

Map Lettering

Labelling (GIS)

General rule:

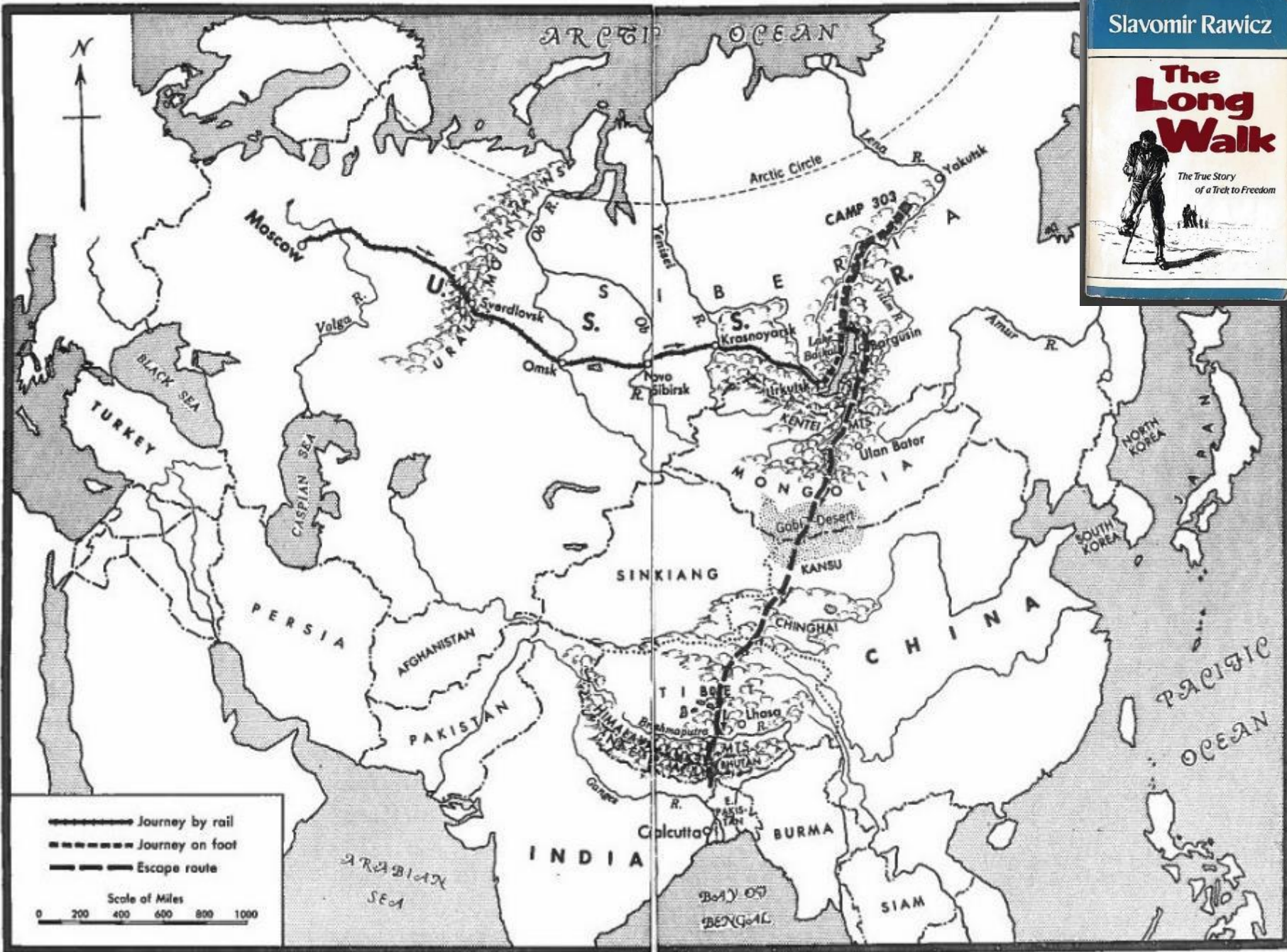
Lettering is an extension of the symbol itself, and should be 'automatically' attached to it in the mind of the reader, both in design and positioning: 'good lettering' is barely noticed

Lettering is like a soccer/hockey referee - if they don't make any mistakes, you don't notice them

The Long Walk



The True Story
of a Trek to Freedom



Lettering – overview

Perhaps the most challenging part of digital mapping
[early computer maps were obvious by their bad lettering]

Consists of:

a. Typography – lettering design

b. Positioning – lettering placement

a: can be easily automated in GIS software

b: can be more subjective - often needs manual input

Summary on symbol design: review slide

Symbols - design variables:

Qualitative

shape, pattern

colour - hue (except red)

Quantitative

size, tone

colour - chroma / value

Symbols - use of design variables:

1. Association: shape, size, colour, convention
2. Qualitative or quantitative data
3. Output purpose, cost and media

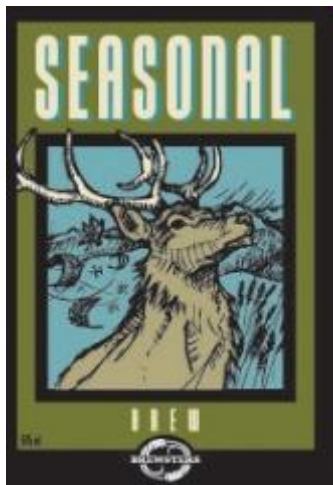
Lettering typography follows similar guidelines

1. Visual Design Variables

a. Font (~shape) ... hundreds of options

- serif (e.g. Times)
- sans serif (e.g. Geneva)
- decorative (e.g. Joker)

Serif Sa
Decorative



Sans serif



Serif 2015



Sans-serif 2016



I shot the serif.

Font Humour

Bob Marley / Eric Clapton:

<https://www.youtube.com/watch?v=oe2hdbft5-U>

Font Choice is mostly based on preference .. and utility

... except for some nominal associations:

e.g. Times old roman
Stonehenge, battles

Serif for natural features ?

Sans-serif for human features ?

Choice of Lettering fonts

Wide range of choices in software -as in MS Office

Legibility: good distinction between letters in the alphabet

Visibility: good contrast between lettering and background

Aesthetics: avoid ugly letter proportions and faces

Don't use Courier (typewriter) !!

Comic Sans (Microsoft, 1994) ? No longer cool



comic sans

still a better choice
than trump



EXAMPLE OF POOR FONT LEGIBILITY:

Would you sign your boys up for this league ?



Spruce City Minor Boys Softball

Ages 7 - 19

FINAL REGISTRATION

Call: Darlene 562-3119

Lorry 561-9171

157758

b. Form: *italic* or upright

Calibri (Body) ▾

Digital format choices

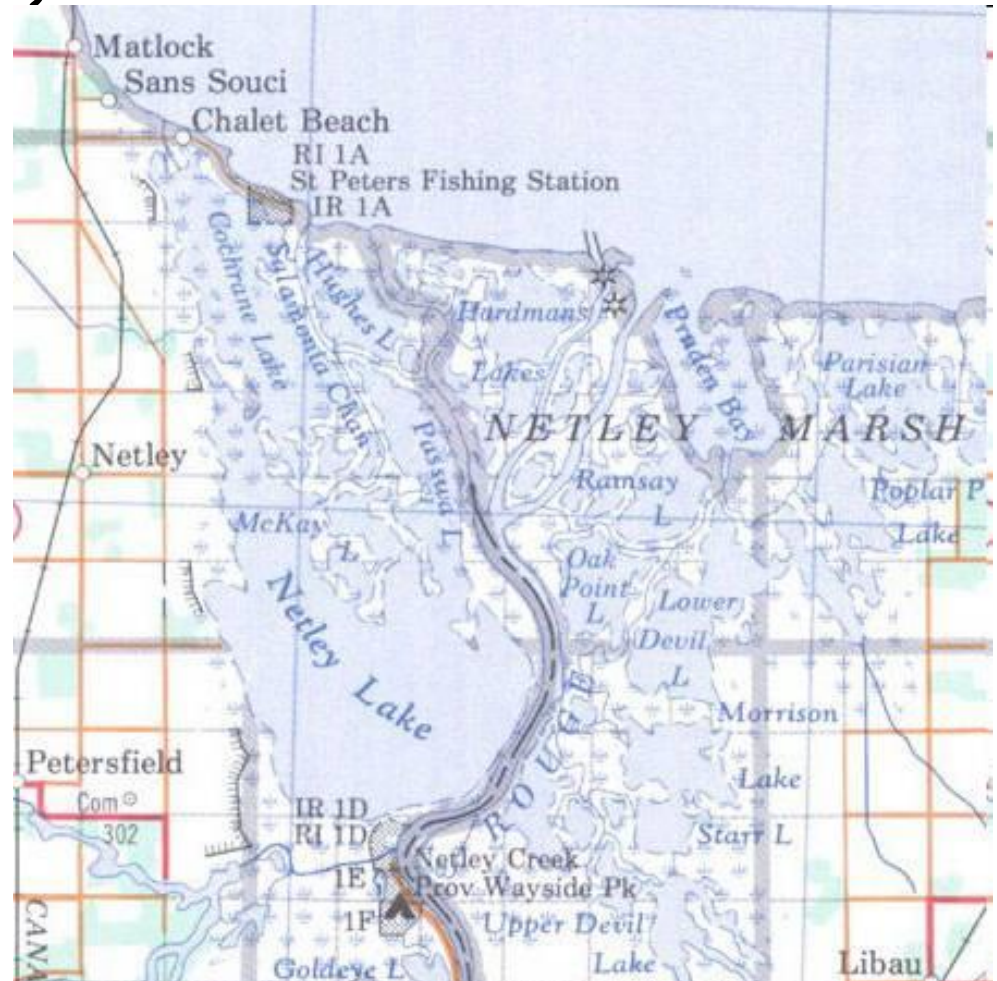
B *I* U ▾ abc

• *Italics* (and blue) are reserved for hydrographic features (*rivers, lakes, etc.*)

Why ?

Underlining is **not** generally used

Why?

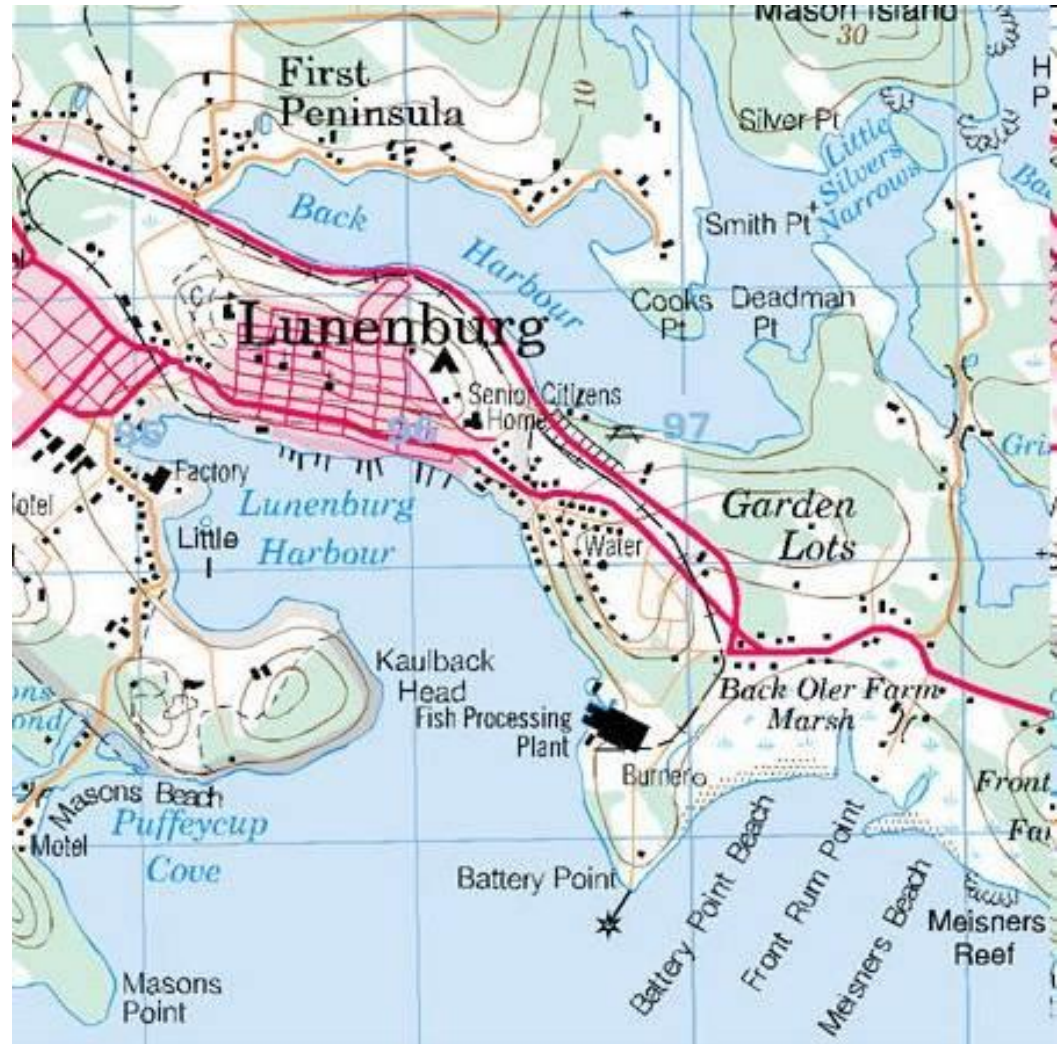


c. Form: bold or plain

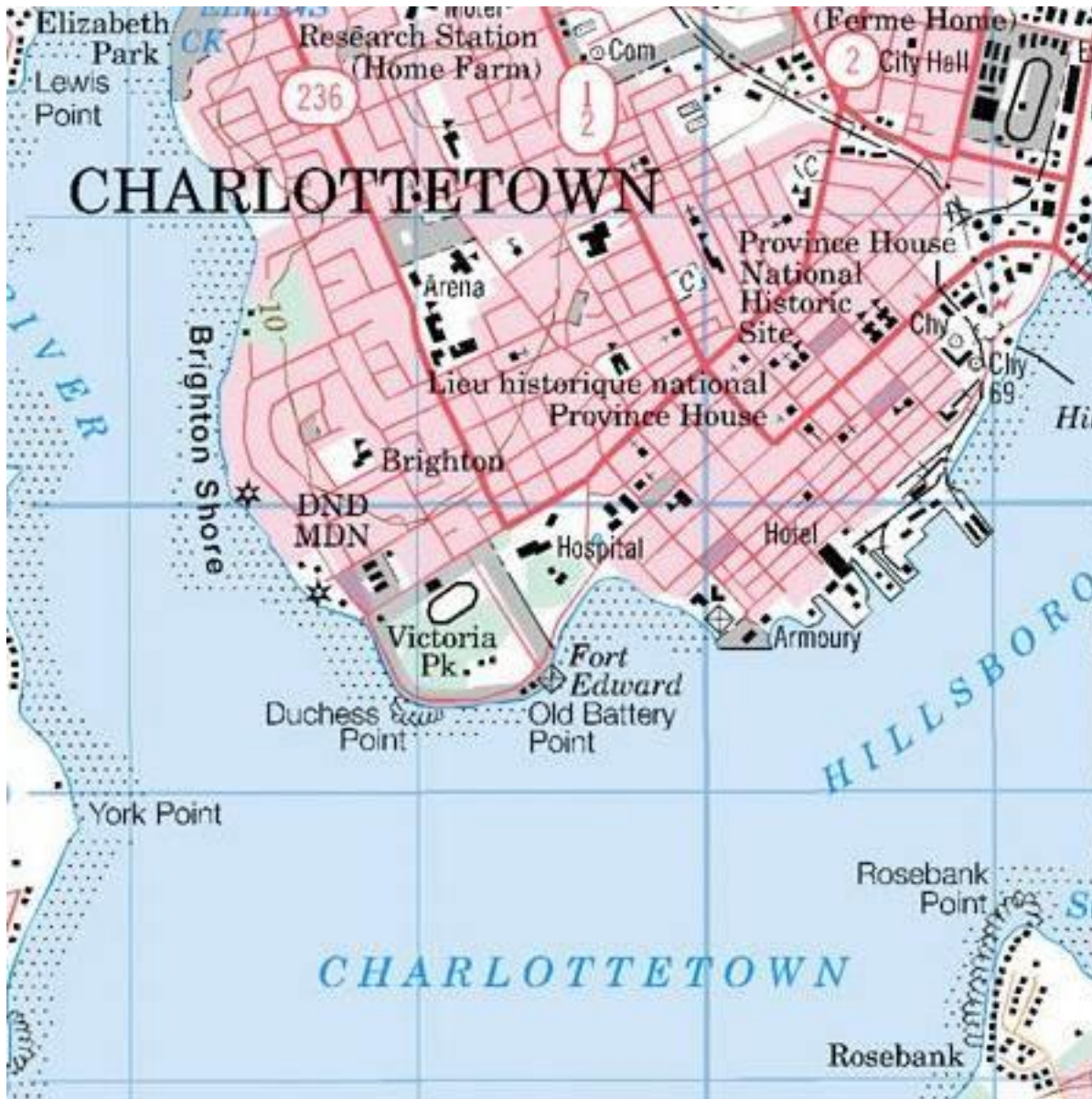
e.g. **Vanderhoof** Vanderhoof

Bold implies
prominence

-its more visible
also useful on dark
backgrounds



d. (Form) UPPER or Lower case



UPPER CASE
implies major
features

PRINCE GEORGE

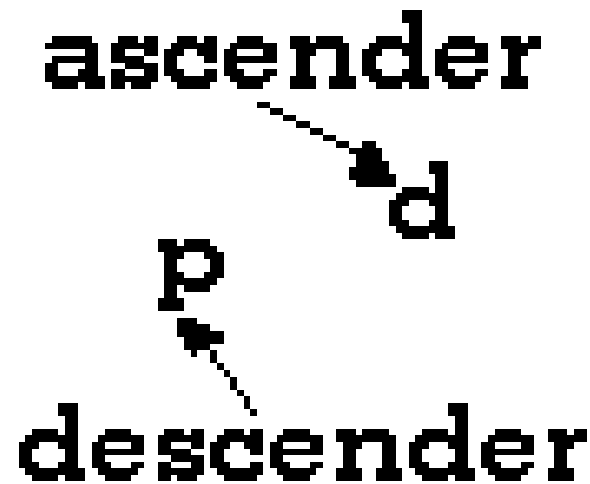
Prince George

Use UPPER case
sparingly - why ?

Why are map labels
and books mostly in
lower case ?

Use UPPER case sparingly - why ?

.. it is (13%) less readable than lower case due to the extra information provided by 'ascenders' and 'descenders'



The diagram shows the words "ascender" and "descender" in a pixelated font. A dashed arrow points from the top of the letter 'd' in "ascender" down to the top of the letter 'p' in "descender". Another dashed arrow points from the top of the letter 'p' in "descender" down to the bottom of the letter 'd' in "ascender". This illustrates how the vertical extent of lowercase letters (ascenders and descenders) provides additional information that is lost in uppercase text.

This is why we don't print books in UPPER Case and shouldn't use it in emails

(why are they called UPPER and lower 'case' ?)

why are they called UPPER and lower 'case' ?

Barkerville print shop



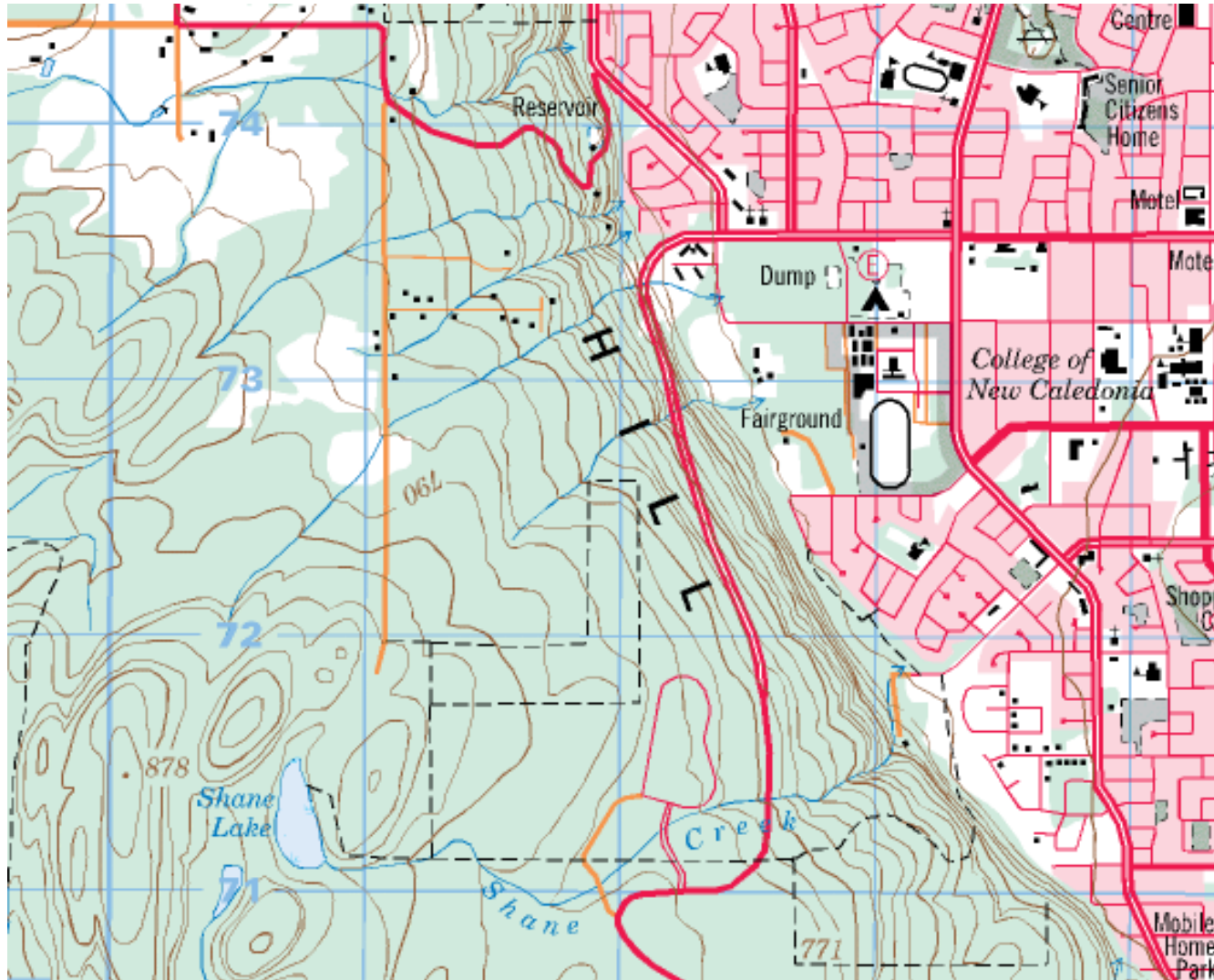
e. Colour (hue) : nominal / qualitative .. is used associatively

Blue: hydrography

Brown: contours

Black: standard

Red: important



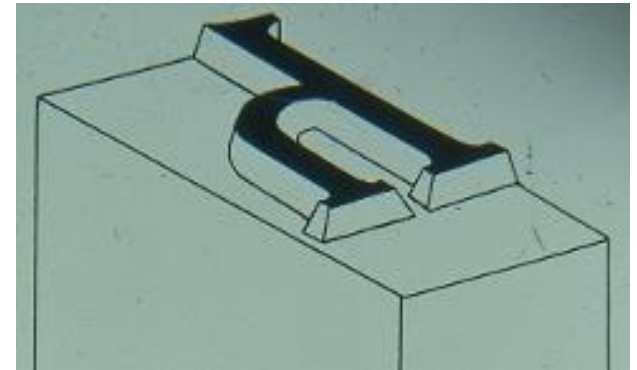
Quantitative Variables

a. **Size** : size denotes importance

It is commonly measured in 'points' (you knew this !)

72points = ~ 1" (inch)

minimum size = 6 points



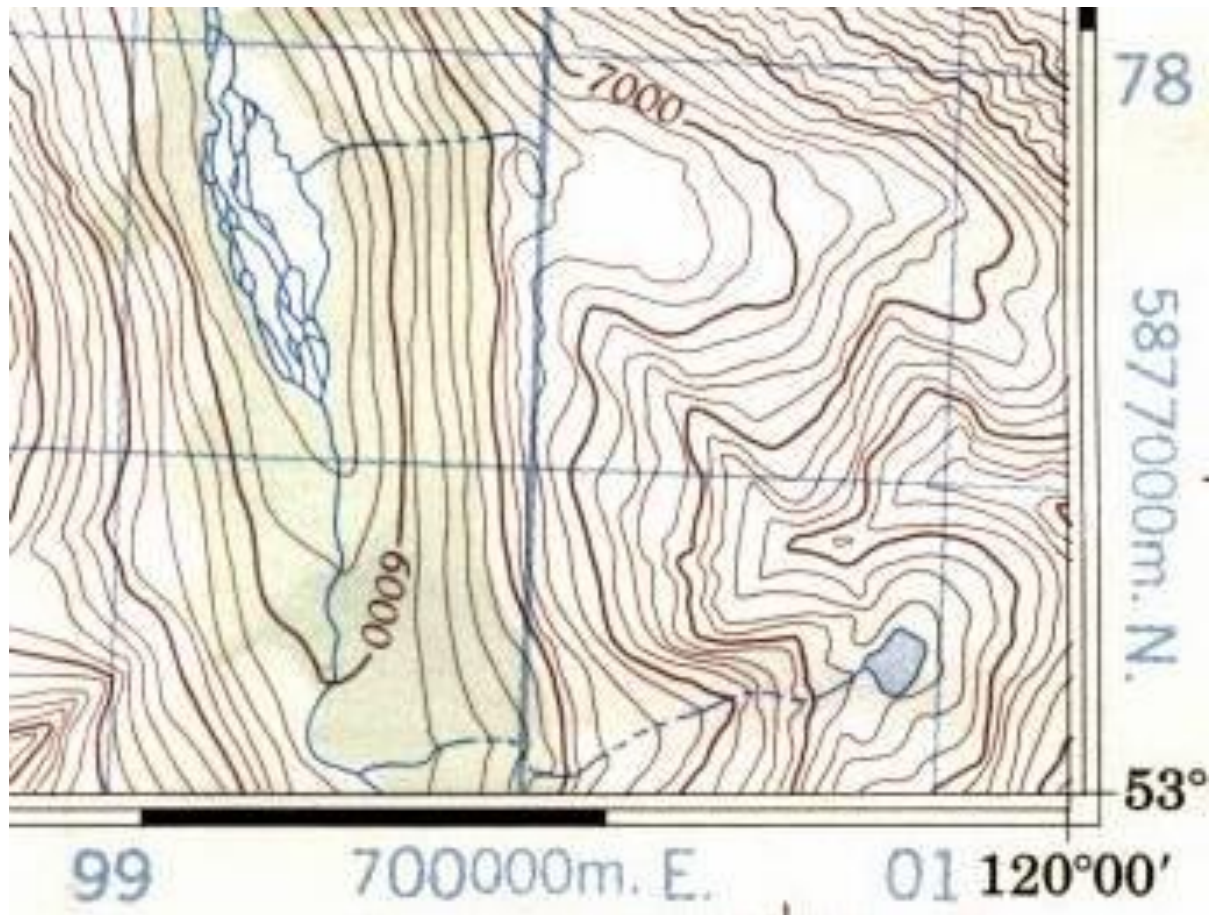
Larger size text is associated with larger / more important features (DUH!)

Large lettering should not be overpowering

Also: UPPER CASE and **Bold** imply some size/importance

Quantitative Visual Design Variables

b. Tone / chroma (colour): 'screened' lettering for background features (low saturation e.g. UTM digits)

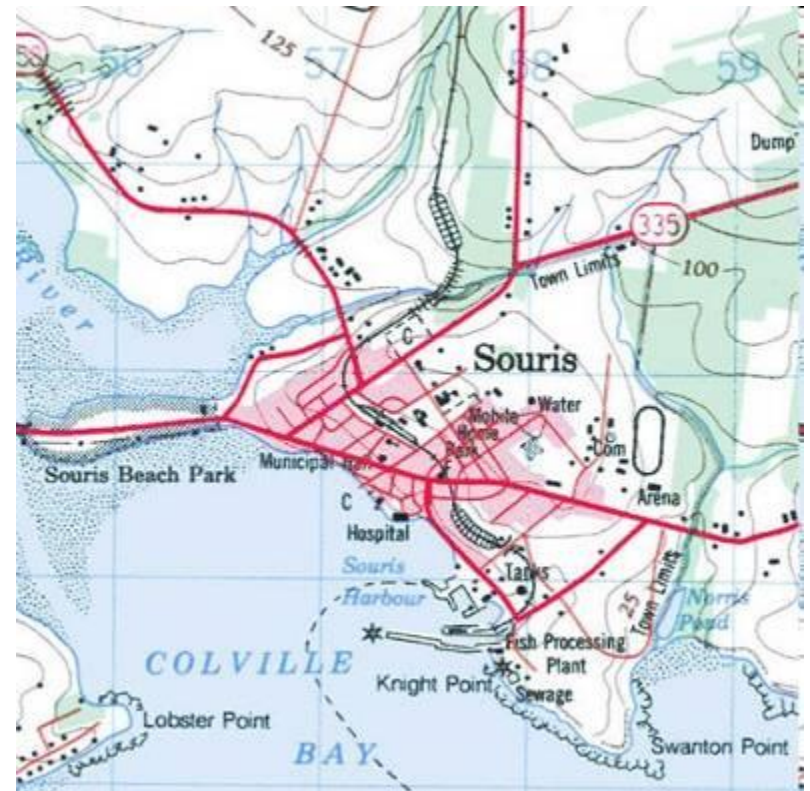


Choice of combinations of colour, fonts and form

Consistency: lettering within a class should be the same (e.g. all major rivers)

Contrast: should be higher between major classes than within a class type

Harmony: avoid many type faces (fonts); use different forms instead



2. General rules of Positioning

Positioning is an **extra** visual variable that symbols don't have:

- This can complicate digital mapping as it's less easy to define

General rules:

A> Minimize ambiguity in what the name refers to

B> Choose minimum interference with other map elements:

lettering is movable - symbols are not

C> Horizontal lettering where possible, except:

..... if there is no space available (points) or

.....feature is not horizontal (areas/lines)

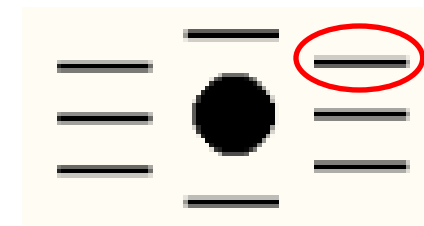
- Lettering lined up with parallels instead of horizontal
- Lettering curved to avoid / reduce overlap / interference
- Density of names leads to some ambiguity



Points: ArcGIS default, top right label position

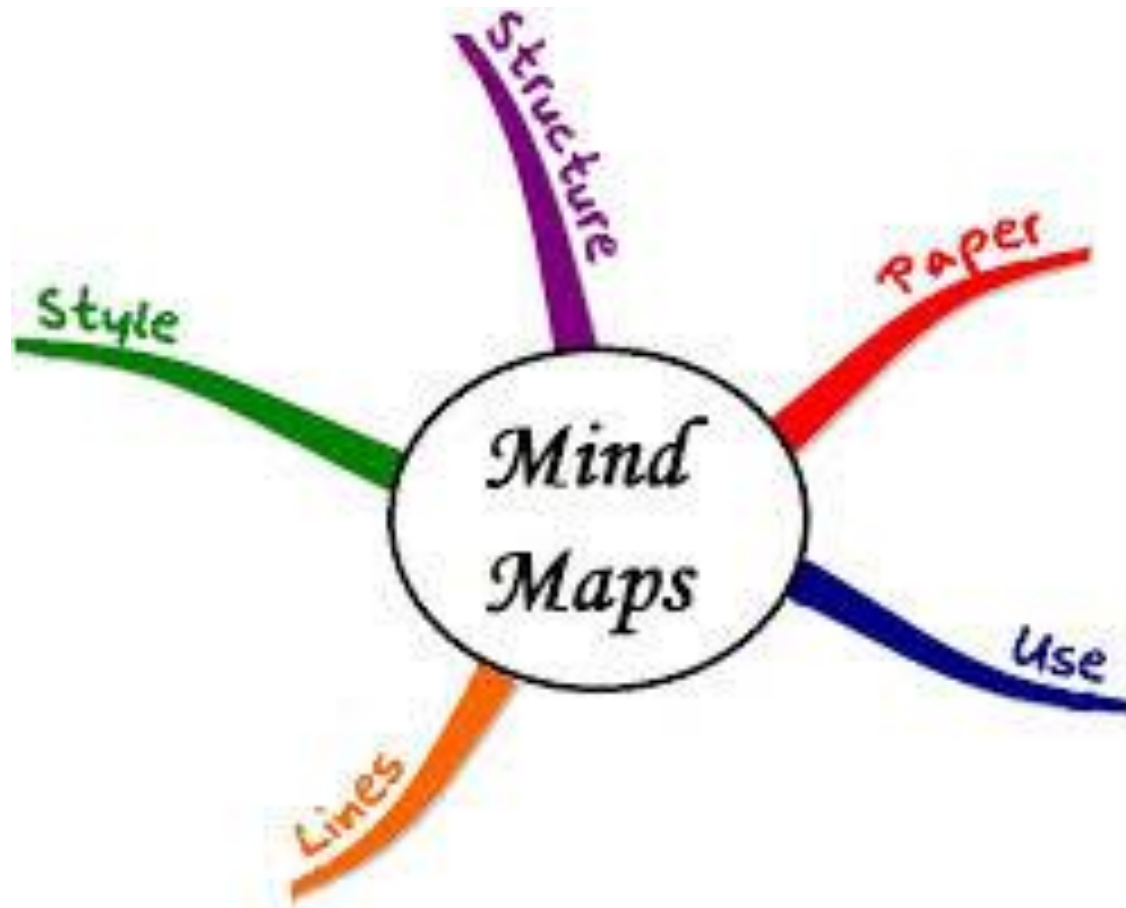
There are 8 possible positions for names.
Top right is best default but not always

- Based on manual cartography methods

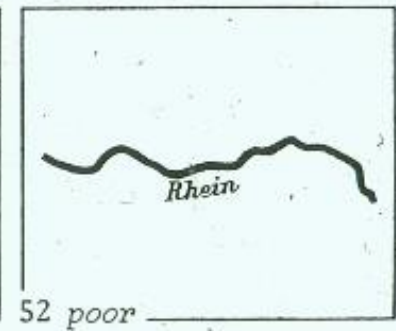
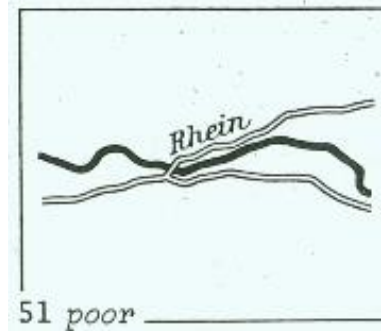
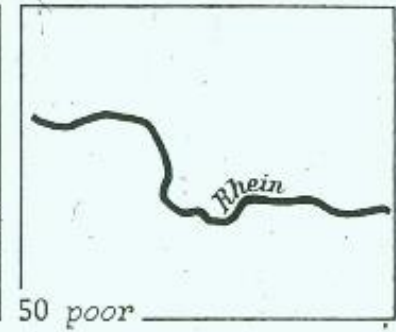
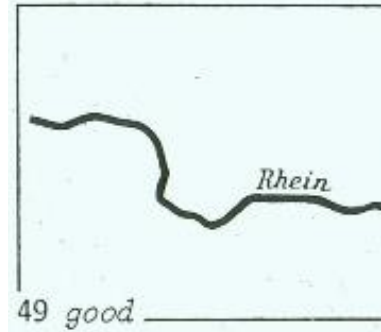
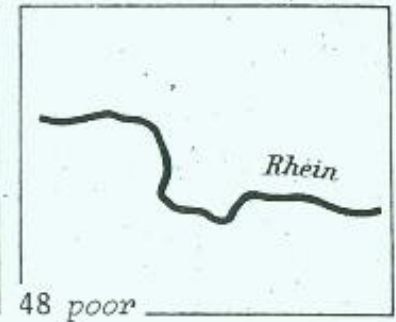
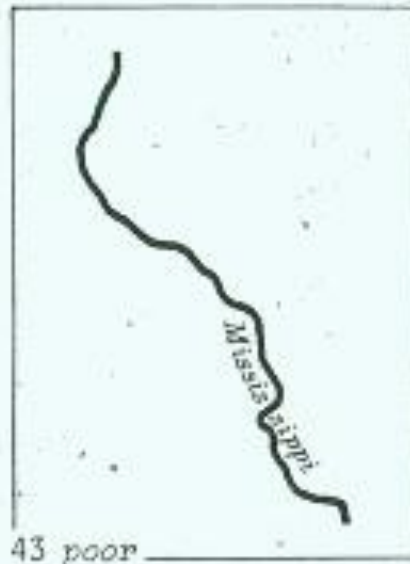
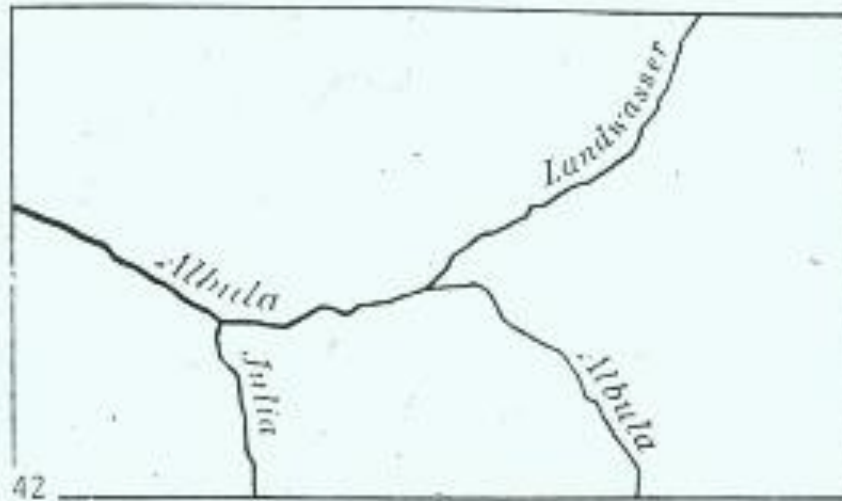


Line symbols labels

- A> Follow the orientation of the line (river, road, etc.)
- B> Find a relatively straight piece to label
- C> Label above the line, enough away so descenders don't cross it

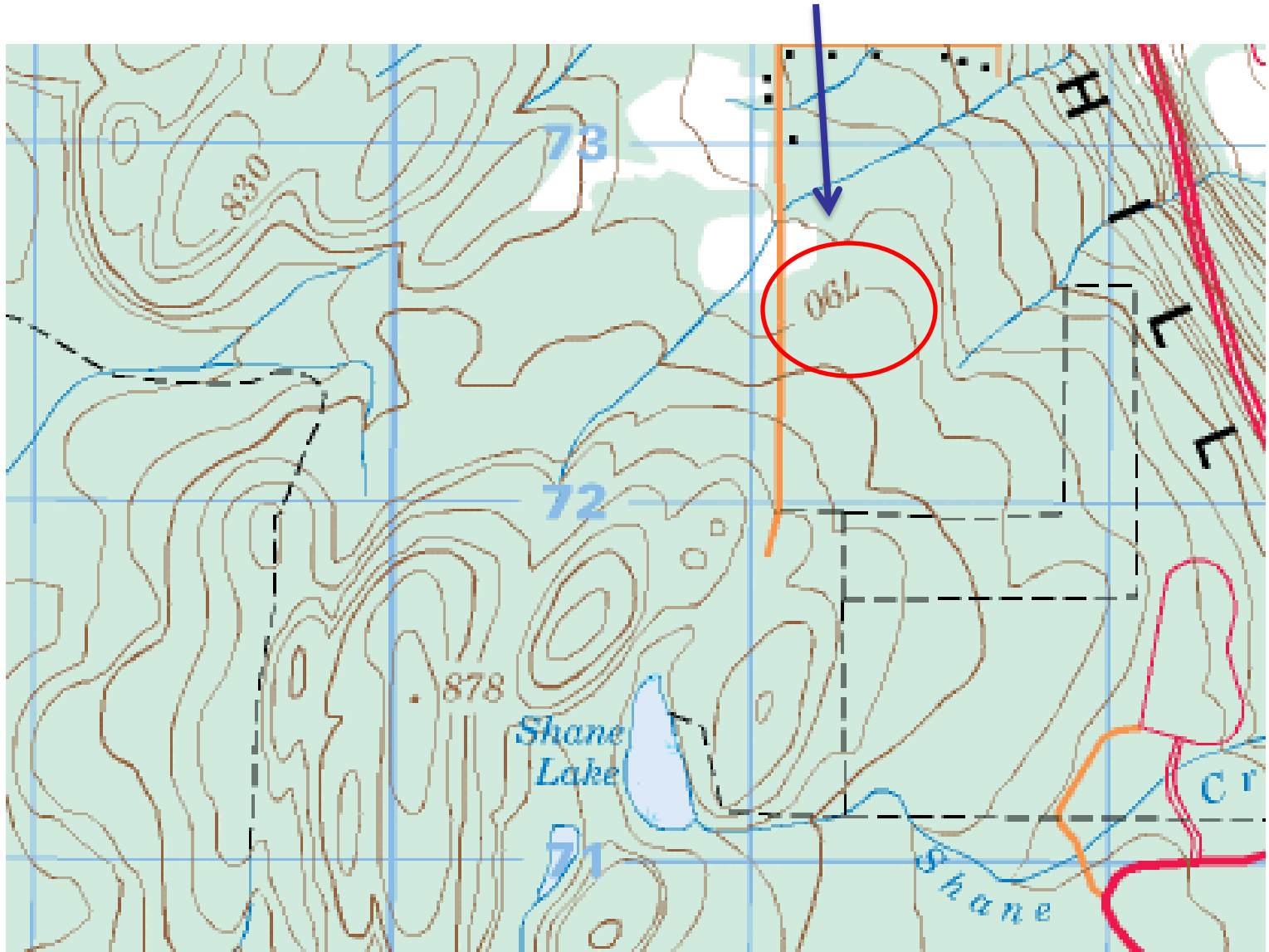


Line symbol labels



Examples from Eduard Imhof ... 'Swiss Guru'

Lettering should not be beyond the vertical ... the **only** exception (?) is contour lines, where lettering tops can 'point uphill' to show terrain form



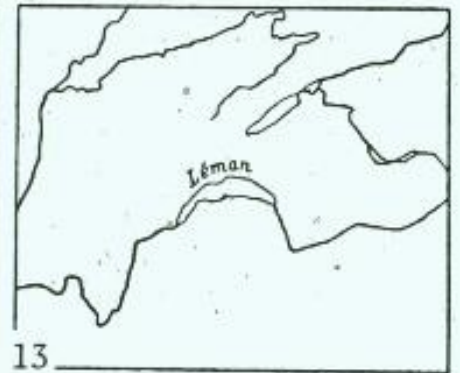
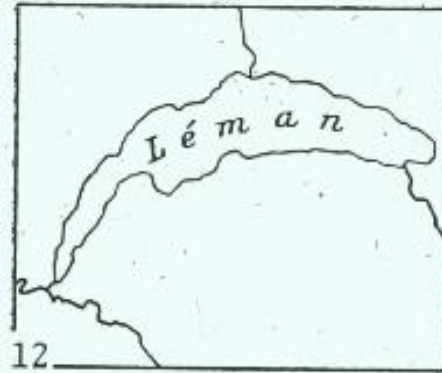
.... And not usually 'just a bit off vertical' which can look like an accident

Area symbols

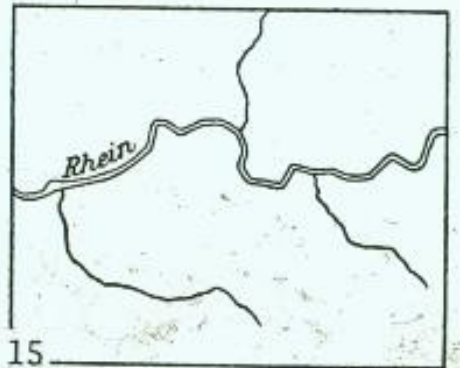
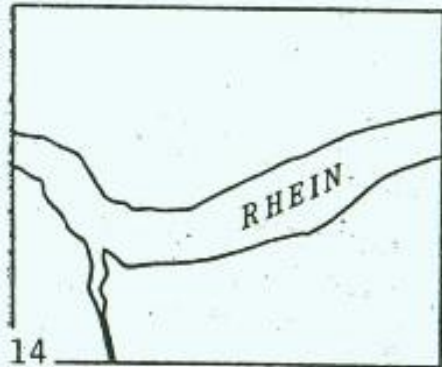
A> Lettering totally inside the area



B> If too small, label as if a point

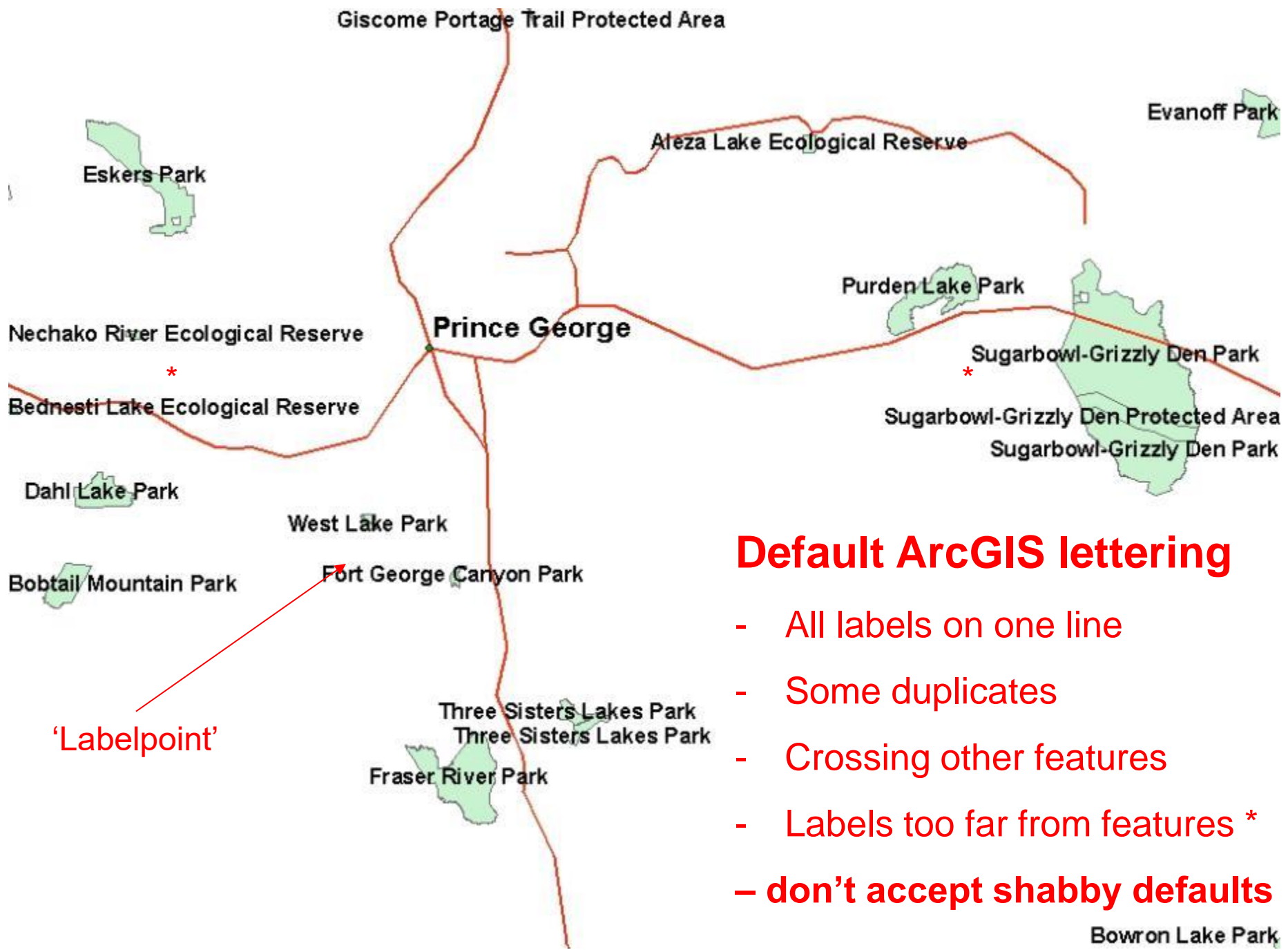


C> Orient lettering to fit area shape, curve as needed



D> Space lettering if area is large, evenly but not $> 4 \times$ letter height, Serifs are useful in spaced names

Examples from Eduard Imhof



Default ArcGIS lettering

- All labels on one line
- Some duplicates
- Crossing other features
- Labels too far from features *
- **don't accept shabby defaults**

Mount Robson Provincial Park

Berg Lake Trail



LEGEND

Facilities

- | | | | |
|--|--------------|--|------------------------|
| | Ranger Cabin | | Emergency Services |
| | Hiking | | Campground |
| | Viewing | | Meals, Gasoline |
| | Parking | | Wilderness Camping |
| | Picnic Area | | Telephone |
| | Information | | Shelter - day use only |
| | Washrooms | | Mountain Biking |

Points

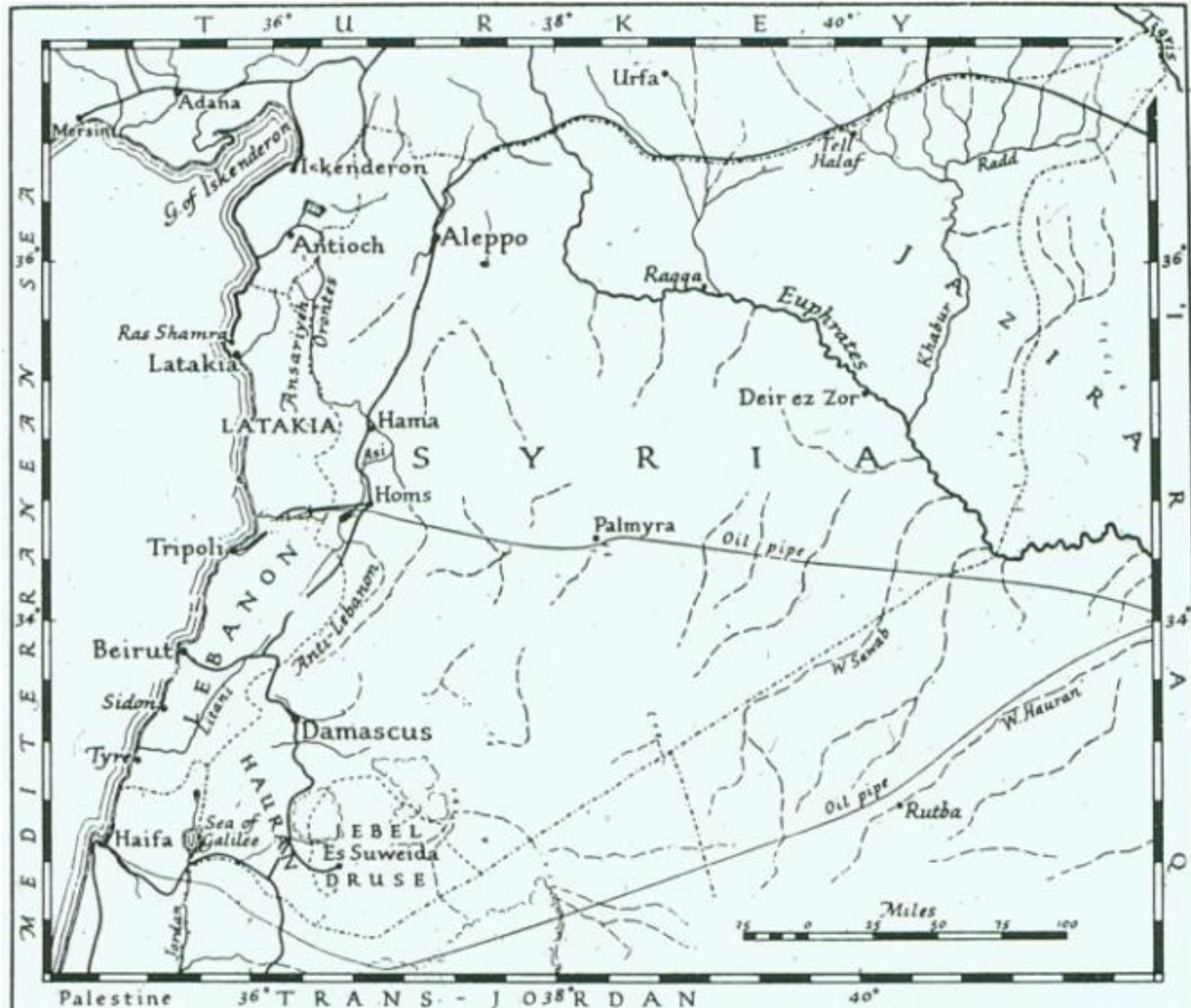
horizontal,
close to point

Lines

Along (above)

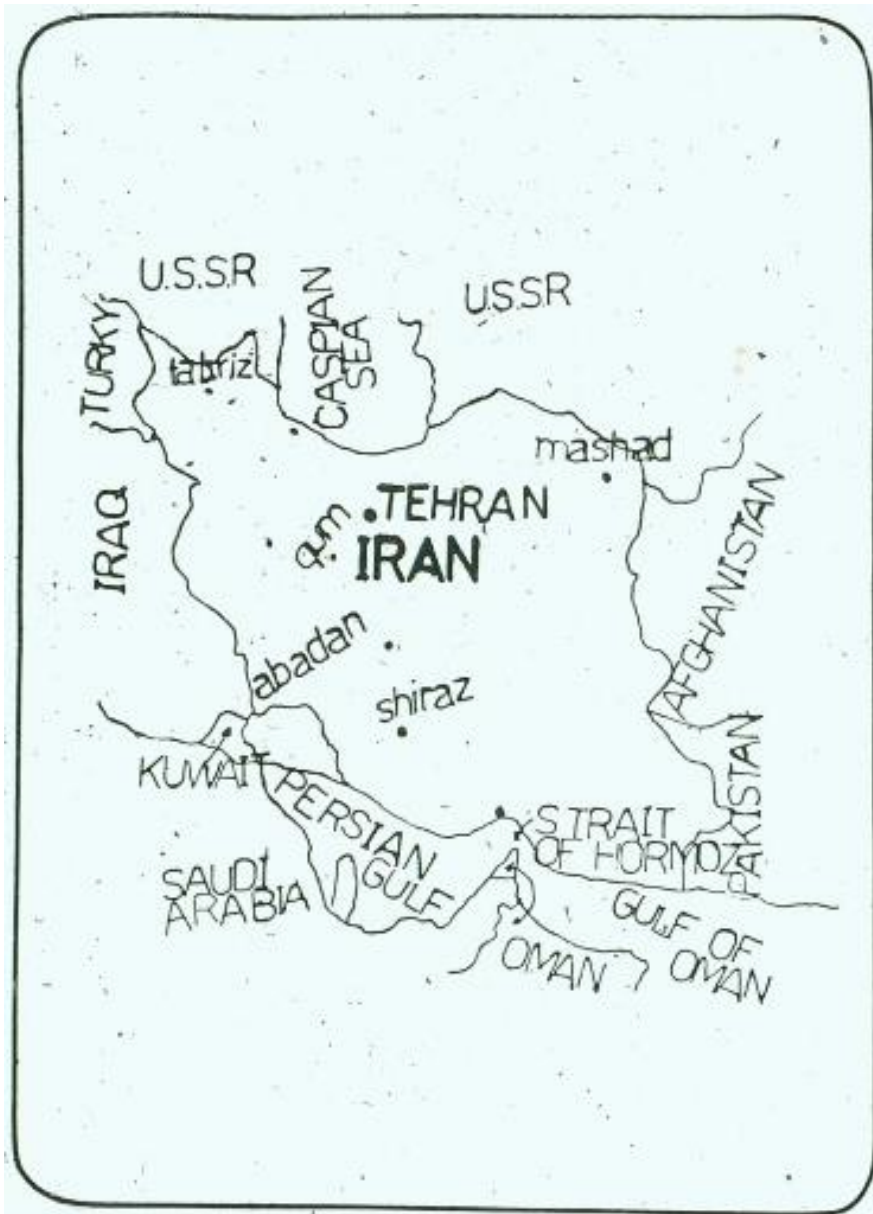
Areas

centred, with
spacing and
orientation

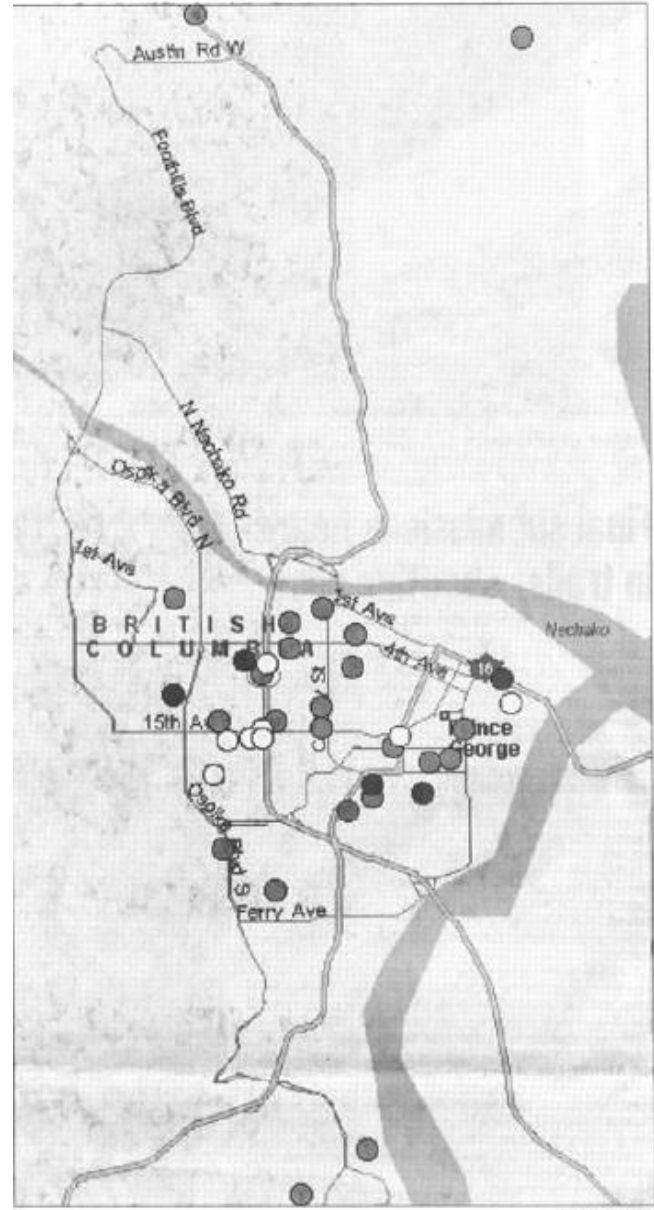


Good example of hand lettering

1978 'The Sheaf' -University of Saskatchewan
 Iran hostage crisis – Murphy's Law ?



Prince George Citizen, 2008



Submitted graphic
 This map shows the locations of recent break-ins in Prince George. Grey indicates residential break-ins; white is business and black is other. A residential break-in past the Prince George Airport is not shown.

Toponymy: the study of placenames

English place name endings and meaning

by	village, town	(viking)
dal /dale	meadow / valley	(viking)
ford	ford	
hurst	wooded hill	
knock	hill	(gaelic)
minster	large church	
pool	harbour	
shaw	wood	
stead	place	
ster	farm	

These could tell us about the local geography, but not when they are copied ... but we have indigenous names

Indigenous place name examples

Lheidli Confluence

Nagwentled Landslides

Nanaimo Big strong tribe

Kakwa Porcupines

Poboktan Burrowing Owl

Winnipeg Muddy waters

Bugaboo: Object of baseless terror

Canada (Kanata) village - settlement

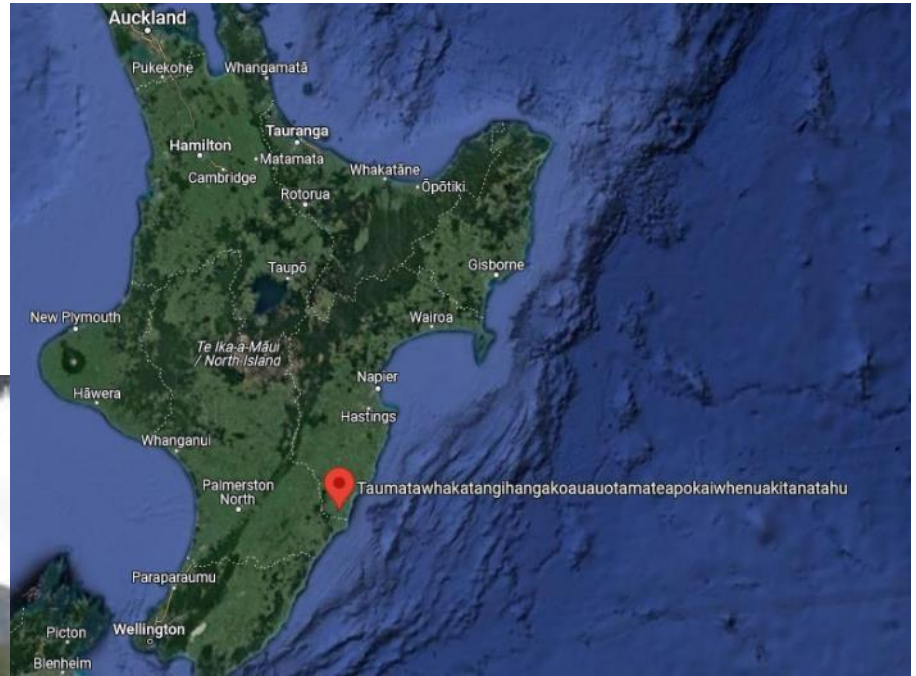
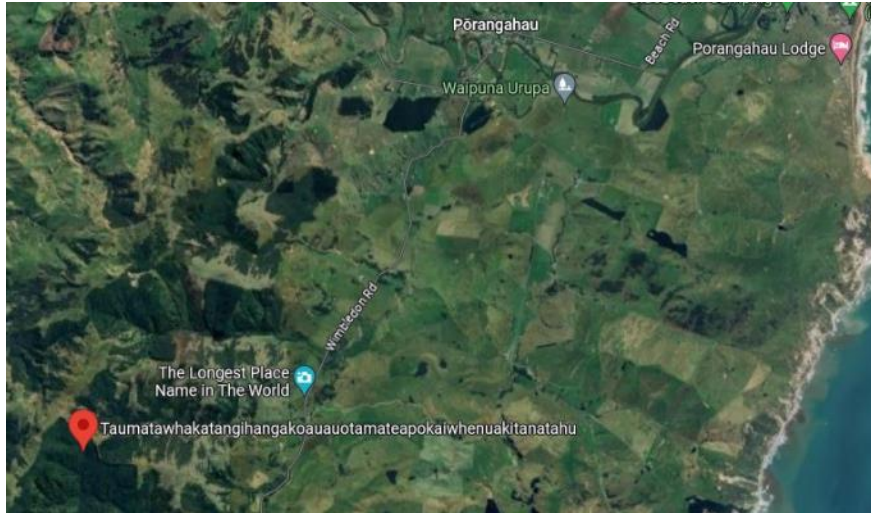
Canada's longest placename:

Pekwachnamaykoskwaskwaypinwanik Lake

where the wild trout are caught by fishing with hooks."



World's longest placename



TaumatawhakatangihangakoauauoTamateaturipukakapikimaungahoronukupokaiwhenuakitanatahu

Translates as: "The summit where Tamatea, the man with the big knees, the climber of mountains, the land-swallower who travelled about, played his nose flute to his loved one

One of the equal shortest placenames: Å, Lofotens, Norway

