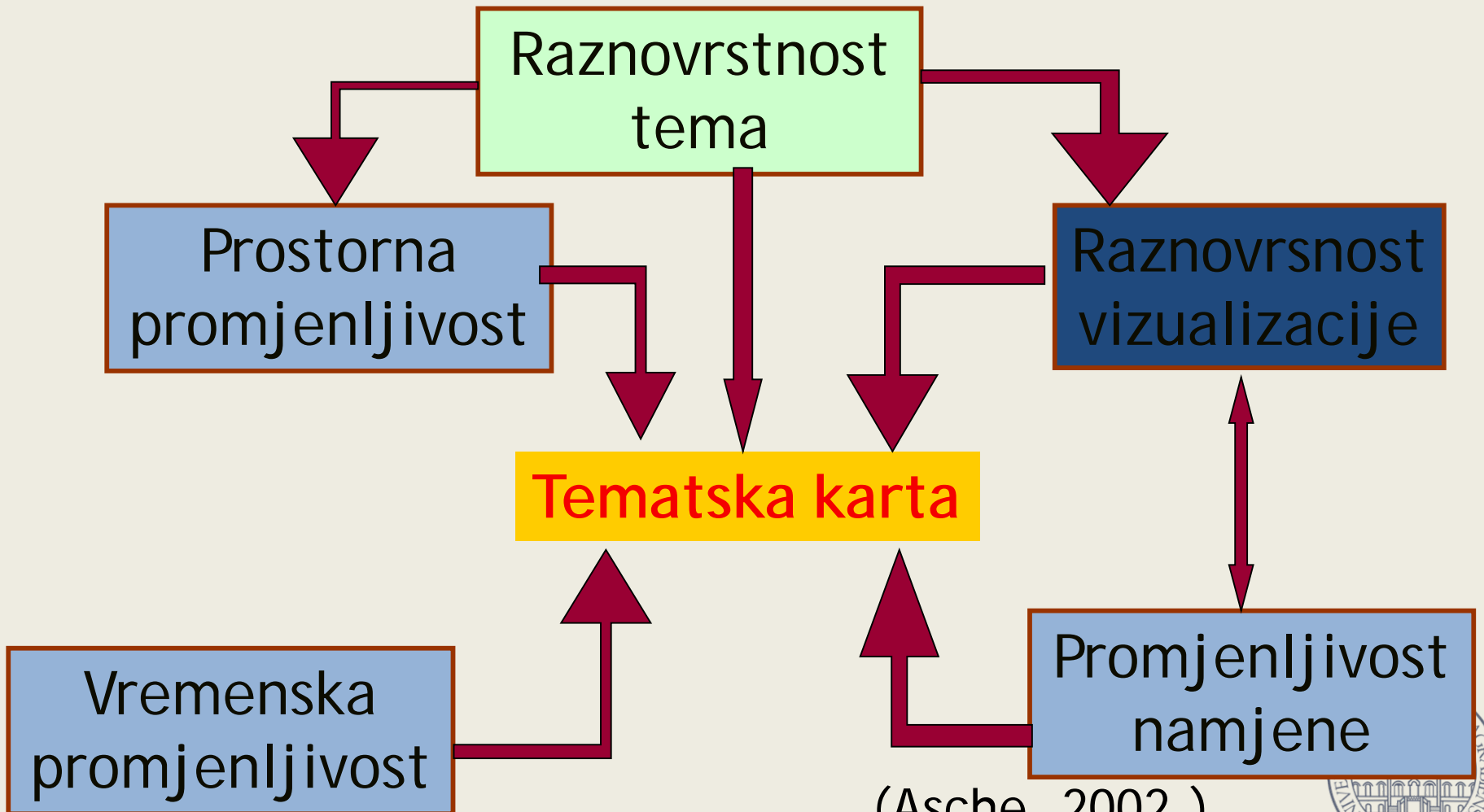


Tematske karte - obilježja

- Raznovrsnost tema
 - Široki spektar prostorno uvjetovanih tema
 - Konkretno/apstraktne teme, realne/virtualne teme
- Raznovrstnost vizualizacije
 - Velika mogućnost izbora tema i mjerila - planovi gradova, auto-karte, ekonomske karte
 - Standardizacija u suglasju s kreativnom, projektno usmjerenom vizualizacijom
- Prostorne i vremenske varijable
 - Smještajna i položajna točnost
 - Sadašnjost, prošlost, budućnost – vremensko trajanje i promjene



Tematske karte - obilježja



(Asche, 2002.)



- Tematske karte ne samo da nam omogućuju prodočivanje prostornih pojava i procesa, već pomažu u istraživanju njihovih međuovisnosti,, promjena, korelacija, razvoja itd. (Witt, 1979.)



Temeljni zadatak

- Otkrivanje i uočavanje prostornih struktura odnosno veza između izabranih objekata u prostoru (što nije moguće bez naglaska na jednoj temi).



Tematska kartografija - razvoj

- < 1650. Preteče tematskih karata (npr. Tabula Peutingeriana)
- 1650.-1750. Vojno-strategijske karte
 - 1701.g. Karta izogona (deklinacija) za Atlantski ocean
 - 1727. prva gospodarska karta – Proizvodi i životinje Filipina
 - Karte nalazišta ruda (rudnika)



Tematska kartografija - razvoj

- **1750.-1850.** Političke, administrativne, planovi gradova
 - 1838-48. – prvi tematski atlas Svijeta: Physikalischer Atlas (Berghaus) – izd. Justus Perthes
- **1850.-1920.** Prometne, klimatske, upravne
- **1920.-1945.** Regionalni atlas, planerske karte, karte nacionalne strukture, vegetacijske karte
 - Pojam tematske karte



Tematska kartografija - razvoj

- **1945.-1970.** Metode tematskog predočavanja, udžbenici i priručnici (Njemačka)
- **1970.-1980.** Počeci primjene računala u proizvodnji, pripremi i obradi podataka, redakciji karata : AMS (Automated Mapping System)



Tematska kartografija - razvoj

- **1980.-2000.** – Digitalna kartografija (primjena računala u izradi karata), GIS
 - Karte na zaslonu računala (DEM, interaktivne karte, GIS karte)
 - Vizualizacija
- **> 2000.** Multimedijska kartografija, internetske karte (Web kartografija)



- Kartografska izražajna sredstva

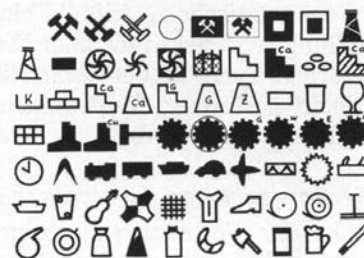
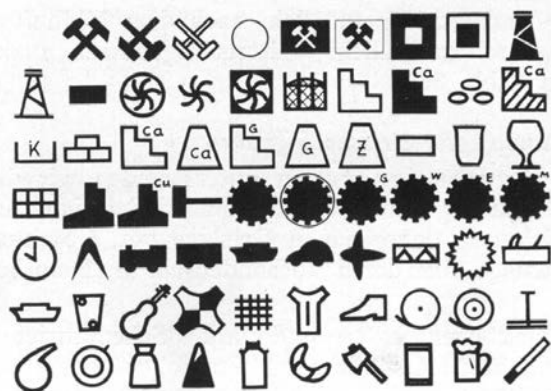
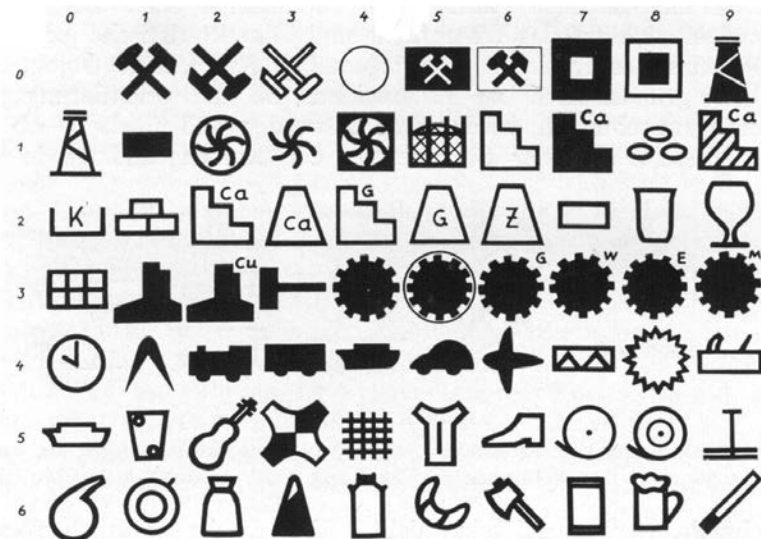


Kartografska izražajna sredstva (prema Arnbergeru)

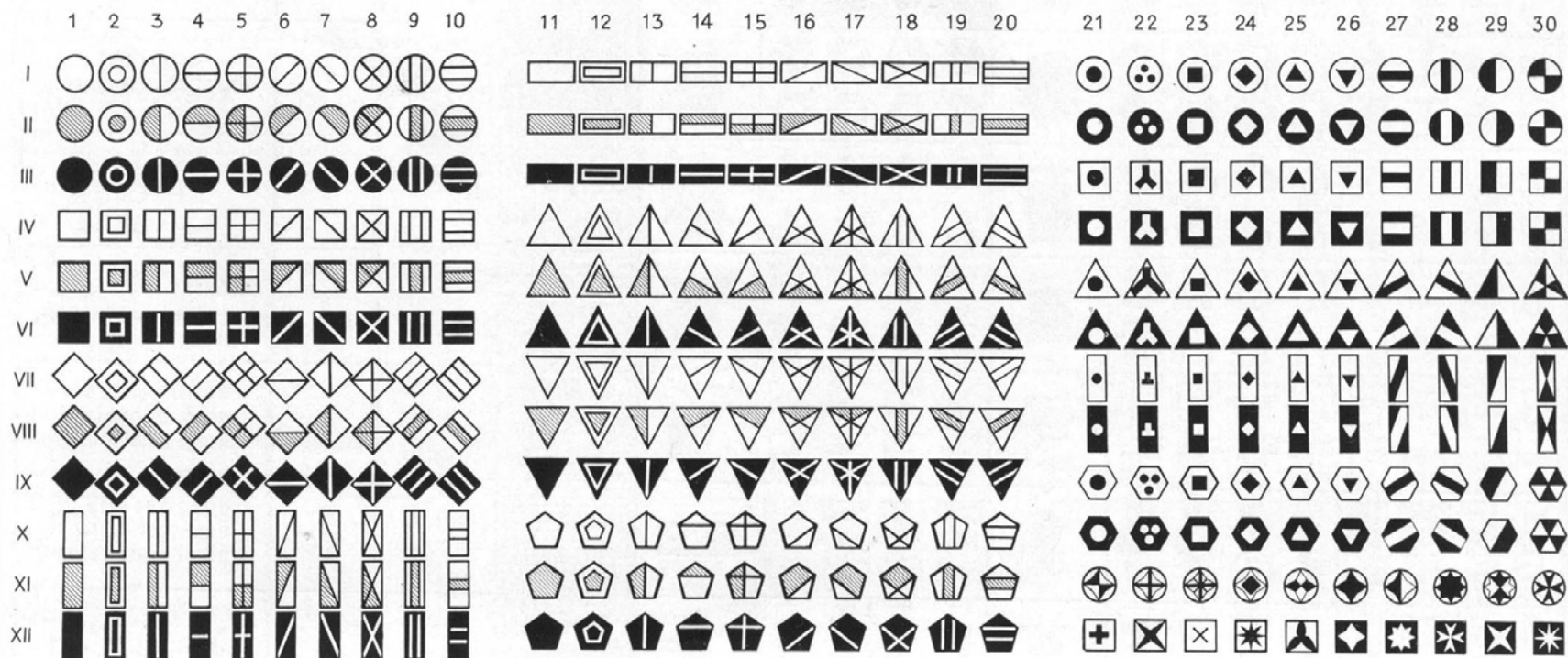
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2. Figurativne signature
3. Signature vrijednosnih jedinica
4. Alfnumeričke signature
5. Dijagrami
6. Podcrtavanje kao signatura
7. Linijske signature
8. Trakaste signature
9. Izolinije
10. Vrijednosne granice i granice rasprostranjenja objekata
11. Signature pokreta (vektori)
12. Površinske signature



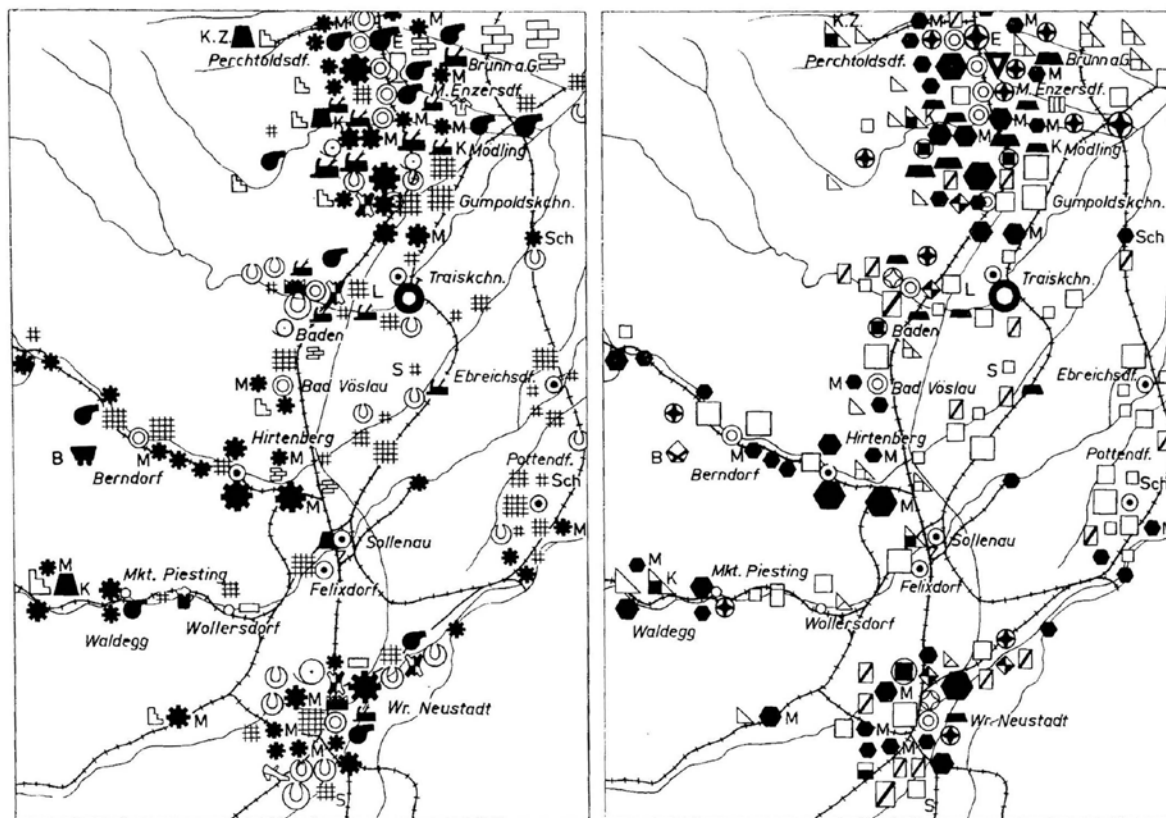
Figurativne signature (zorne)



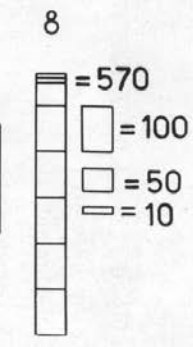
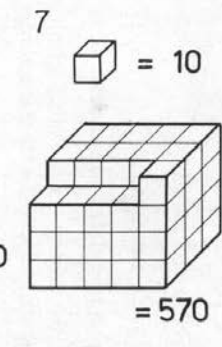
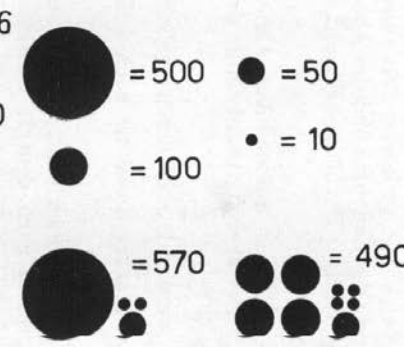
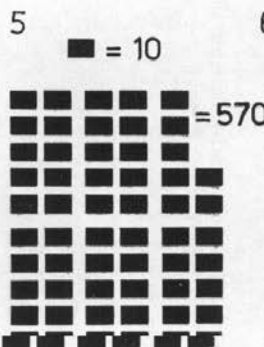
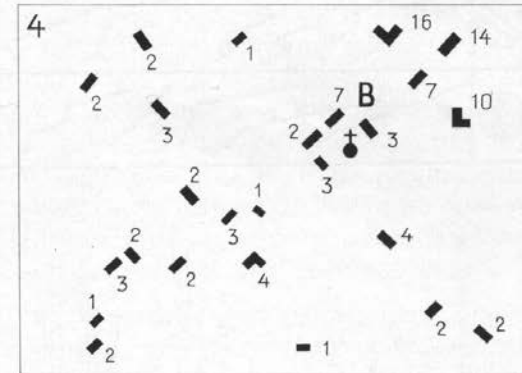
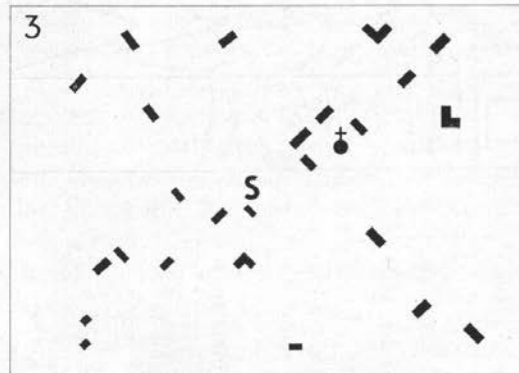
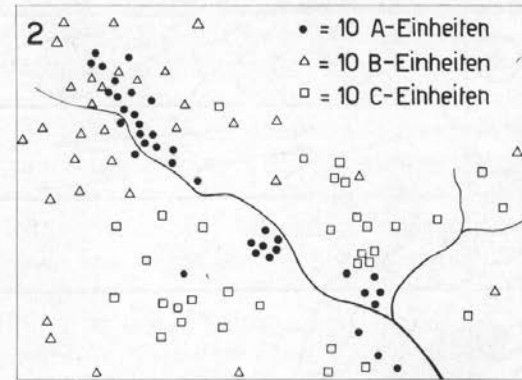
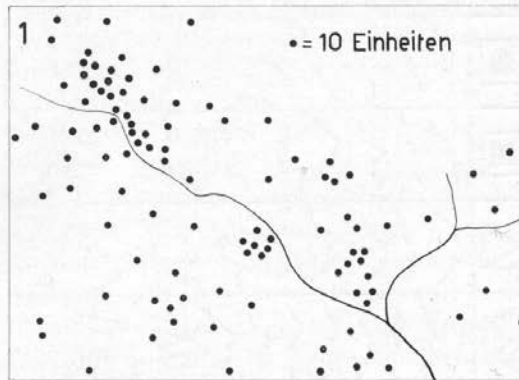
Figurativne signature (geometrijske)



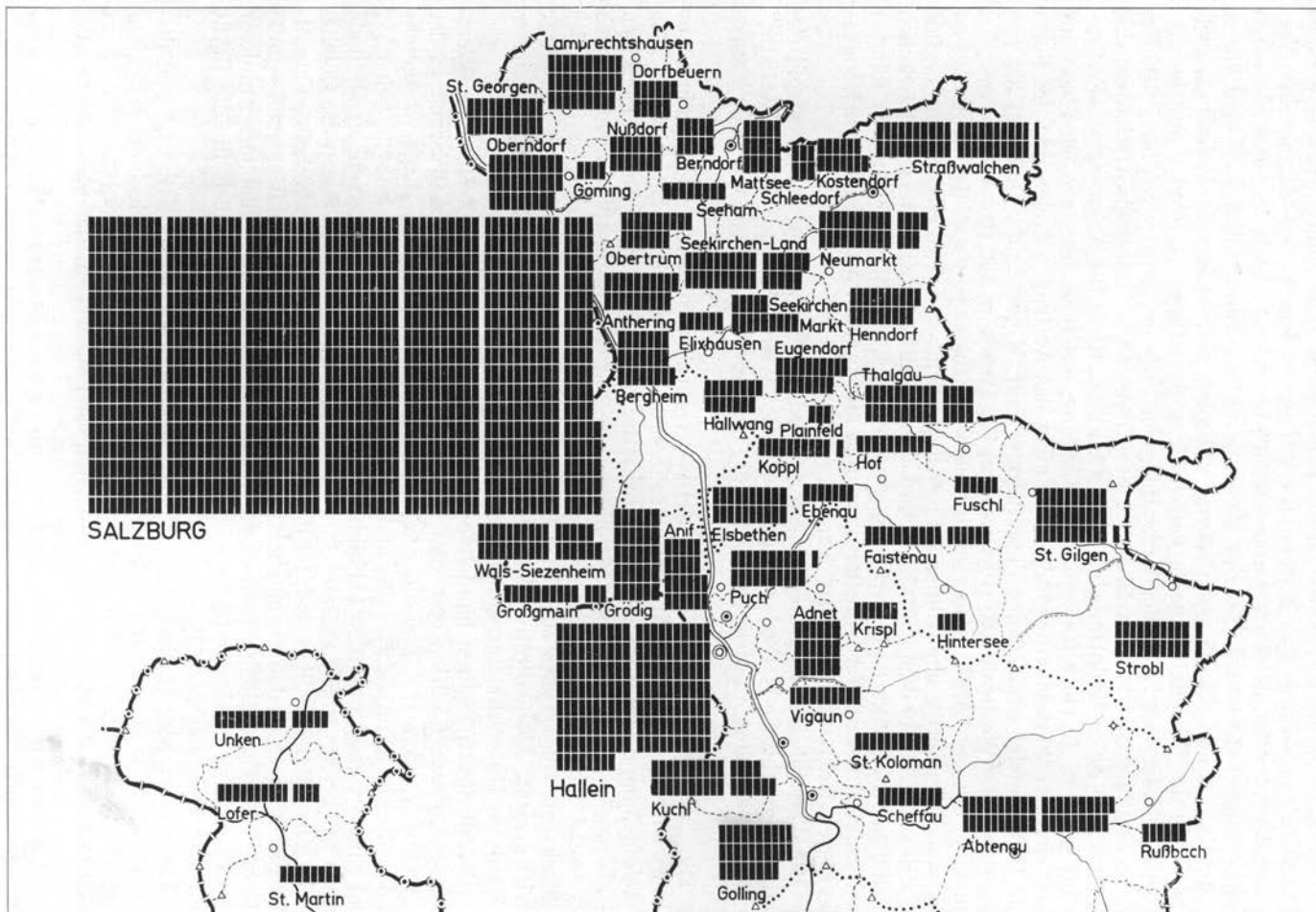
Primjeri primjene zornih i geometrijskih signatura



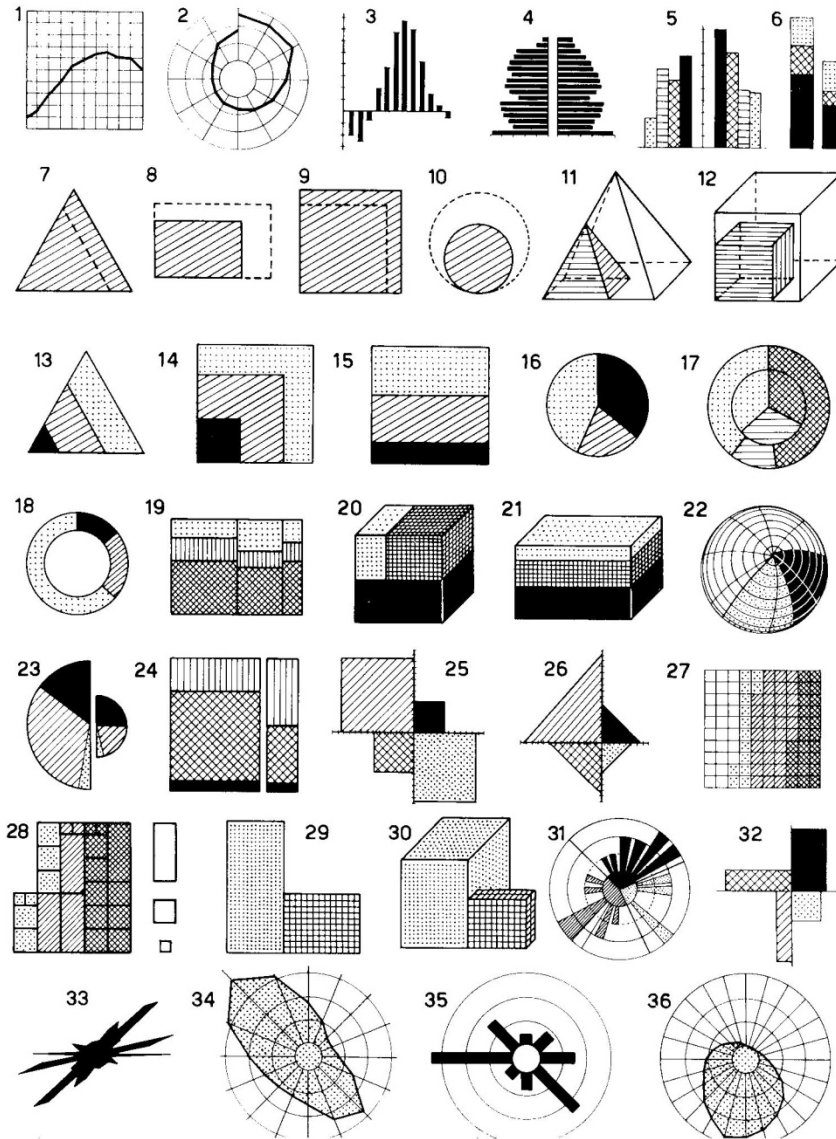
Signature vrijednosnih jedinica



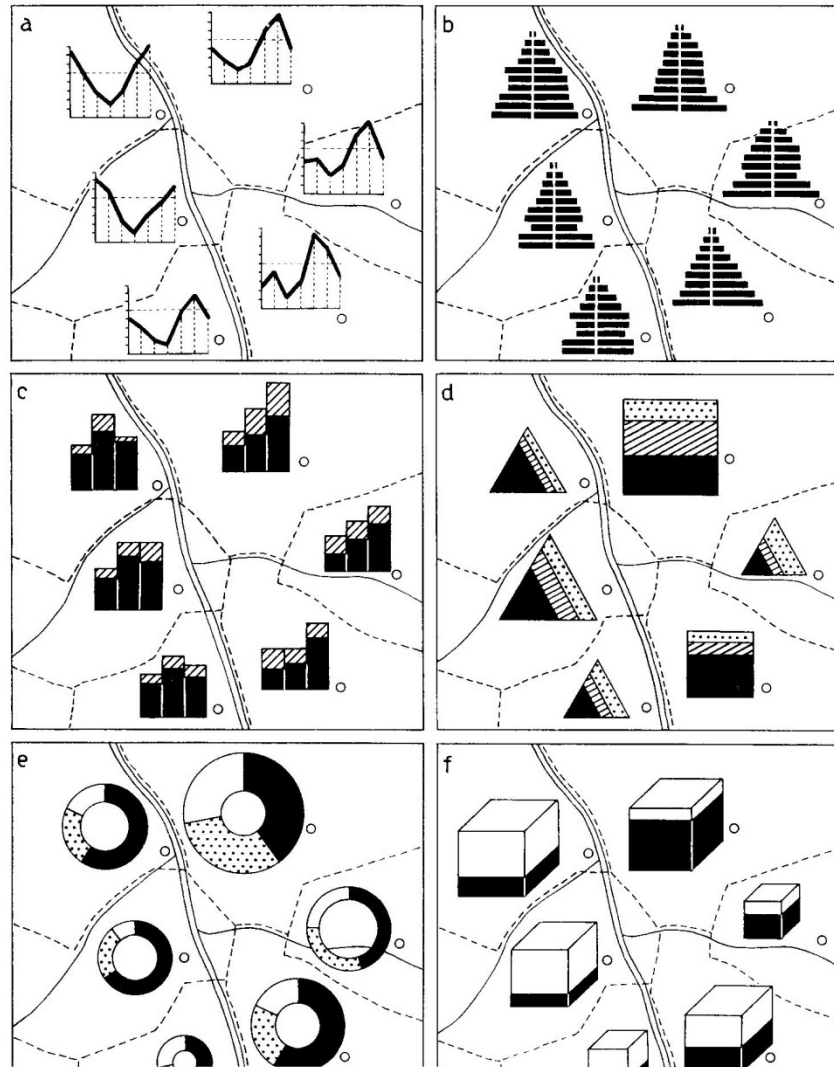
Prikaz stalnog stanovništva u općini Salzburg – metoda “bečke slikovne statistike” 1 pravokutnik = 100 st.



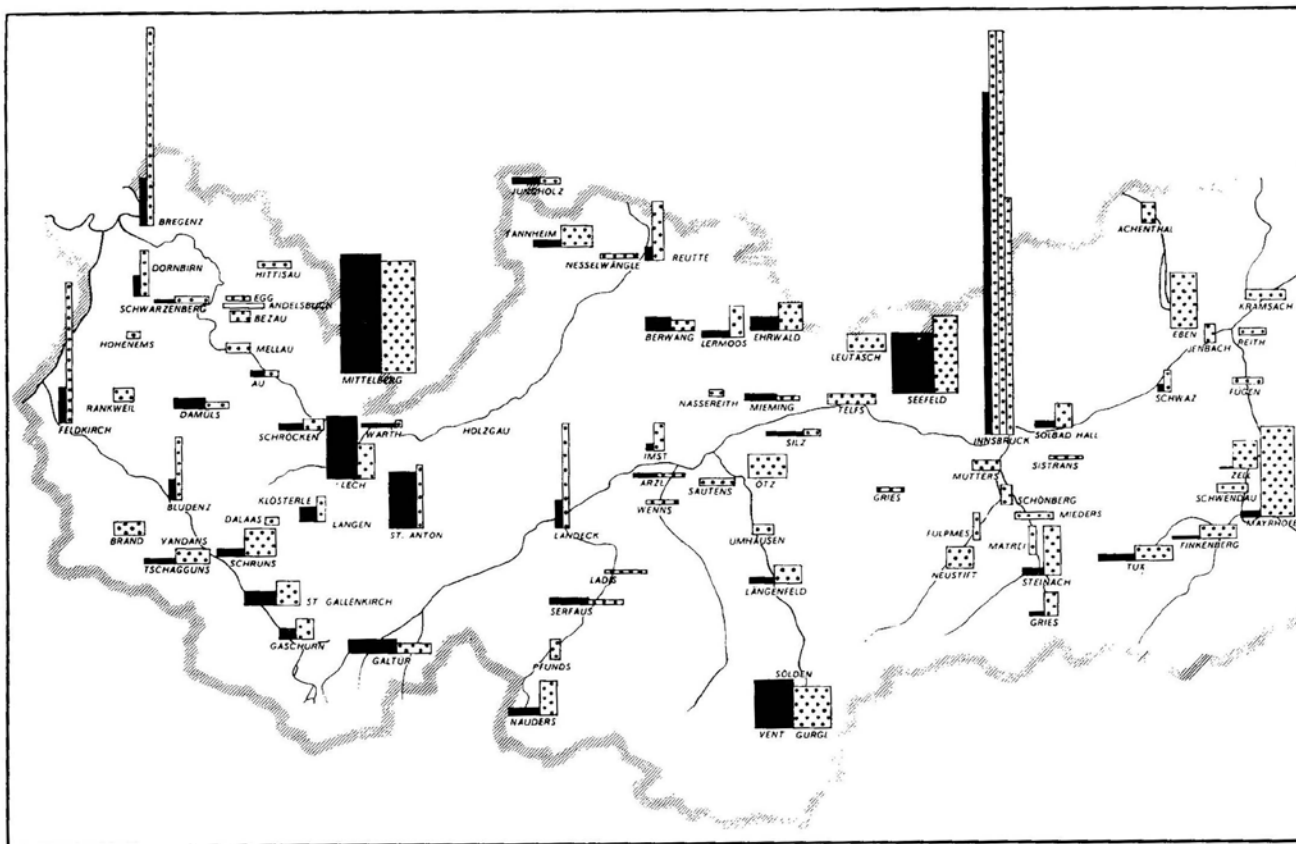
Dijagrami

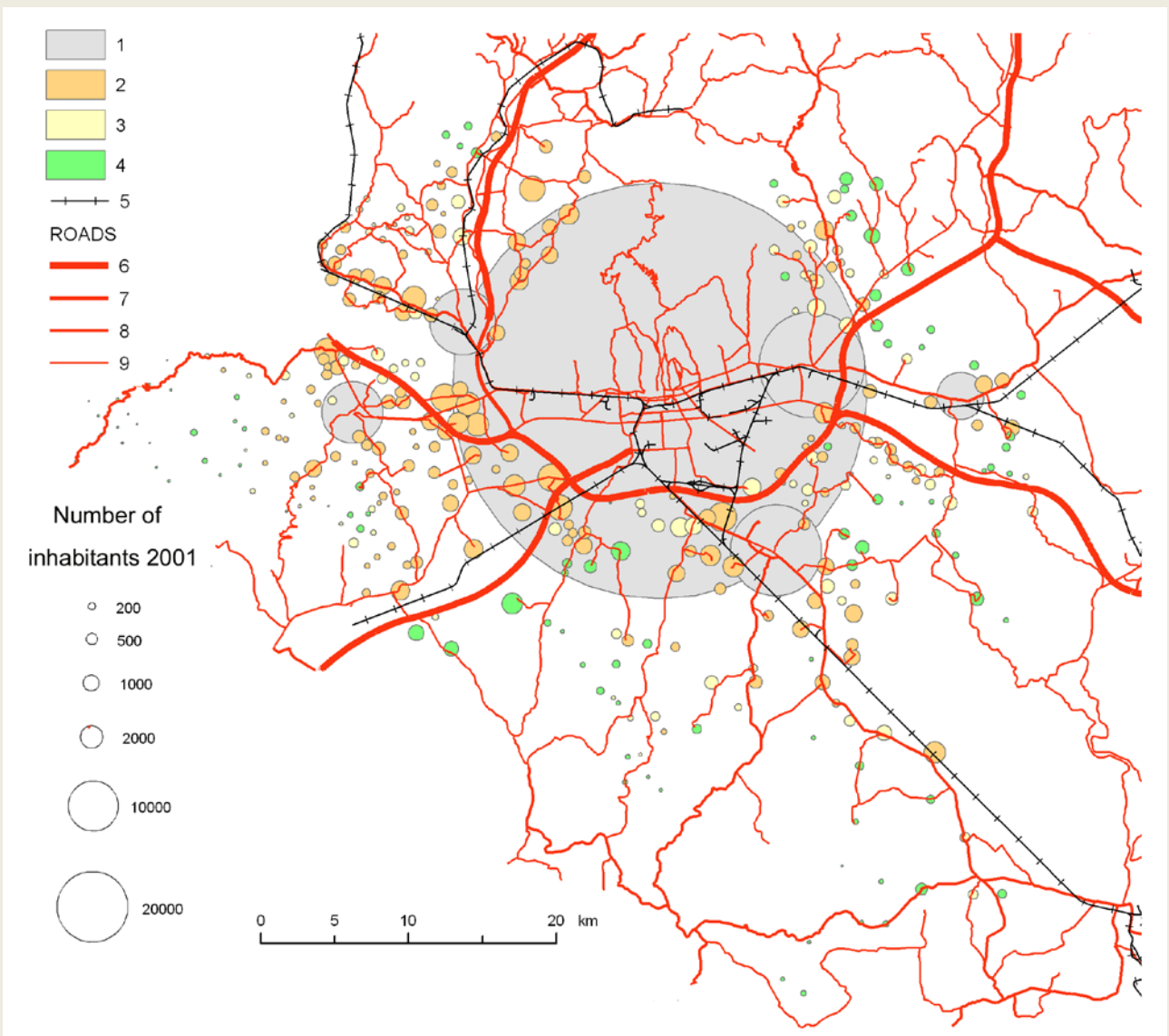


Primjeri primjene dijagrama u kartodijagramima

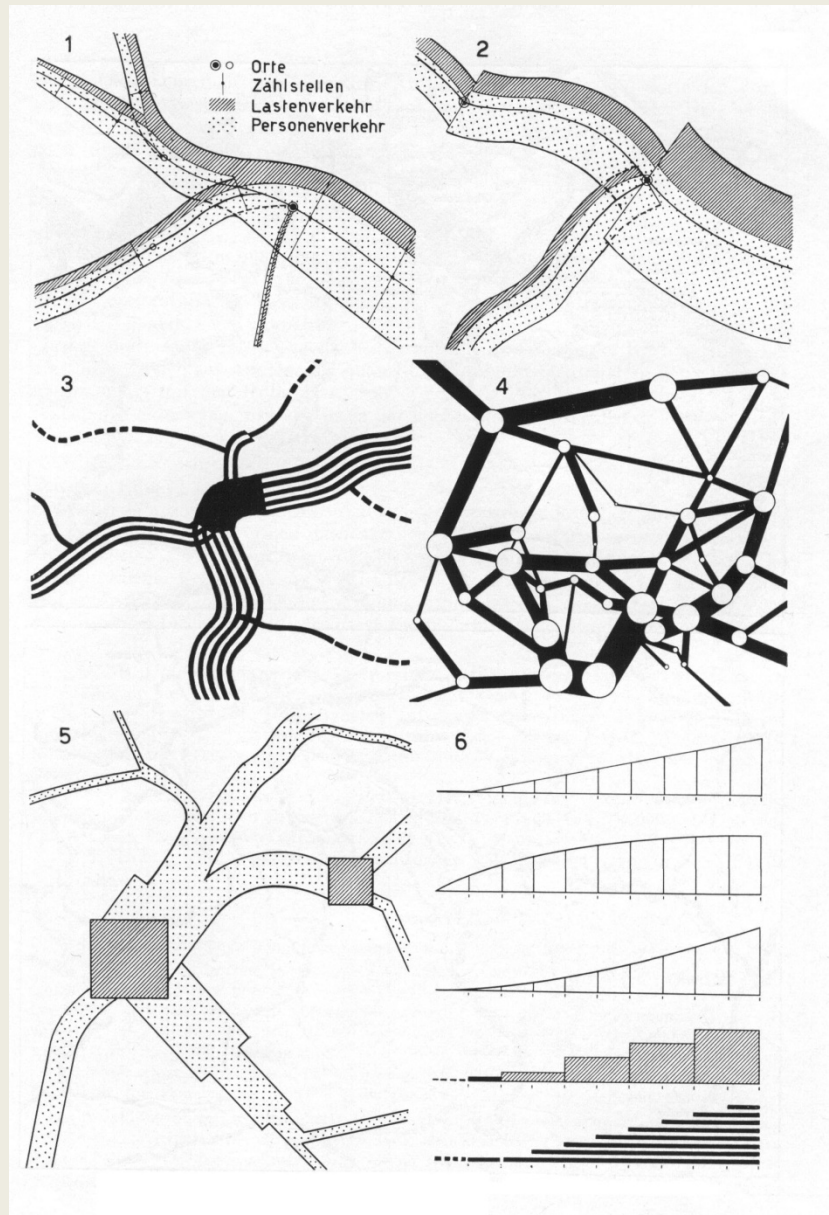


Primjer kartodijagrama

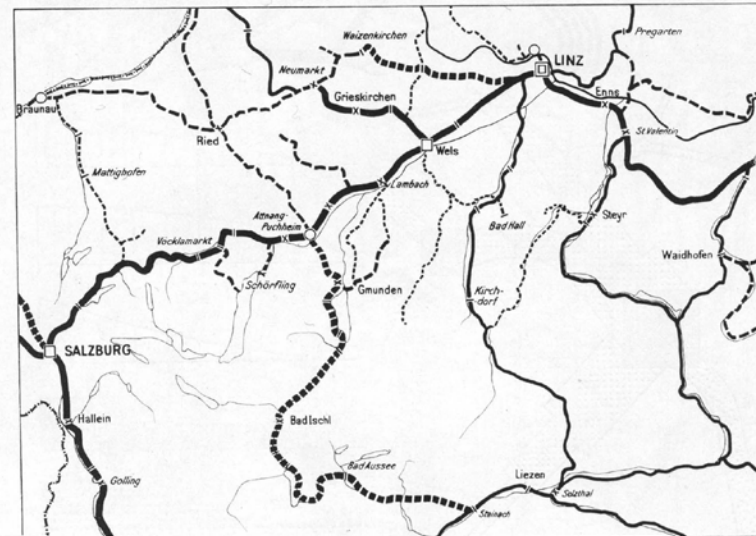
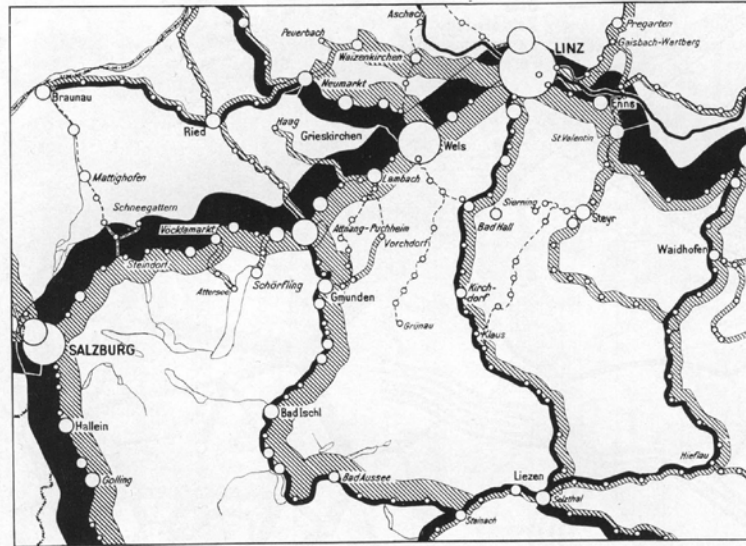


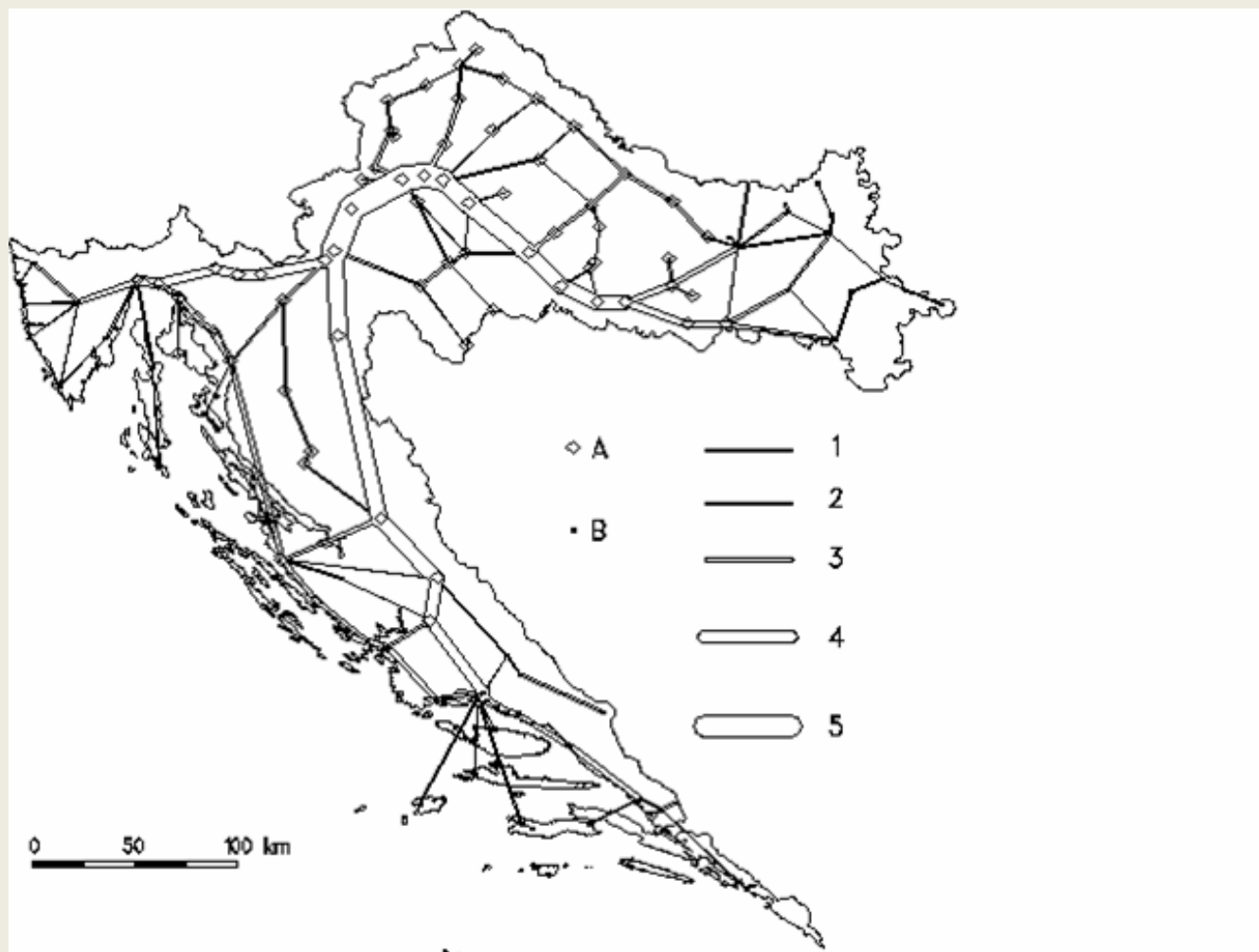


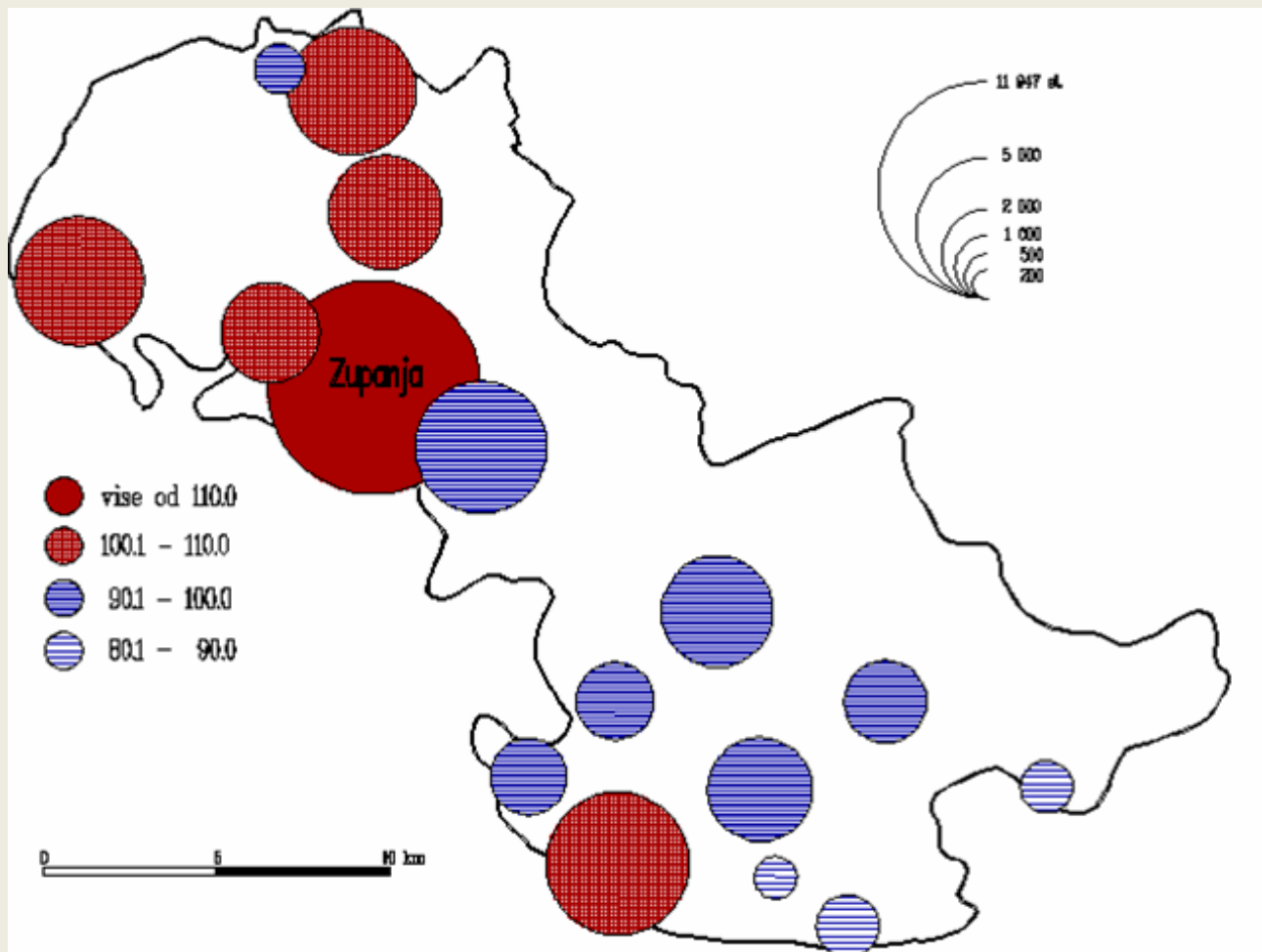
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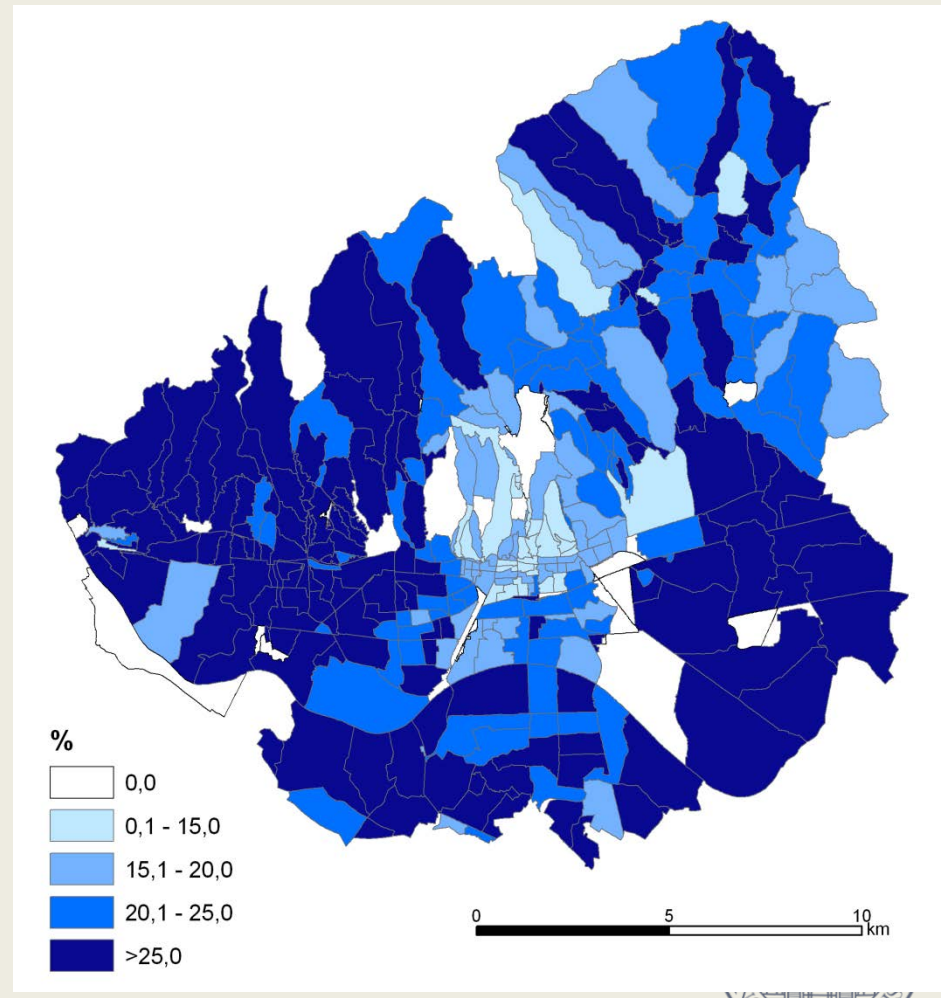
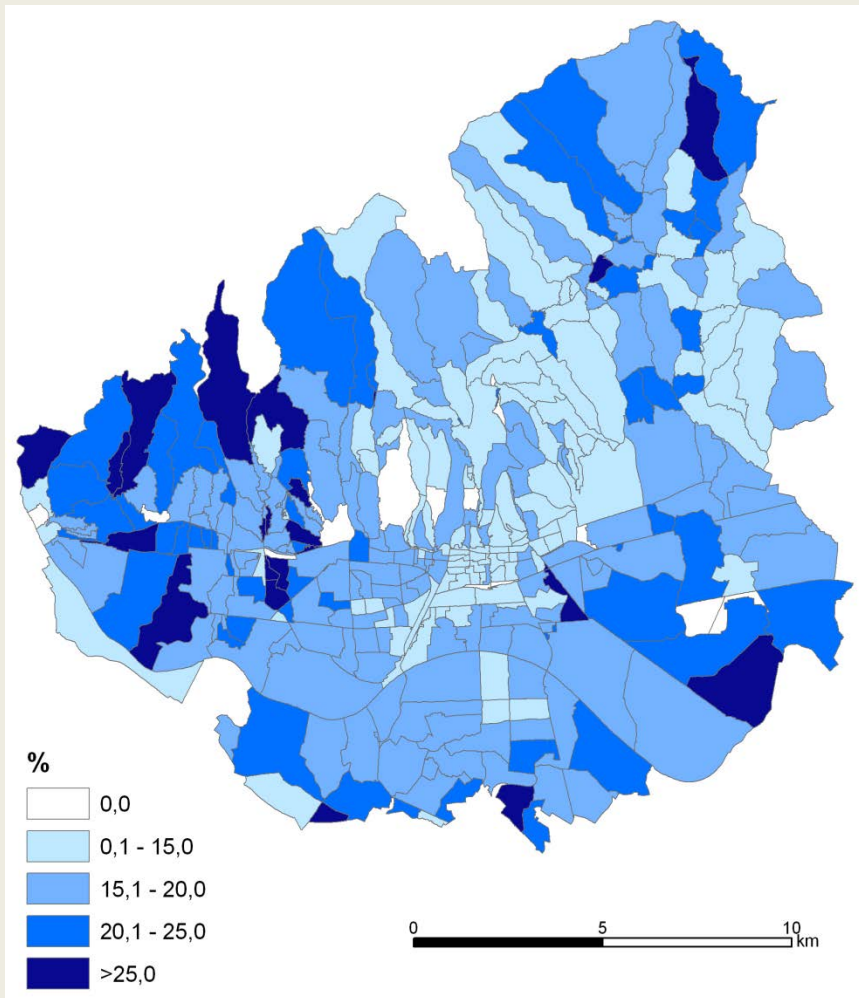


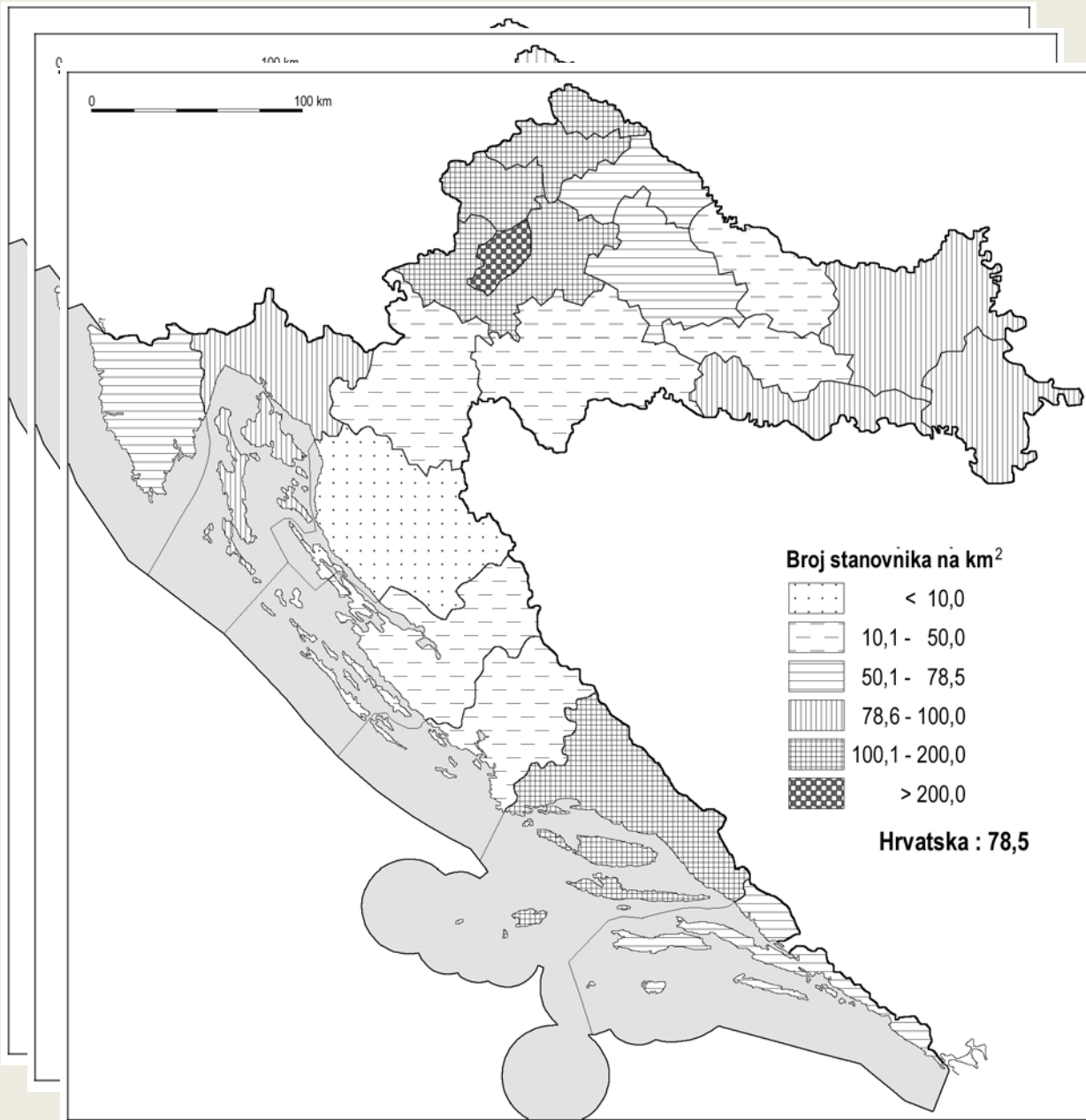
Prikaz putničkog prometa brzim (crno) i putničkim (sivo) vlakovima

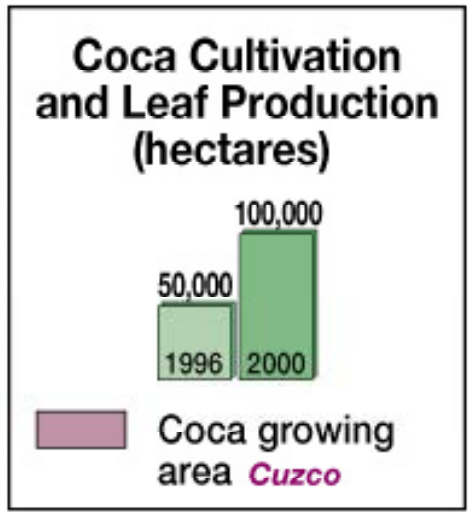
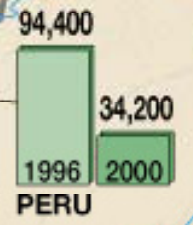
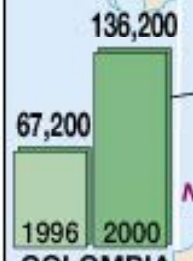






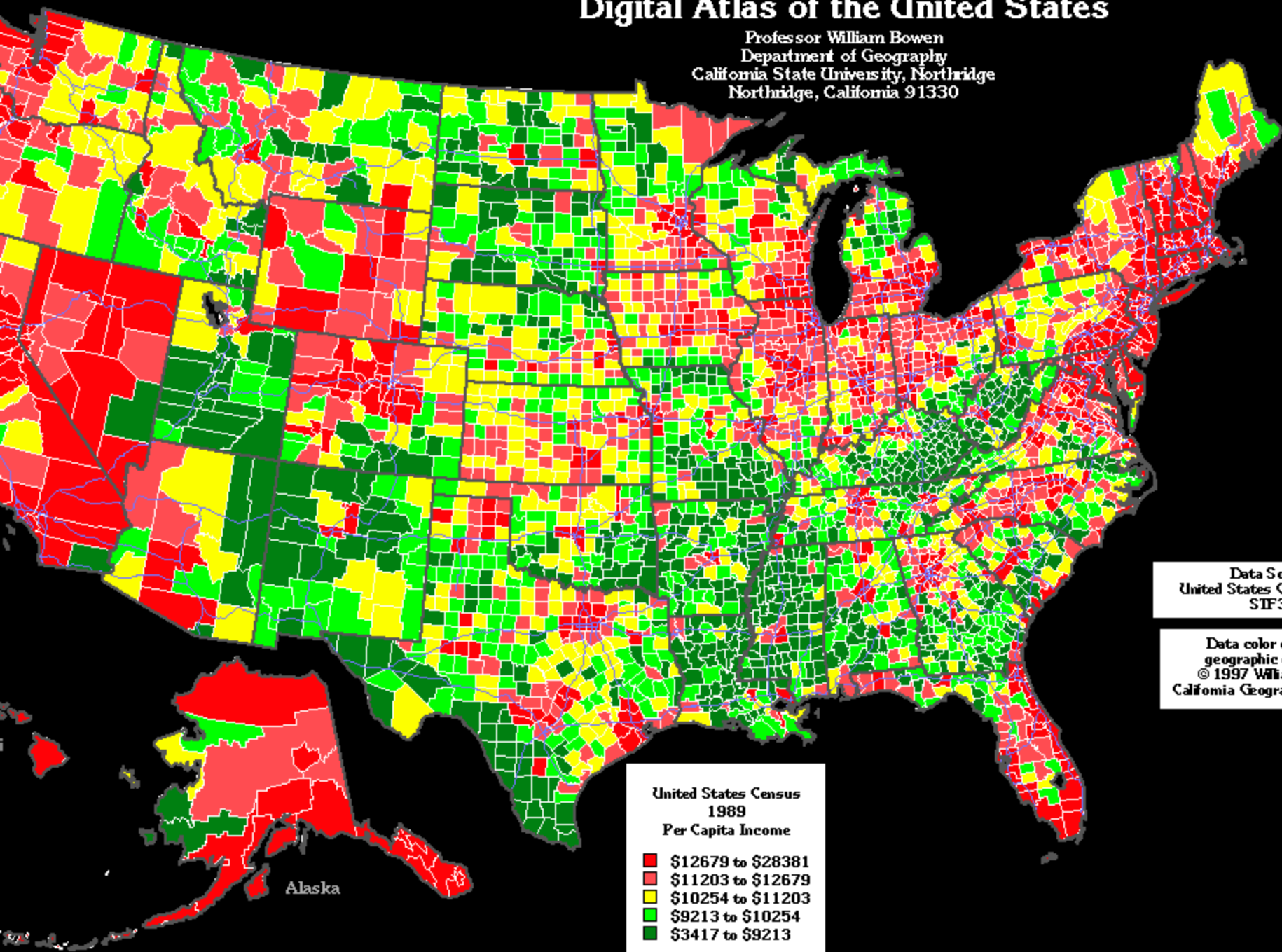






Digital Atlas of the United States

Professor William Bowen
Department of Geography
California State University, Northridge
Northridge, California 91330



Data Source
United States Census 1989
SIF3C

Data color coded by
geographic quintiles.
© 1997 William Bowen
California Geographical Society

United States Census
1989
Per Capita Income

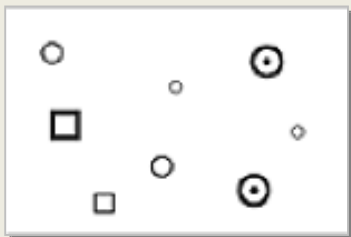
- \$12679 to \$28381
- \$11203 to \$12679
- \$10254 to \$11203
- \$9213 to \$10254
- \$3417 to \$9213

Metode tematskog predočivanja

- S obzirom na topološka obilježja prostornih struktura metode tematskog predočavanja možemo podijeliti u pojedine skupine metoda (Salisčev, Pillewizer, Stams). Te su skupine temeljene na tri osnovna grafička elementa:
 - točki
 - liniji
 - površini



Metode tematskog predočivanja



Pozicijske signature



Dijagramske signature



Metoda točaka



Linijske signature



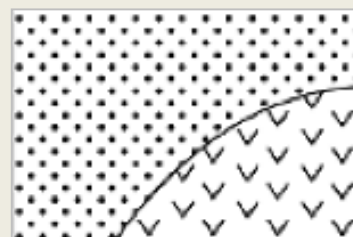
vektorske signature



Izolinije



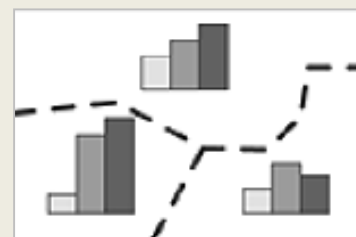
Arealne signature



Vrijednosne površine



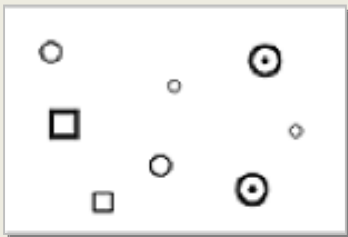
Površinski kartogram



Kartodijagram

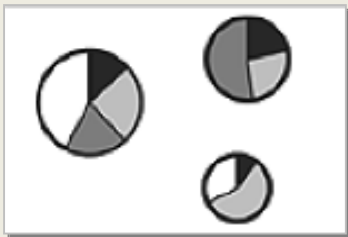
Izvor: BOLLMANN/KOCH 2002, 2:17

Točka (lokalni diskretni objekti)



Metoda pozicijskih (točkastih) signatura (>*point symbols*)

- Približan poredak po značaju (kvaliteti) prikazan točkastim signaturama
- Kvalitativne pojave



Metoda dijagramskih signatura (>*point diagrams*)

- Približan poredak po dijagramskim figurama
- Kvantitativna obilježja objekata



Metoda točkaka (>*dot map*)

- Prostorni raspored točkaka kojima je pridružena određena vrijednost (problem jedinične vrijednosti)

Linija (linijski diskretni objekti)



Metoda linijskih signatura (>*linear symbols*)

- Približan poredak po značenju prikazan linijskim signaturama
- Kvalitativna obilježja objekata



Metoda vektora (>*vector method*)

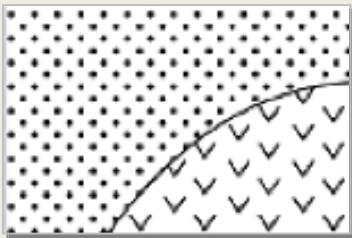
- Promjene položaja (mjesta), usmjerenje procesa
- Prostorna obilježja procesa i objekata

Površina (površinski diskretni objekti)



Metoda areala (>*qualitative area symbolisation*)

- Flächenmethode
- Prikaz kvalitativnih obilježja objekata površinskih signaturama



Generalizirana površinska

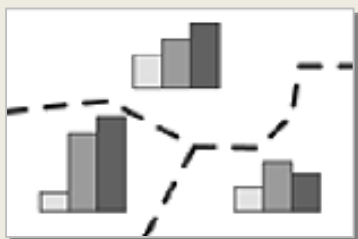
- **Flächenmittelwertmethode** (>*area mean value*)
- Primjena kvalitativno različitih površinskih signaturama
- Kvalitativno obilježja objekata



Površinski kartogram (>*choropleth map*)

- Prikaz kvantitativno određenih relativnih pokazatelja (povezivanje površinskih signaturama s intenzitetom pojave)

Površina



Kartodijagram (>*diagram map*)

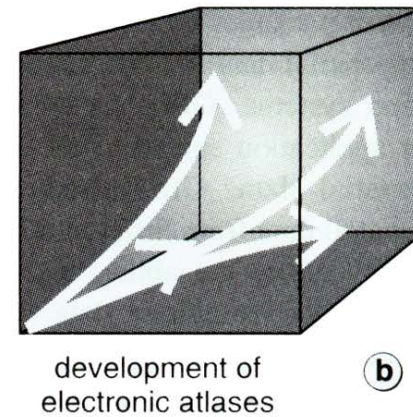
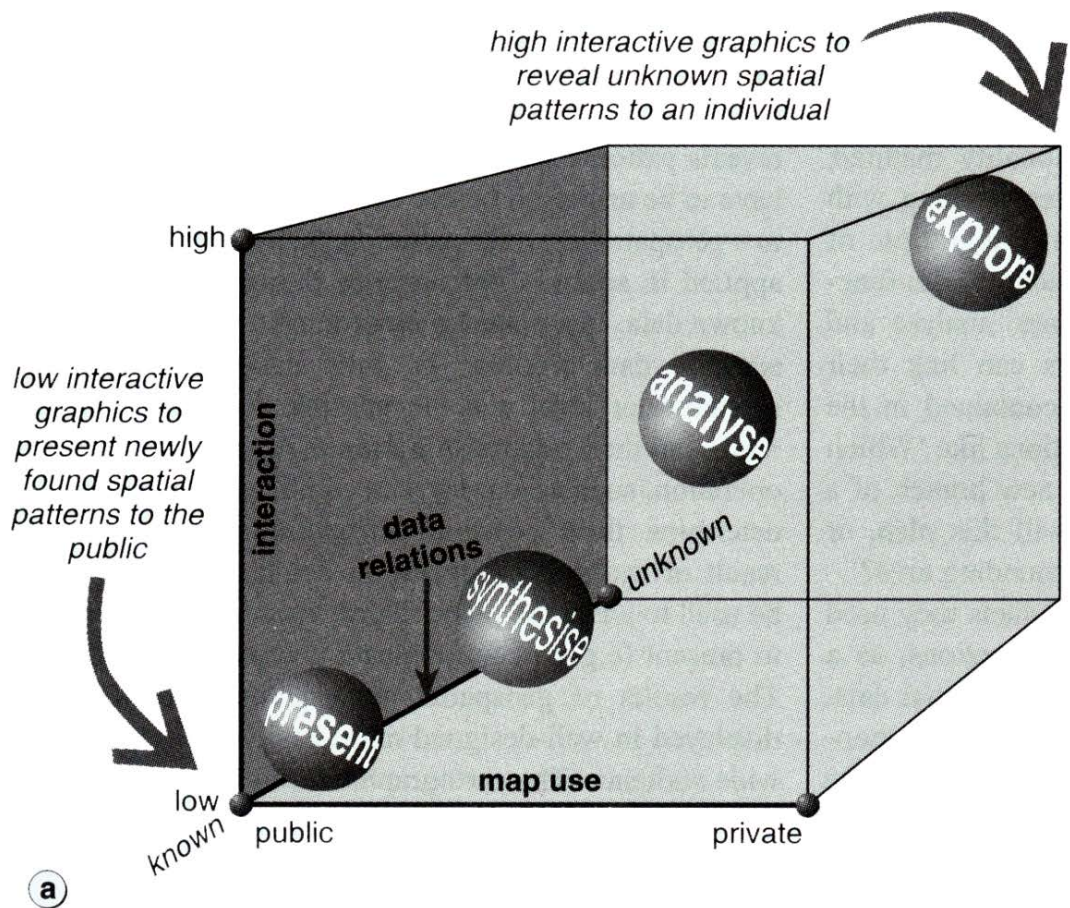
- Površinski mozaik
- Dijagramske signature označavaju karakteristike obilježja cijele površine
- Kvantitativna obilježja objekata: apsolutne vrijednosti

Kontinuirane površine



Metoda izolinija (>*isoline map*), Isarithenmethode

- Strukture prikazane zatvorenim izolinijama, nastale interpolacijom (kontinuum)
- Izolinije - ista vrijednost



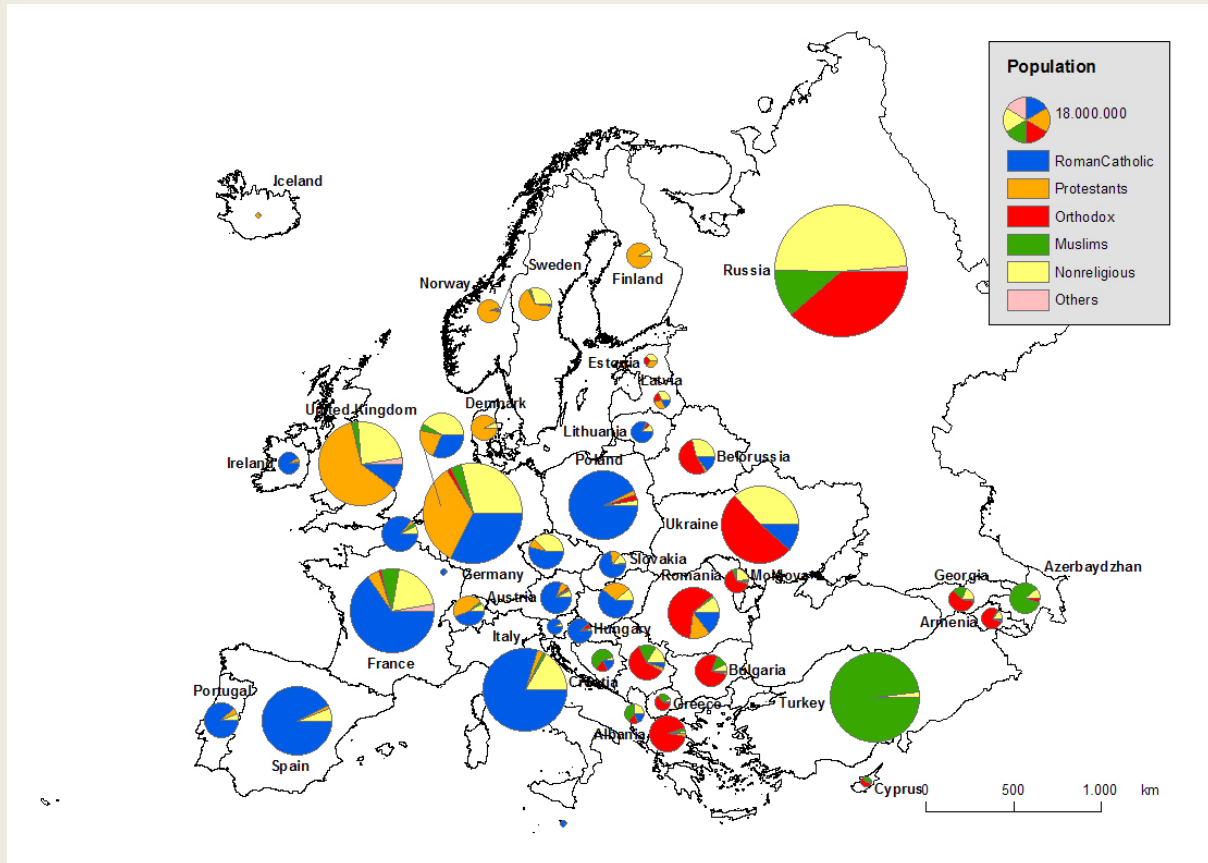
The map use cube (adapted from MacEachren and Taylor, 1994): (a) the four main situations to visualize data in a GIS, to present, to synthesize, to analyse and to explore; (b) the evolution of the electronic atlas plotted in the map use cube

Karta / istraživanje podataka

	Karta	Istraživanje podataka (Geovizualizacija)
Interakcija između korisnika i karte	Niska	Visoka
Javna ili privatna domena	Javna	Privatna
Širenje informacija ili stjecanje novih znanja	Širenje informacija	Stjecanje znanja



Problemi vizualizacije u GIS-u



GIS karta



3 temeljna pitanja

1. Zašto izrađujemo kartu?
2. Kome je namijenjena karta?
3. U kojem mediju će biti prezentirana karta?
4. Evaluacija karte



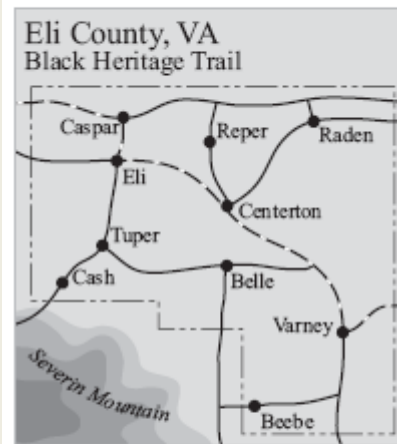
Zašto izrađujemo kartu?

- Što želimo komunicirati kartom? (koju informaciju prenijeti kartom?)
- Jasno **definiranje namjene** olakšat će izradu karte:
 - Lakše je definirati potrebne podatke,
 - Lakše je dizajnirati kartu
 - Olašava izbor signatura
- Rezultat jest bolja karta.



What the map is for: A map showing a proposed Black Heritage Trail in Eli County, VA. The map is the visual centerpiece of a proposal for grants to develop the trail and its associated sites, and must visually tantalize granting agencies.

Poor:



- ✓ title suggests county rather than trail as primary subject of the map.
- ✓ hard to figure out where the trail is.
- ✓ cities and roads along trail not visually different from other cities and roads.
- ✓ little visual depth to the map: trail is not visually prominent.

Good:



- ✓ title suggests trail as primary subject of the map.
- ✓ easy to see the trail.
- ✓ cities and roads along trail are visually prominent.
- ✓ meaningful visual depth to the map: trail is visually prominent.

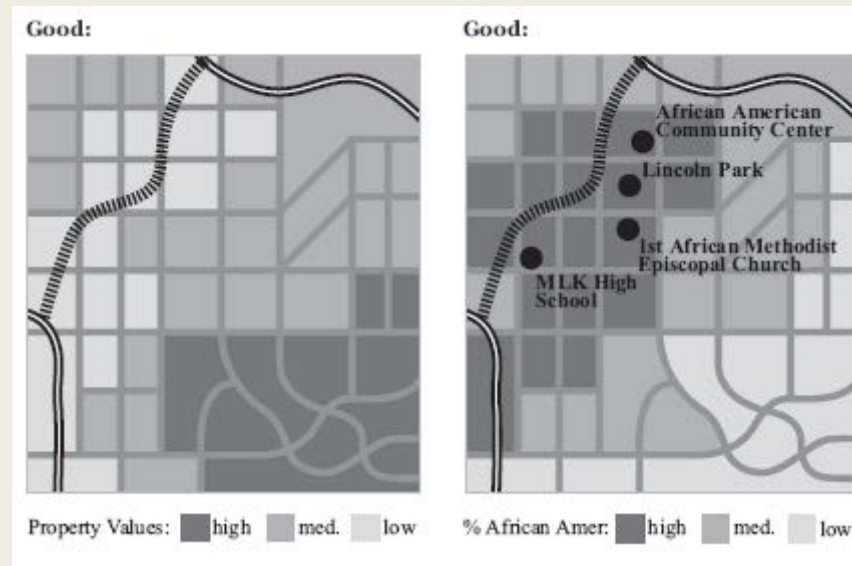


Različiti cilj – drukčija karta

Nova spojna cesta u gradu - jednako dobre karte mogu biti rezultat različitih pogleda na problematiku izgradnje navedene ceste

Gospodarska komora

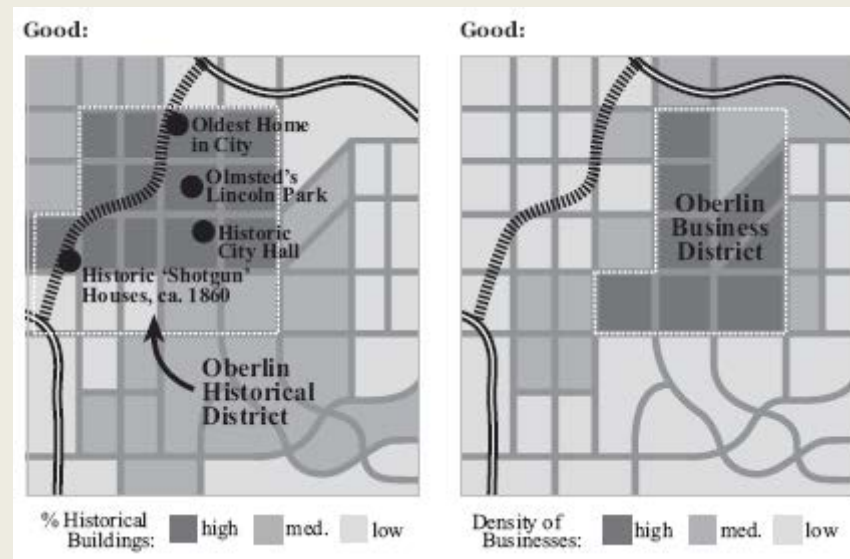
Afroamerička zajednica



Različiti cilj – drukčija karta

Društvo za očuvanje povijesnog identiteta

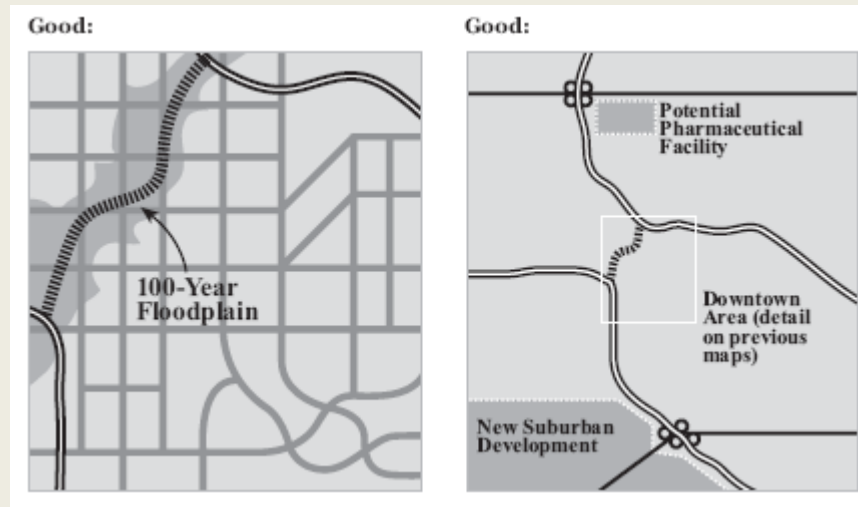
Udruga poslodavaca



Različiti cilj – drukčija karta

Ekološka udruga – cesta prolazi nizinskim poplavnim područjem

Politika širenja farmaceutske industrije



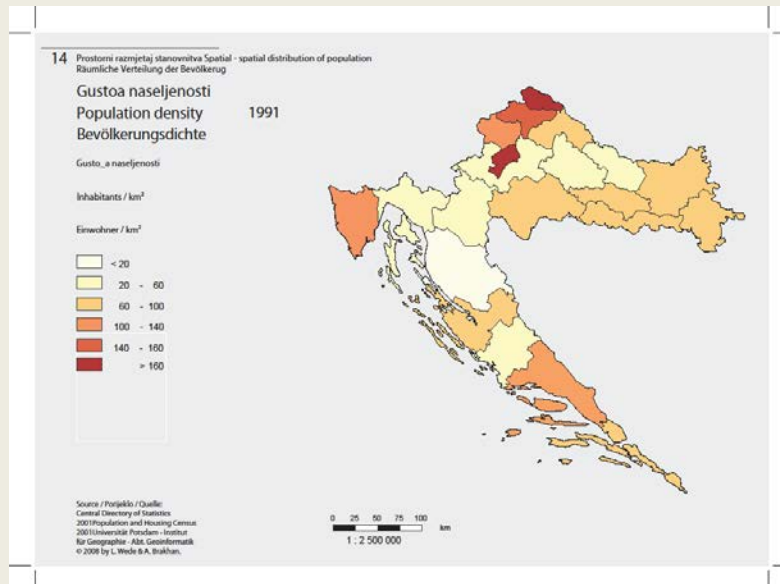
Kome je namijenjena karta?

- Znanstvenici, stručnjaci
 - Motivacija
 - Interes
 - Kompleksni sadržaj
 - Interaktivna multivarijantna karta



Kome je namijenjena karta?

- Širokoj publici (prosječni korisnik)
- Objašnjavajuća karta
- Korisnik nije toliko motiviran
- Jasnoća prezentiranog sadržaja



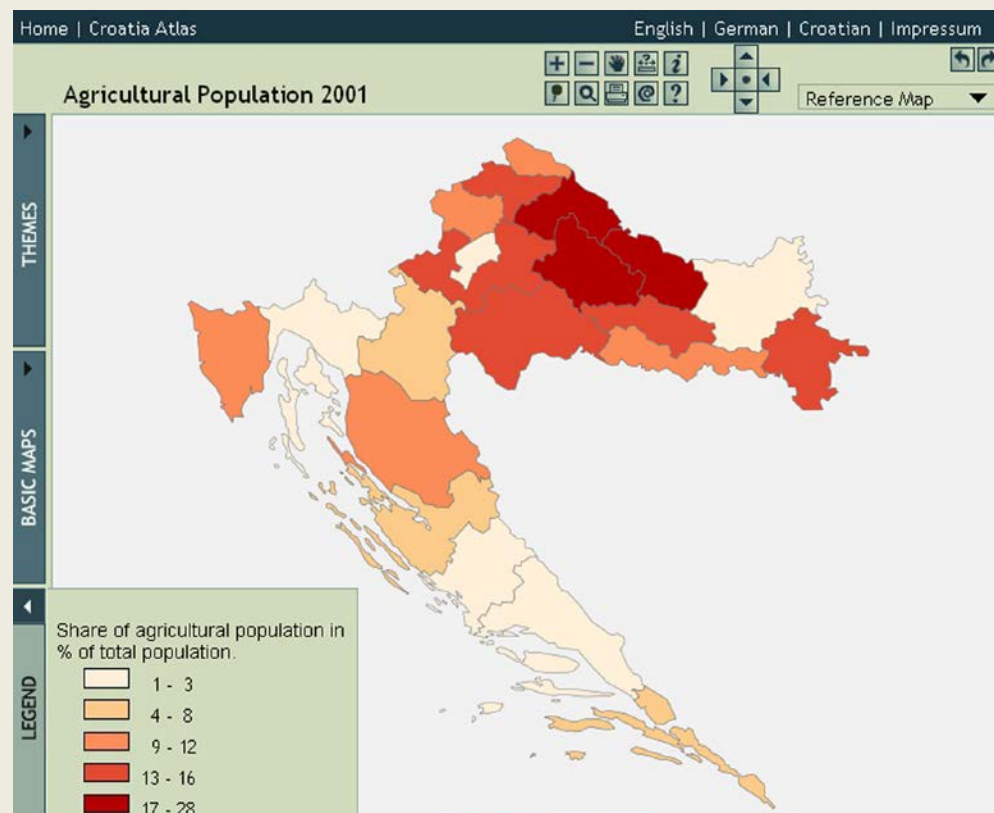
U kojem će mediju biti prezentirana karta?

- Monitor računala
- Crno bijela tehnika, na papiru
- Boja, na papiru
- Projicirana karta (multimedijski projektor)
- Poster



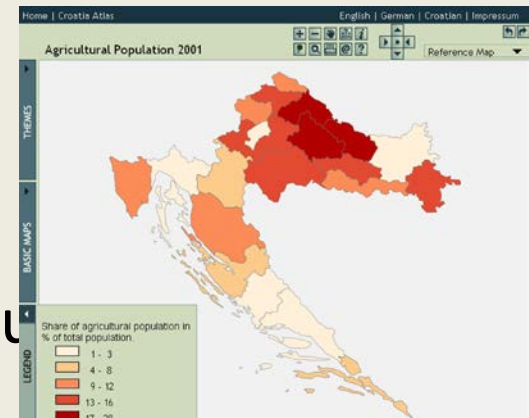
U kojem će mediju biti prezentirana karta?

- Monitor računala
 - Web karte
 - Manja površina, slabija rezolucija – veći znakovi i slova, manje podataka
 - Prednost – hiperveze (ostali sadržaj), multimedija, 3D i dr.



U kojem će mediju biti prezentirana karta?

- Monitor računala
 - 72 dpi (dots per inch)
 - Ograniči veličinu karte – cijela na ekranu
 - Povećaj veličinu slova (14 point)
 - Točkasti i linijski znakovi (15% veći)
 - Manja količina podataka (na jednoj karti)
 - Izbjegavati premale varijacije površine
 - Boja – kvaliteta monitora
 - Bijela – intenzivnija od crne (podloga ili nema pojave)
 - Za web – 72 dpi i veličinu prilagoditi browseru



PostCode Search

Search

Address Search

Find services near you...

Points of interest...

Overview Map

Map Layers

Print Setup



Query/Search Results will Appear Here

Legend:

- Red: Road
- Orange: Road
- Yellow-Orange: Road
- Yellow: Road
- Light Yellow: Road
- White: Road

Web Map View

Back

Address http://www.southwark.gov.uk

OVERVIEW CROSS

Concept: Gross Domestic Product

GROSS DOMES

Portland V

Search for an A

Identify

Done

Internet



U kojem će mediju biti prezentirana karta?

- Crno bijela tehnika, na papiru
 - Na računalu – uvijek opcija
 - Jeftinije
 - Uvijek pogledati isprintanu kartu
 - Margine nužne
 - 10 point (papir), za monitor više
 - Više podataka i kompleksniji podaci (vs monitor)
 - Crna ima najveću težinu
 - Svjetlosivi tonovi – možda se ne vide na papiru



U kojem će mediju biti prezentirana karta?

- Boja, na papiru
 - Razlika monitor – tisak
 - Skuplje
 - Koristi nijanse iste boje (svjetlina, zasićenost) – kvantitativne razlike
 - Kromatska kvaliteta boje (hue) – kvaliteta
 - Tamnije boje – važnije informacije, jer su tamnije boje intenzivnije nego svjetlije
 - Ne printati kartu u boji u crno-bijeloj verziji

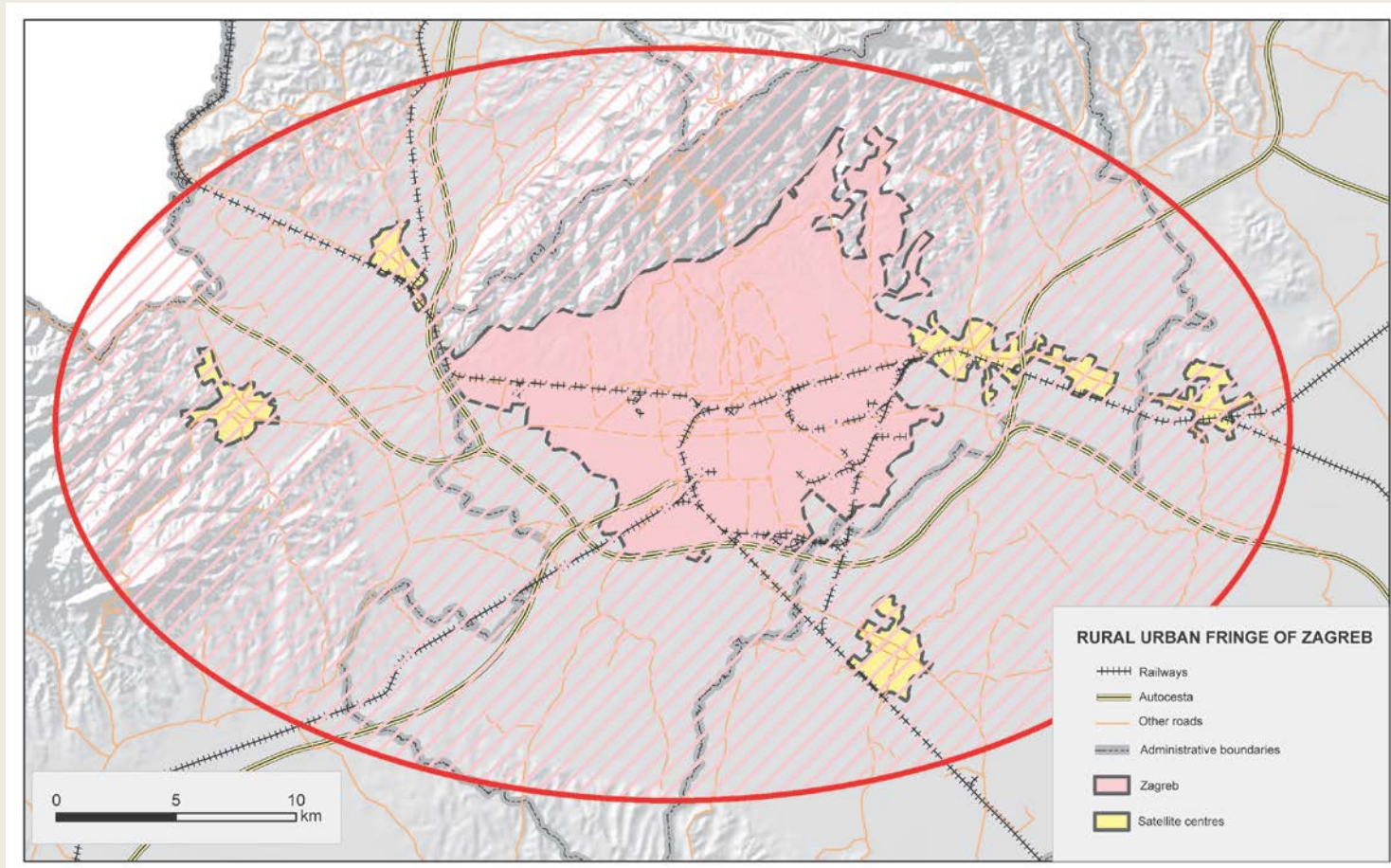


U kojem će mediju biti prezentirana karta?

- Projicirana karta (multimedijski projektor)
 - Prilagođavanje dizajna
 - Veća slova i znakovi
 - Intenzivnije boje
 - Čitljivost iz daljine



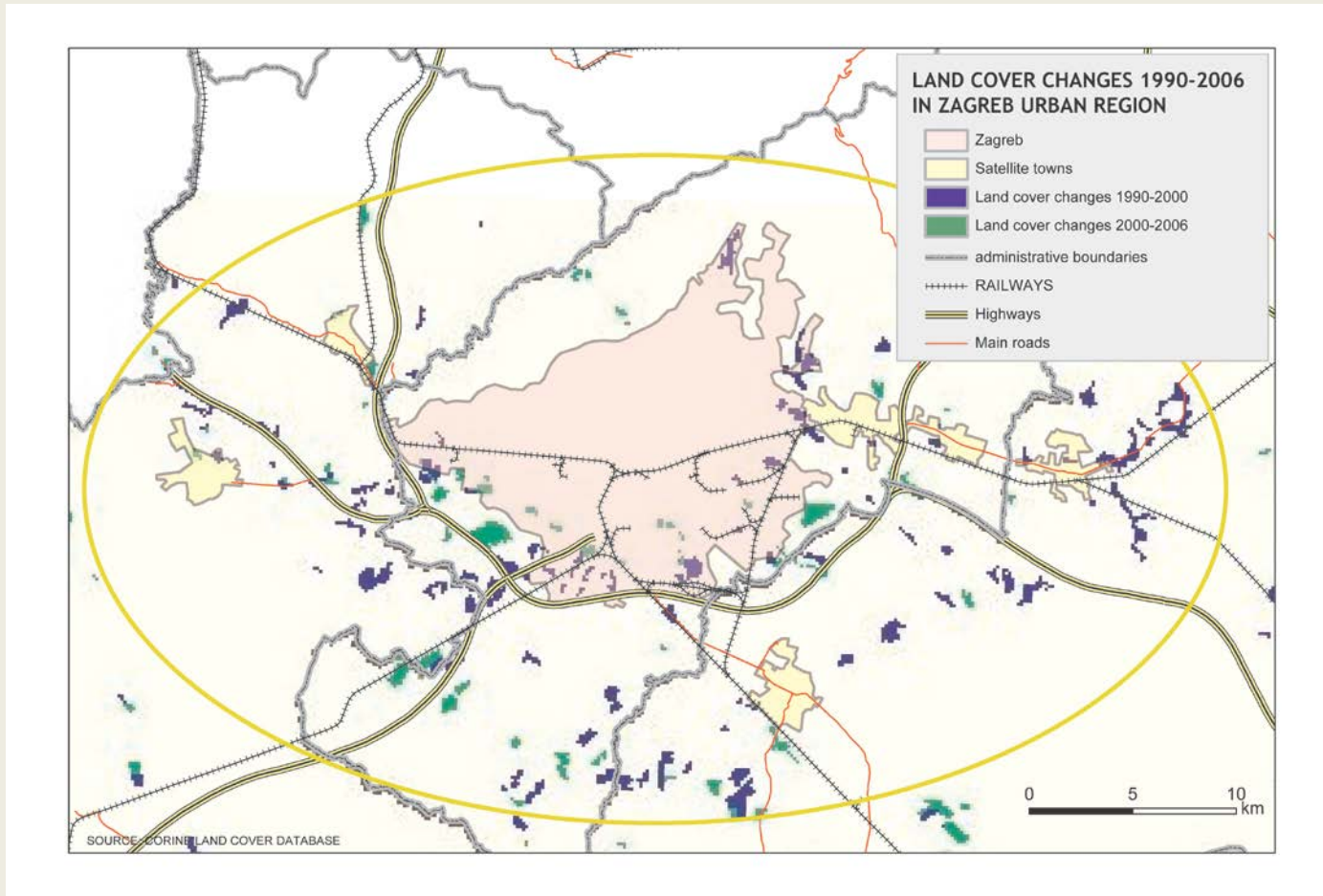
3. Landscape changes in the rural urban fringe



Eliptical shape includes five satellite centers, approx 10-20 km distance)



3. Landscape changes in the rural urban fringe



- almost 90% of rural area changes (1990-2006) encompasses transformation to urban landscape – business and industrial zones as well as housing zones.



U kojem će mediju biti prezentirana karta?

- Poster
 - Gledanje iz blizine (nekad iz veće udaljenosti)



Facing the Presidential Election 2004



© Sara I. Fabrikant, 2004
<http://www.geog.ucb.edu/~sara/htm/mapping/election/election04/election.html>

data source: ESRI, New York Times
 * resemblance with a Hollywood actor is pure conspiracy theory

270 votes

HAWAII ALASKA

Projected: Bush Projected: Kerry Contested States



Evaluacija

- Vlastita
- Stručnjaka

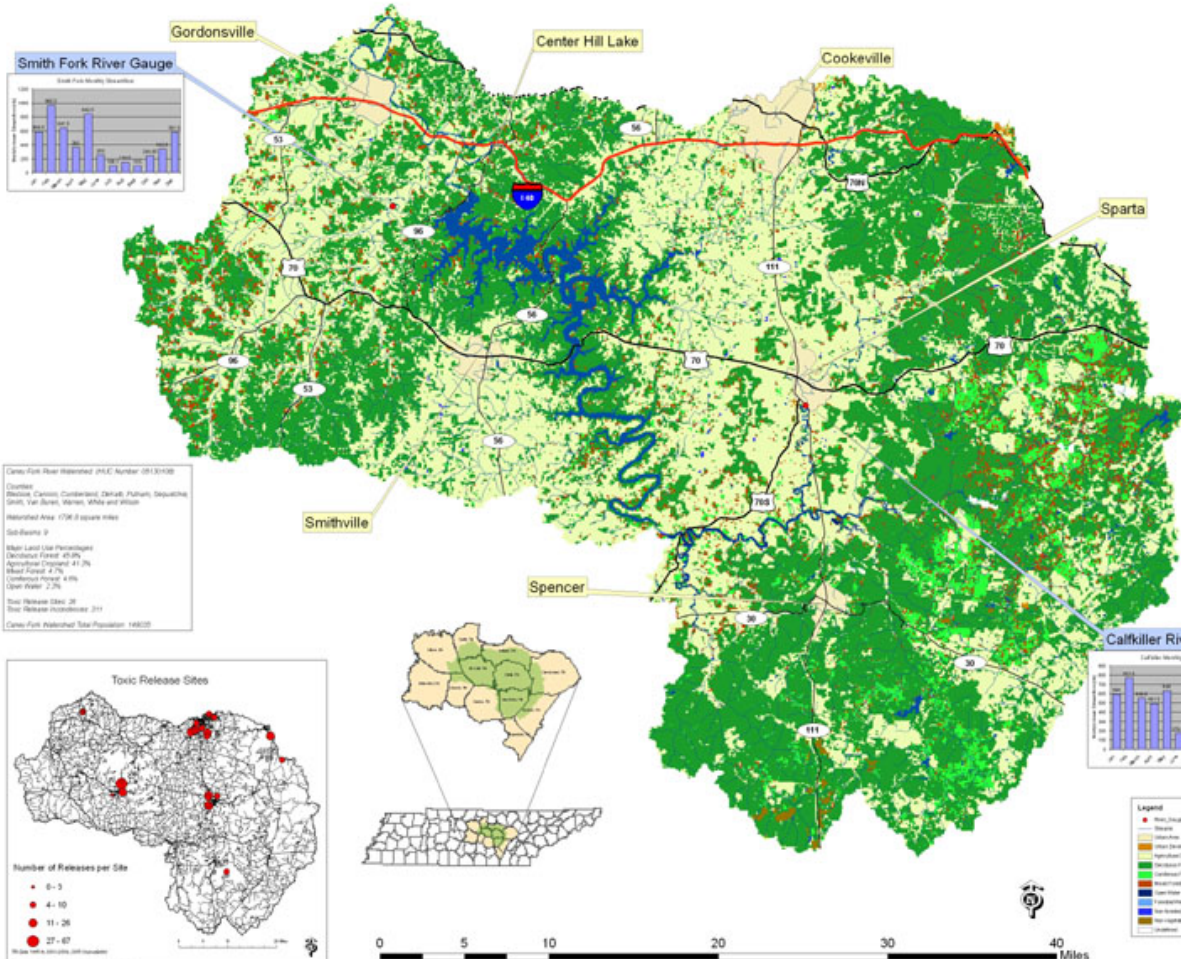


Sastavni dijelovi karte

- Naslov
- Legenda (Tumač znakova)
- Mjerilo
- Pregledna karta
- Izvor
- Smjer sjevera
- Okvir
- Tekst i drugi grafički dijelovi



Caney Fork River Watershed



Caney Fork River Watershed (PLC) Number: 091310100

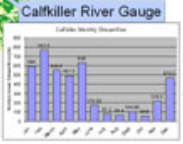
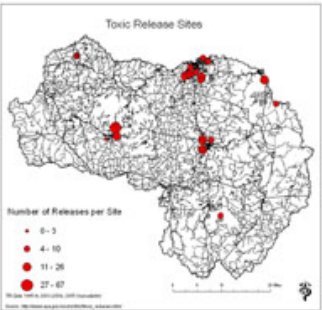
County: Hancock, Cannon, Cumberland, Clark, Putnam, Sequoyia, Smith, Van Buren, Warren, White and Wilson

Watershed Area: 1798.9 square miles

Soil Ecoregion: 9

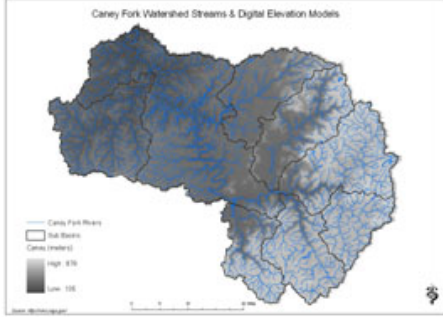
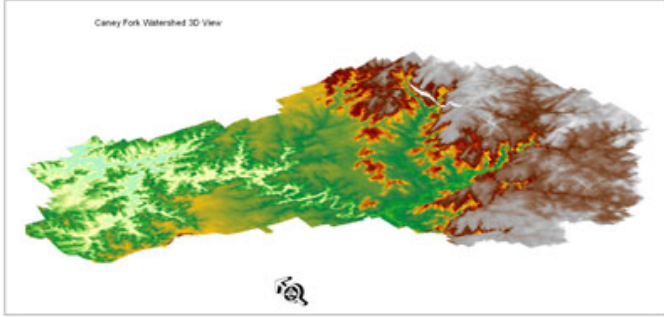
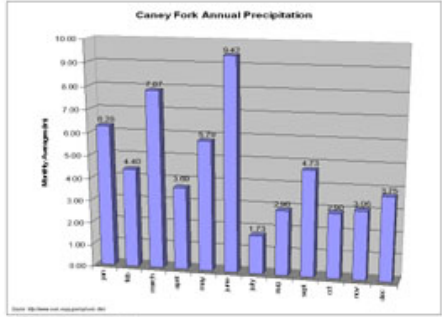
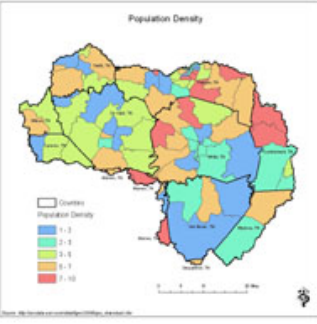
Major Land Use Percentages:
 Developed Forest: 45.2%
 Agricultural: 41.2%
 Mixed Forest: 4.7%
 Commerce: 4.4%
 Urban Area: 2.2%

Total Release Sites: 28
 Total Release Incidents: 311
 Caney Fork Watershed Total Population: 148,000



Legend

- Water Quality
- Streams
- Caney Fork River
- Other Tributaries
- Urban Area
- Residential/Commercial
- Open Forest
- Woodland
- Barren/Grassland
- Barren/Grassland
- Barren/Grassland
- Barren/Grassland



Source: USGS and other organizations. Data current through 2010. Map data by Esri, DeLorme, GeoEye, etc.

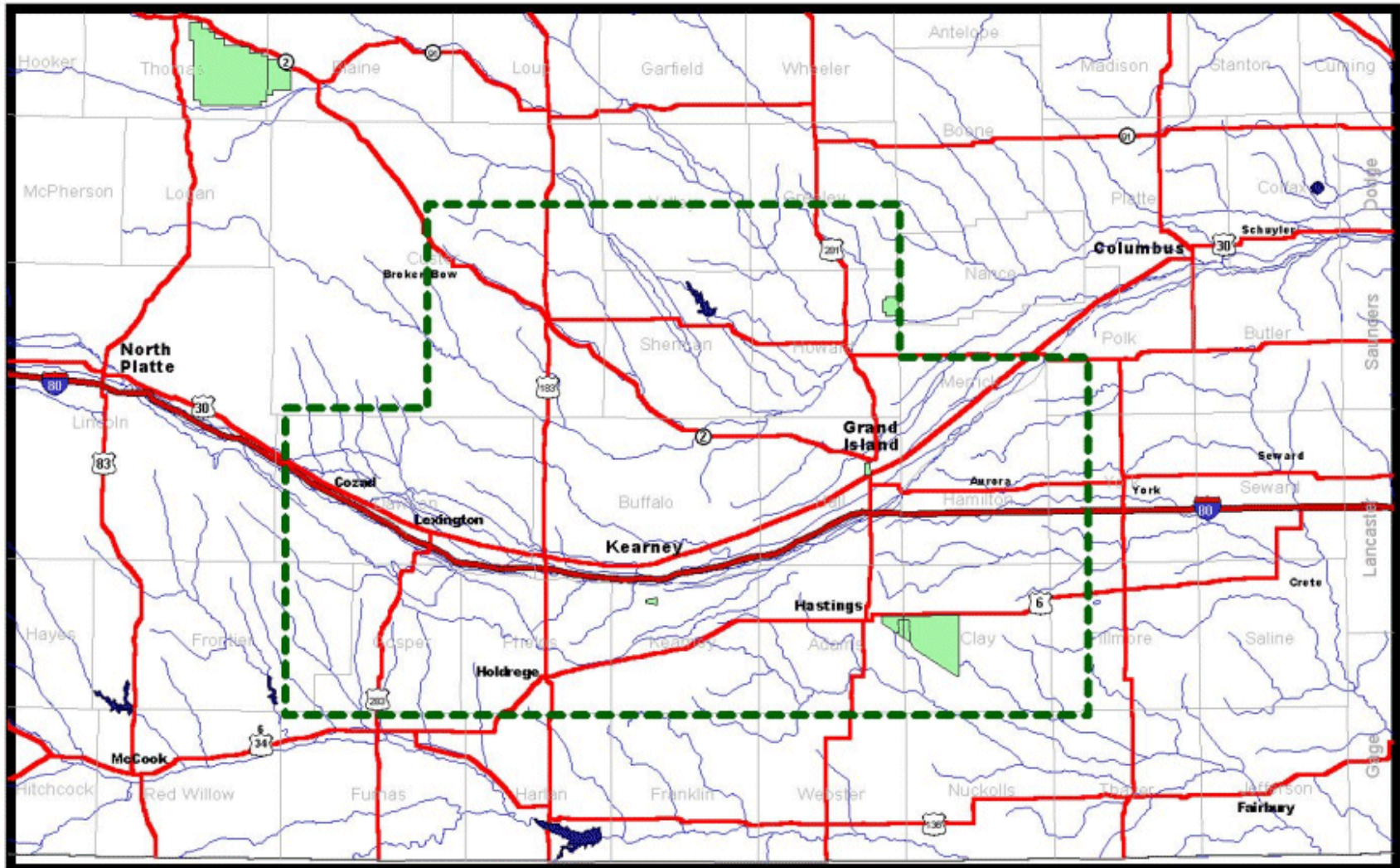
Naslov

- Što? Gdje? Kada?
- 2-3 puta veći tip slova od ostalih na karti



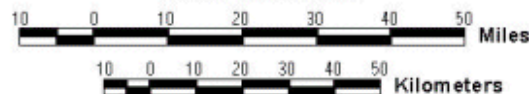
CENTRAL NEBRASKA PROJECT STUDY AREA

May 2000

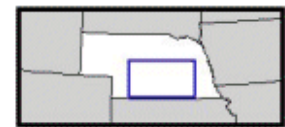


Produced from USGS 1:2,000,000-scale DLG data. The data were symbolized and labeled in an ArcView layout. The finished layout was exported as a 300 dpi image in JPG format.

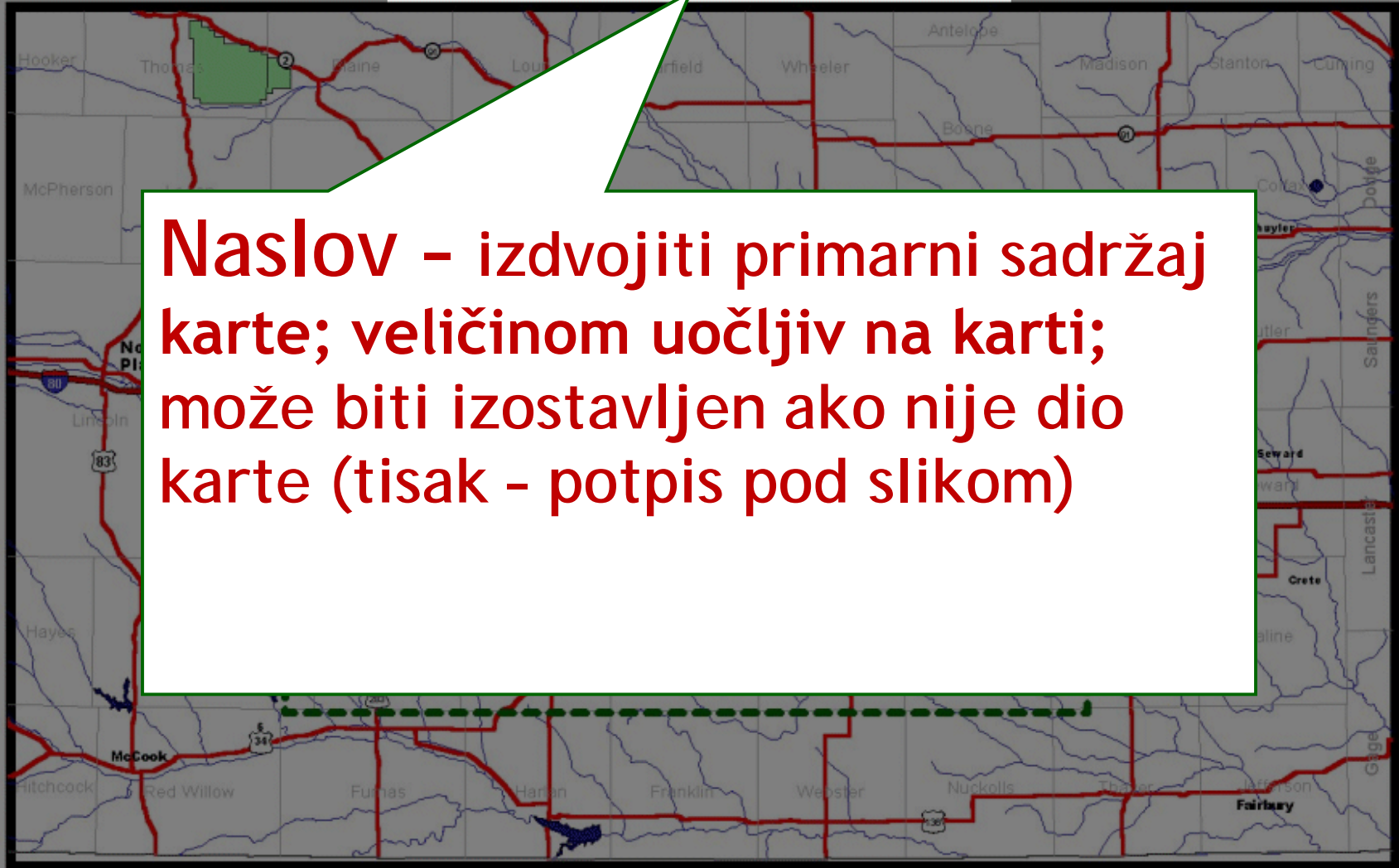
Scale 1:1,500,000




**Project
Boundary**



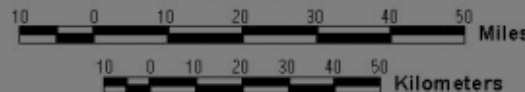
Coverage Area



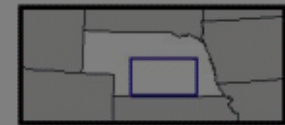
Naslov - izdvojiti primarni sadržaj karte; veličinom uočljiv na karti; može biti izostavljen ako nije dio karte (tisak - potpis pod slikom)

Produced from USGS 1:2,000,000-scale DLG data. The data were symbolized and labeled in an ArcView layout. The finished layout was exported as a 300 dpi image in JPG format.

Scale 1:1,500,000




Project Boundary



Coverage Area

14 Prostorni razmjetaj stanovnitva Spatial - spatial distribution of population
Räumliche Verteilung der Bevölkerung

Gustoa naseljenosti

Population density

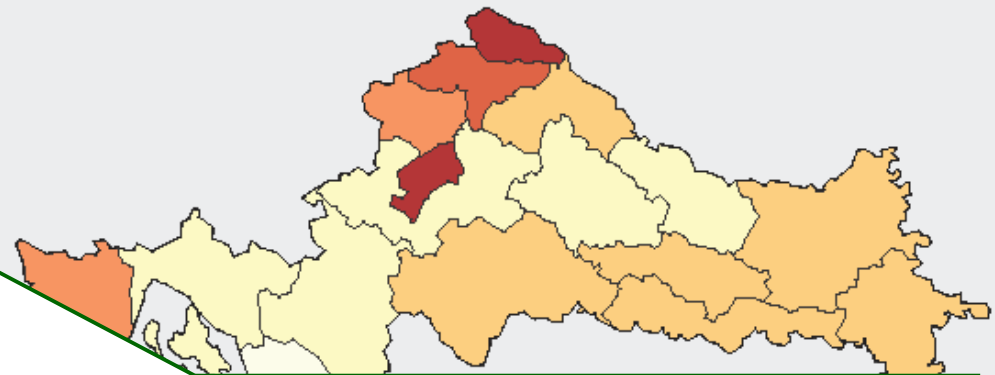
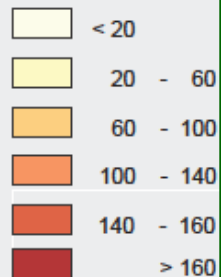
Bevölkerungsdichte

1991

Gusto_a naseljenosti

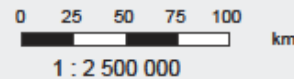
Inhabitants / km²

Einwohner / km²

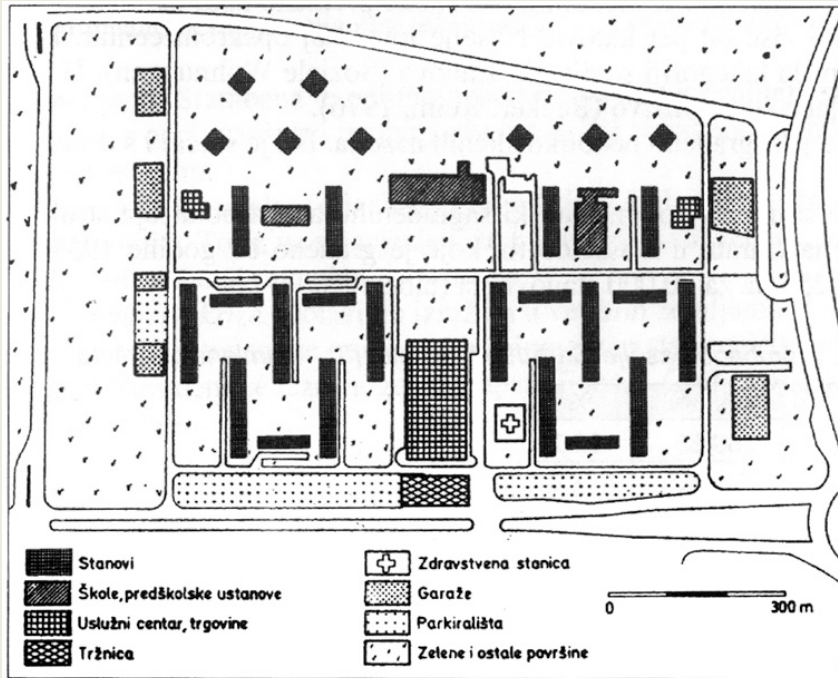


Naslov – izdvojiti primarni sadržaj karte; veličinom uočljiv na karti; može biti izostavljen ako nije dio karte (tisak – potpis pod slikom)

Source / Porijeklo / Quelle:
Central Directory of Statistics
2001 Population and Housing Census
2001 Universität Potsdam - Institut
für Geographie - Abt. Geoinformatik
© 2008 by L. Wede & A. Brakhan.



Naslov



Slika 3.25. Zapruđe – novo stambeno naselje Zagreba godine 1980.

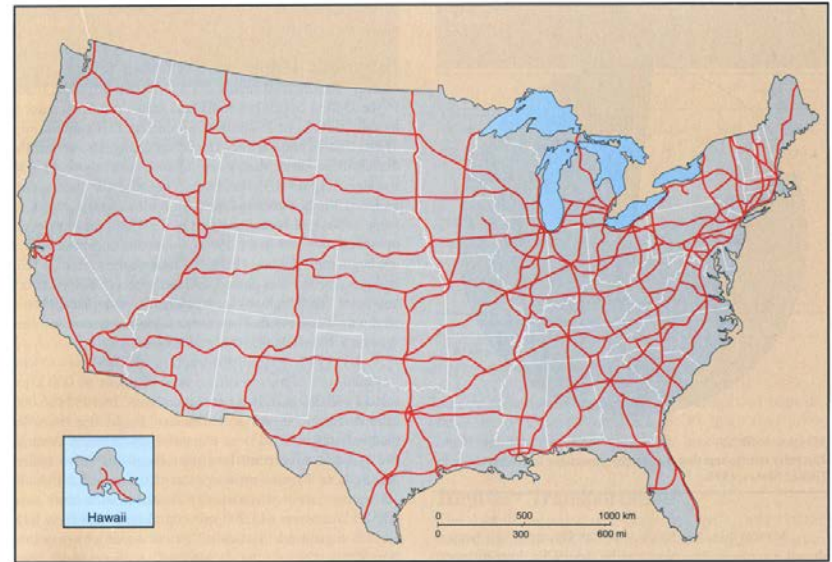


Figure 8.3

The U.S. interstate highway system. The network is relatively evenly distributed, certainly much more so than the population, reflecting its role as a true national transportation system. Because of space limitations, many urban circumferential freeways that are a part of the system are not shown.

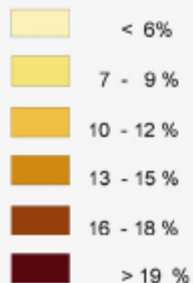


Poljoprivredno stanovništvo
Agricultural Population
Ländliche Bevölkerung

Udio poljoprivrednog u ukupnom stanovništvu %

Share of Agricultural Population in % of total Population

Anteil der ländlichen Bevölkerung an der Gesamtbevölkerung in %



Izvor / Source / Quelle:
National Bureau of Statistics of the
Republic of Croatia
2001 Population and Housing Census
2001 Universität Potsdam - Institut
für Geographie - Abt. Geoinformatik
© 2008 by L. Wede & A. Brakhan.

Tumač znakova (kod drugih karata opis značenja manje poznatih kartografskih signatura)

Ne treba objašnjavati poznate znakove.

0 50 100 Km

1 : 2 500 000



Strategija i Program prostornog uređenja Republike Hrvatske

MINISTARSTVO PROSTORNOG UREĐENJA, GRADITELJSTVA I STANOVANJA
Zavod za prostorno planiranje

4. Poglavlje:

Prostorno razvojna i planska usmjerenja

Sektor:

Naselja - proces urbanizacije, sustav razvojnih središta i usmjerenja

Tema:

Gradovi i naselja s gradskim obilježjima - oko 160 gradskih područja

Prostori najdinamičnijih gospodarskih i graditeljskih aktivnosti - nužna izrada Gener. plan. uređenja

Godina podataka - stanje - planirano:

1991. i 2005.

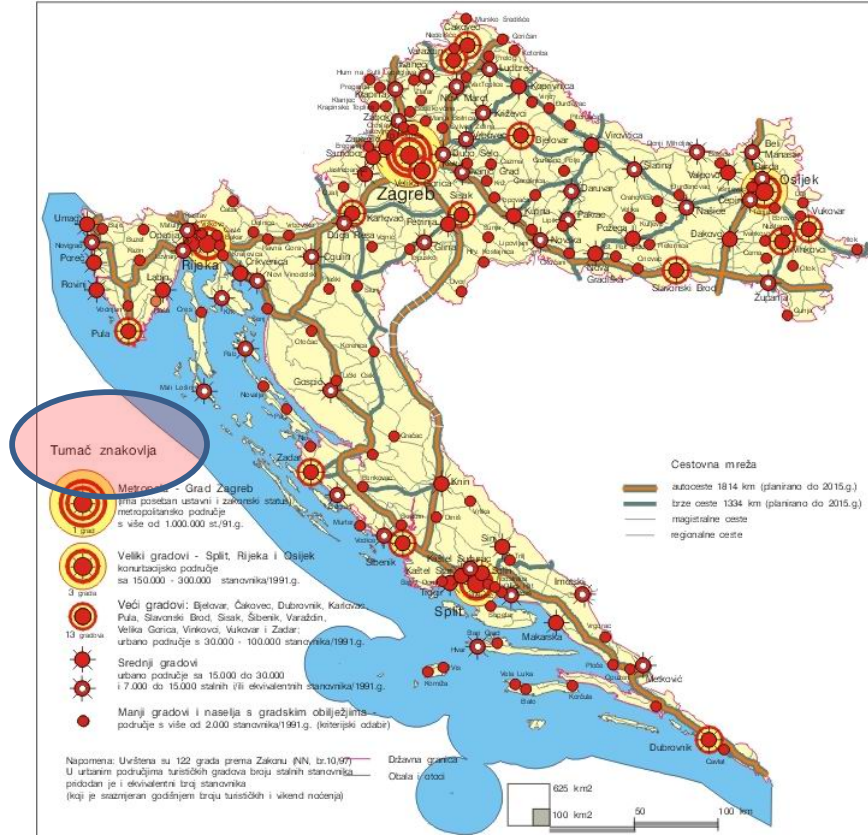
Izvori podataka: Popis stanovništva, domaćinstava i stanova;

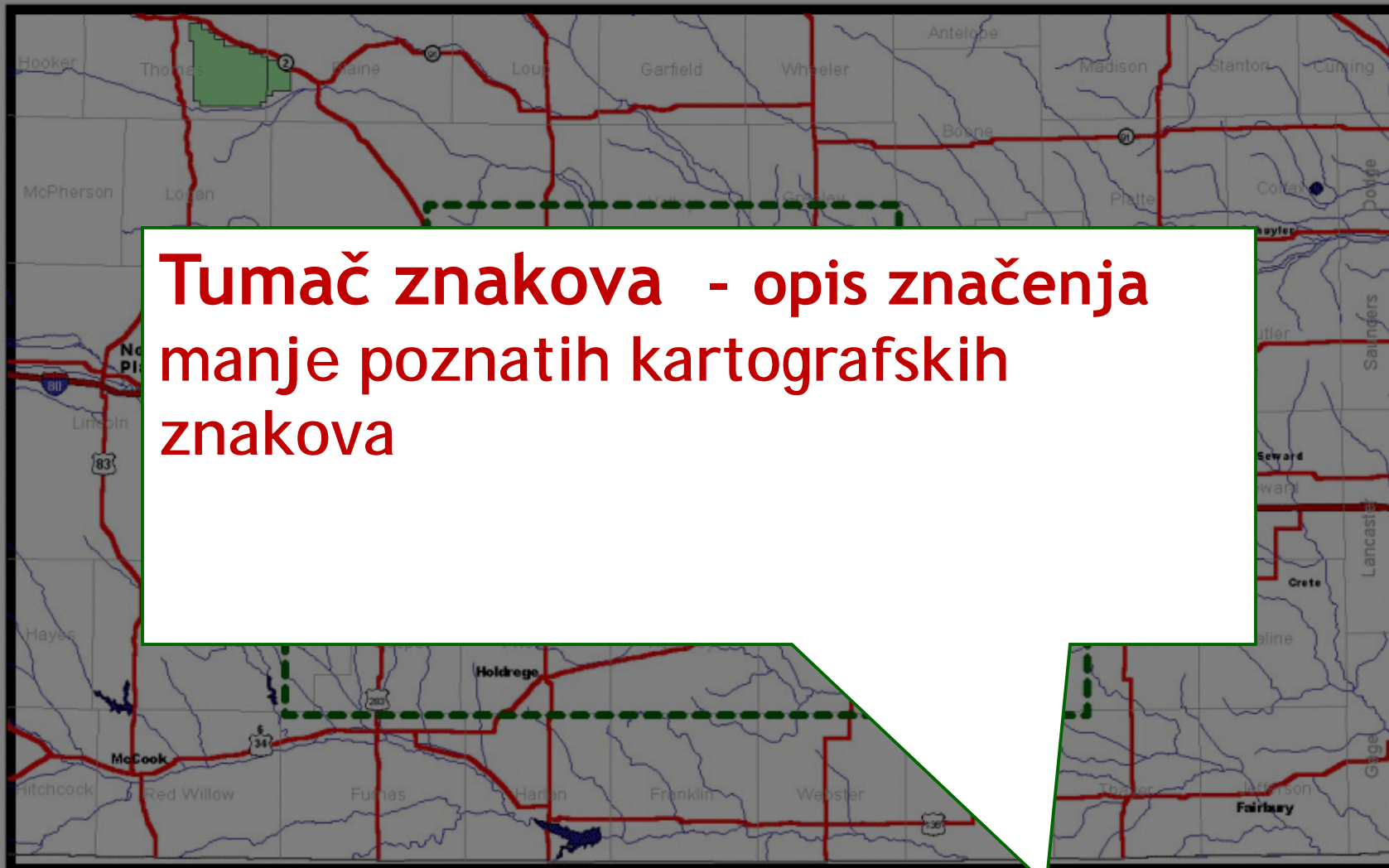
Studije: Naselja - naseljenost prostora, proces urbanizacije i sustav razvojnih žarišta;

Kompleksno sagledavanje procesa urbanizacije i Zakon o područjima županija, gradova i općina (NN, br.10/97)

Kartografski prikaz:

42-10

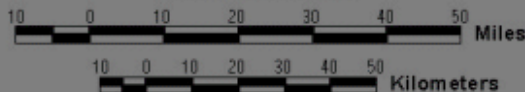




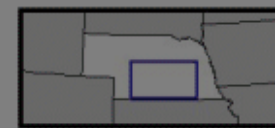
**Tumač znakova - opis značenja
manje poznatih kartografskih
znakova**

Produced from USGS 1:2,000,000-scale DLG data. The data were symbolized and labeled in an ArcView layout. The finished layout was exported as a 300 dpi image in JPG format.

Scale 1:1,500,000



**Project
Boundary**



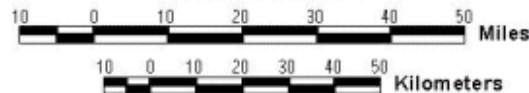
Coverage Area



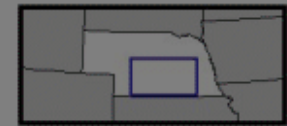
Mjerilo - daje korisniku informaciju o odnosu dužina na karti i u prirodi; brojčano, grafičko (tematske karte), tekstualno.

Produced from USGS 1:2,000,000-scale DLG data. The data were symbolized and labeled in an ArcView layout. The finished layout was exported as a 300 dpi image in JPG format.

Scale 1:1,500,000



Project Boundary



Mjerilo

The screenshot displays the ArcMap interface with a map of Slovenia. A dialog box titled "Data Frame Properties" is open, showing the "Data Frame" tab. The "Extent" section is set to "Fixed Scale" with a scale of 1:2000000. The "Clip to Shape" section has the "Enable" checkbox unchecked. The map shows a light blue shaded area representing the extent of the data frame, which is a rectangle with a dashed border. The "Layers" panel on the left shows a layer named "zupanja". The status bar at the bottom indicates the current scale as 1:2,000,000 and the map's extent as 2346471,88 4738817,07 Meter; 5,23 7,73 Centimeters.

Untitled - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

Georeferencing Layer: 3D Analyst Layer: Spatial Analyst Layer: Editor Task: Create New Feature Target: 65%

Layers

- zupanja

Data Frame Properties

Annotation Groups Extent Rectangles Frame Size and Position

General Data Frame Coordinate System Illumination Grids Labels

Extent

Automatic

Fixed Scale

1: 2000000

Fixed Extent

5265657,473624091E

2241772,0945401411 2755246,571431393E

4582881,216933555

Clip to Shape

Enable Specify Shape... Border:

OK Cancel Apply

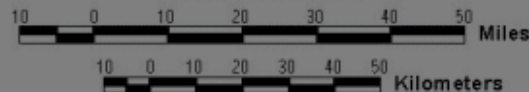
Display Source 10.0 Arial 2346471,88 4738817,07 Meter; 5,23 7,73 Centimeters

start Geoinfo_pred_12_tjetni Prostorno_planiranje_9 Untitled - ArcMap - Ar... 21:46

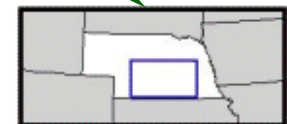


Produced from USGS 1:2,000,000-scale DLG data. The data were symbolized and labeled in an ArcView layout. The finished layout was exported as a 300 dpi image in JPG format.

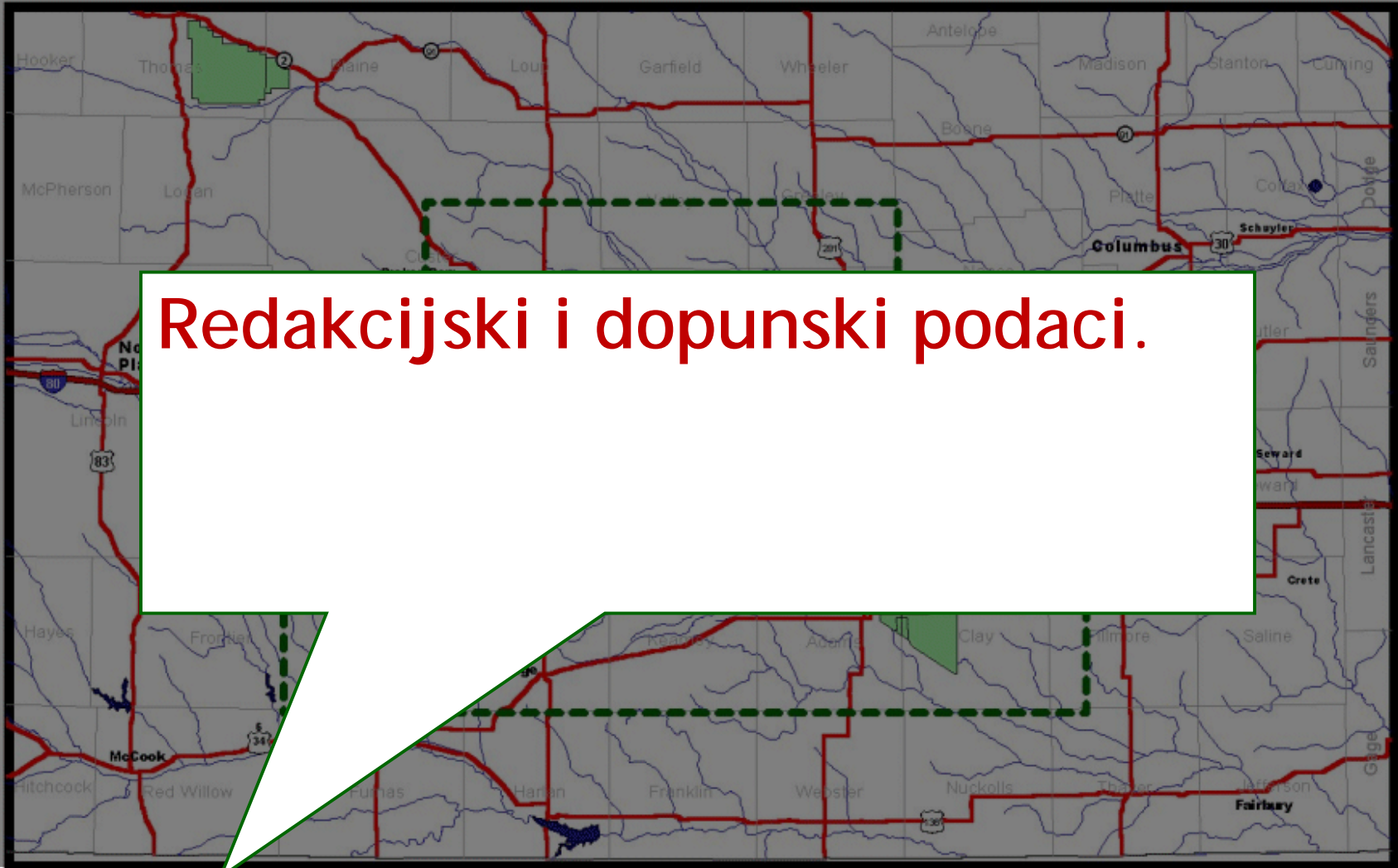
Scale 1:1,500,000




Project Boundary

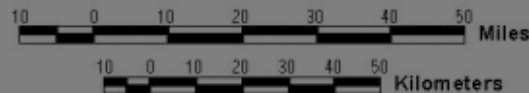


Coverage Area

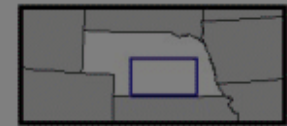


Produced from USGS 1:2,000,000-scale DLG data. The data were symbolized and labeled in an ArcView layout. The finished layout was exported as a 300 dpi image in JPG format.

Scale 1:1,500,000




**Project
Boundary**



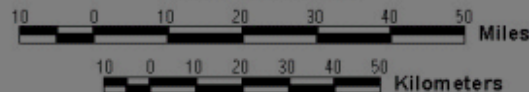
Coverage Area



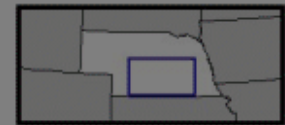
Datum - ukoliko je vrijeme nastanka karte značajno.

Produced from USGS 1:2,000,000-scale DLG data. The data were symbolized and labeled in an ArcView layout. The finished layout was exported as a 300 dpi image in JPG format.

Scale 1:1,500,000



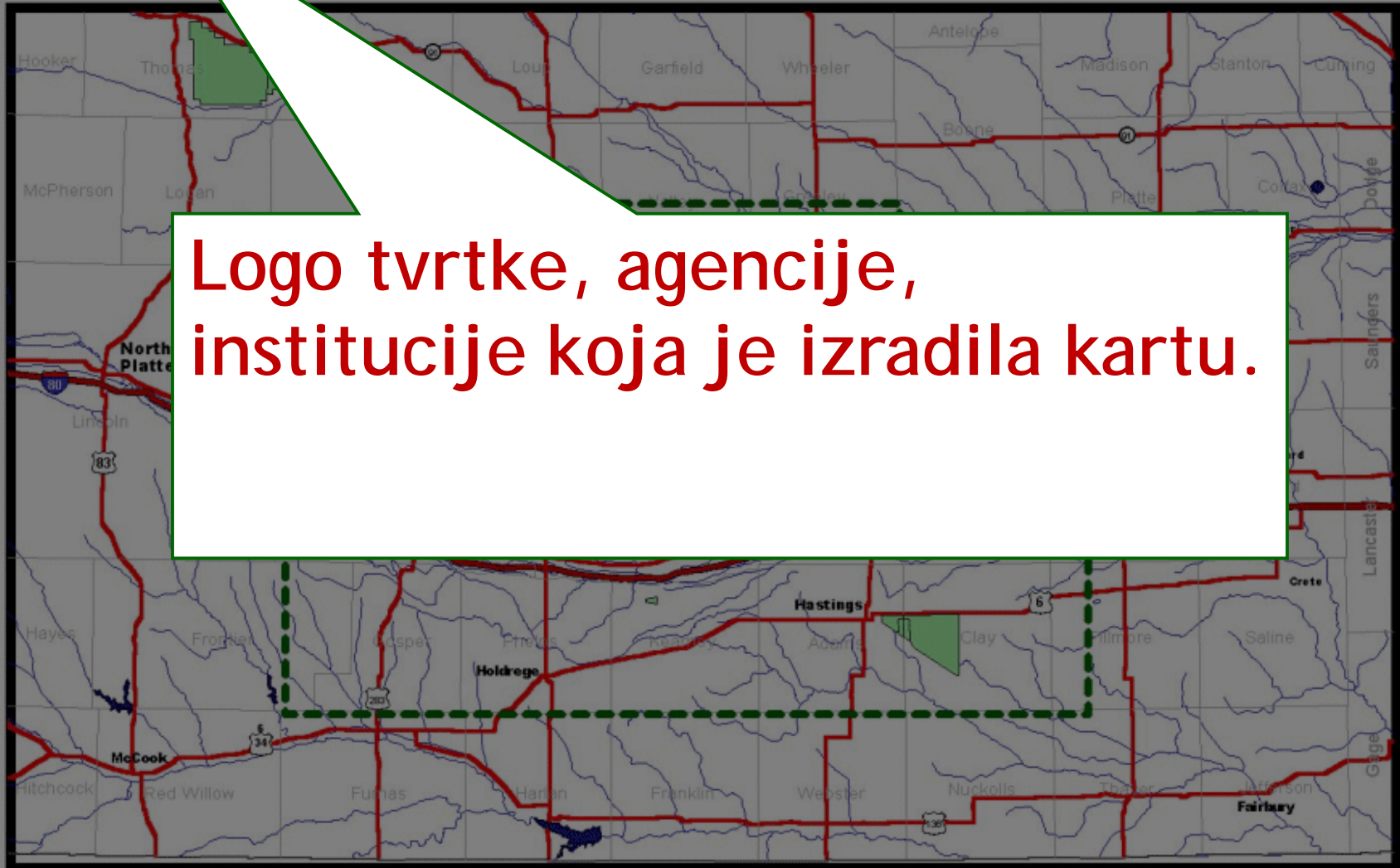

**Project
Boundary**



Coverage Area

CENTRAL NEBRASKA PROJECT STUDY AREA

May 2000



Logo tvrtke, agencije,
institucije koja je izradila kartu.

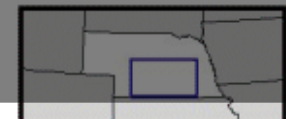
Produced from USGS 1:2,000,000-scale DLG data. The data were symbolized and labeled in an ArcView layout. The finished layout was exported as a 300 dpi image in JPG format.

Scale 1:1,500,000

10 0 10 20 30 40 50 Miles

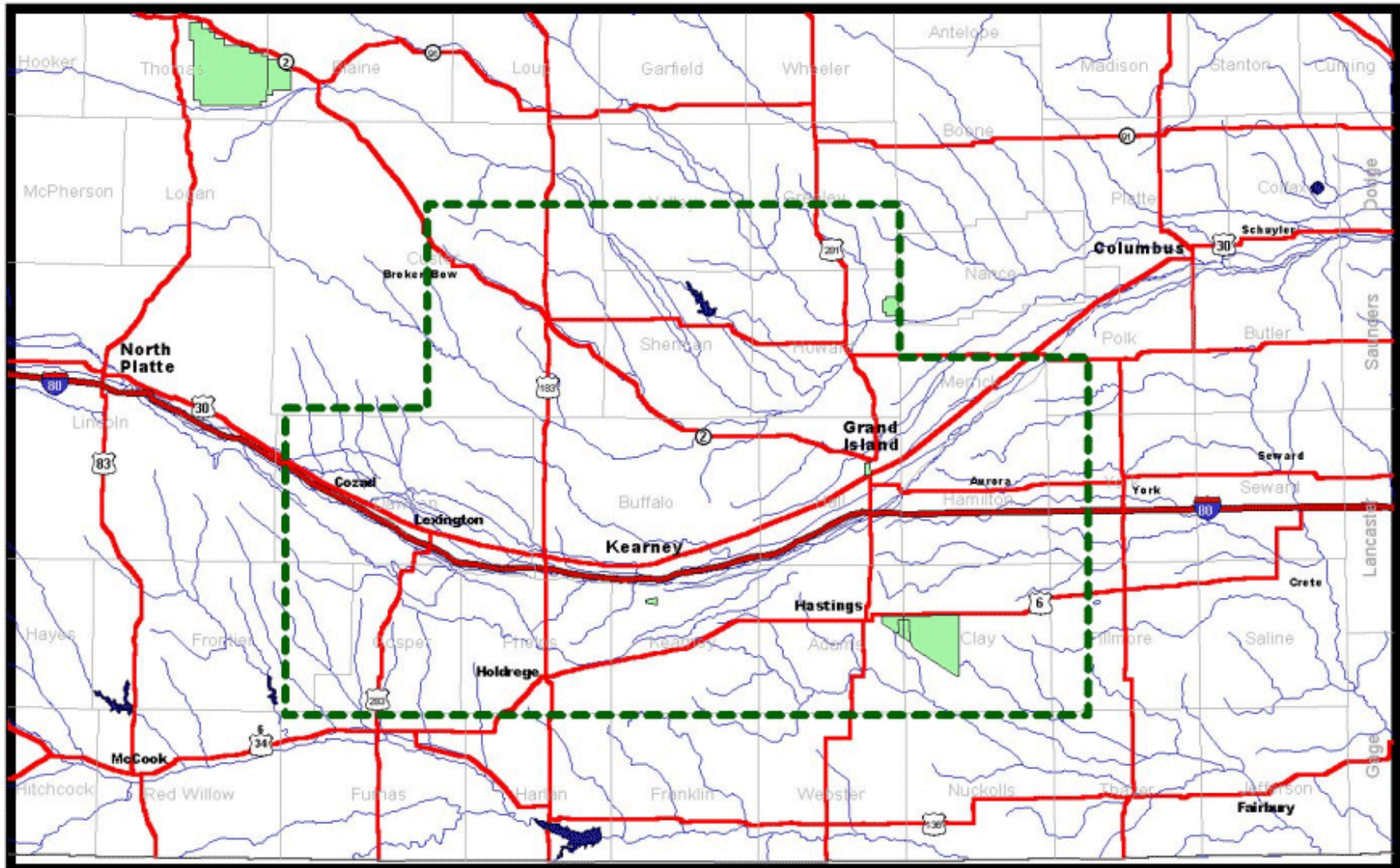
10 0 10 20 30 40 50 Kilometers

Project Boundary



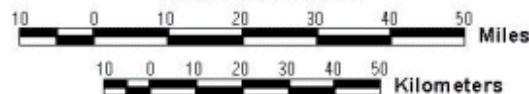
CENTRAL NEBRASKA PROJECT STUDY AREA

May 2000

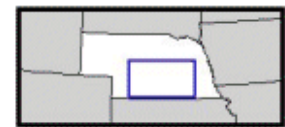


Produced from USGS 1:2,000,000-scale DLG data. The data were symbolized and labeled in an ArcView layout. The finished layout was exported as a 300 dpi image in JPG format.

Scale 1:1,500,000




**Project
Boundary**



Coverage Area

14 Prostorni razmjetaj stanovnitva Spatial - spatial distribution of population
Räumliche Verteilung der Bevölkerung

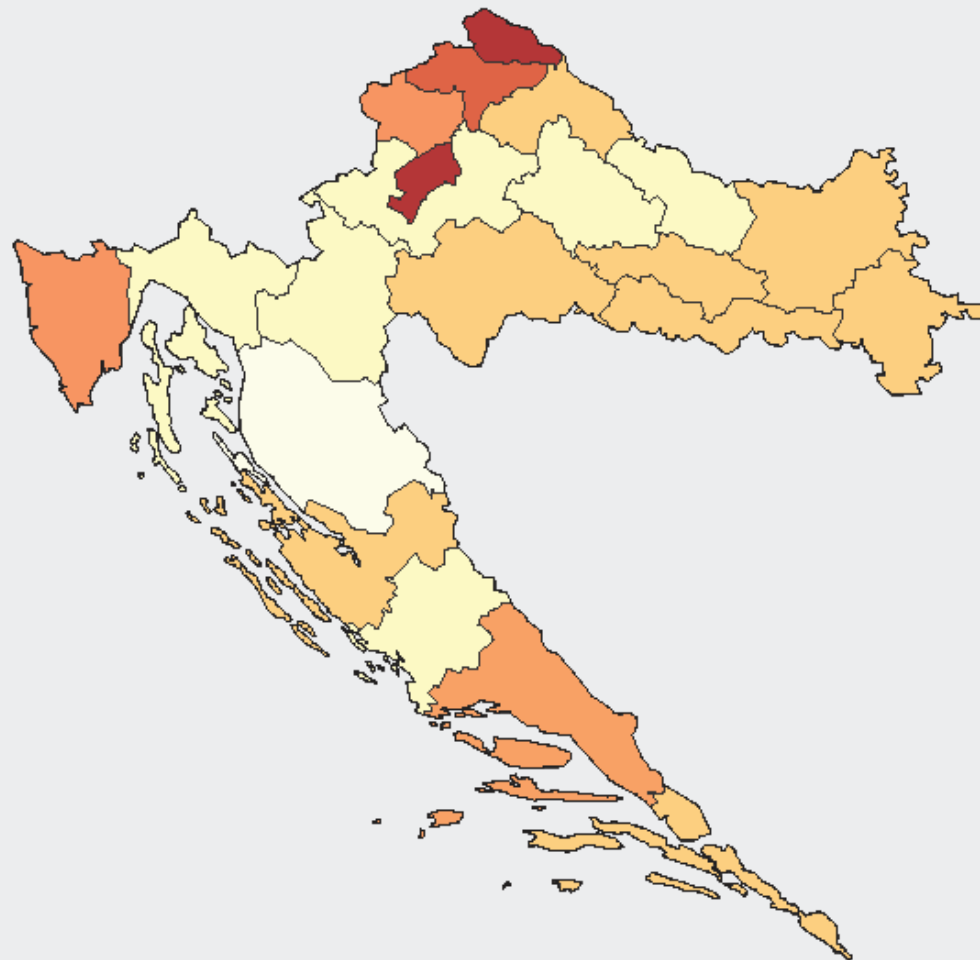
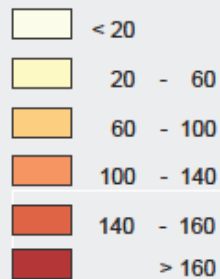
Gustoa naseljenosti
Population density
Bevölkerungsdichte

1991

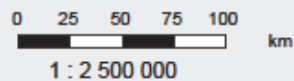
Gusto_a naseljenosti

Inhabitants / km²

Einwohner / km²



Source / Porijeklo / Quelle:
Central Directory of Statistics
2001 Population and Housing Census
2001 Universität Potsdam - Institut
für Geographie - Abt. Geoinformatik
© 2008 by L. Wede & A. Brakhan.

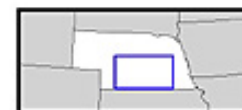


Prikazani sadržaj

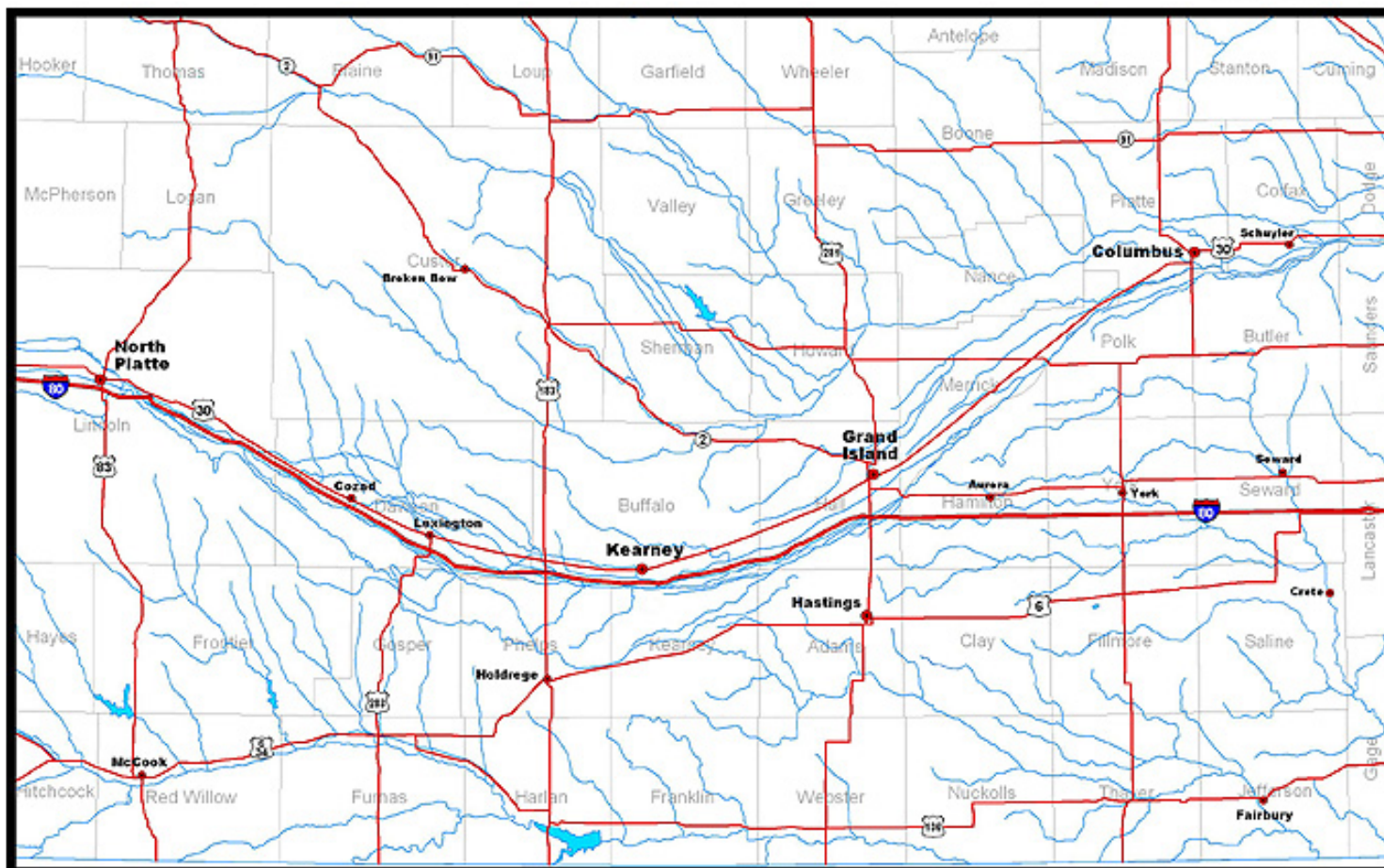
- Pronaći ravnotežu: prikazati dovoljno informacija, a da karta ne bude pretrpana mnoštvom objekata i nečitka.
- Prikazati samo neophodni sadržaj pri čemu je bitno ostvariti povezanost tematskog sadržaja i temeljne karte



Central Nebraska

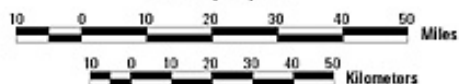


Coverage Area



Produced from USGS 1:2,000,000-scale DLG data. The data were symbolized and labeled in an ArcView layout. The finished layout was exported as a 300 dpi image in JPG format.

Scale 1:1,500,000



Mid-Continent Mapping Center
May 1999

Strategija i Program prostornog uređenja Republike Hrvatske

MINISTARSTVO PROSTORNOG UREĐENJA, GRADITELJSTVA I STANOVANJA
Zavod za prostorno planiranje

4. Poglavlje:

Prostorno razvojna i planska usmjerenja

Sektor:

Naselja - proces urbanizacije, sustav razvojnih središta i usmjerenja

Tema:

Gradovi i naselja s gradskim obilježjima - oko 160 gradskih područja
Prostori najdinamičnijih gospodarskih i graditeljskih aktivnosti - nužna izrada Gener. plan. uređenja

Godina podataka - stanje - planirano:

1991. i 2005.

Izvori podataka: Popis stanovništva, domaćinstava i stanova;

Studije: Naselja - naseljenost prostora, proces urbanizacije i sustav razvojnih žarišta;

Kompleksno sagledavanje procesa urbanizacije i Zakon o područjima županija, gradova i općina (NN, br.10/97)

Kartografski prikaz:

42-10



Strategija i Program prostornog uređenja Republike Hrvatske

MINISTARSTVO PROSTORNOG UREĐENJA, GRADITELJSTVA I STANOVANJA
Zavod za prostorno planiranje

4. Poglavlje:

Prostorno razvojna i planska usmjerenja

Sektor:

Prometni sustav

Tema:

Cestovni promet

Autoceste - poluautoceste - brze ceste; pravci, koridori i trase (planovi i istraživanja)

Godina podataka - stanje - planirano:

1997., 2005. i 2015.

Izvori podataka:

Ministarstvo razvitka i obnove i

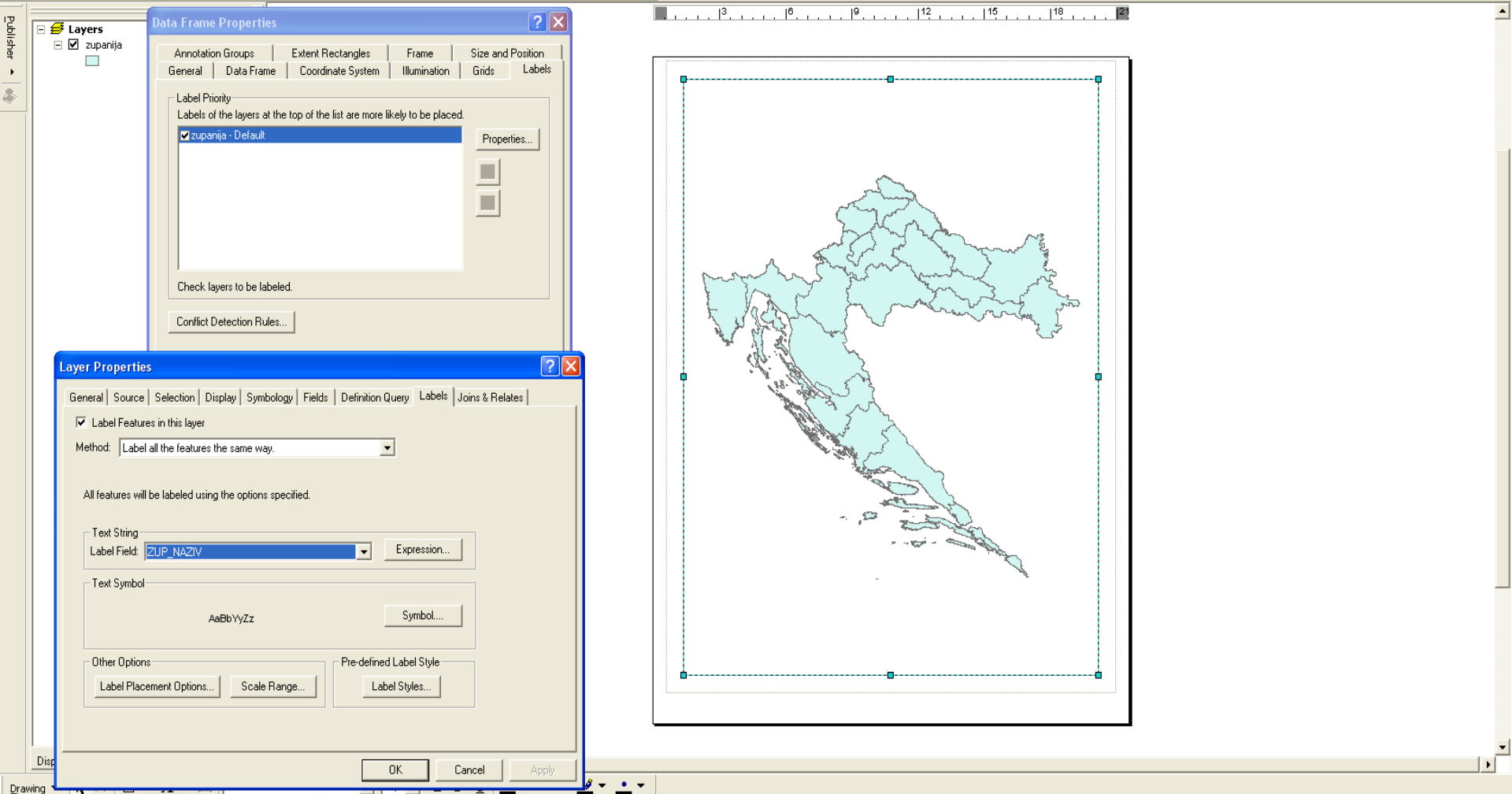
Ministarstvo pomorstva, prometa i veza

Kartografski prikaz:

44-02

Zagreb, srpnja 1997.





1:2,483,562

File Edit View Insert Selection Tools Window Help

Georeferencing Layer: 3D Analyst Layer: Geostatistical Analyst

Spatial Analyst Layer: Editor Task: Create New Feature Target:

Layers

- zupanija

Display Source



Dizajn karte (2 aspekta)

- Kompozicija (raspored sastavnih dijelova karte)
- Planiranje karte (izbor sadržaja i metode, izbor projekcije, mjerila, tipa znakova)



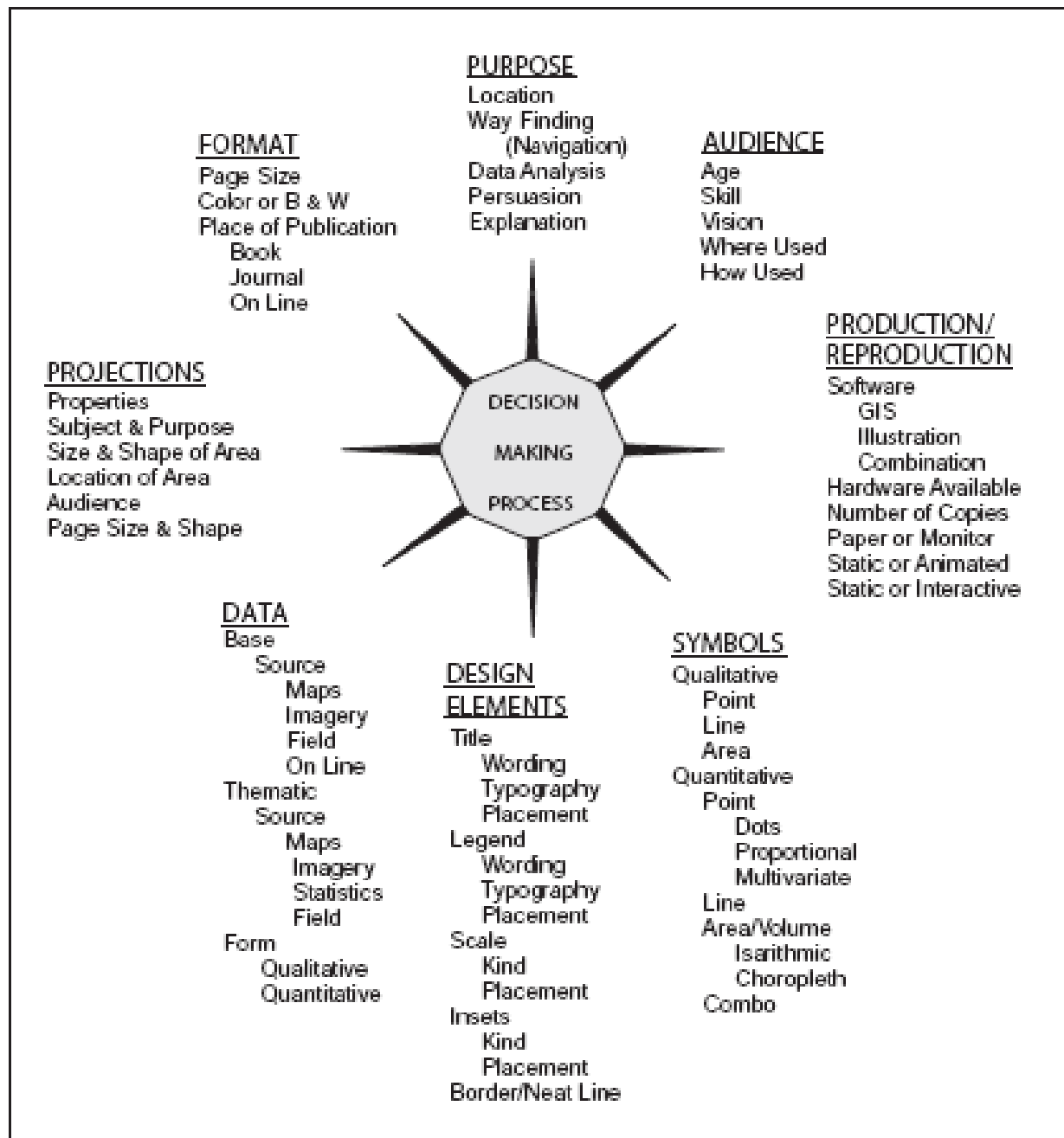


FIGURE 12.1. The map design decision process.



Dizajn karte - filteri

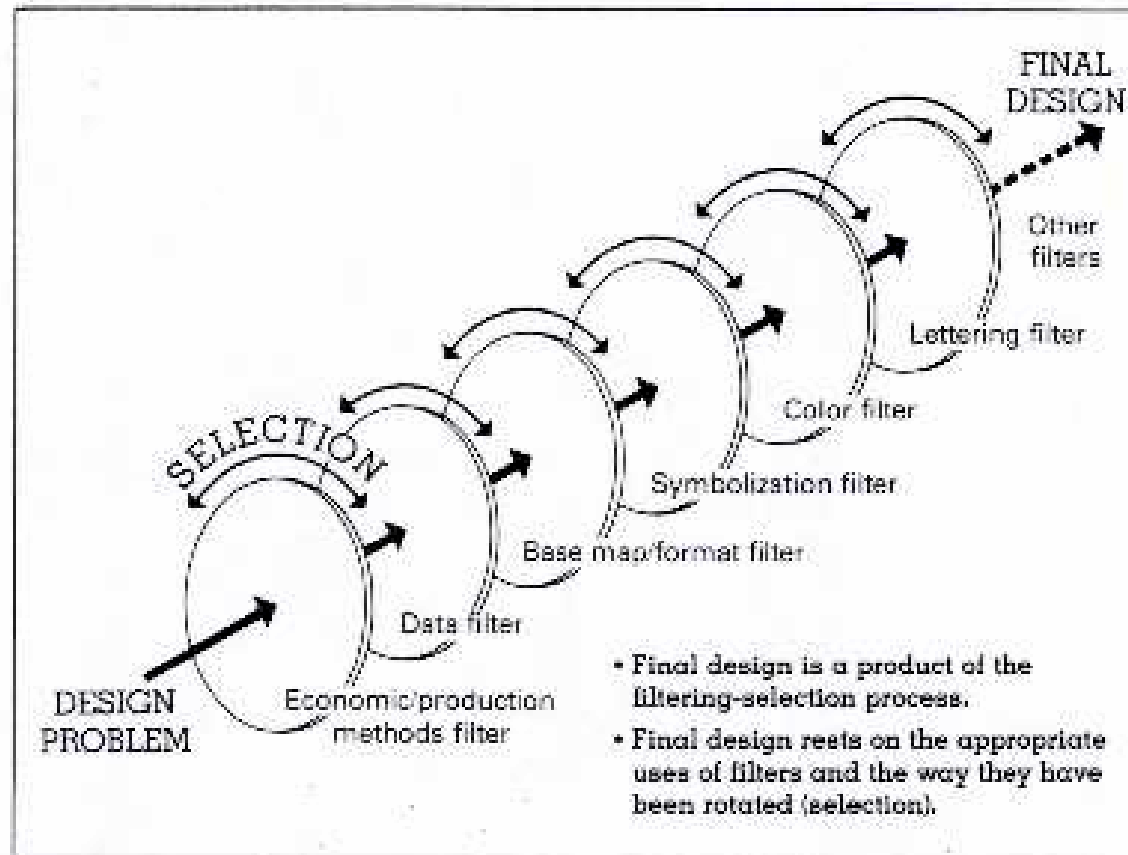


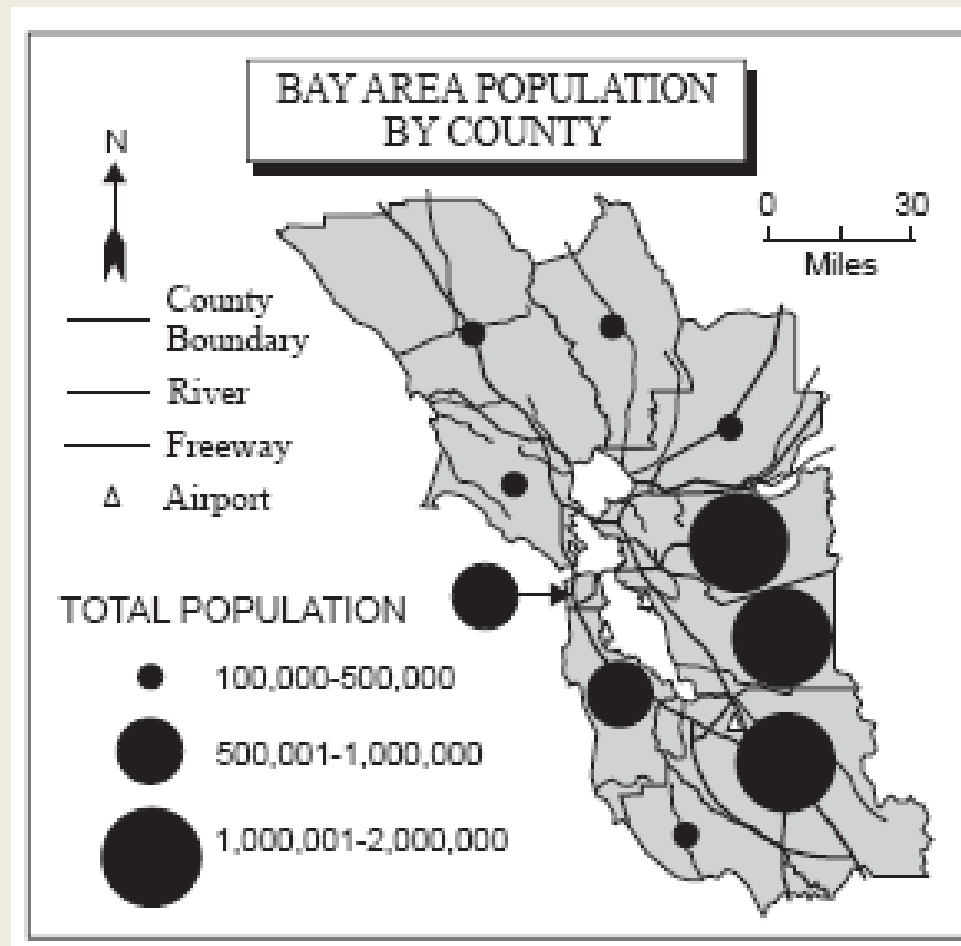
Figure 12.4. Map design as a filtering-selection process. In this view of design, a series of filters must be rotated (selection), allowing design activity to continue until an appropriate final solution is reached.

Dizajn karte - ciljevi

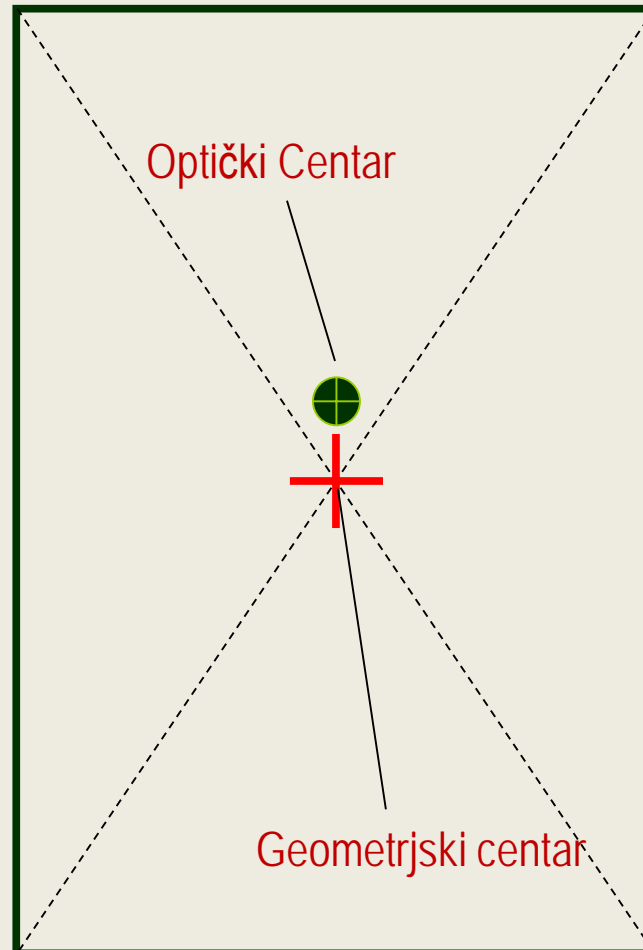
- Jasnoća
- Red (logika karte)
- Vizualna ravnoteža (ovisi o lokaciji, veličini, boji, obliku i smjeru), prazni prostori na karti
- Kontrast
- Jedinstvo
- Harmonija



Dizajn karte - Jasnoća

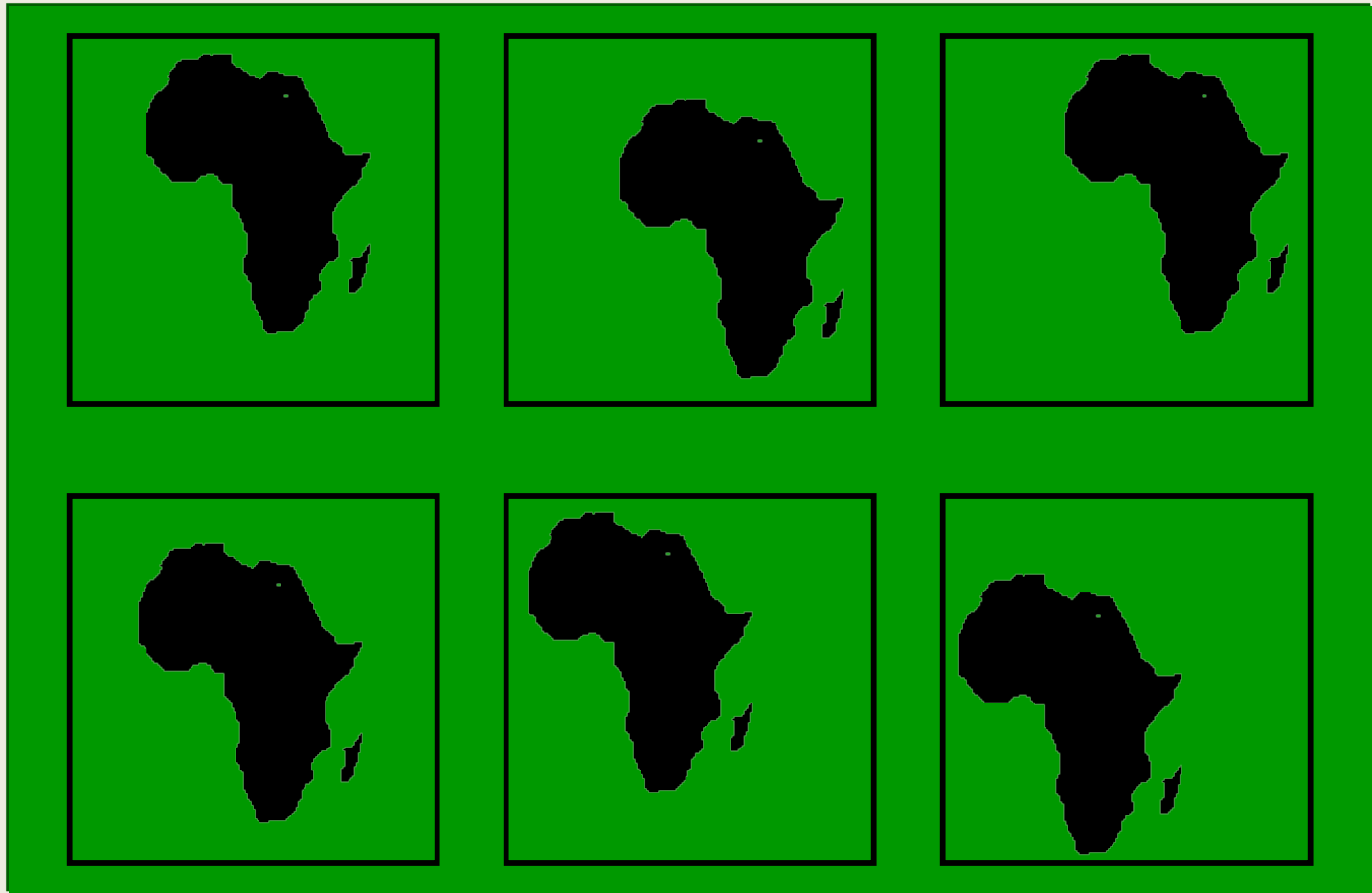


Dizajn karte – Vizualna ravnoteža - Vizualni centar



Kartograf
treba
organizirati
elemente oko
optičkog
centra karte

Vizualna ravnoteža



Fokus (centar pozornosti)

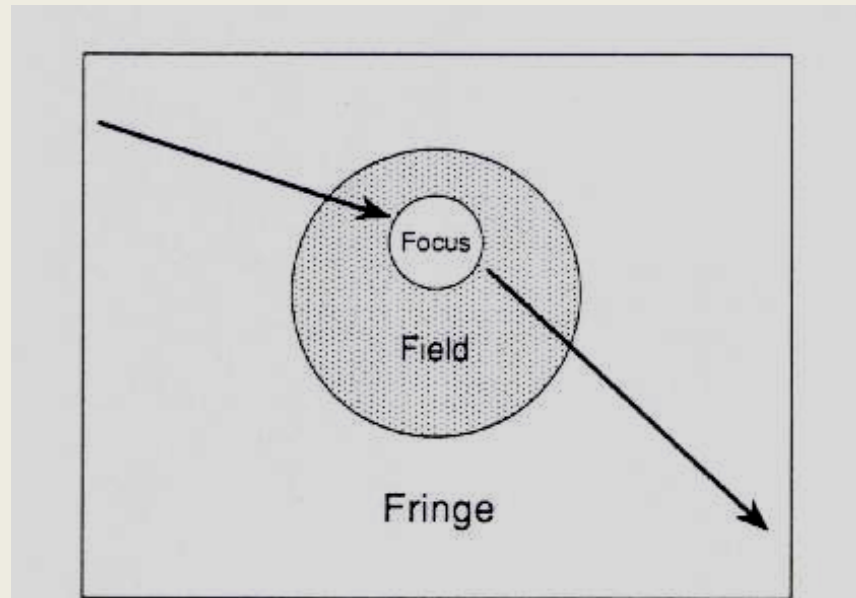
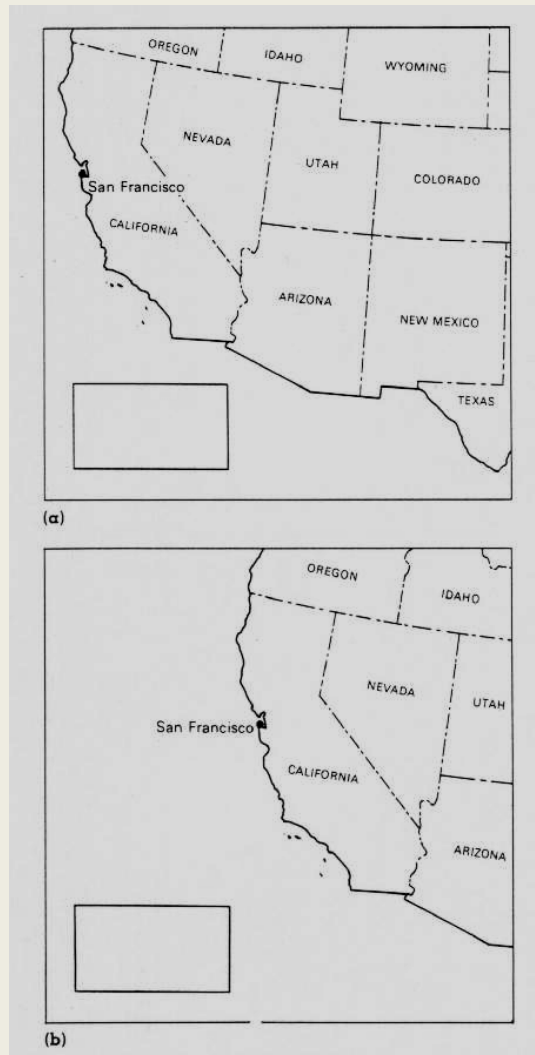


Figure 12.10. Eye movement through the image space. In normal viewing, the reader's eyes enter the image space at the upper left, proceed through the visual center (focus), and exit the space at the lower right. Cartographic designers may use this pattern when arranging the map's elements, so that the positions of important objects on the map correspond to natural eye movements.

Dizajn karte - Vizualna ravnoteža

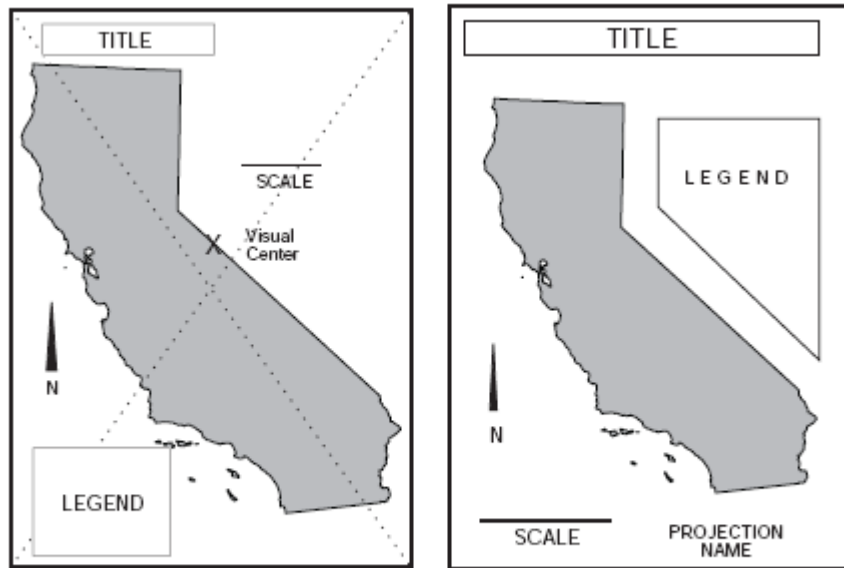
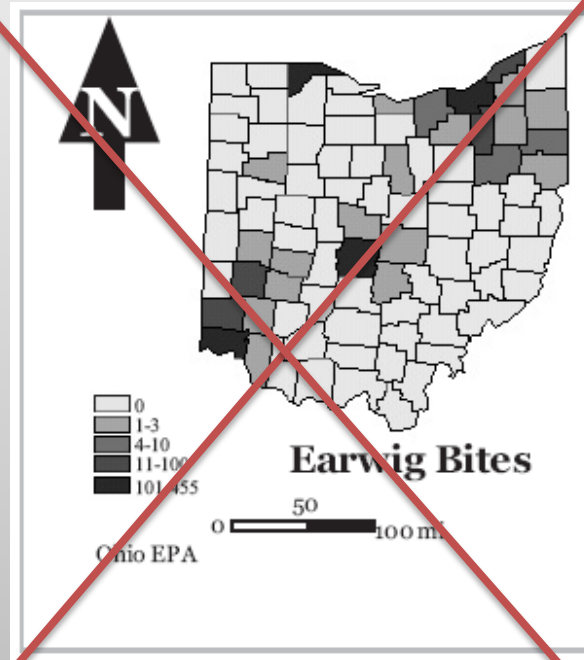
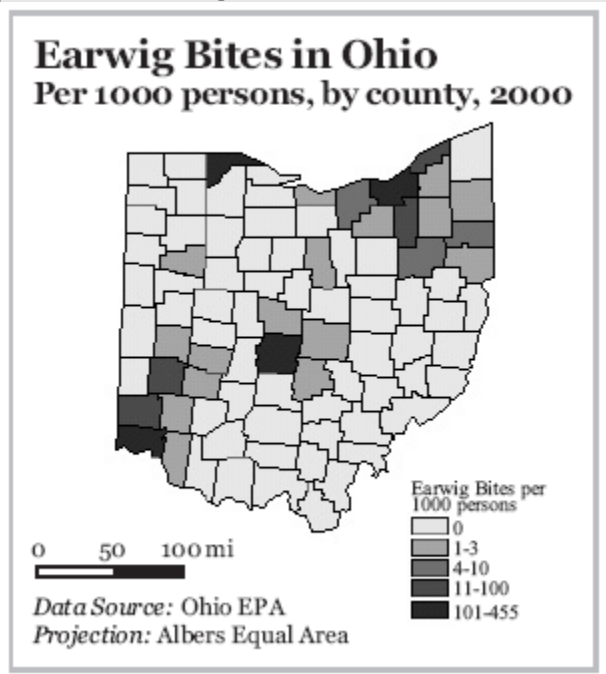


FIGURE 2.3. The layout on the left is poorly balanced. On the right, the page has many elements, but the subject area takes up too little of the available space.

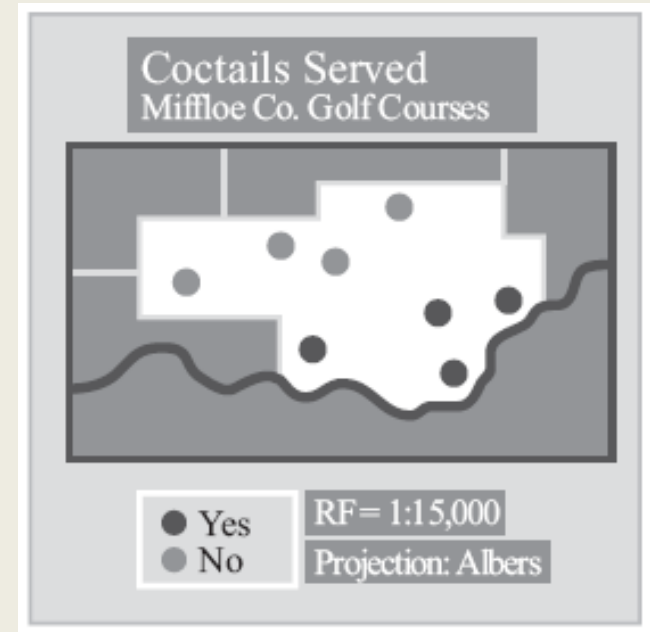


Dizajn karte – vizualna ravnoteža

- Raspored sastavnih dijelova karte

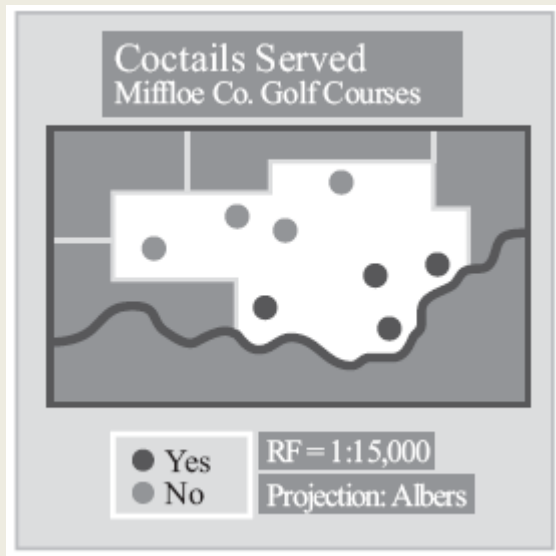


Vizualna ravnoteža



Vizualna ravnoteža

Simetrična ravnoteža



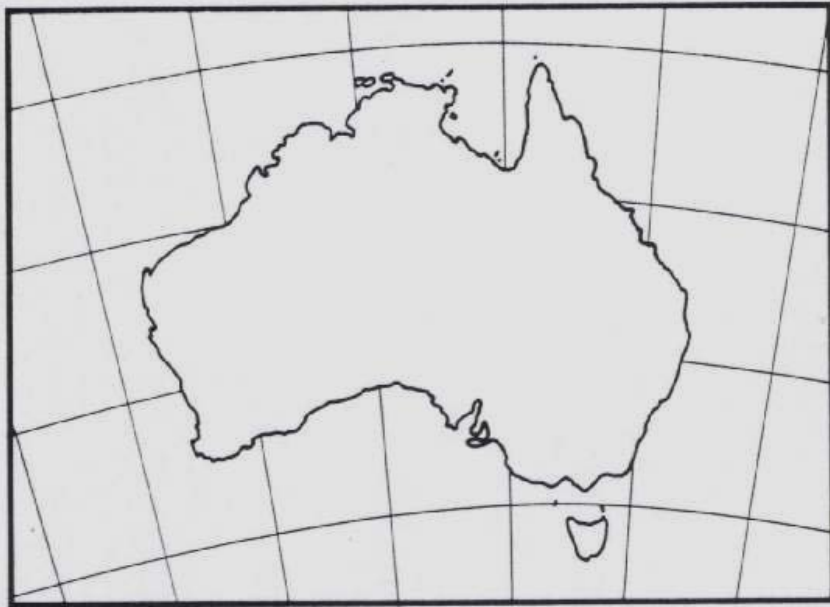
Asimetrična ravnoteža



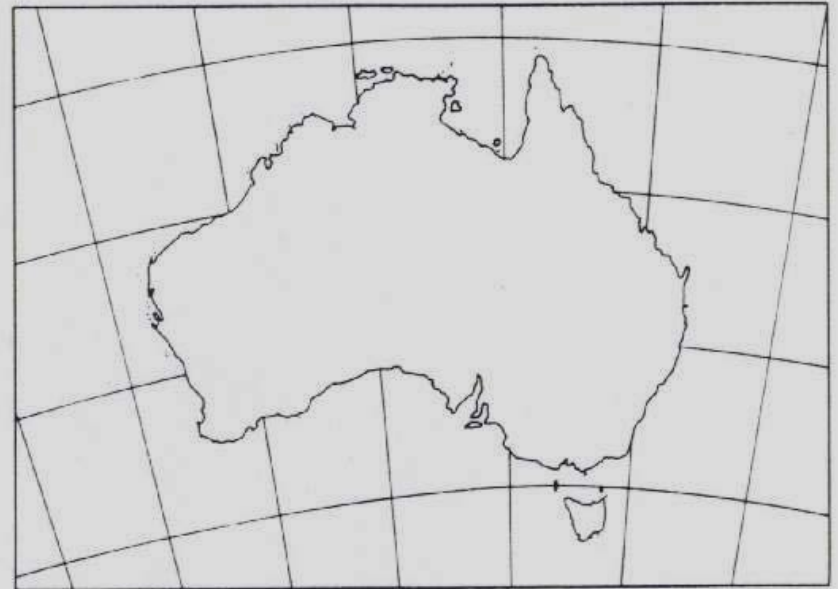
Dizajn karte - kontrast



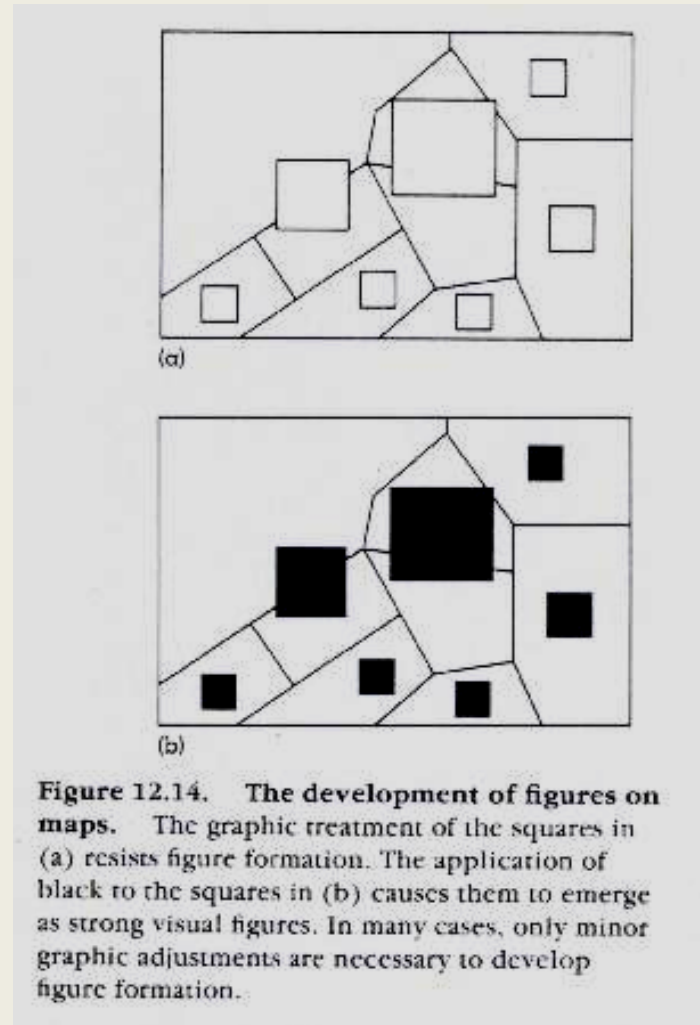
Oštri rubovi (prema podlozi)



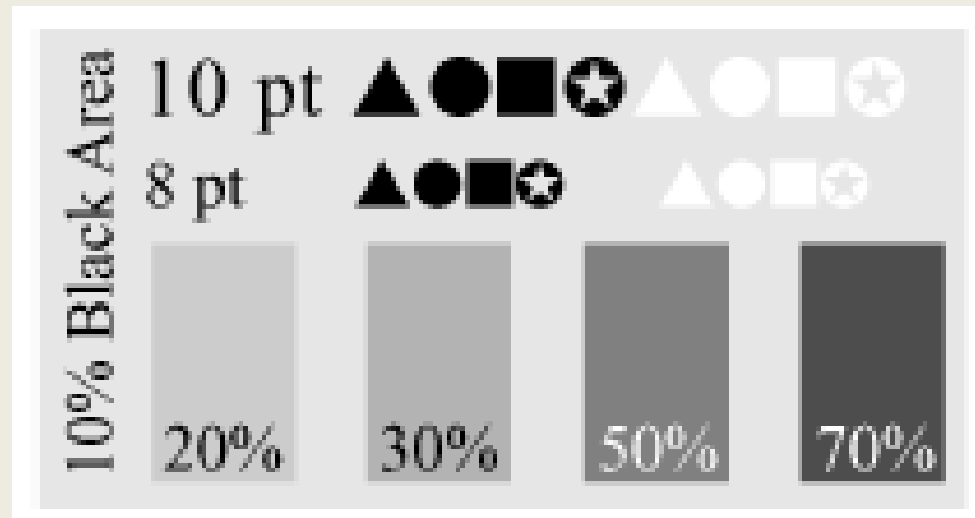
(c)



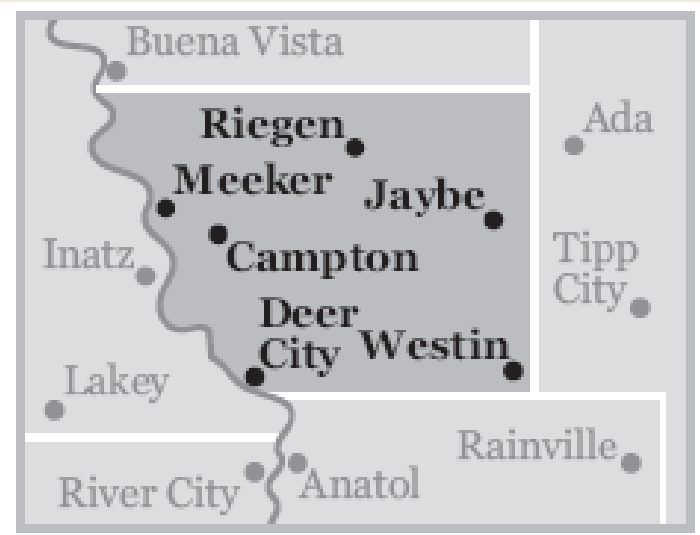
Kontrast tema - podloga



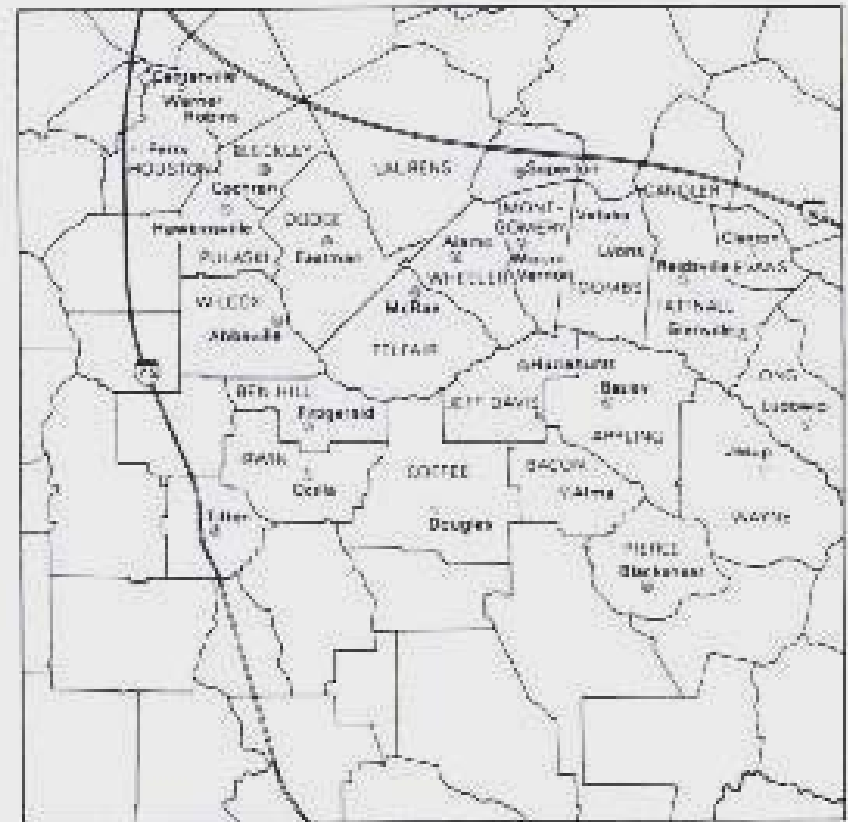
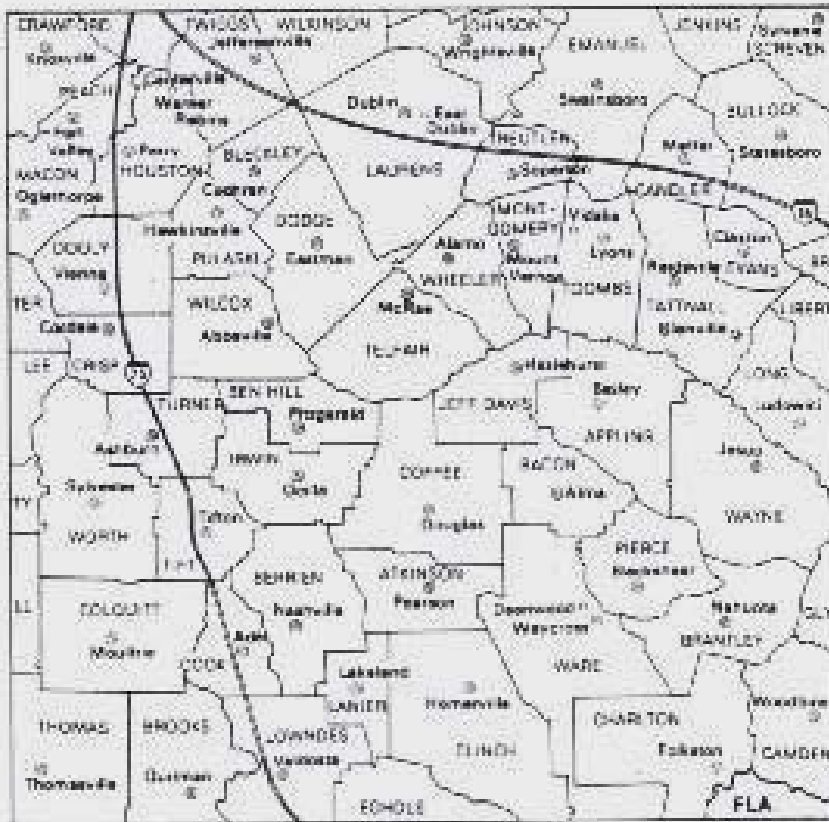
Kontrast tema - podloga



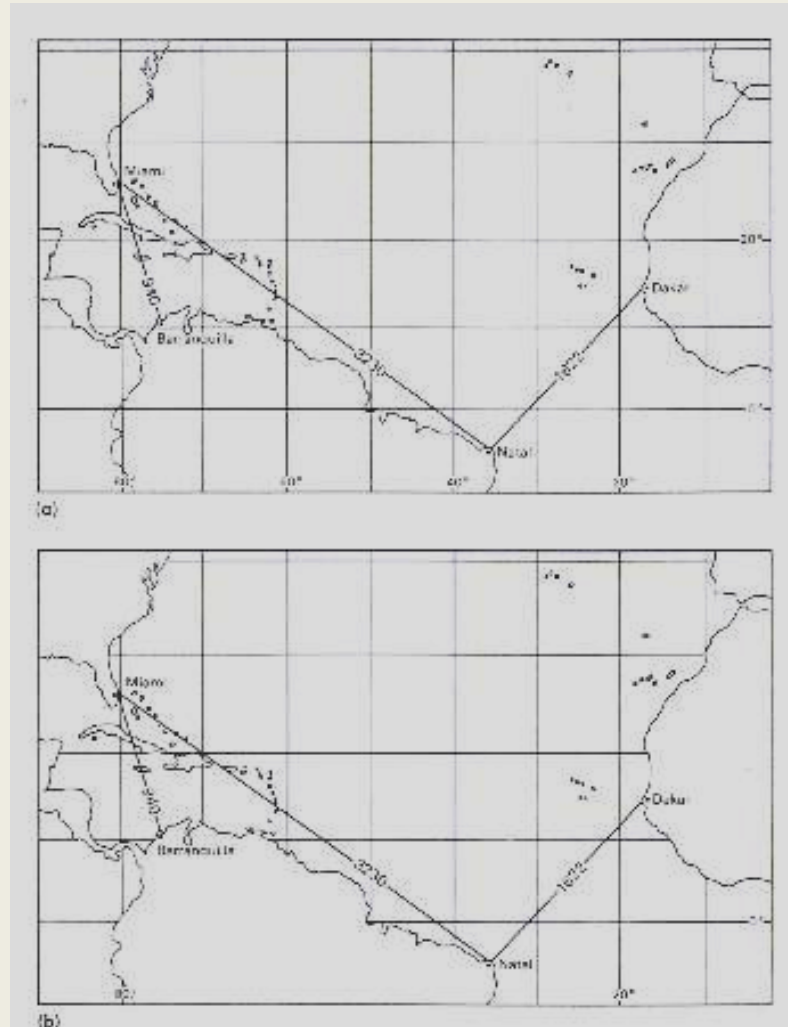
Kontrast tema - podloga



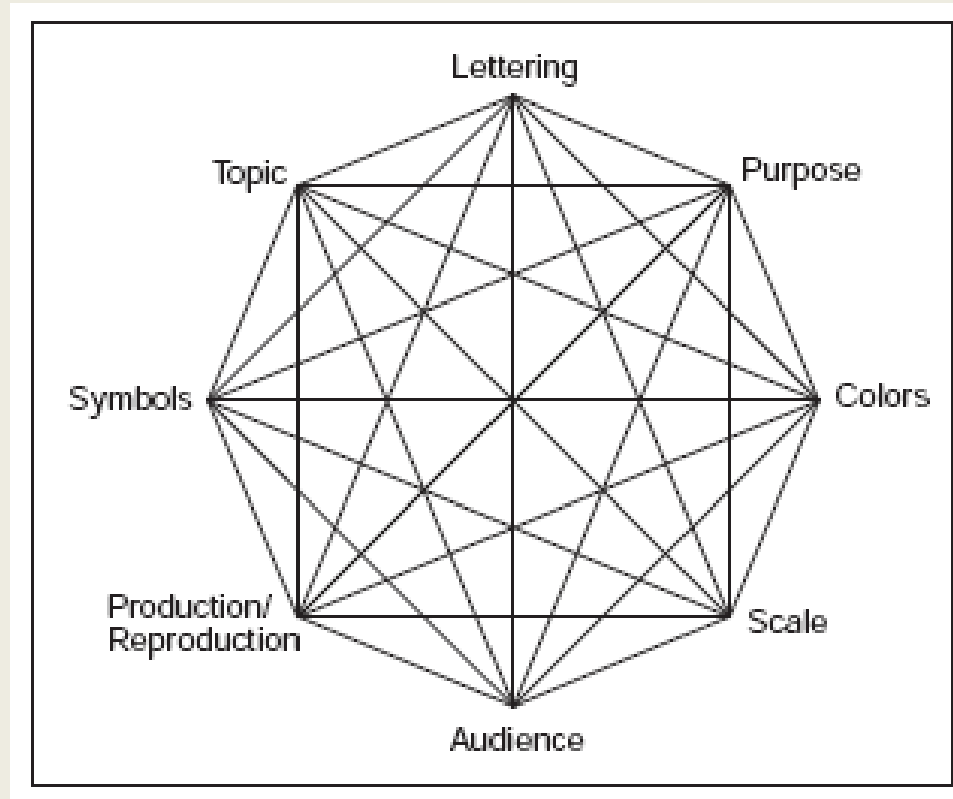
Variranje detaljnosti



Sloj u pozadini, važniji sloj ispred

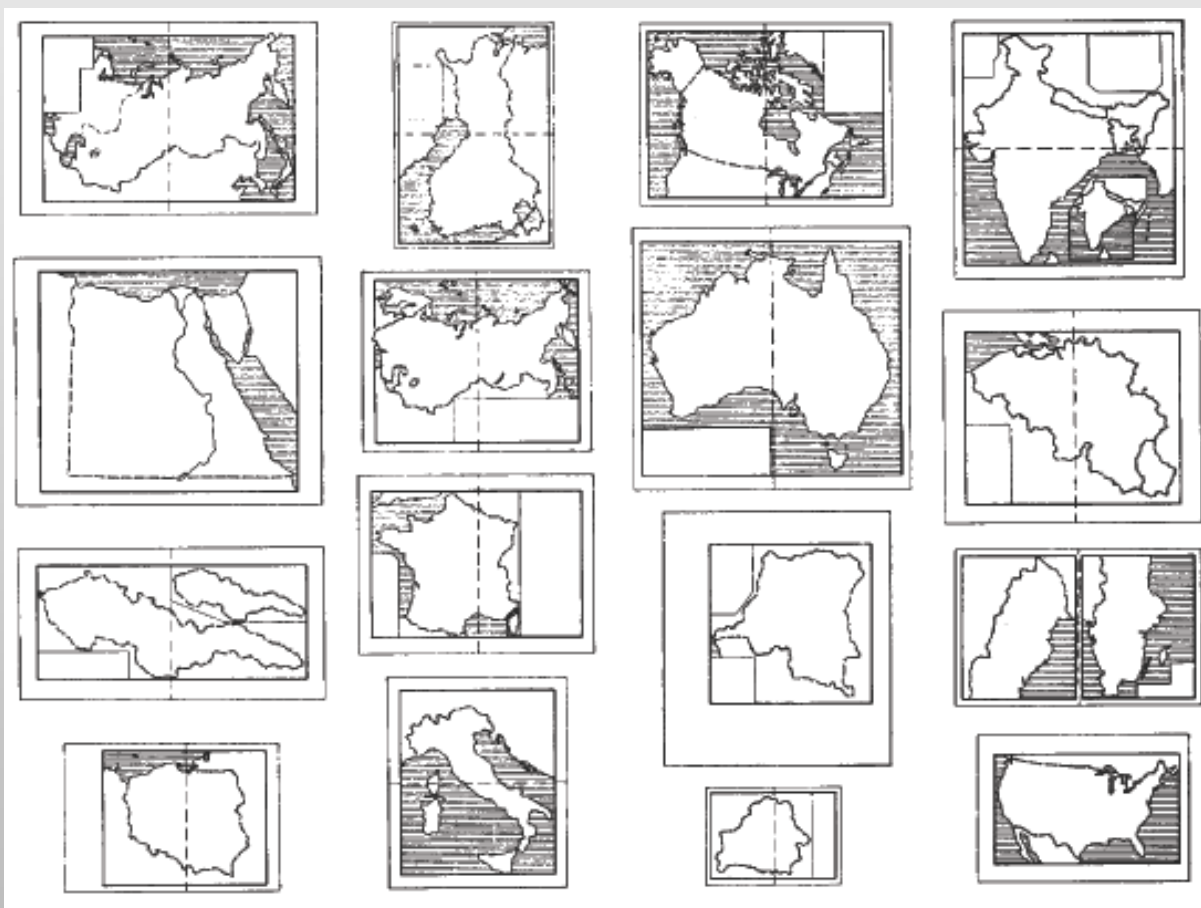


Dizajn karte - Harmonija

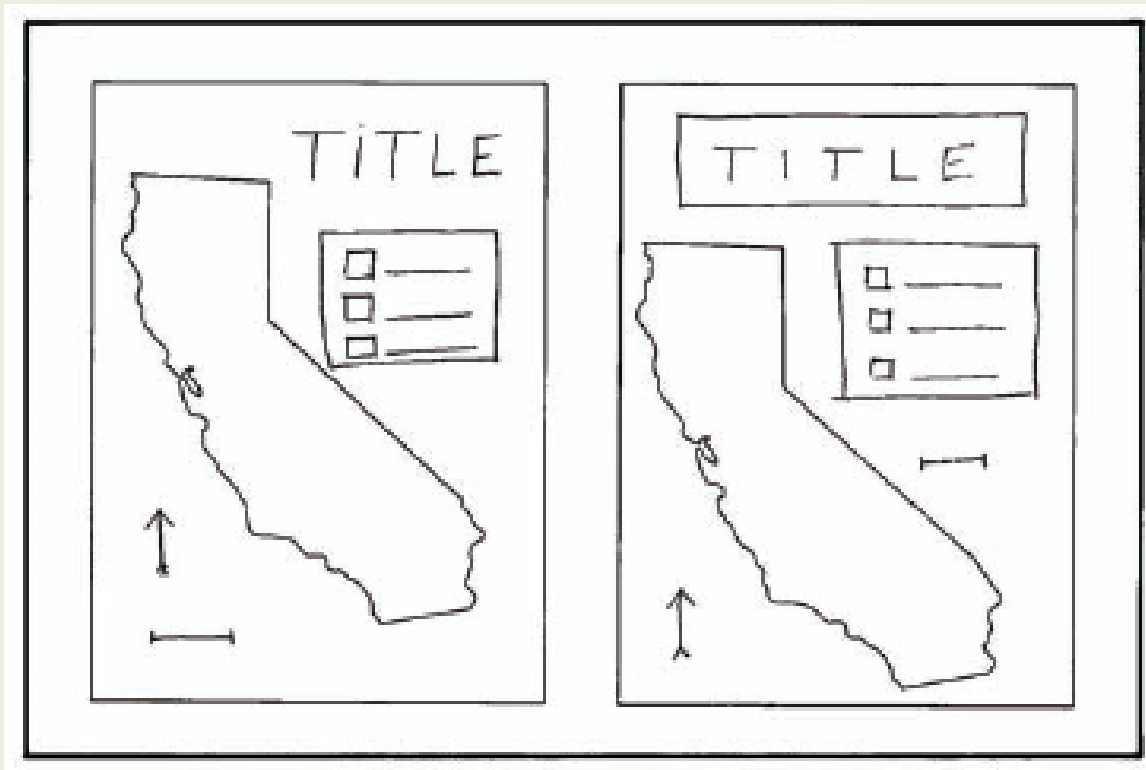


Kompozicija karte - skica

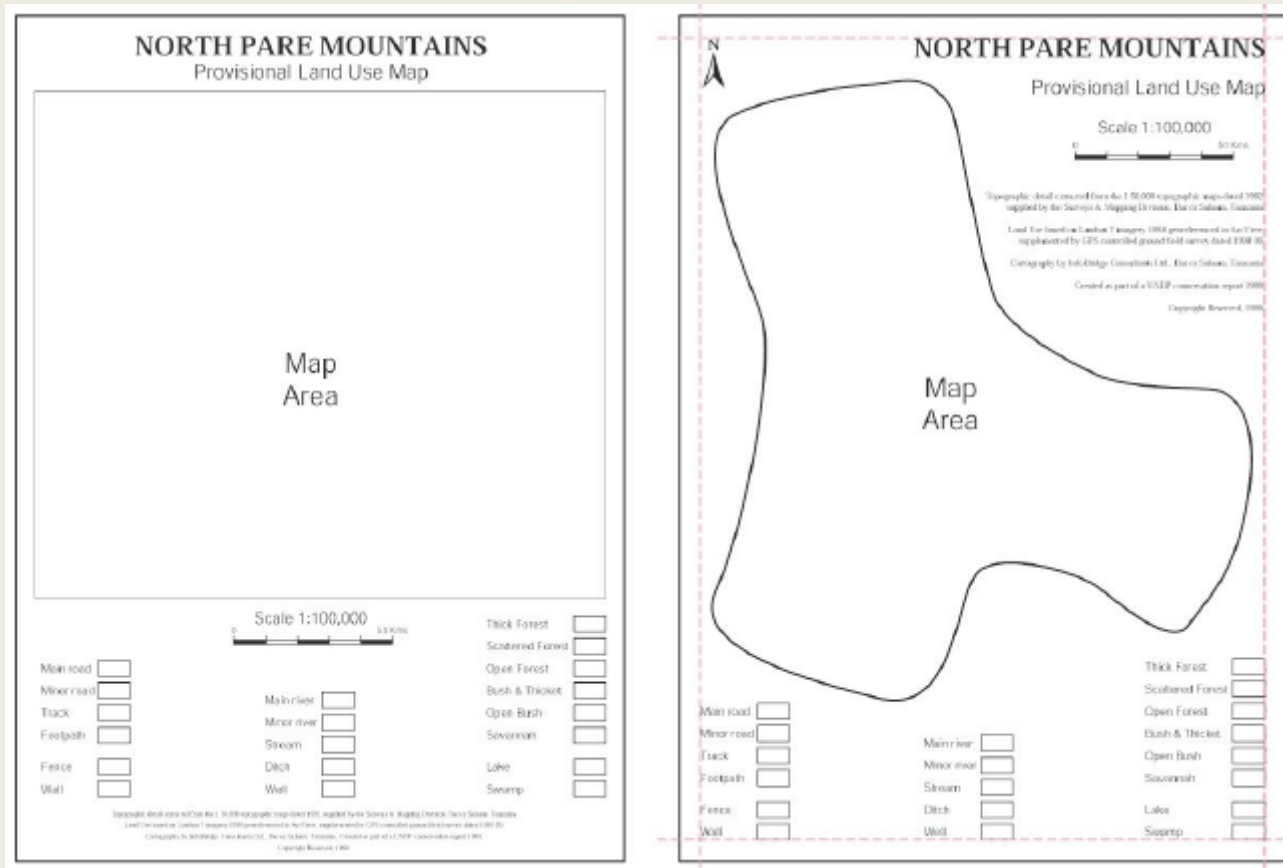
- Raspored sastavnih dijelova karte



Kompozicija karte - skica



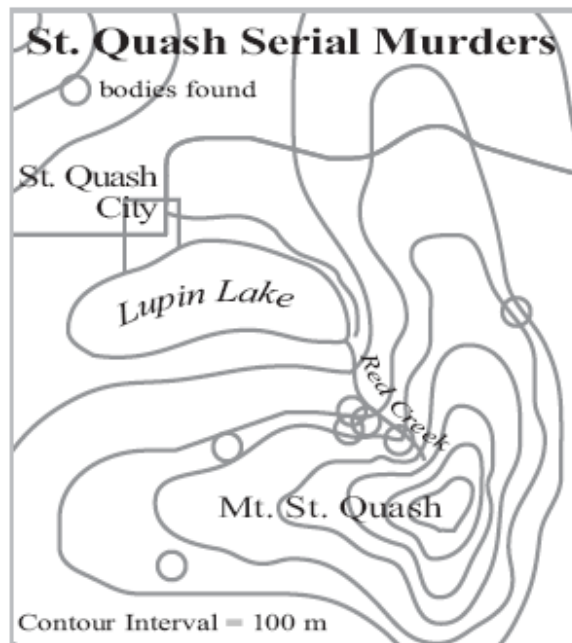
Prazan prostor – rub papira – rub karte



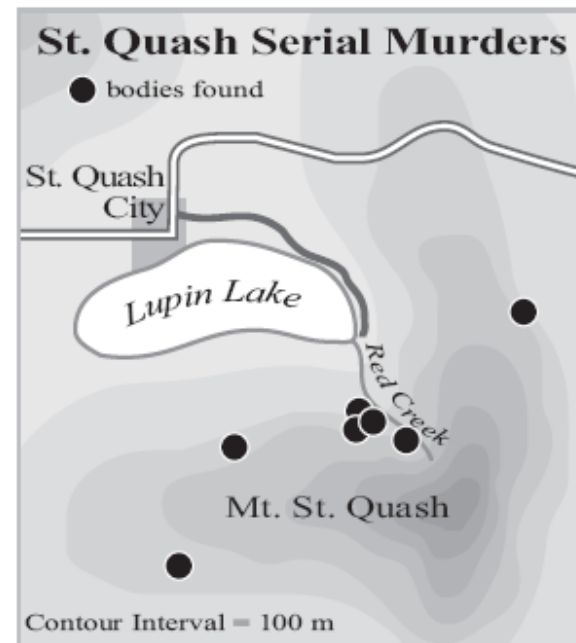
Logička i vizualna hijerarhija

- Namjena karte određuje logičku hijerarhiju
- Relativna važnost elemenata
- Vizualna hijerarhija rezultat je logičke.
- Neki elementi izbijaju u prvi plan, neki se nalaze u pozadini – vizualna hijerarhija

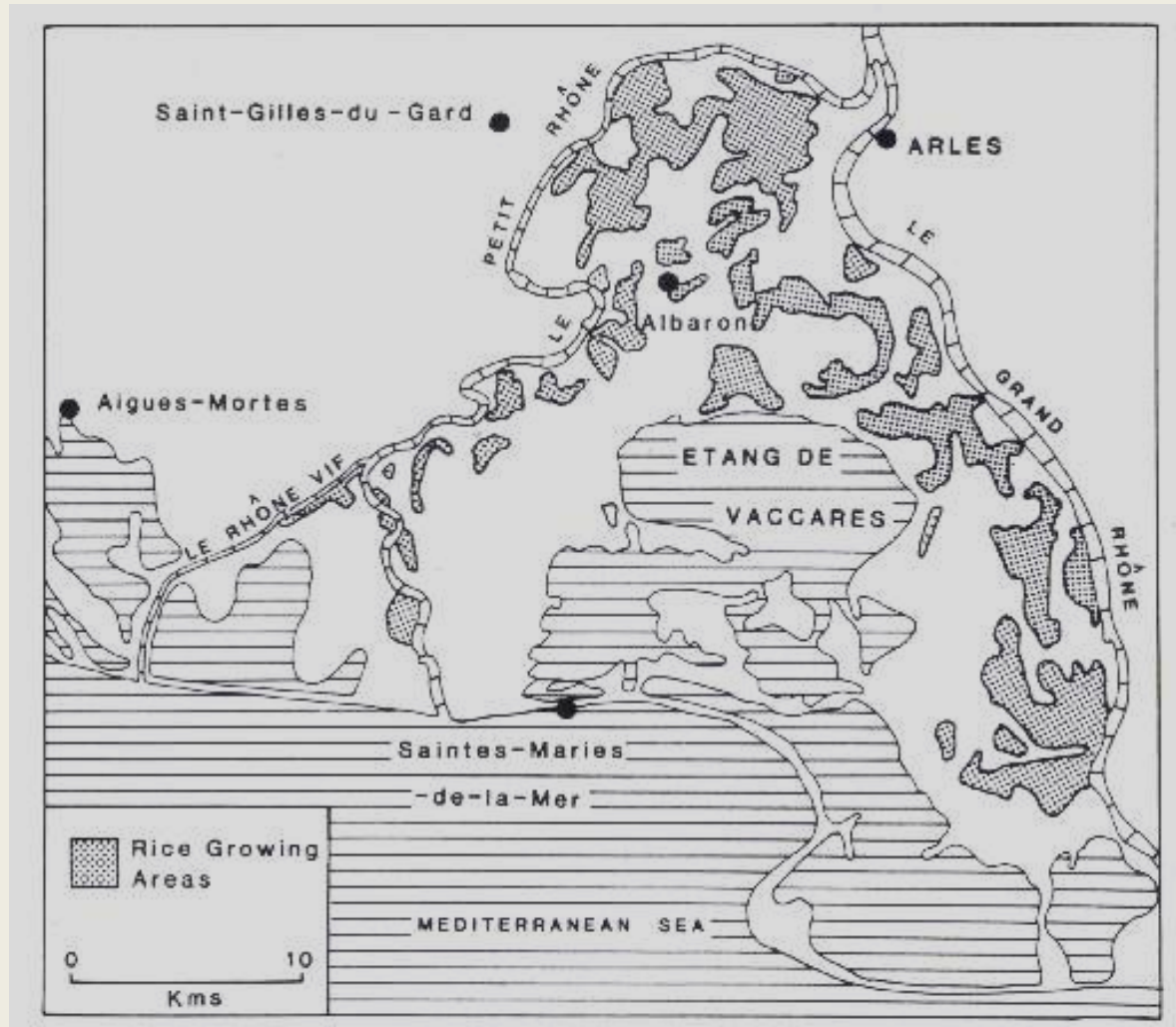
Poor visual hierarchy:



Good visual hierarchy:



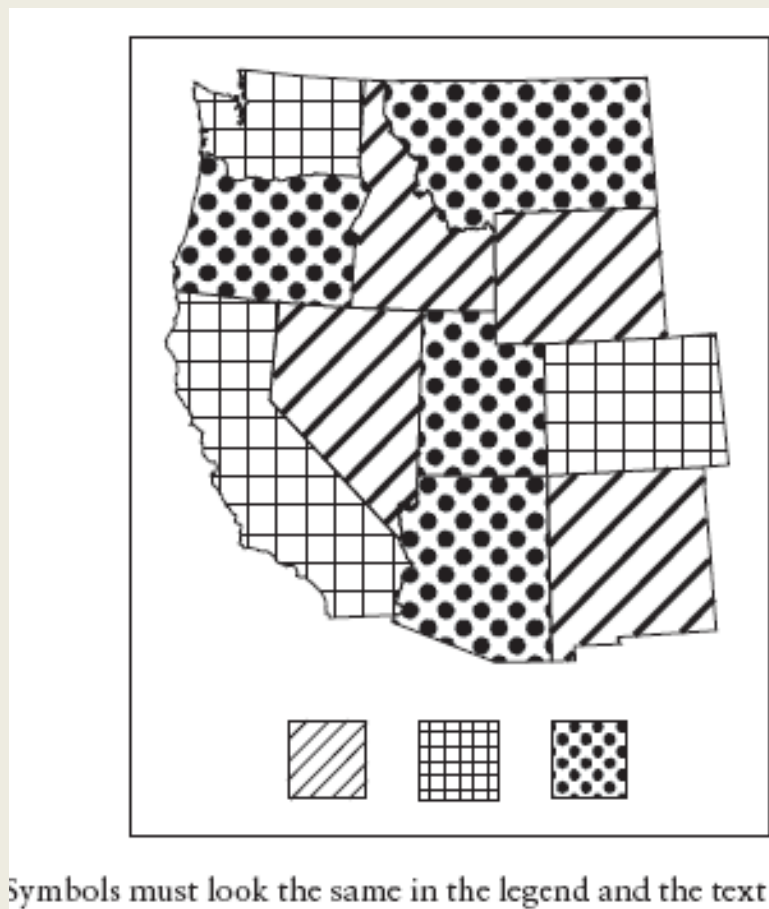
Tekstura



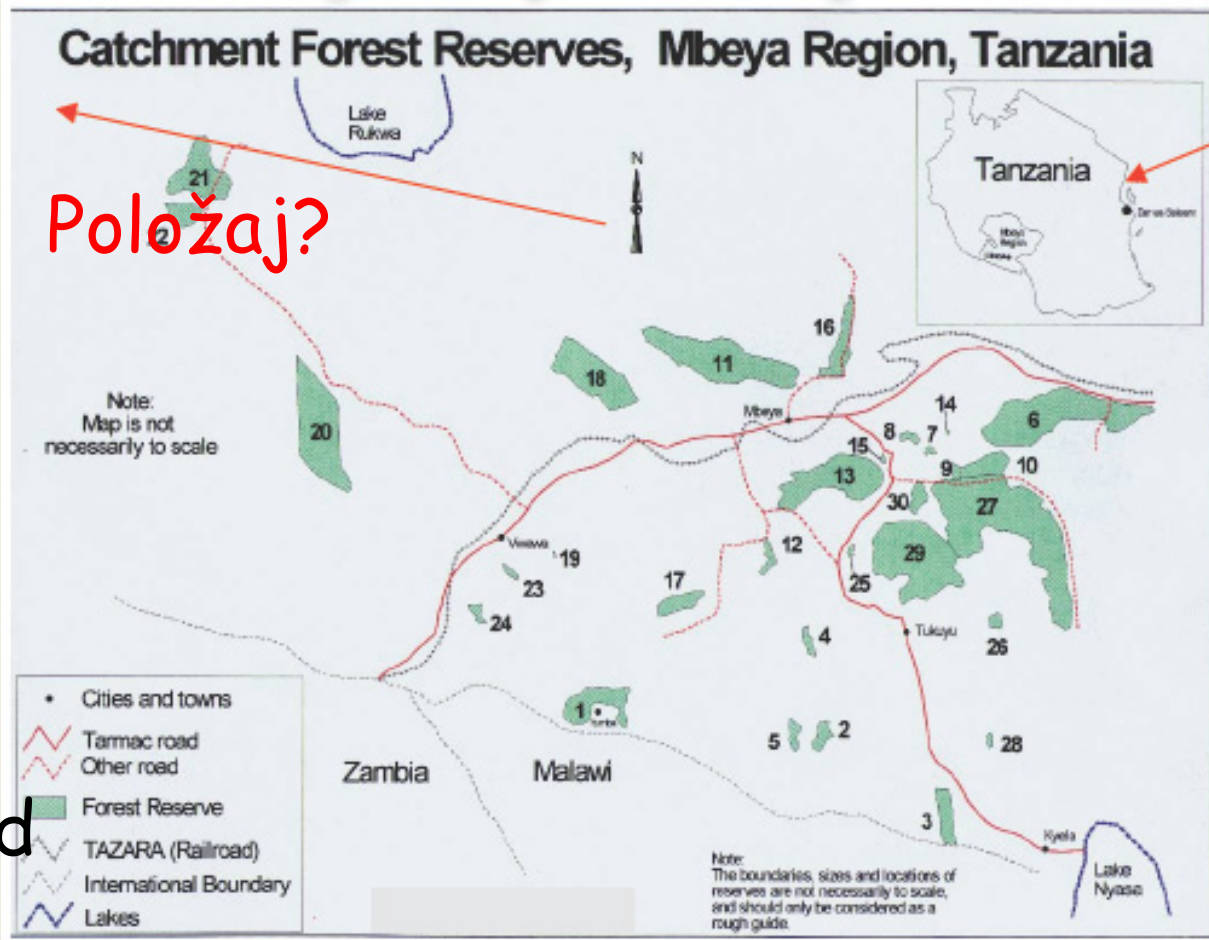
Što vidimo na slici?



Neusklađenost legende i karte!



Catchment Forest Reserves, Mbeya Region, Tanzania



Položaj?

Položaj?

Redoslijed
znakova





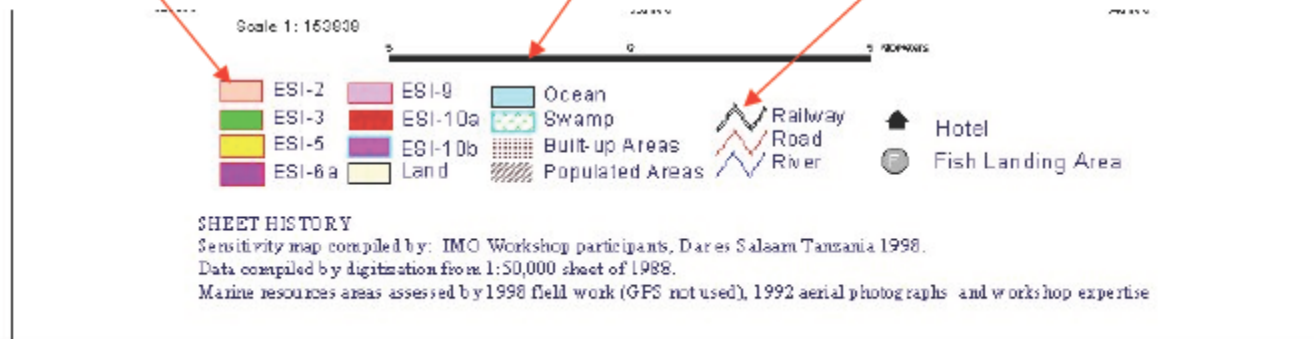
Korištenje prostora, redoslijed znakovlja



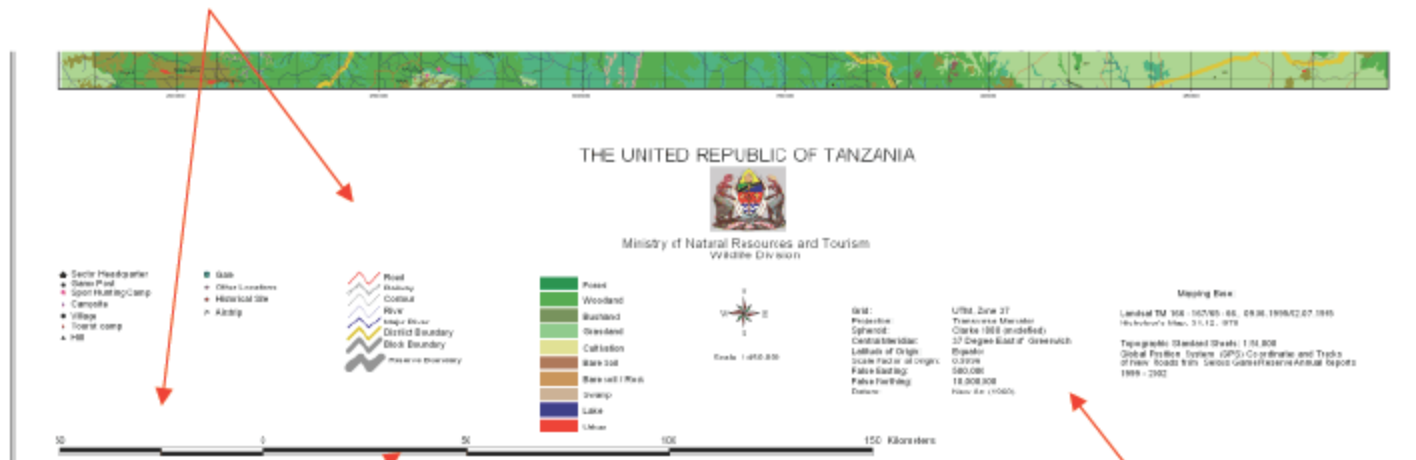
Legend unnecessary cramped symbols to close together

Avoid over-sized and thick scale bars

Avoid zig-zag symbols



Too much
'white space'



Scale bar
too large

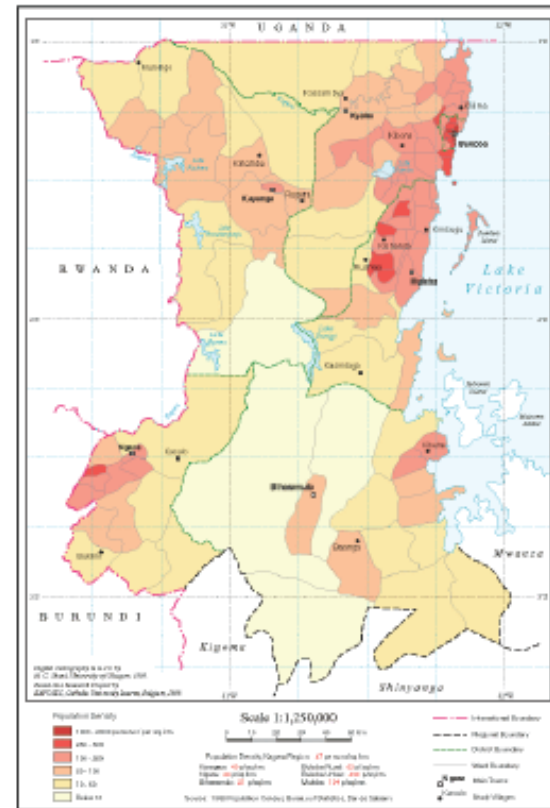
No symmetry
in spacing between
text blocks



Atlas of Food Security - Kagera Region, Tanzania
ADMINISTRATIVE DIVISIONS



Atlas of Food Security - Kagera Region, Tanzania
POPULATION DENSITY





Tematske karte u GIS-u



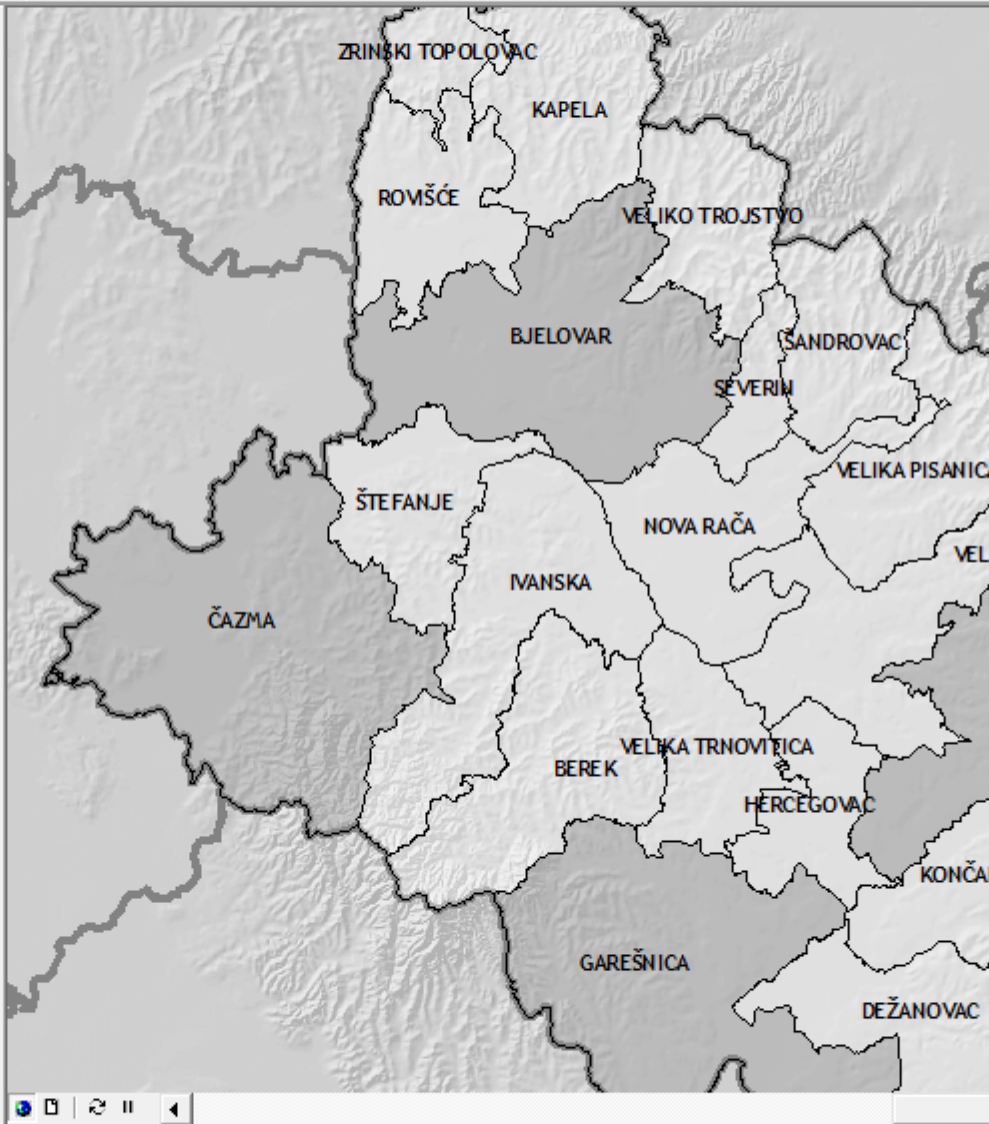
Geostatistical Analyst

- P2001
 - 27783
 - 9815
 - 4252
 - 3171
 - 2878
- zup_lin
- TERITORIAL_SEA_COUNTY
-
- zup_lin
 - OPIS
 - Granica županije
 - Razdjelna linija
- MUNICIPALITIES_NOT_GENERALIZED
- MUNICIPALITIES_GENERALIZED
- hillshade_Resample1.img
 - Value
 - High : 254
 - Low : 0
- hillshade
 - Value
 - High : 254
 - Low : 0

Display Source Selection

- ArcTo
- 3D
- Ar
- Ca
- Cc
- Da
- Da
- Ge
- Ge
- Lir
- Mi
- Ne
- Sa
- Se
- Sp
- Sp
- Tr

Favo



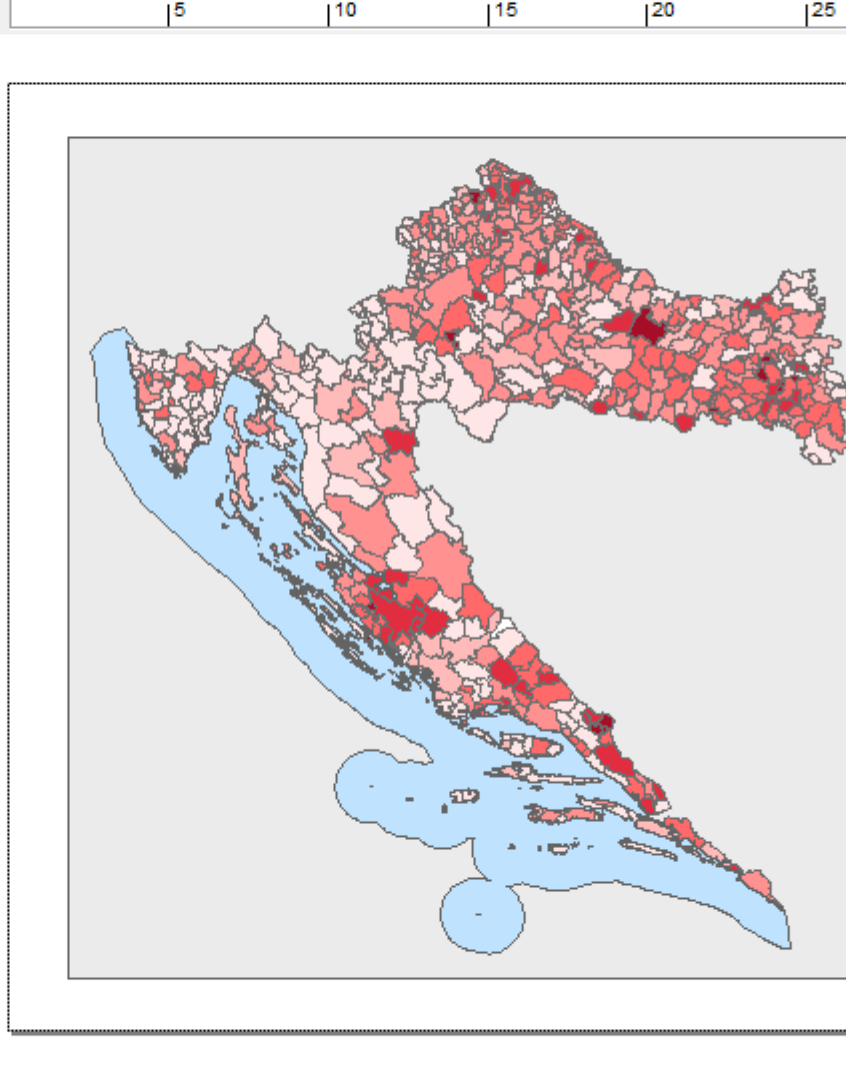
Geostatistical Analyst
Vectorization
Raster Cleanup
Call Selection

New Data Frame

- obalna_linija1
- standard_opcine_join
 - 1,7 - 8,0
 - 8,1 - 8,8
 - 8,9 - 10,0
 - 10,1 - 12,0
 - 12,1 - 14,0
 - 14,1 - 18,2
 - Nema pojave
- drzava

- ArcTo
- 3D
- Ar
- Ca
- Cc
- Da
- Da
- Ge
- Ge
- Lir
- Mi
- Ne
- Sa
- Se
- Sp
- Sp
- Tr

25
20
15
10
5



Display Source Selection

Favo

File Edit View Bookmarks Insert Selection Tools Window Help

1:1.950.000 3D Analyst Layer:

Editor Task: Create New Feature Target: Spatial Analyst Layer:

Georeferencing Layer: Network Analyst Network Dataset:

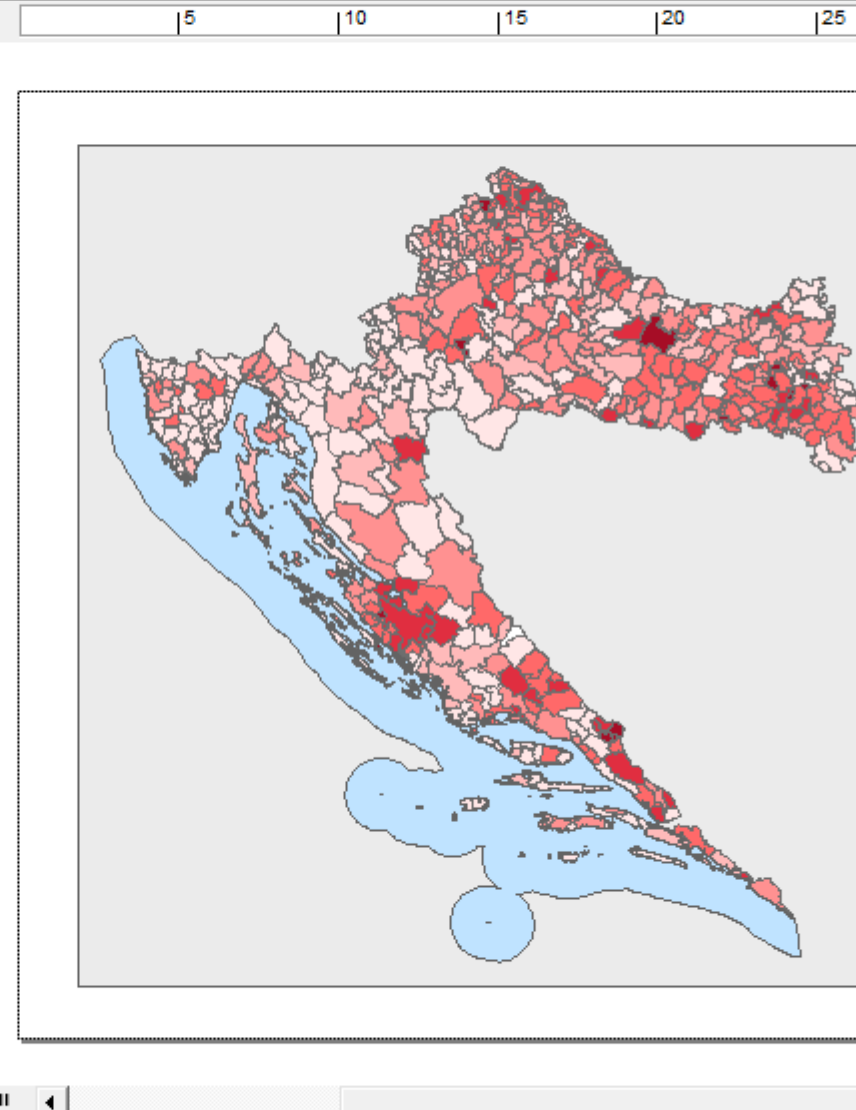
Geostatistical Analyst
 Vectorization
 Raster Cleanup
 Call Selection

New Data Frame

- obalna_linija1
- standard_op
 - 1,7 - 8,0
 - 8,1 - 8,8
 - 8,9 - 10,0
 - 10,1 - 12,0
 - 12,1 - 14,0
 - 14,1 - 18,0
 - Nema podataka
- drzava

Copy
 Remove
 Open Attribute Table
 Joins and Relates
 Zoom To Layer
 Zoom To Make Visible
 Visible Scale Range
 Use Symbol Levels
 Selection
 Label Features
 Convert Labels to Annotation...
 Convert Features to Graphics...
 Convert Symbolology to Representation...
 Data
 Save As Layer File...
 Create Layer Package...
Properties...

Display Source Selection Fav



File Edit View Bookmarks Insert Selection Tools Window Help


 1:1.950.000

Editor Task: Create New Feature Target:

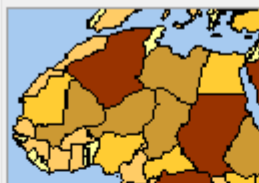
Georeferencing Layer: Network Analyst Network Dataset:

Layer Properties

General Source Selection Display Symbology Fields Definition Query Labels Joins & Relates HTML Popup

Show:

 Features
 Categories
 Quantities
 Graduated colors
 Graduated symbols
 Proportional symbols
 Dot density

 Charts
 Multiple Attributes


Draw quantities using color to show values. Import...

Fields

Value: N43

Normalization: none







Color Ramp:

Classification

Manual

Classes: 6

Classify...

Symbol	Range	Label
	1,686341 - 8,000000	1,7 - 8,0
	8,000001 - 8,762767	8,1 - 8,8
	8,762768 - 10,000000	8,9 - 10,0
	10,000001 - 12,000000	10,1 - 12,0
	12,000001 - 14,000000	12,1 - 14,0
	14,000001 - 18,244720	14,1 - 18,2

 Show class ranges using feature values

Advanced

OK

Cancel

Apply

Display Source Selection

Favo

New Data Frame

- obalna_linija1
- standard_opcine_join
 - 1,7 - 8,0
 - 8,1 - 8,8
 - 8,9 - 10,0
 - 10,1 - 12,0
 - 12,1 - 14,0
 - 14,1 - 18,2
 - Nema pojave
- drzava
 -

Layer Properties

General

Show:

Features

Categories

Quantities

Charts

Multiple A

Symbol Selector

Category: All

Preview

DEMO_RES_A DEMO_RES_B DEMO_RES_B

DEMO_RES_C DEMO

DEMO_RES_F DEMO

OPC_LINJE Green Blue

Color Selector

Color Properties CMYK

C %

M %

Y 10 %

K 0 %

OK Cancel

Properties...

More Symbols

Save... Reset

OK Cancel

http://colorbrewer2.org/

File Edit View Favorites Tools Help

Norton Phishing Protection on Identity Safe Log-ins

Google chyntia brewer color Search +

Windows Live Bing What's New Profile Mail Photos Calendar Share

Favorites Prijedlog web-mjesta Get More Add-ons

Colorbrewer: Color Advice for Maps **http://colorbrewer2.org**

number of data classes on your map

3 [learn more >](#)

the nature of your data

sequential [learn more >](#)

pick a color scheme: BuGn

multihue single hue

(optional) only show schemes that are:

colorblind safe print friendly

photocopy-able [learn more >](#)

pick a color system

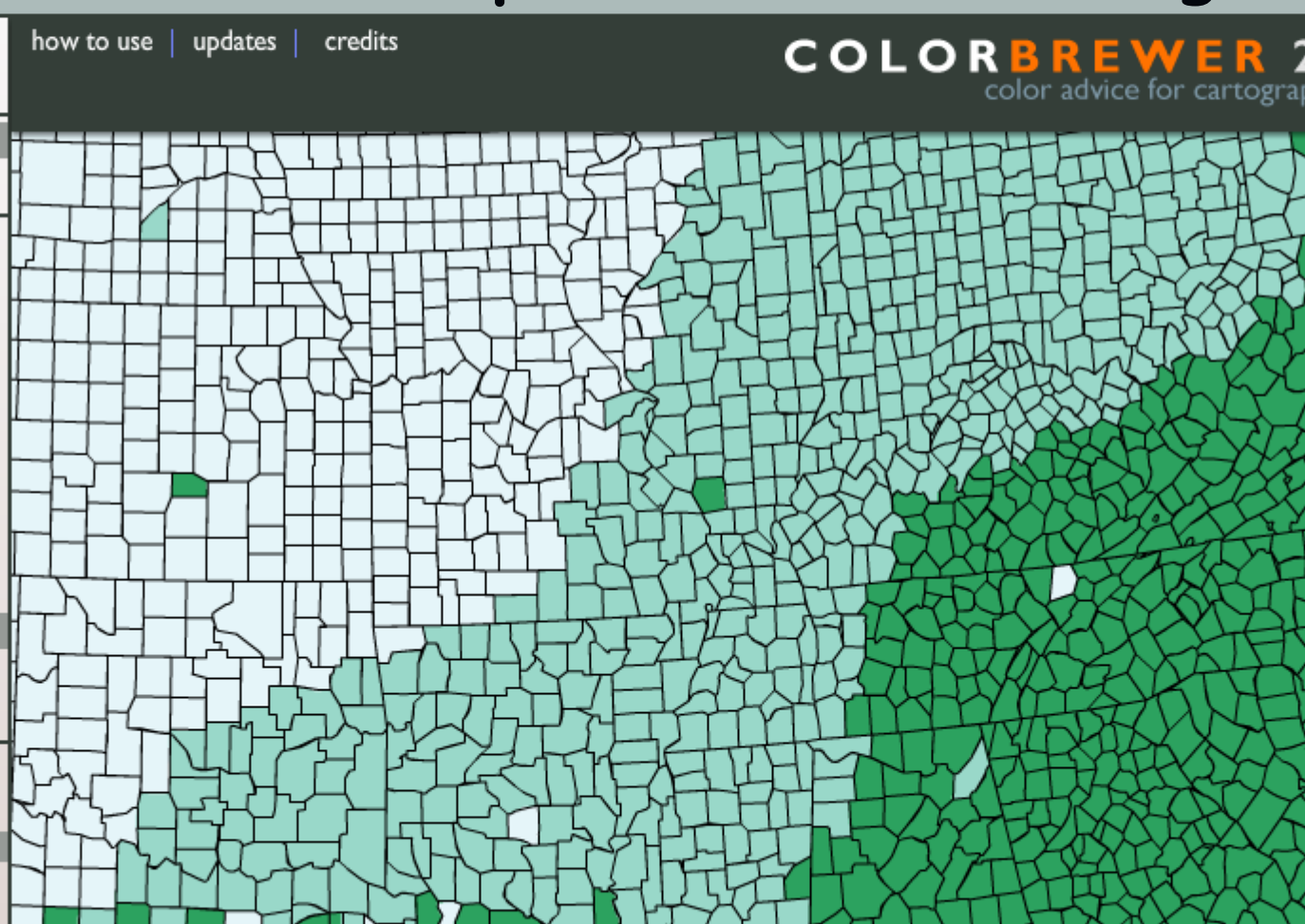
229, 245, 249 RGB CMYK HEX

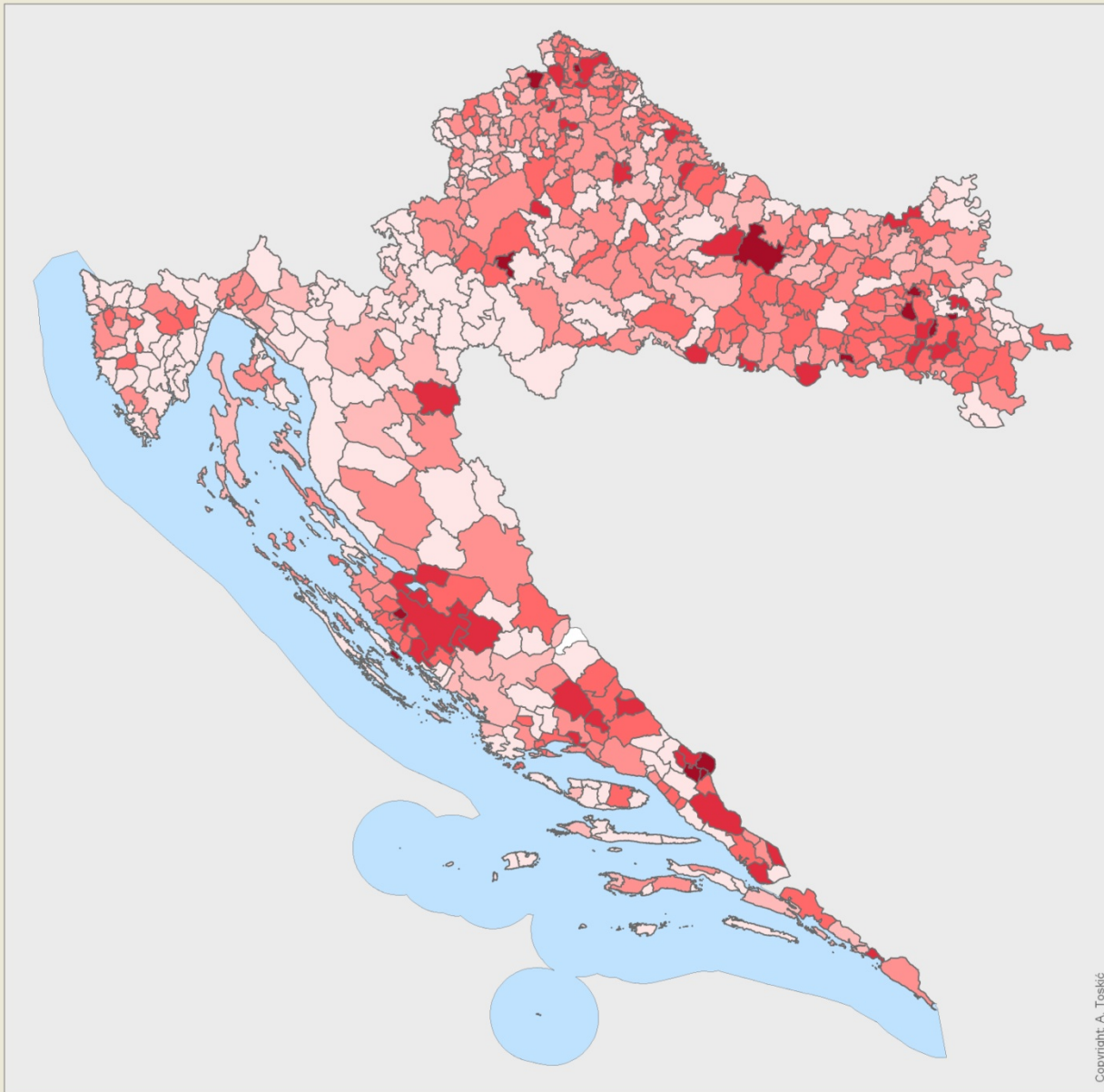
153, 216, 201

44, 162, 95

adjust map context

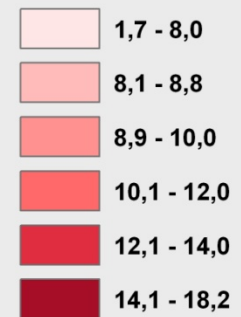
roads





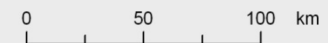
Prosječne stope rodnosti po općinama Hrvatske 2001.- 2003.

‰



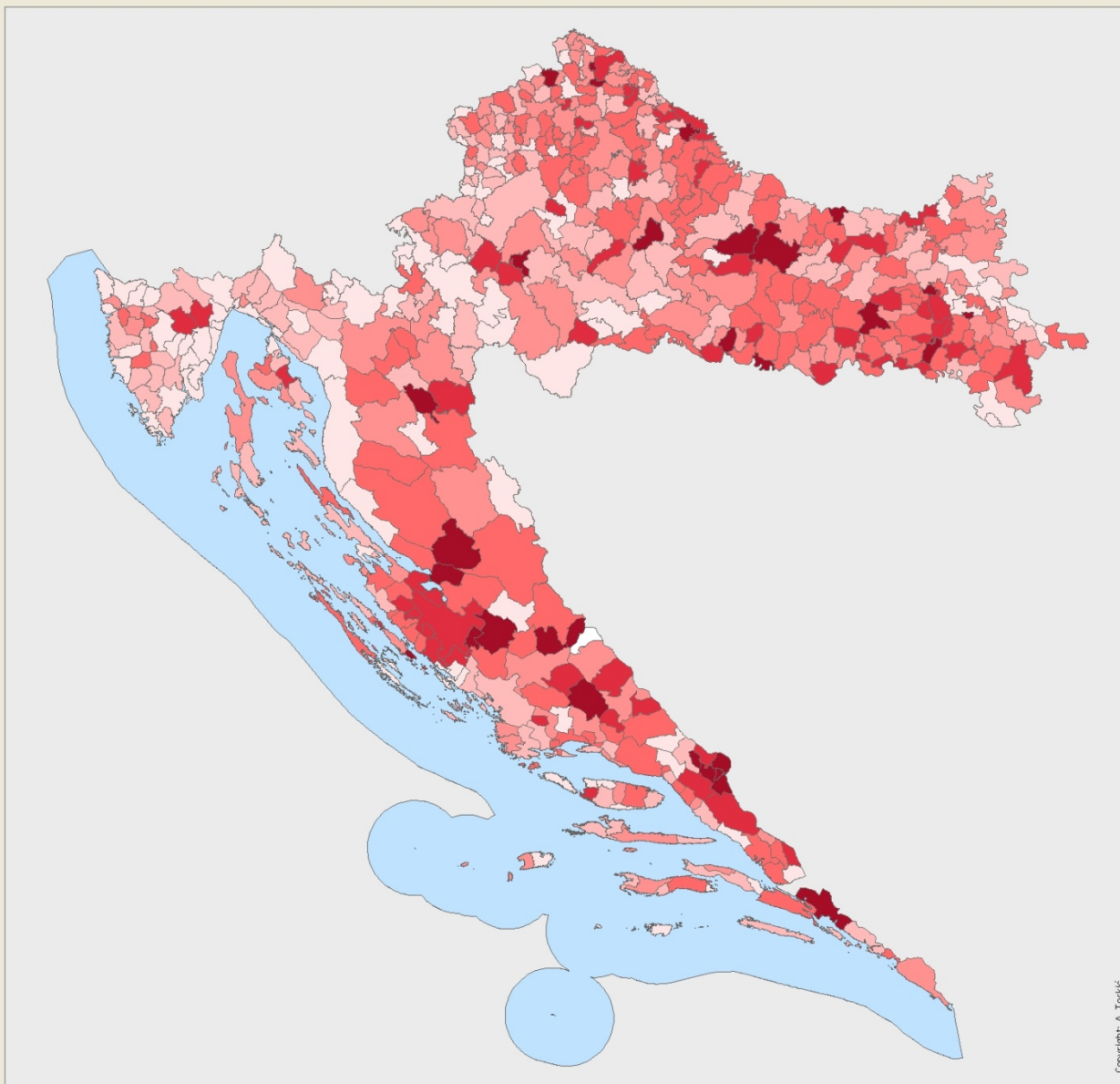
HRVATSKA 9,1 ‰

Min. - Janjina i Ervenik 1,7 ‰
Max. - Imotski 18,2 ‰

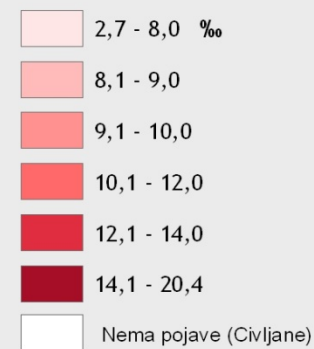


Copyright: A. Toskić

Izvor: Državni zavod za statistiku, Popis 2001.,
interni podaci



Standardizirane stope rodnosti po općinama Hrvatske 2001. - 2003.



Min. - Janjina 2,7 ‰
Max. - Kistanje 20,4 ‰



Copyright: A. Toskić

Izvor: Državni zavod za statistiku, Popis 2001.,
interni podaci

File Edit View Bookmarks Insert Selection Tools Window Help


 1:1.950.000

Editor Task: Create New Feature Target:

Georeferencing Layer: Network Analyst Network Dataset:

Layer Properties

General Source Selection Display Symbology Fields Definition Query Labels Joins & Relates HTML Popup

Show:

 Features
 Categories
 Quantities
 Graduated colors
 Graduated symbols
 Proportional symbols
 Dot density

 Charts
 Multiple Attributes
Draw quantities using color to show values. Import...

Fields

Value: N43

Normalization: none

Color Ramp: 

Classification

Manual

Classes: 6

Classify...

Symbol	Range	Label
	1,686341 - 8,000000	1,7 - 8,0
	8,000001 - 8,762767	8,1 - 8,8
	8,762768 - 10,000000	8,9 - 10,0
	10,000001 - 12,000000	10,1 - 12,0
	12,000001 - 14,000000	12,1 - 14,0
	14,000001 - 18,244720	14,1 - 18,2

 Show class ranges using feature valuesAdvancedOKCancelApply

Geostatistical Analyst

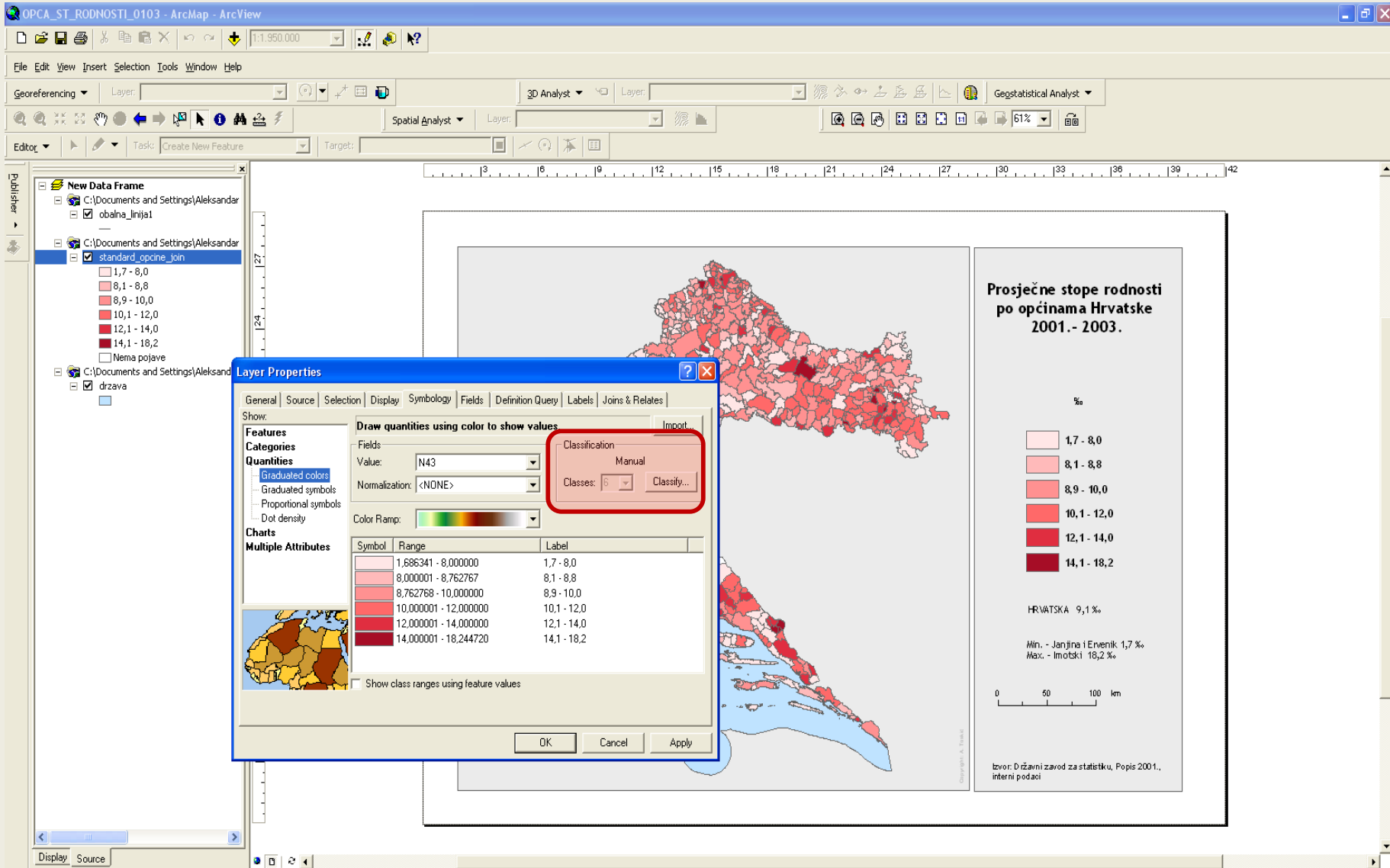
Vectorization

Raster Cleanup

Call Selection

Display Source Selection

Favo



Display the properties of this layer

-6,88 22,48 Centimeters



New Data Frame

- C:\Documents and Settings\Aleksandar
 - obalna_linija1
 - standard_opcine_join
 - 1,7 - 8,0
 - 8,1 - 8,8
 - 8,9 - 10,0
 - 10,1 - 12,0
 - 12,1 - 14,0
 - 14,1 - 18,2
 - Nema pojave
- C:\Documents and Settings\Aleksandar
 - drzava

Display Source

Classification

Classification Method: Manual

Classes: Manual

Data Exclusion: Defined Interval

Use Custom Break Values

Show class for values: show custom.min show custom.max

Classification Statistics

Count:	542
Minimum:	1,7
Maximum:	18,2
Sum:	4865,1
Mean:	9,0
Standard Deviation:	2,3

Advanced Statistics

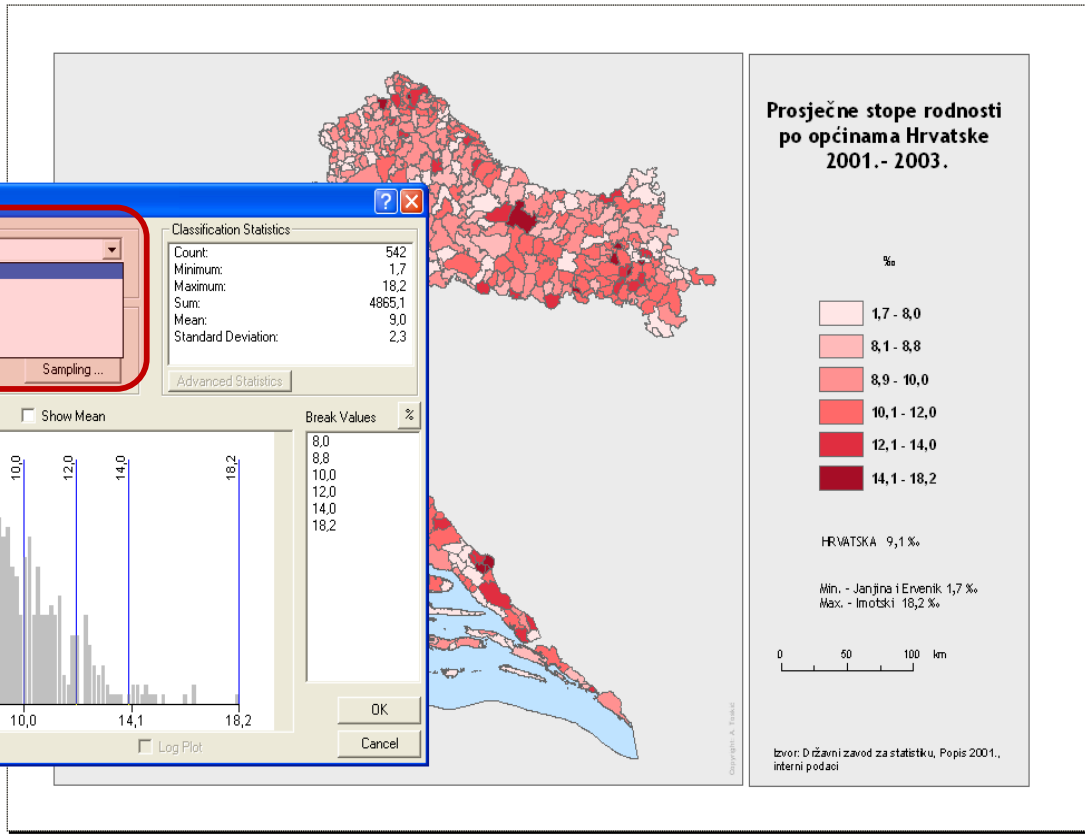
Columns: 100 Show Std. Dev. Show Mean

Break Values: %

8,0
8,8
10,0
12,0
14,0
18,2

Snap breaks to data values Log Plot

OK Cancel



6. Metode određivanja veličine razreda

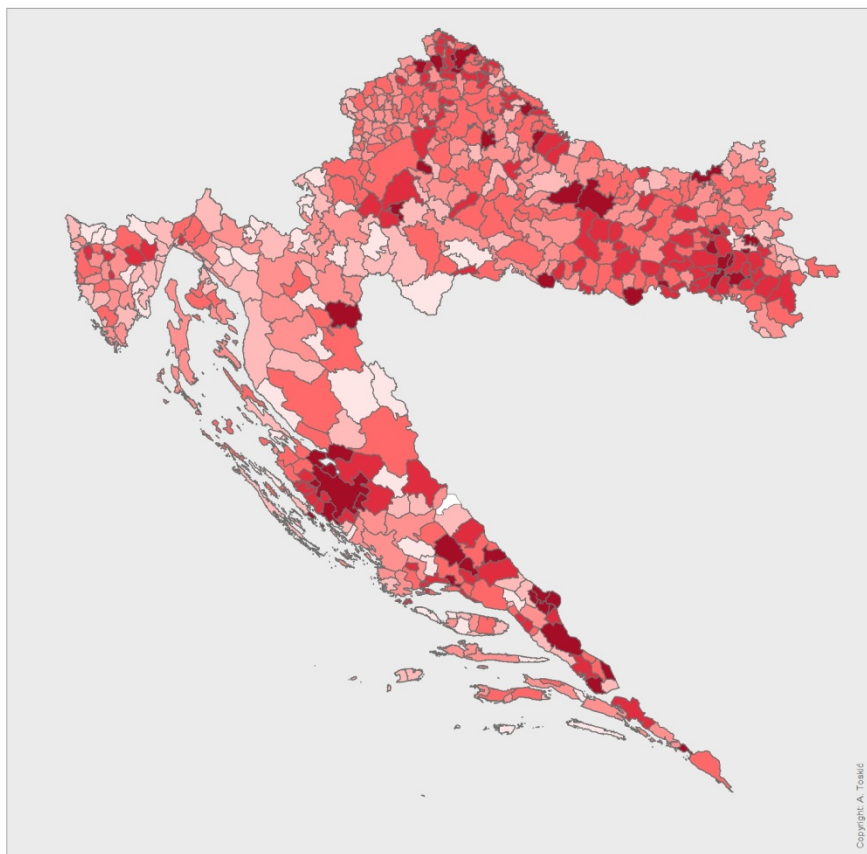
Standardne metode (ArcGIS)

- Opasnosti klasifikacije, “single-map solution” (Mark Monmonier)
- ArcGIS – standardne metode određivanja razreda:
 - Natural breaks (Jenks optimization)
 - Manual (slobodno grupiranje)
 - Equal interval (jednaki intervali)
 - Defined interval (definirani intervali)
 - Kvantili
 - Geometrical interval (geometrijski intervali)



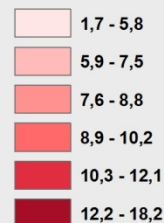
1.

Natural breaks



Prosječne stope rodnosti po općinama Hrvatske 2001.- 2003.

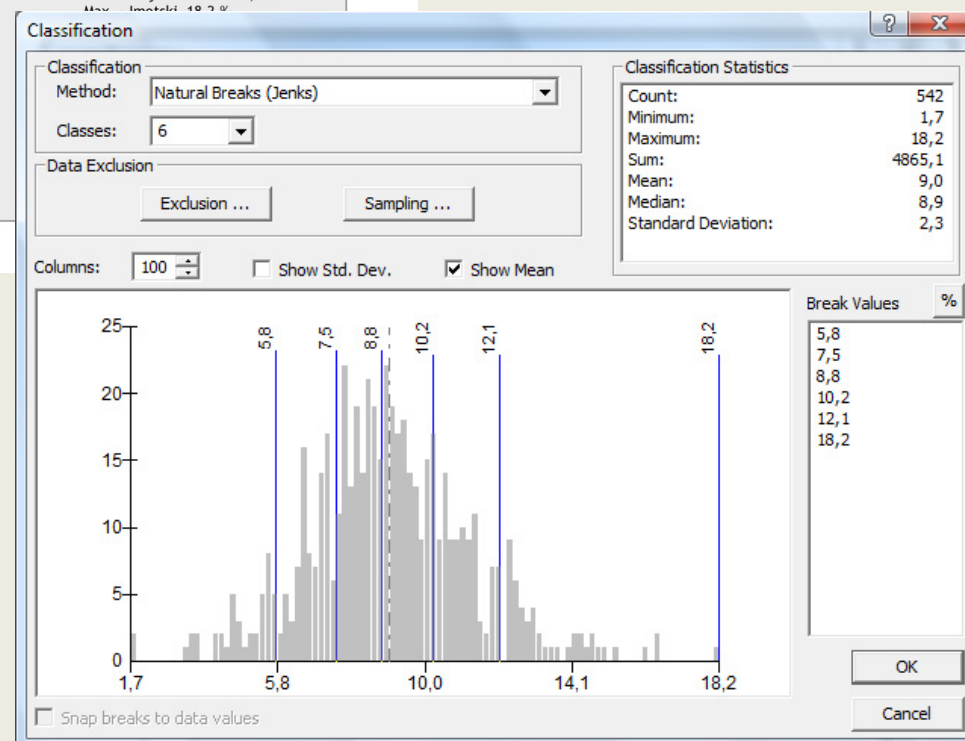
‰



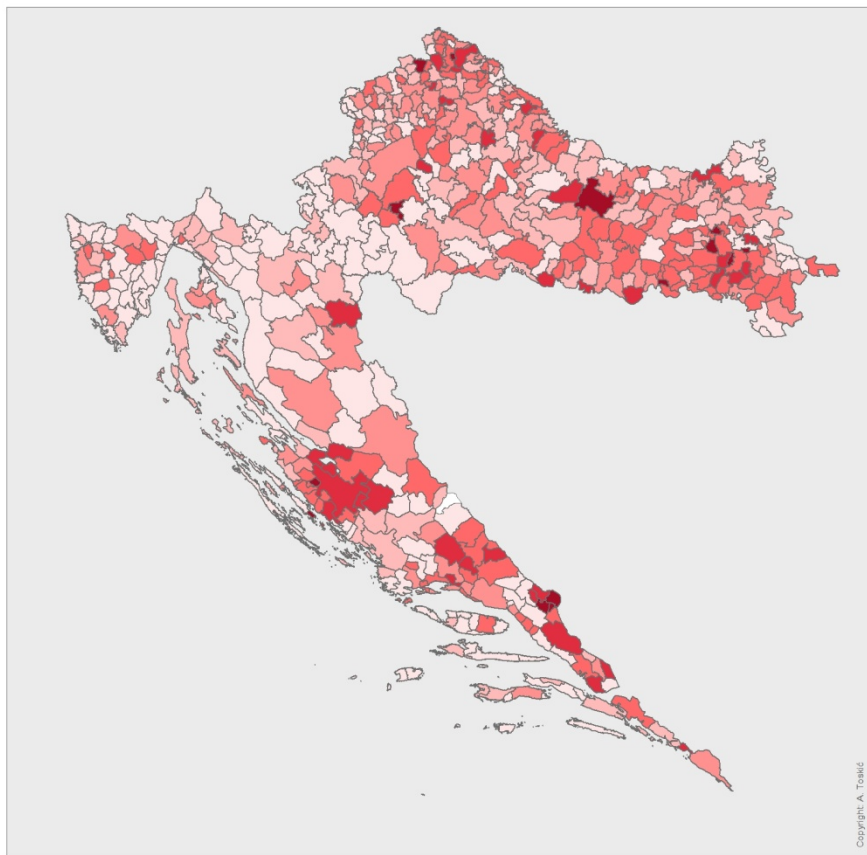
HRVATSKA 9,1 ‰

Min. - Janjina i Ervenik 1,7 ‰
Max. - Metković 18,2 ‰

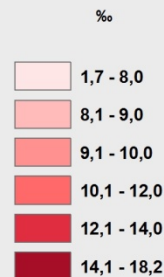
Copyright: A. Tosić



Ova metoda formiranja razreda temelji se na grupiranim podacima, odn. skokovima u podacima (statistička formula Jenksove optimizacije). Taj postupak obuhvaća reduciranje odstupanja unutar razreda odn. maksimizaciju varijance između razreda.



Prosječne stope rodnosti
po općinama Hrvatske
2001.- 2003.



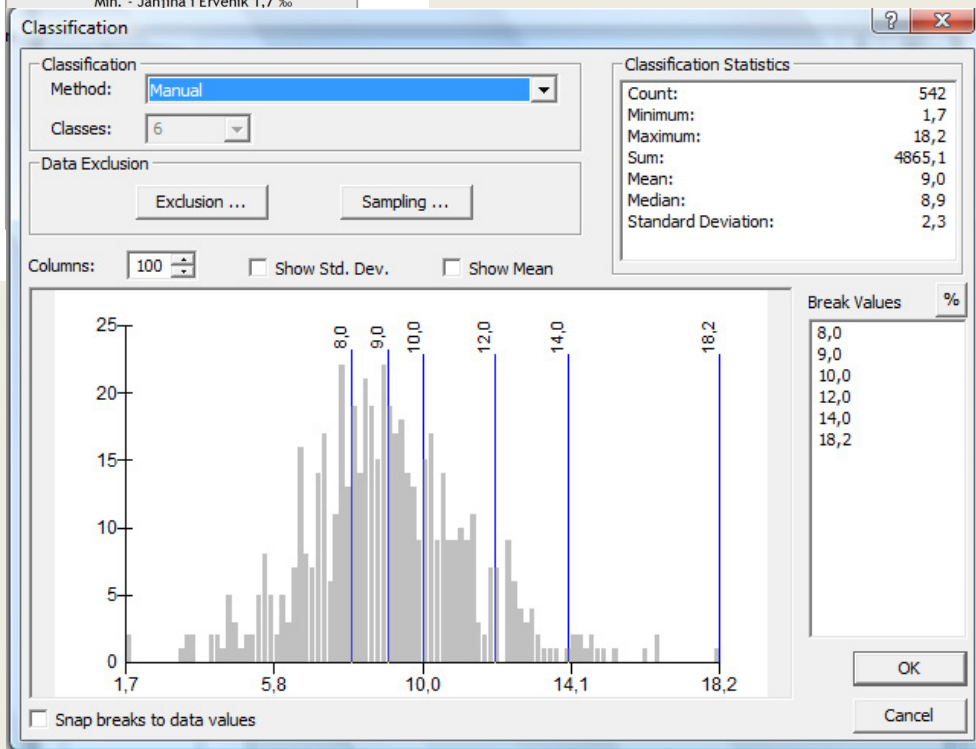
HRVATSKA 9,1 %

Min. - Janjina i Ervenik 1,7 %

2.

Slobodno određivanje razreda

Metoda se koristi ako korisnik dobro poznaje pojavu koju prikazuje
Primjenjuje se kada prikazujemo pojavu koju želimo usporediti tijekom vremena (npr. više popisnih godina – radi usporedivosti)

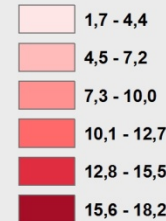


3.

Equal interval Metoda jednakih razreda

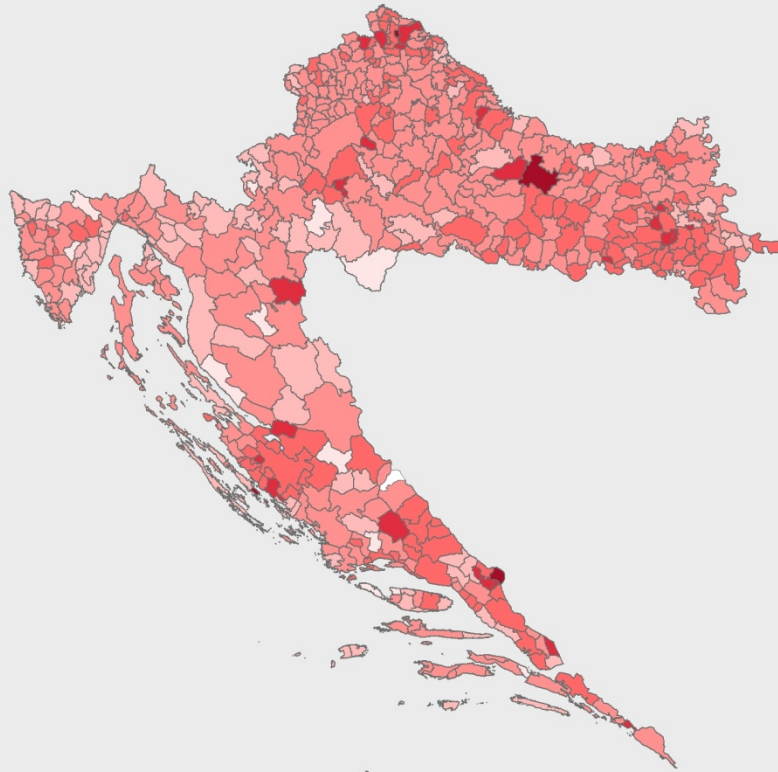
Prosječne stope rodnosti
po općinama Hrvatske
2001.- 2003.

‰

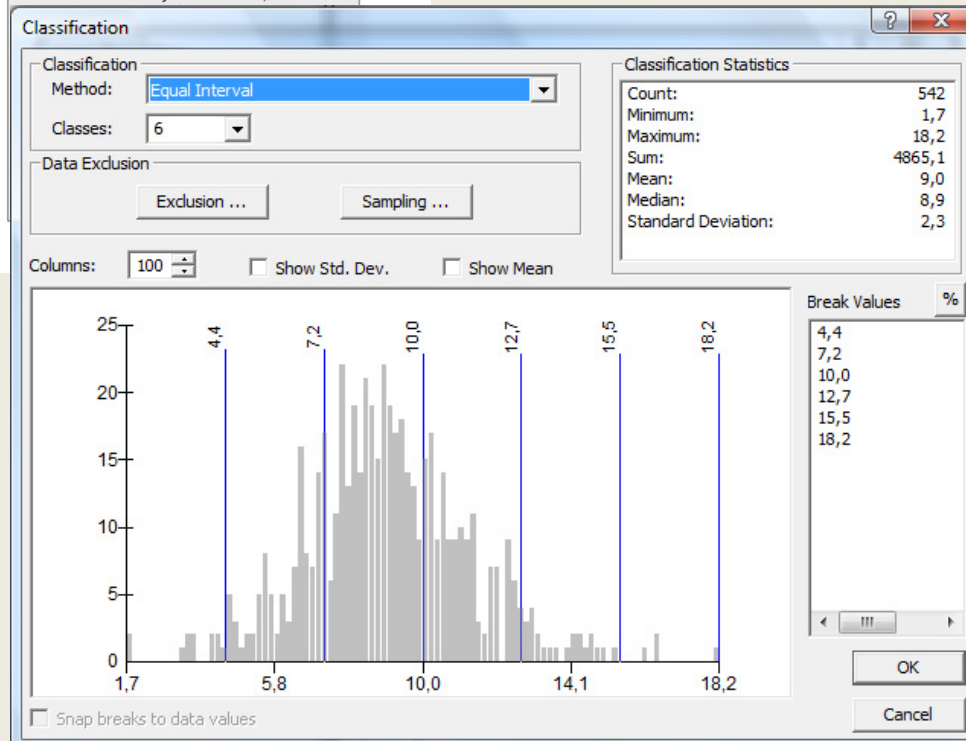


HRVATSKA 9,1 ‰

Min. - Janjina i Ervenik 1,7 ‰

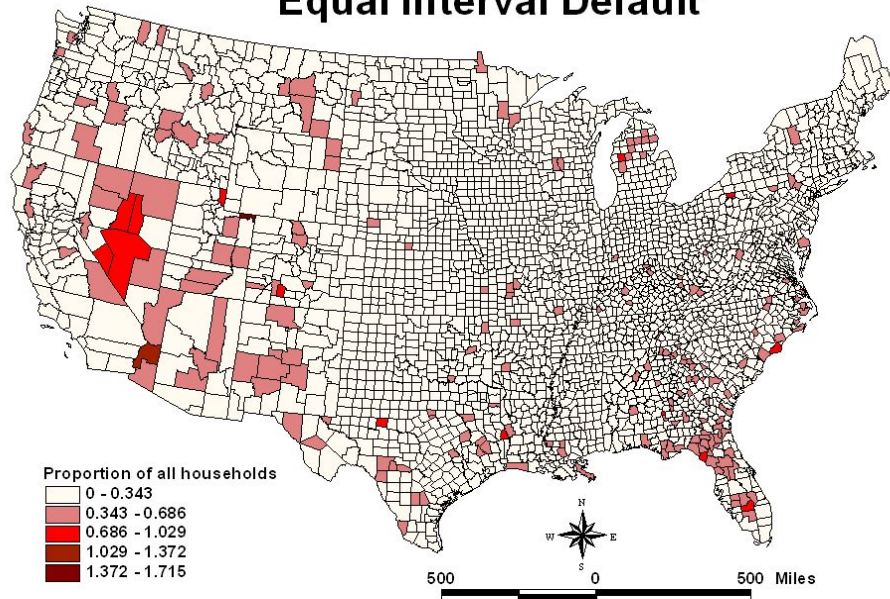


Copyright: A. Tosić



Grupiranje u razrede jednake veličine
Korisnik odabire broj razreda (6), a sofver određuje granice razreda
Primjena:
Najčešće kod postotaka.
Nije dobra za grupirane podatke.
Razlika najveće i najmanje vrijednosti podijeljena s brojem razreda

U.S. Mobile Homes, 1999 Equal Interval Default



3.

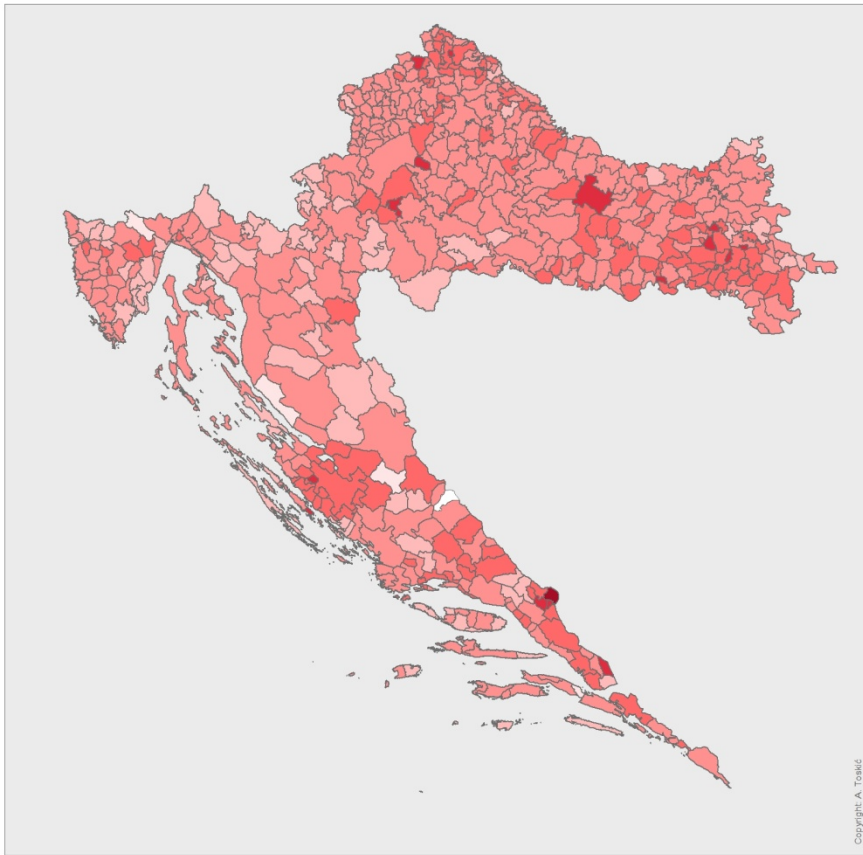
Equal interval Metoda jednakih razreda

- Uglavnom 4-7 razreda s istom veličinom razreda
- Kontinuirani nizovi podataka, nije za grupirane podatke
- Razlika najveće i najmanje vrijednosti podijeljena s brojem razreda
- U ovom primjeru??



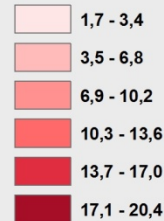
4.

Defined interval Definirani intervali



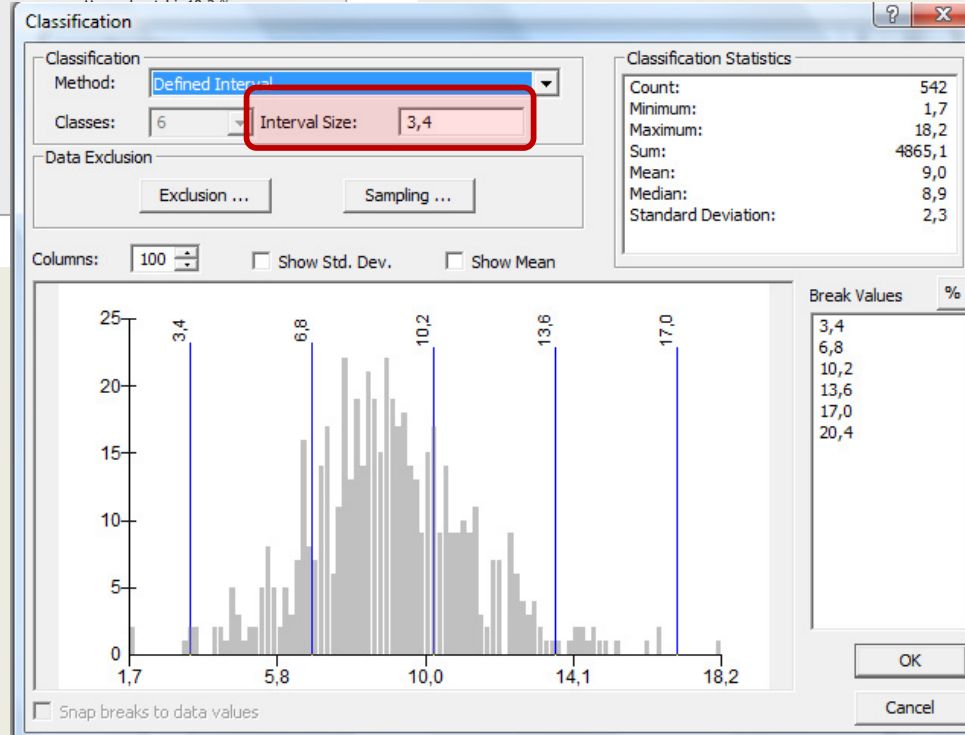
Prosječne stope rodnosti
po općinama Hrvatske
2001.- 2003.

‰



HRVATSKA 9,1 ‰

Min. - Janjina i Ervenik 1,7 ‰



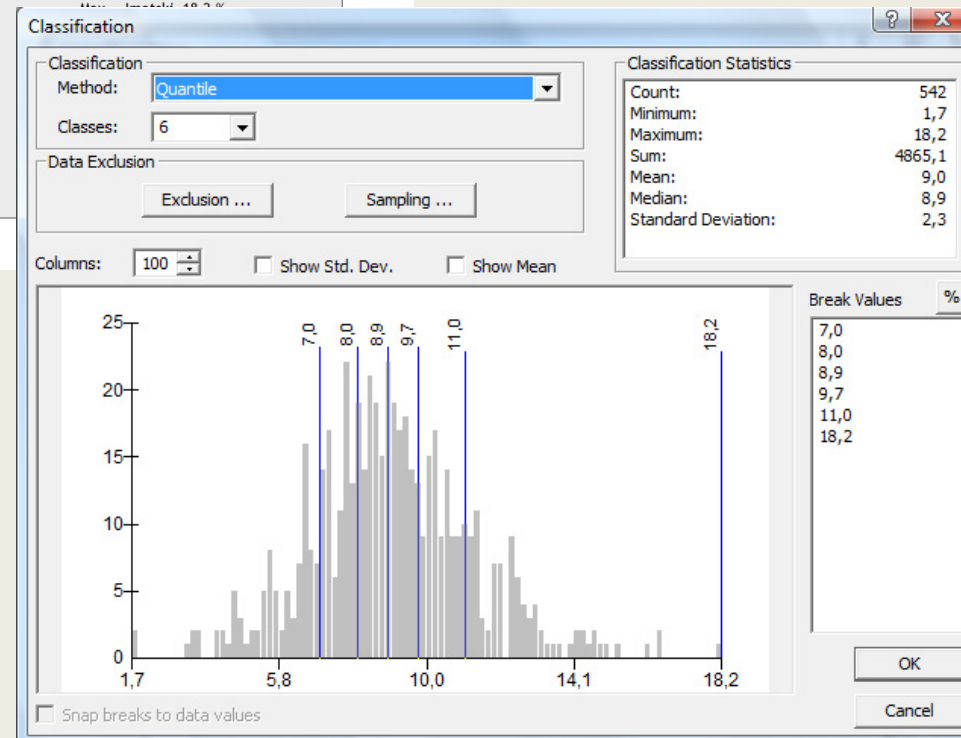
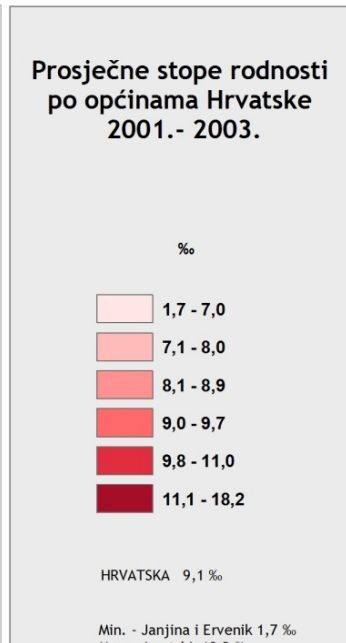
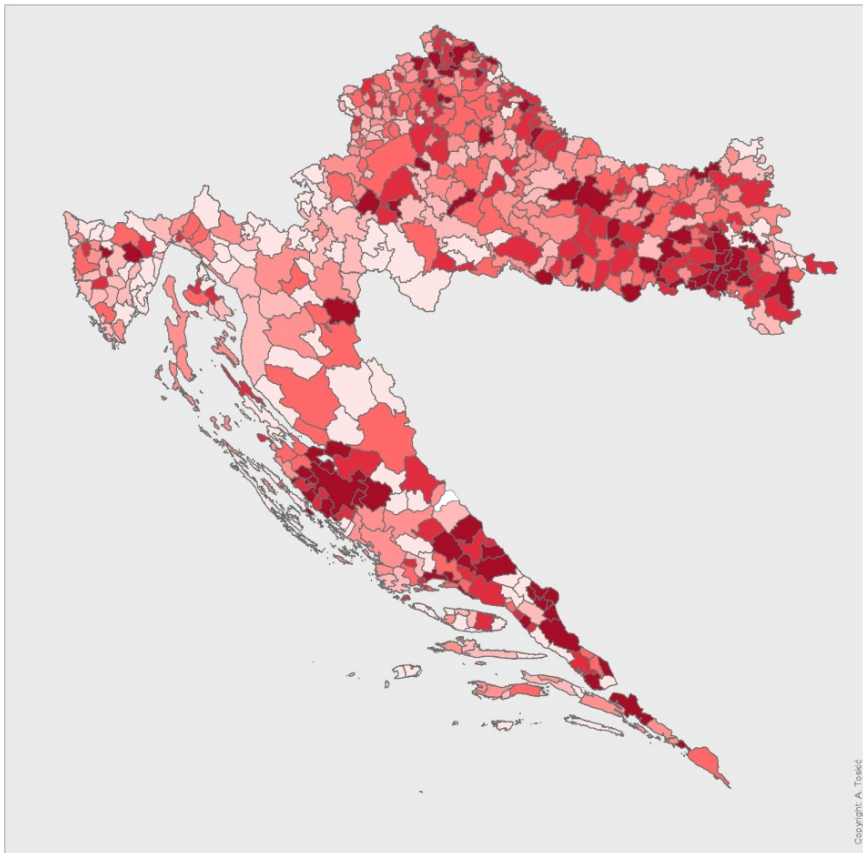
Korisnik definira veličinu razreda, a softver automatski određuje broj razreda i svrstava vrijednosti obilježja u razrede

Veličina razreda 3,4

Grupiranje od 0 prema max.

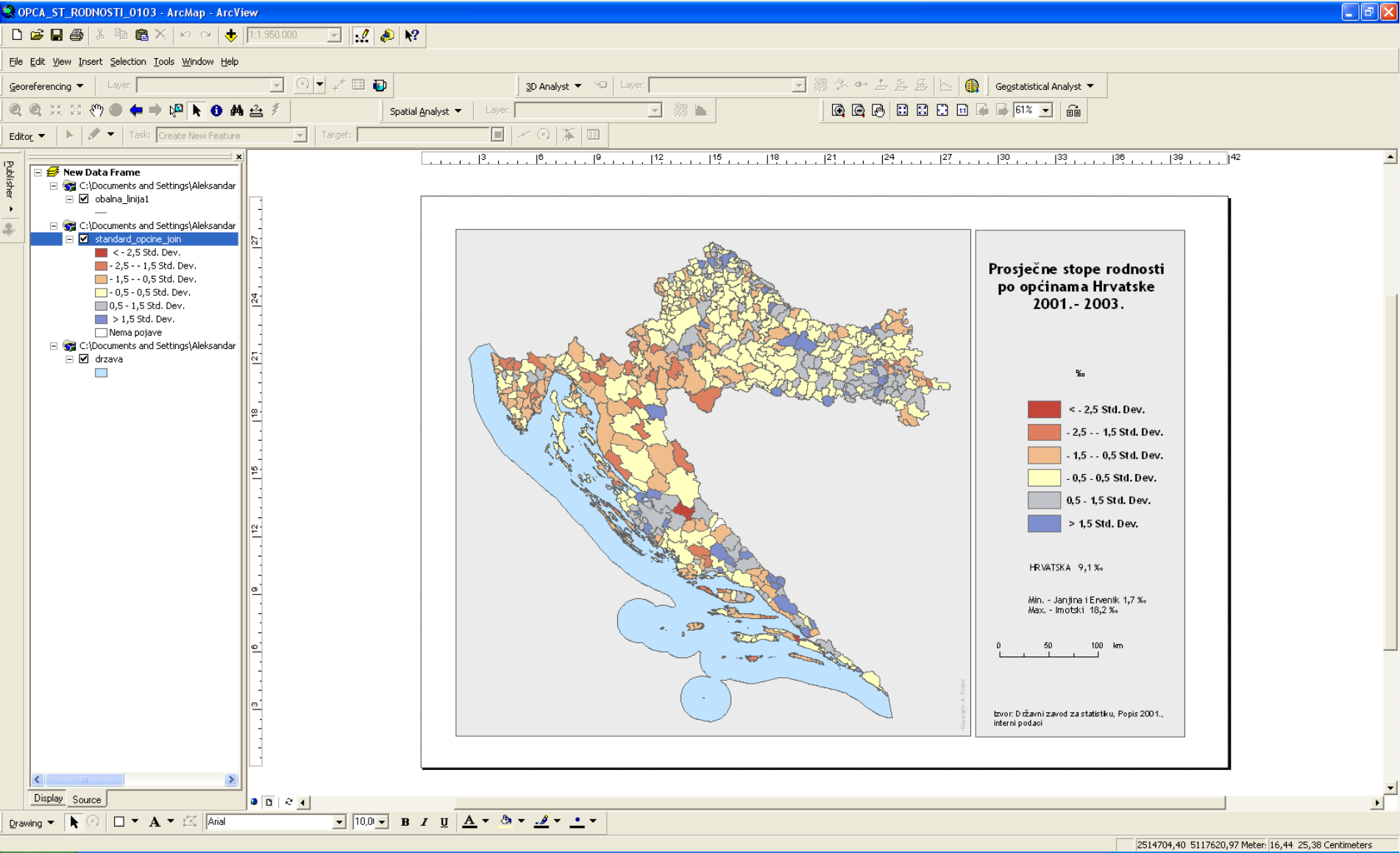
5.

Kvantili



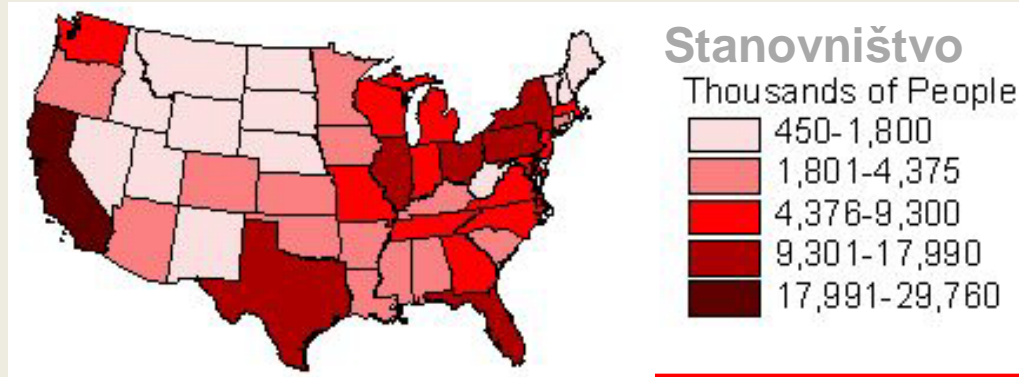
- Grupiranje s istim brojem podataka u razredu
- Nema praznih razreda
- Nema razreda s premalo ili previše frekvencija
- Generalno daje jasnu sliku, ali ne mora uvijek prikazivati istinitu poruku

6. Standardna devijacija



Koropletna karta

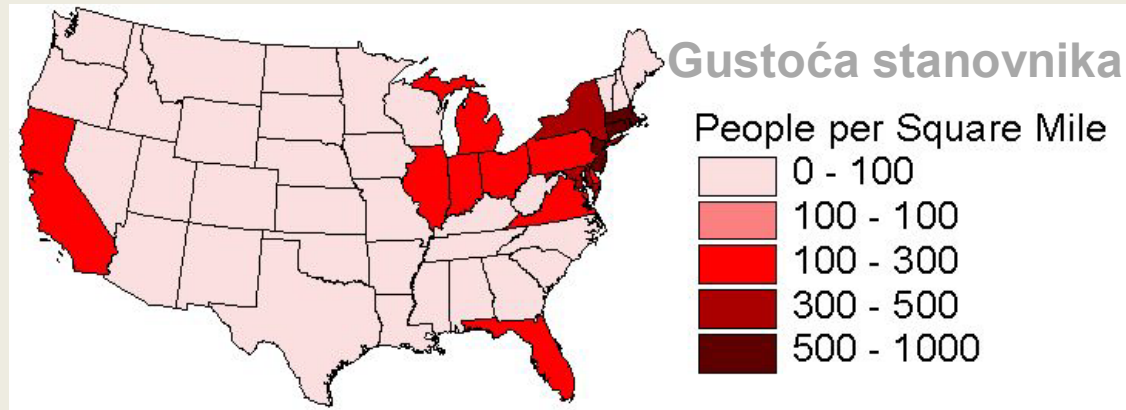
PODACI – Grupirani podaci (skokoviti)



Karta
napravljena s
krivom vrstom
podataka.

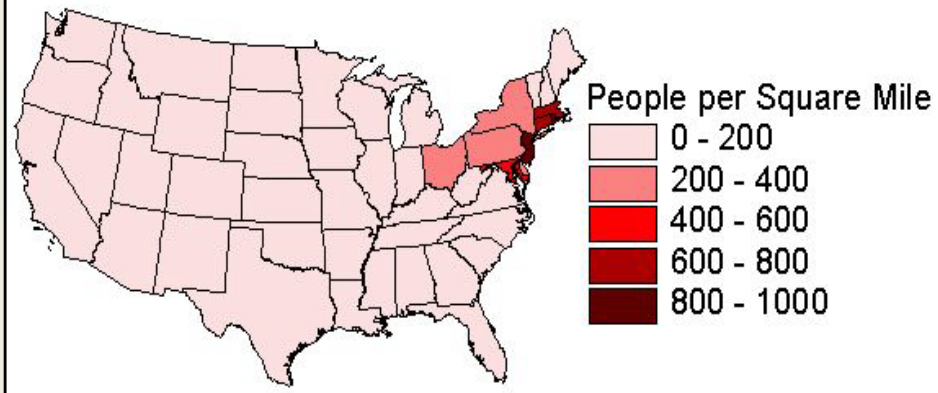
Numeričke podatke - bolje prikazati
veličinom kruga, a ne površinskim
signaturama

Prerađeni podaci – metoda prirodnih skokova



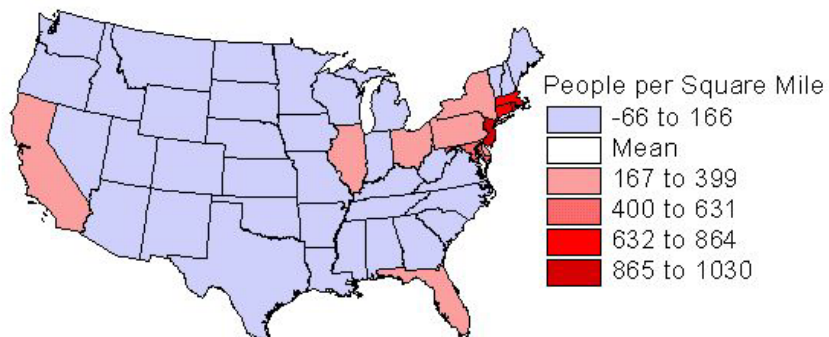
Određivanje razreda

Metoda jednakih intervala



Ova karta ne govori ništa!

Standard Deviation



Beskorisna karta (riječ je o ljudima po jedinici površine – nema negativnih vrijednosti)



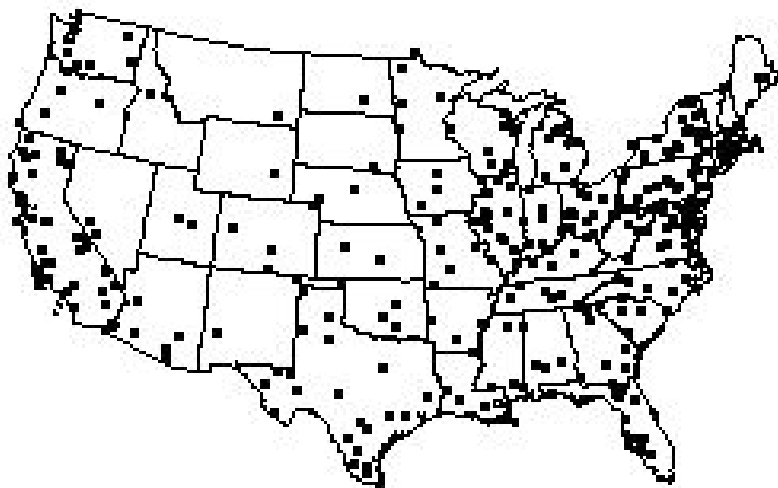
Piktogram

Ova karta je **pogrešna**. Svrhoviti piktogram – samo apsolutni podaci



1 točka = 50
stanovnika na km²

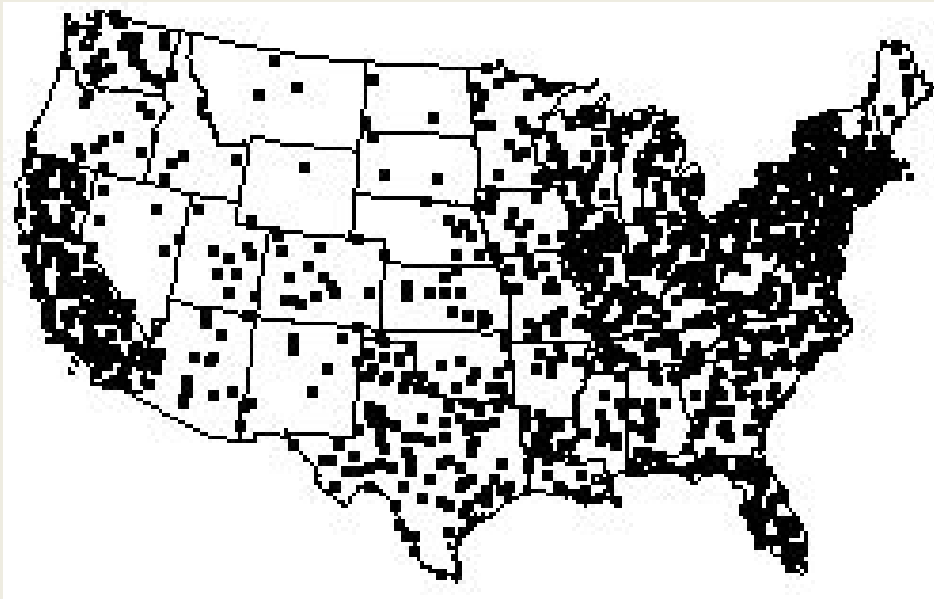
Apsolutni brojevi



1 točka = 800,000 st.

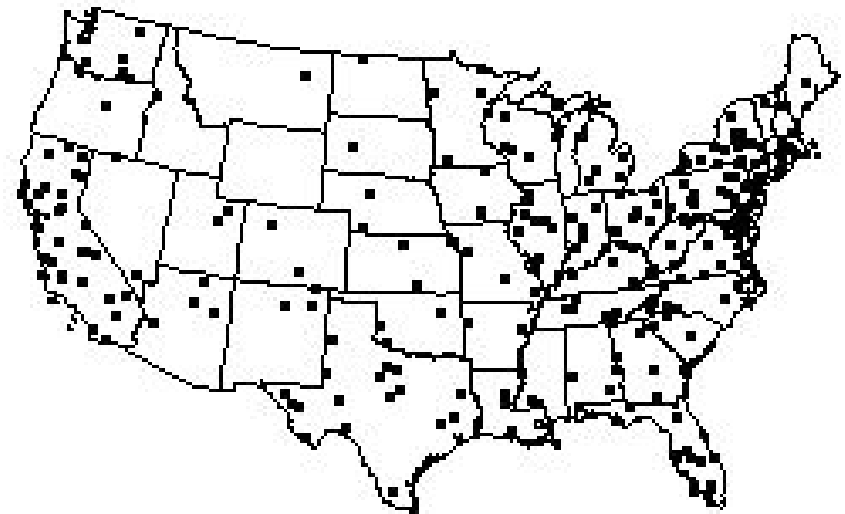


METODA TOČAKA



Na gornjoj karti
pridružena vrijednost
jednoj točki jest
neodgovarajuća.

1 točka = 200.000 ljudi



1 točka = 1.000.000 ljudi

Hvala na pozornosti!

