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

Lettering – overview

Perhaps the most challenging part of digital mapping

[early computer maps were obvious by their bad lettering]

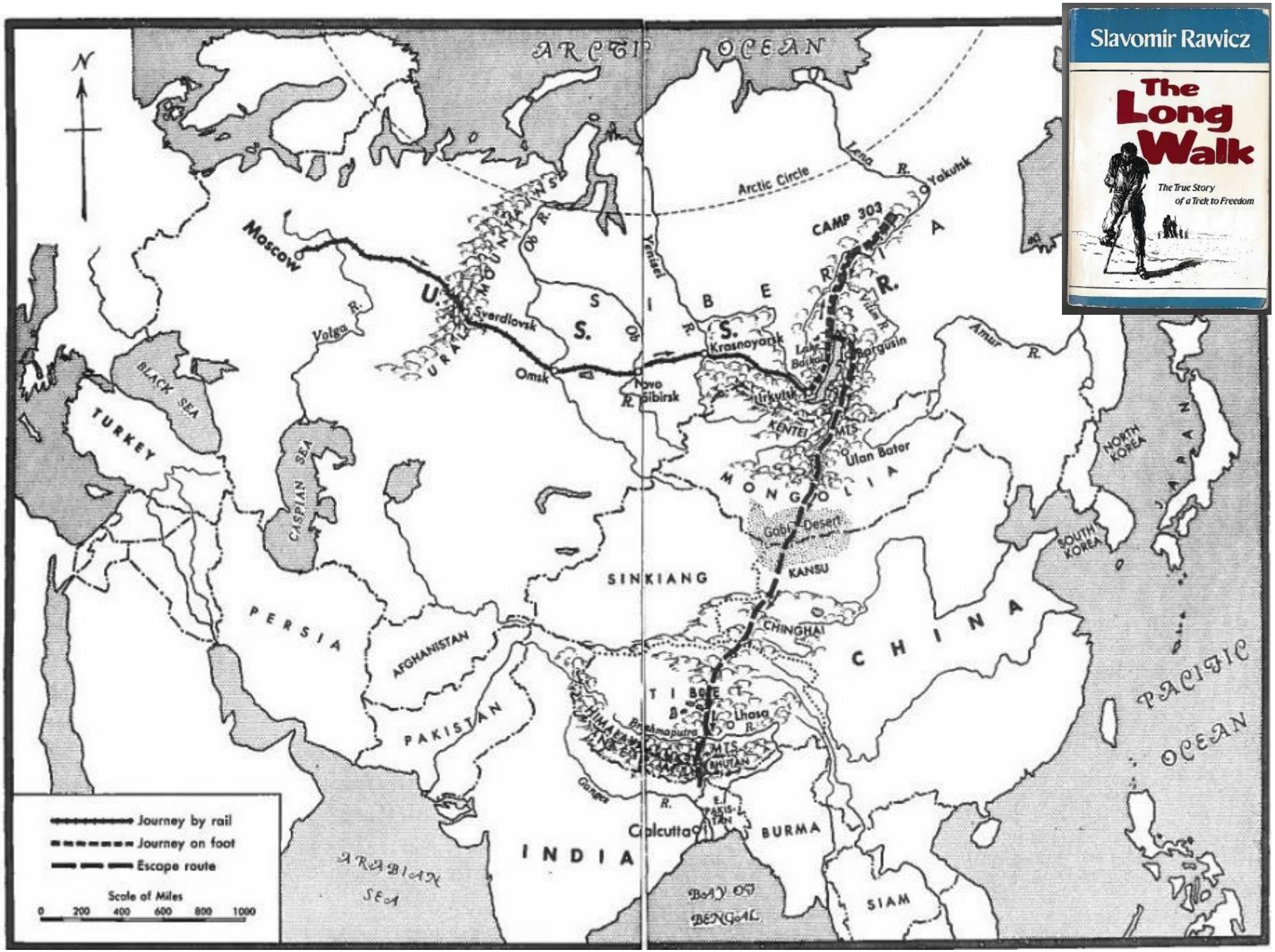
Consists of:

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



Slavomir Rawicz
The Long Walk
The True Story of a Trek to Freedom
ARCTIC OCEAN
N
Arctic Circle
Lena R.
Yakutsk
CAMP 303
Moscow
Volga R.
U. S. S. R.
URAL MOUNTAINS
Ob R.
Yenisei R.
SIBERIA
Sverdlovsk
Omsk
Novo Sibirsk
Krasnoyarsk
Lake Baikal
Bargusin
Irkutsk
KENTEI MTS.
Ulan Bator
MONGOLIA
Gobi Desert
KANSU
SINKIANG
CHINGHAI
CHINA
Amur R.
NORTH KOREA
SOUTH KOREA
JAPAN
PACIFIC OCEAN
BLACK SEA
TURKEY
CASPIAN SEA
PERSIA
AFGHANISTAN
PAKISTAN
TIBET
Lhasa
Brahmaputra R.
HIMALAYA MTS.
BHUTAN
Ganges R.
E. PAKISTAN
Calcutta
INDIA
BURMA
SIAM
ARABIAN SEA
BAY OF BENGAL
Journey by rail
Journey on foot
Escape route
Scale of Miles
0 200 400 600 800 1000

Summary on symbol design: review slide

Symbols – design variables:

Qualitative	*Quantitative*
shape, pattern	size, tone
colour - hue (except red)	colour – chroma / value

Symbols – use of design variables:

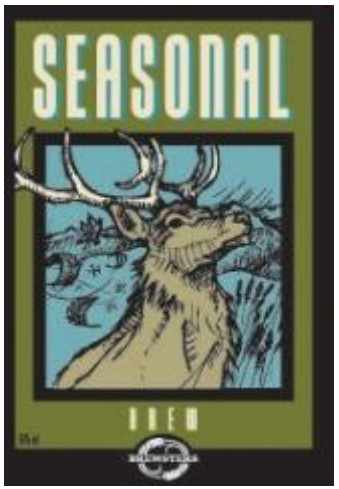
1. Association: shape, size, colour, convention
2. Qualitative or quantitative data
3. Output purpose, cost and media

Much of this is common sense – design enables good communication

1. Visual Design Variables

a. Font (~shape)

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



Sans serif

Serif

Decorative

Serif 2015

Google™

Google Search | I'm Feeling Lucky

Advanced Search
Language Tools

Google Canada

Sans-serif 2016

Font Humour

Bob Marley / Eric Clapton:
https://www.youtube.com/watch?v=oe2hdbft5-U

Font Choice is mostly based on preference ..

… 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 ? No longer cool ….

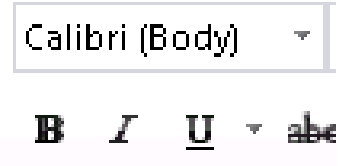
comic sans

still a better choice than trump

EXAMPLE OF POOR FONT LEGIBILITY:

Would you sign your boys up for this league ?

b. **Form:** ***italic*** or upright



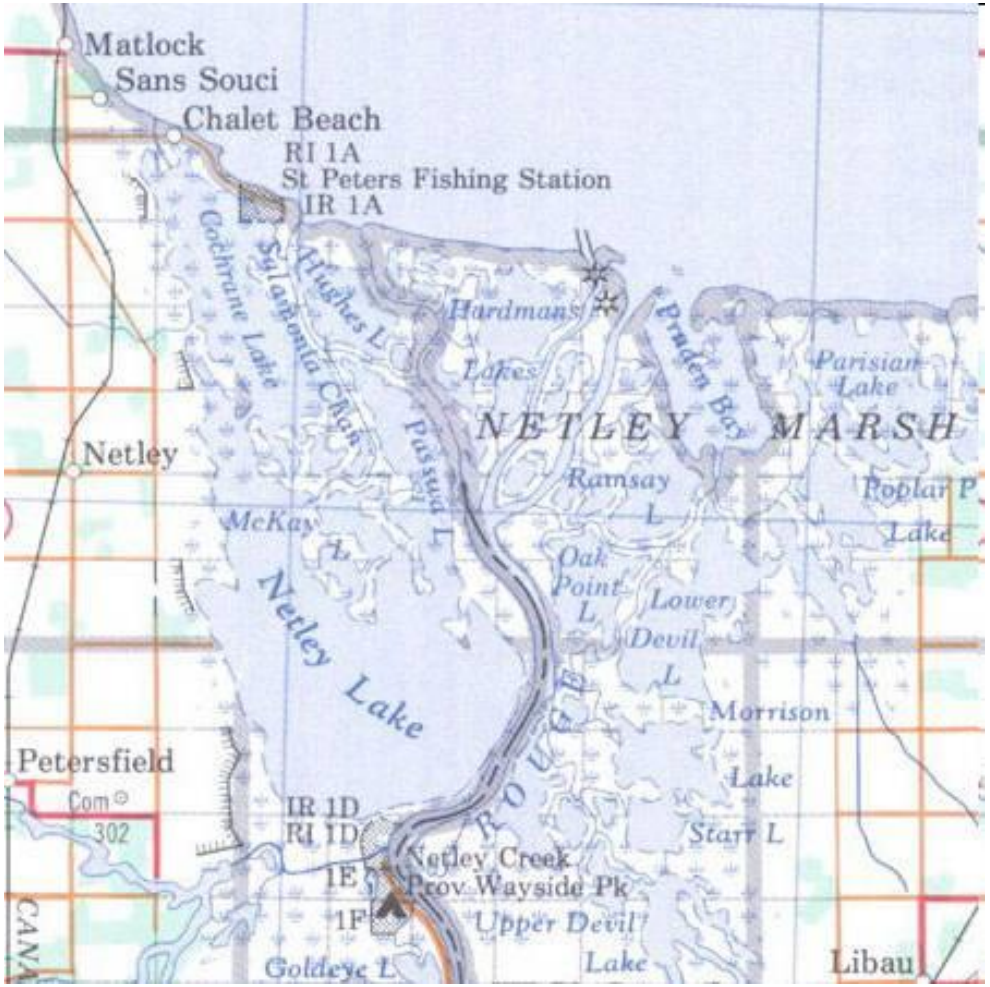
Digital format choices

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

Why ?

<u>Underlining</u> is **<u>not</u>** generally used

Why?

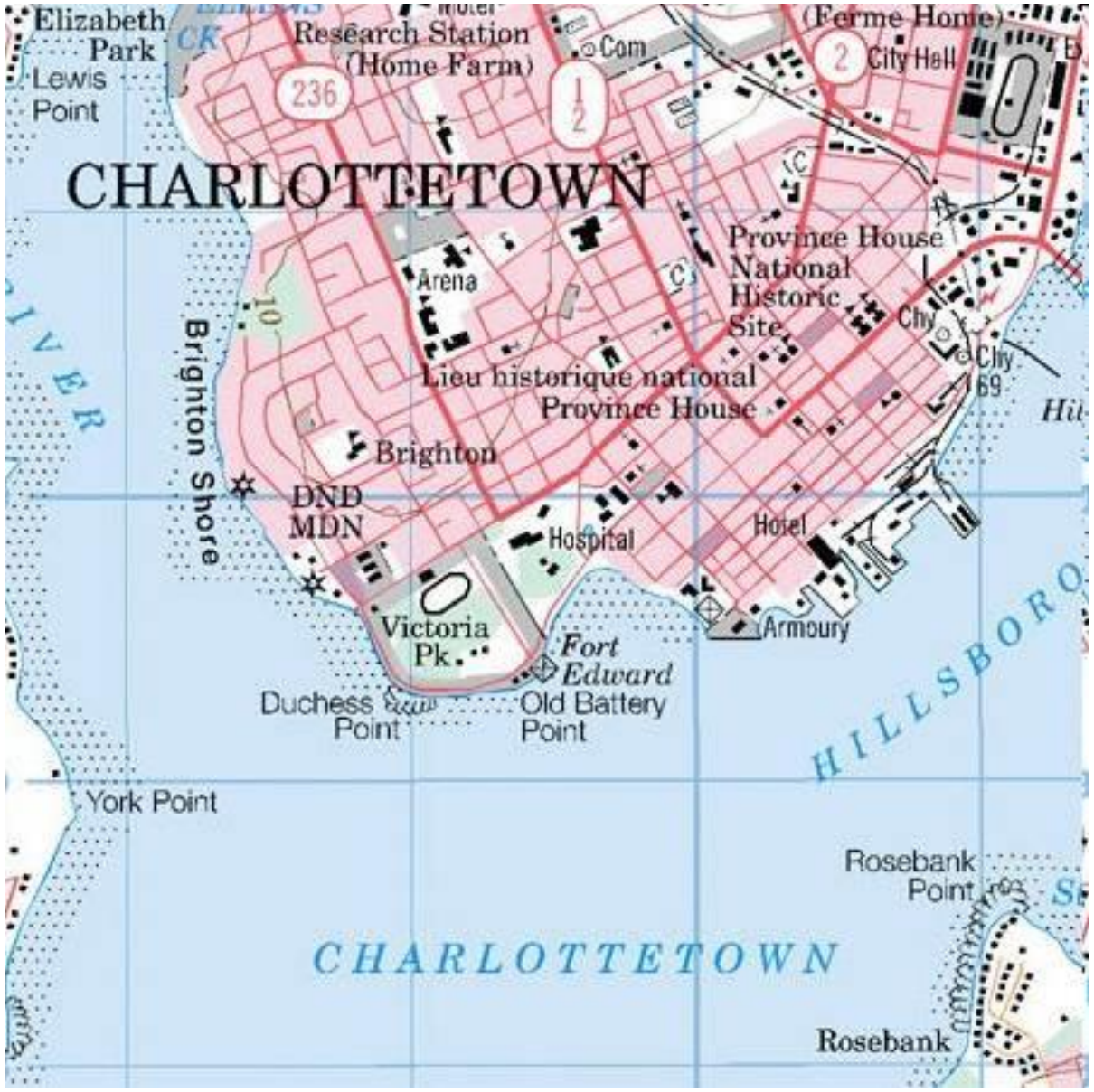


c. Form: bold or plain e.g. **Vanderhoof** Vanderhoof

Bold implies prominance

-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'

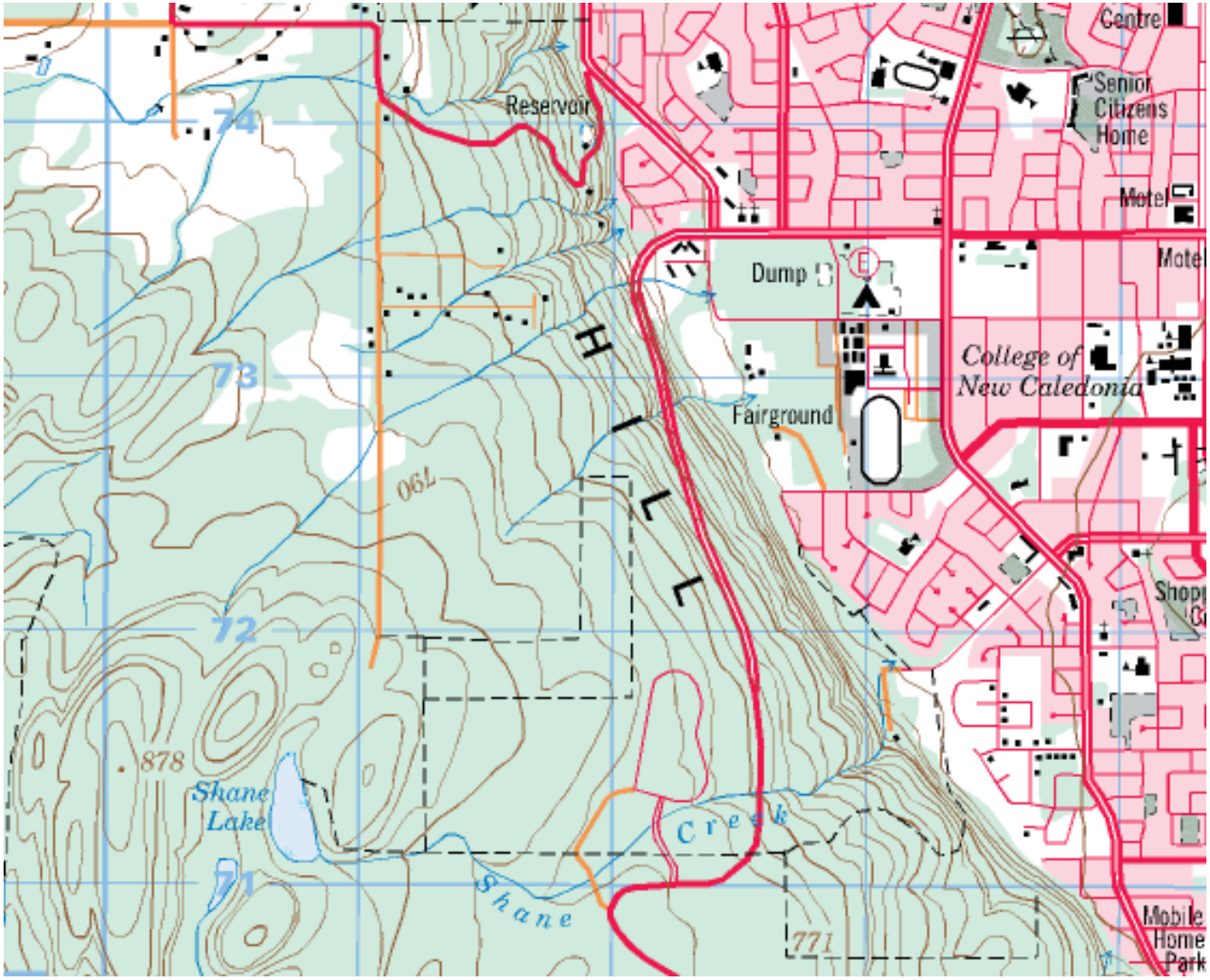
This is why we don't print books in UPPER Case and shouldn't use it in emails

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

why are they called UPPER and lower 'case' ?

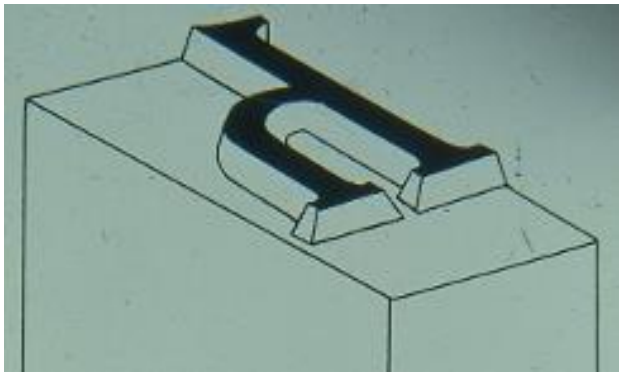
e. Colour (hue) : nominal / qualitative .. is used associatively

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

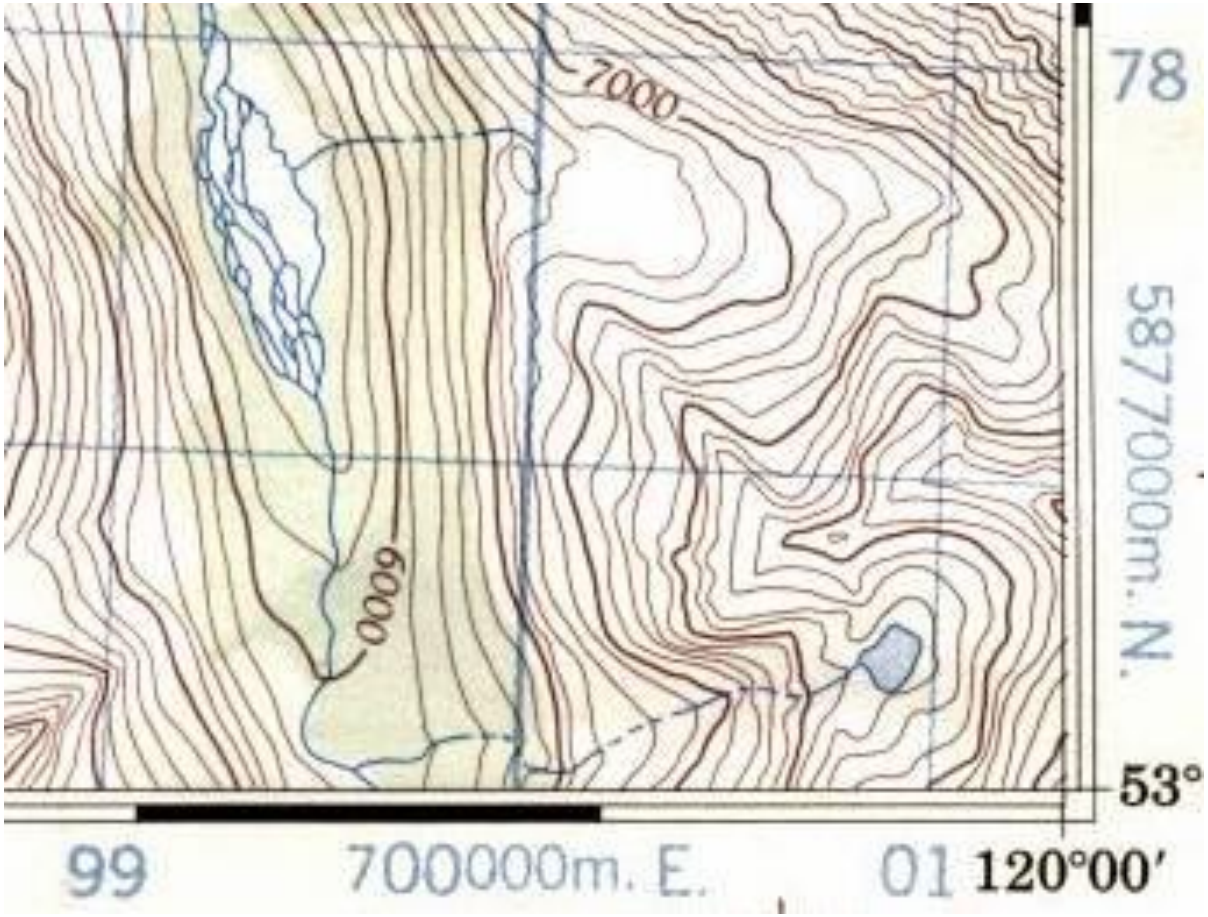
Larger size text is associated with larger / more important features (DUH!)

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)

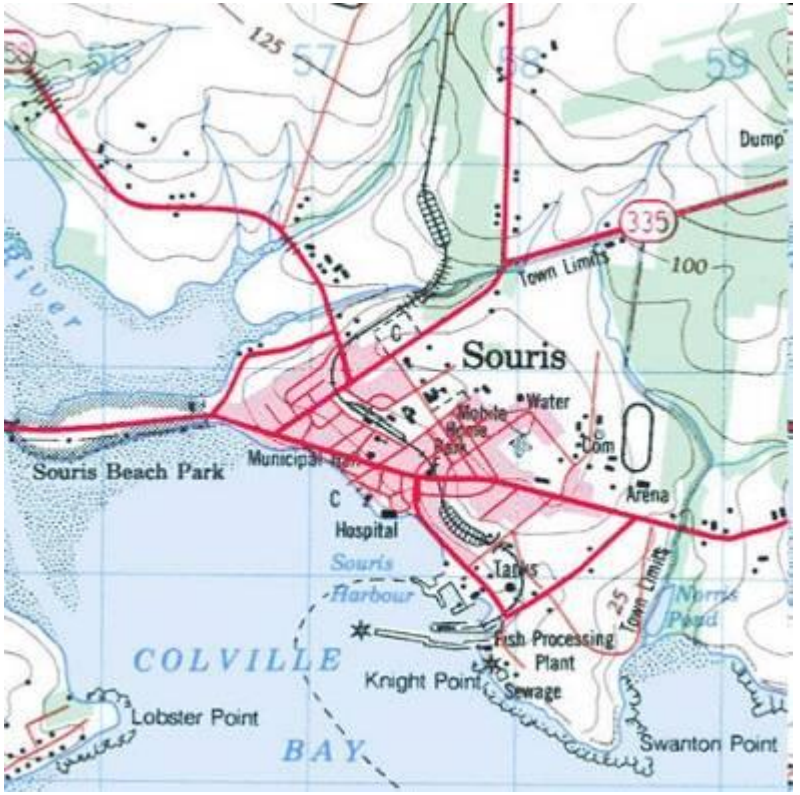


Choice of combinations of colour, fonts and form

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 as to 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

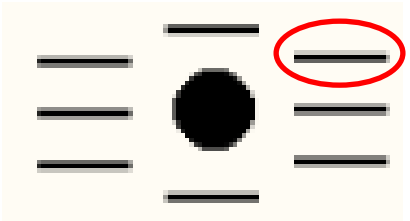
……feature is not horizontal (areas/lines)

- 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



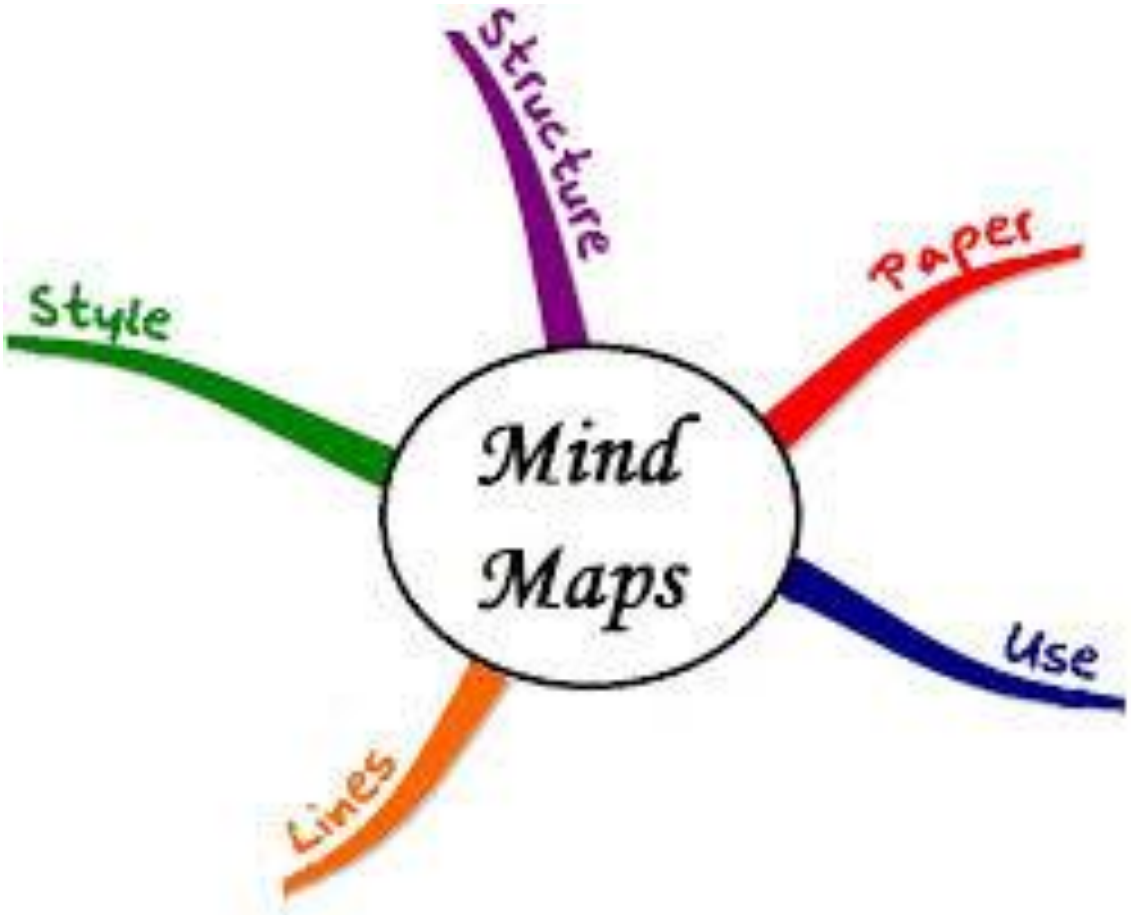
OOPS ……! .. Label starting from the left …

Line symbols labels

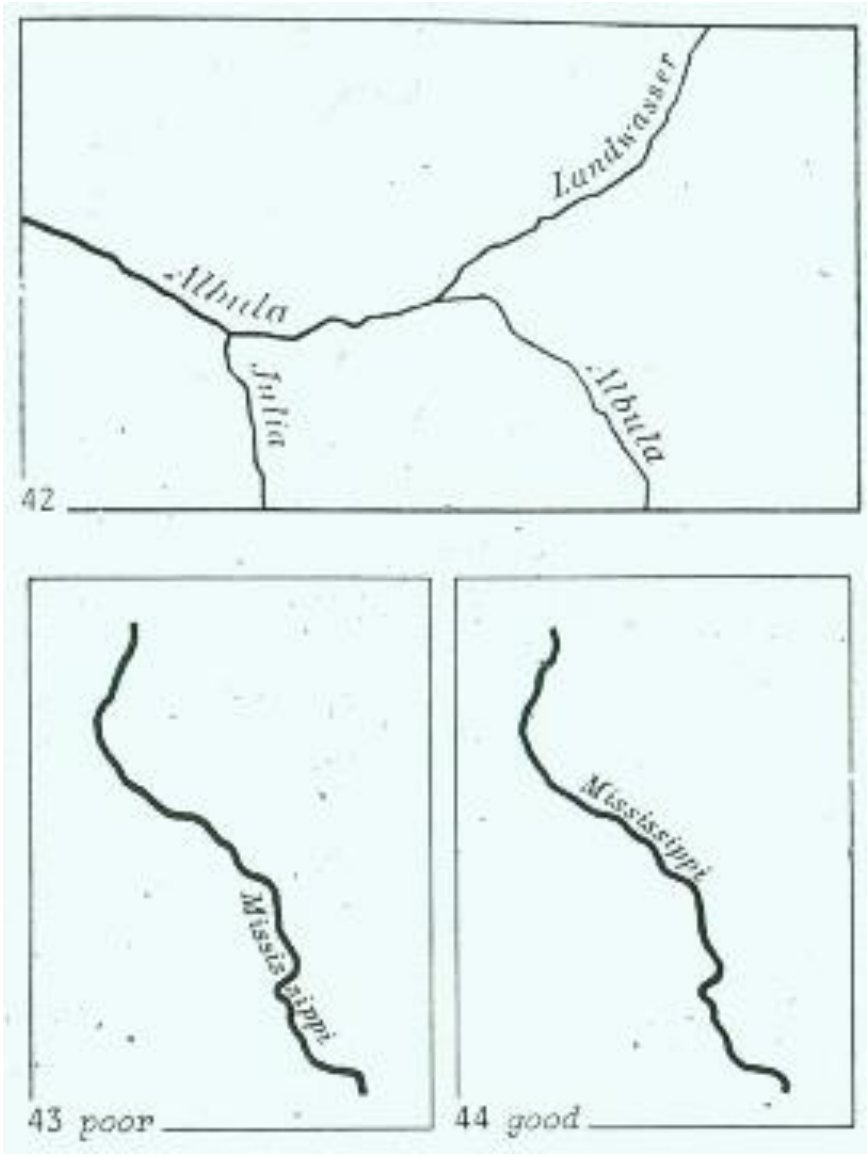
A> Follow the orientation of the line (river, road, etc.)

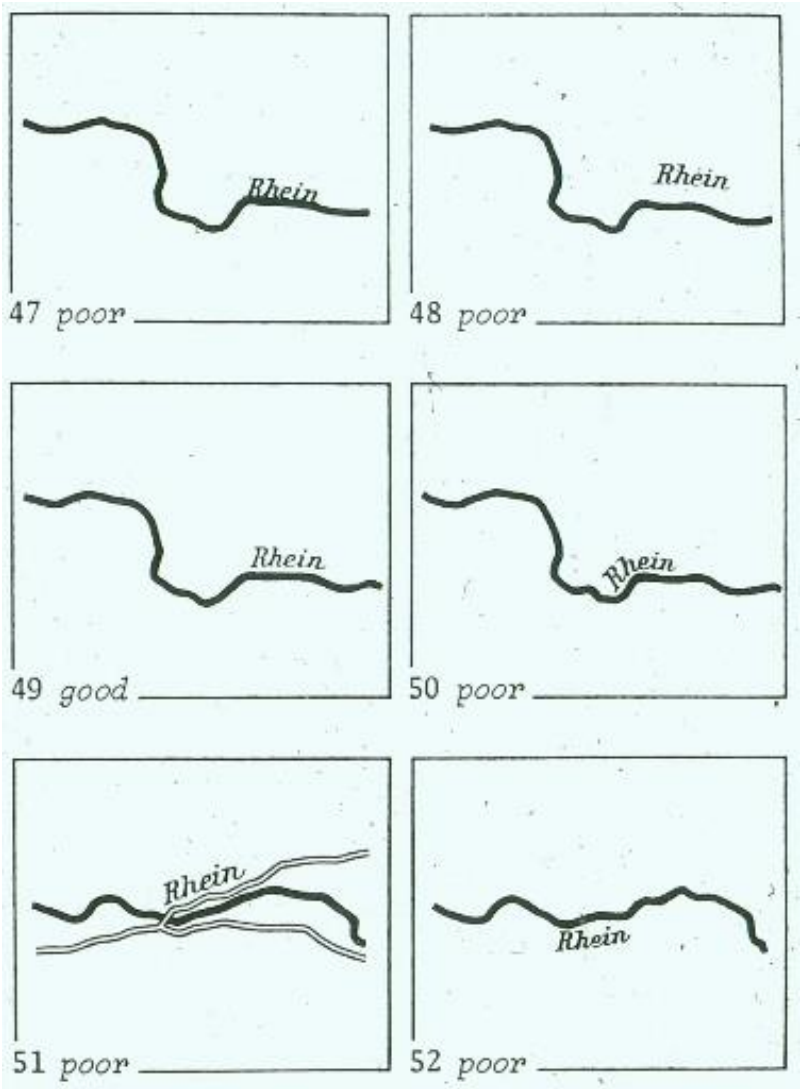
B> Find a relatively straight piece to label

C> Label above the line, far enough away so descenders don't cross it



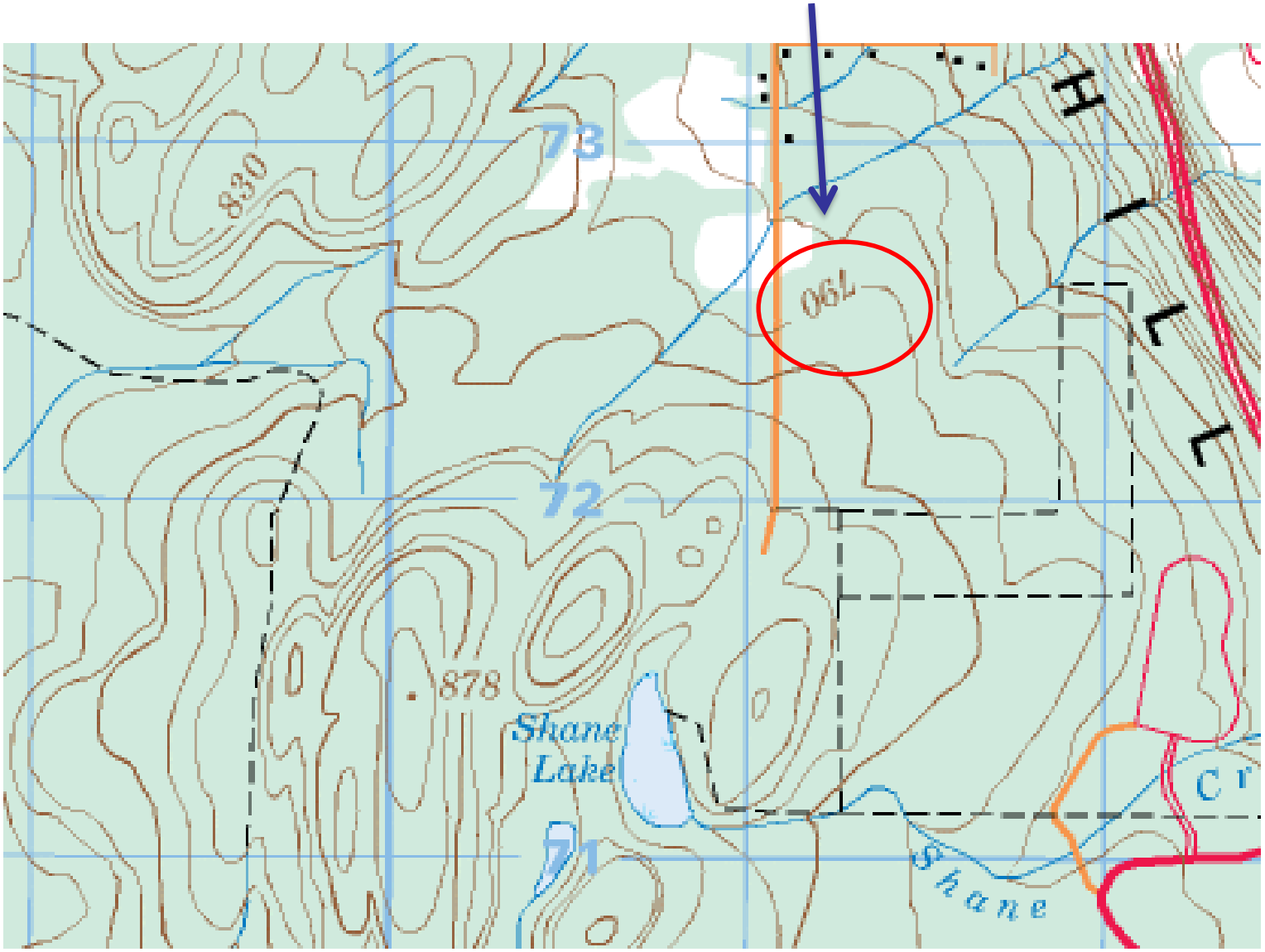
Line symbol labels





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

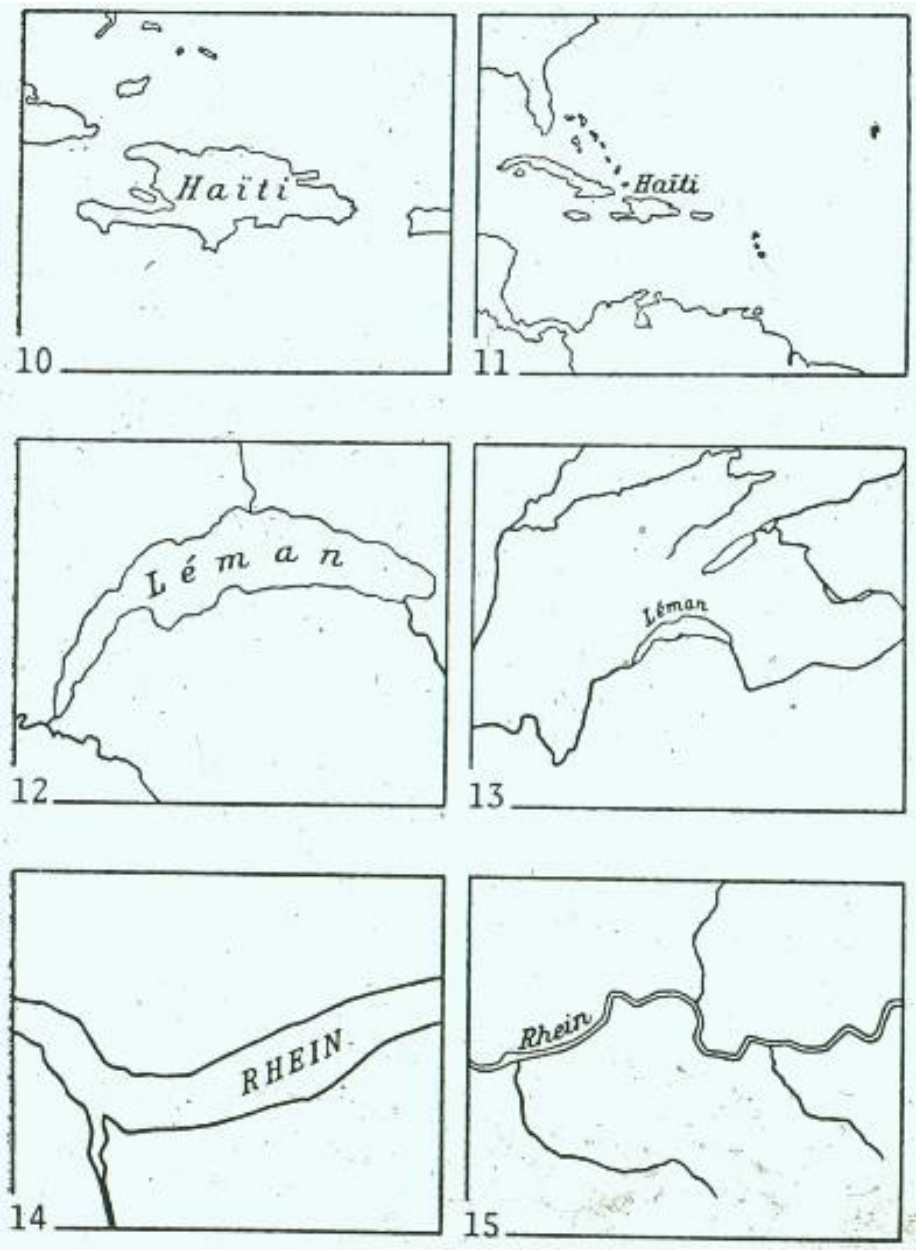
A> Lettering totally inside the area

a

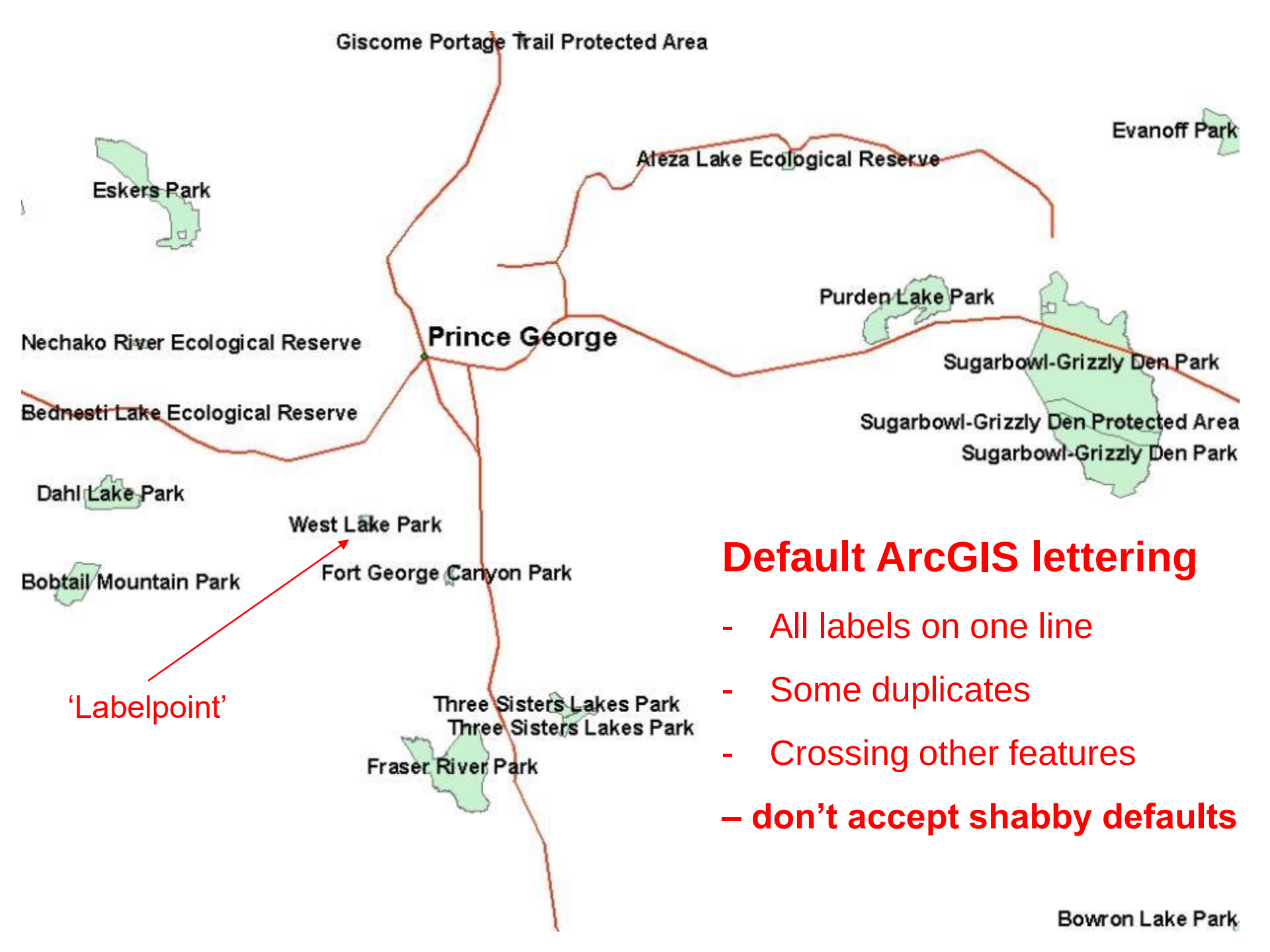
B> If too small, label as if a point

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

D> Space lettering if area is large, evenly but not > 4 x 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

– don't accept shabby defaults

Mount Robson Provincial Park
Berg Lake Trail
Kinney Lake
Falls
Adolphus Lake
Robson Pass
Jasper National Park
Mt Robson Provincial Park
Toboggan Falls
Hargreaves Glacier
Berg Lake
Rearguard Mountain
Robson Glacier
Berg Glacier
Mist Glacier
Robson River
Emperor Falls
Falls of the Pool
White Falls
Valley of a Thousand Falls
Falls
Whitehorn Mountain
Mount Robson
LEGEND
Facilities
Ranger Cabin
Hiking
Viewing
Parking
Picnic Area
Information
Washrooms
Emergency Services
Campground
Meals, Gasoline
Wilderness Camping
Telephone
Shelter - day use only
Mountain Biking

Points

horizontal,

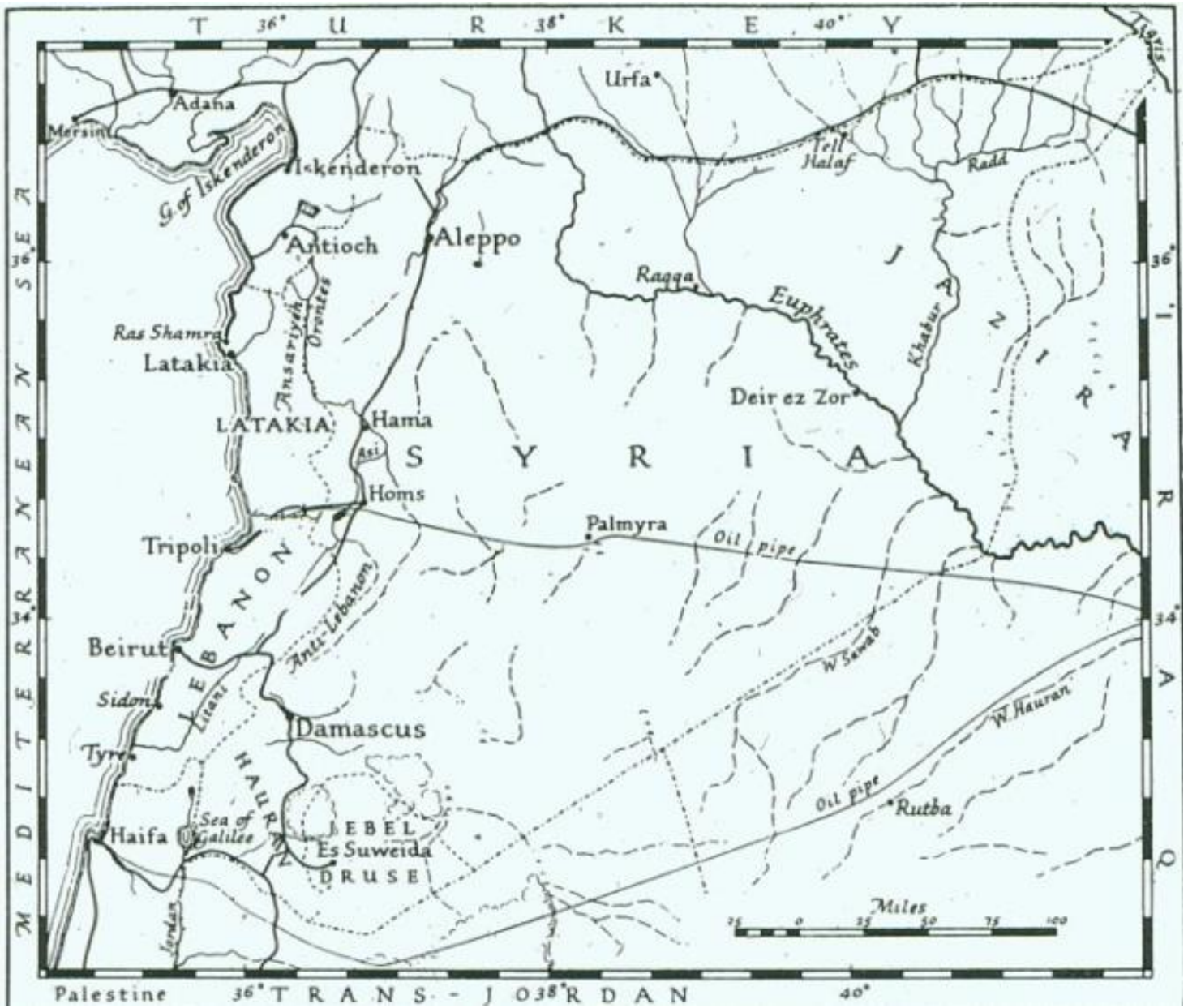
close to point

Lines

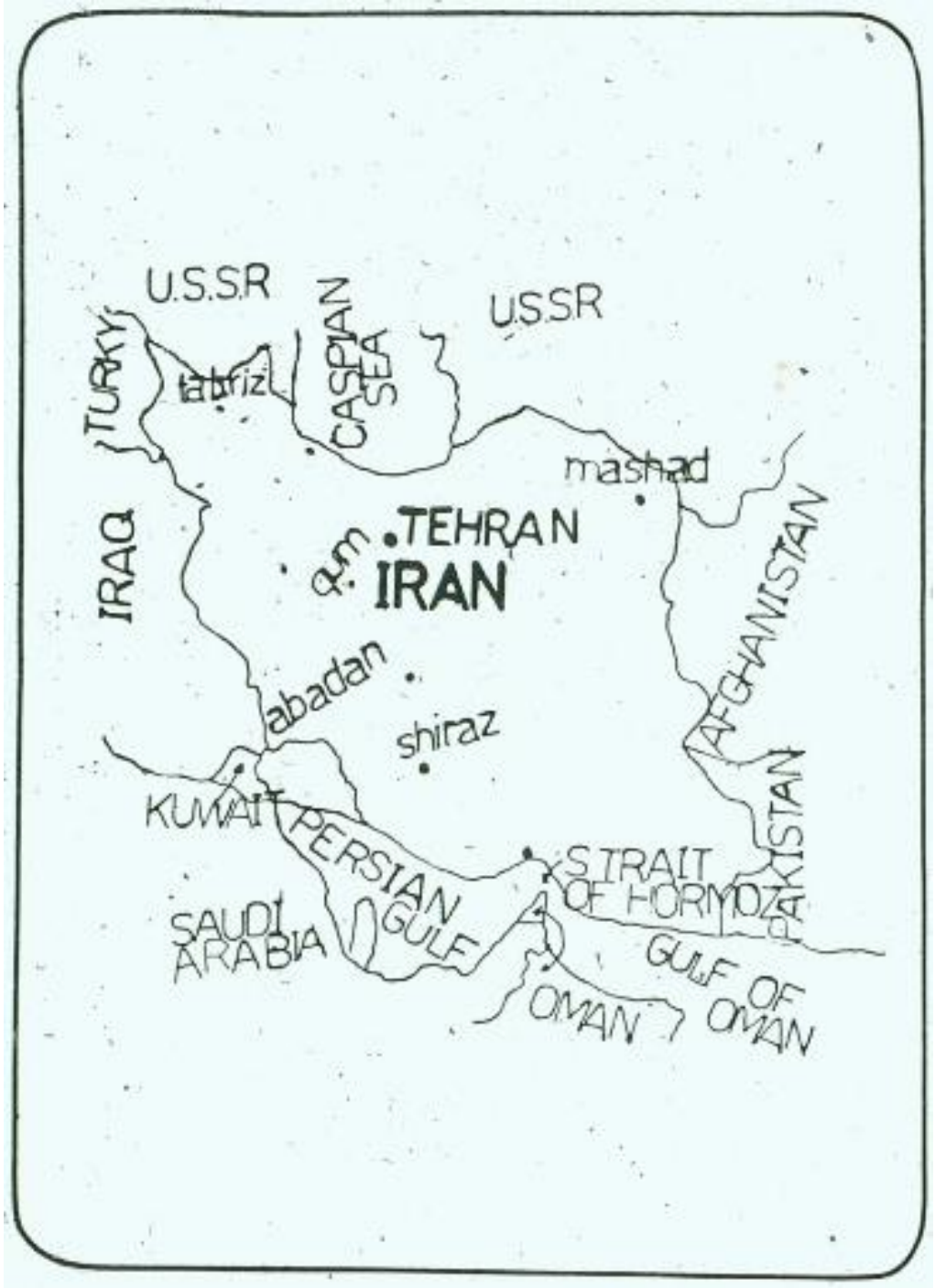
Along(above)

Areas

centred, with spacing and orientation



Good example of hand lettering



1978 Yikes!

University of Saskatchewan 'The Sheaf'

(Iran hostage crisis)

What went wrong?

What went right ?

Murphy's Law

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 e.g. in Canada
… but we have the 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

Place name types in Canada

Listed based on merit: *(my list - very unofficial)*

1. **Indigenous names based on geography / people**
2. Early settlers or features or explorers e.g. Vancouver
3. Home places elsewhere e.g. Banff, Calgary
4. Friends / sponsors / saints e.g. St. John, Fort St…
5. Minor royal family members and explorers' cats
   Prince George …

Canada’s longest placename:

Pekwachnamaykoskwaskwaypinwanik Lake

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

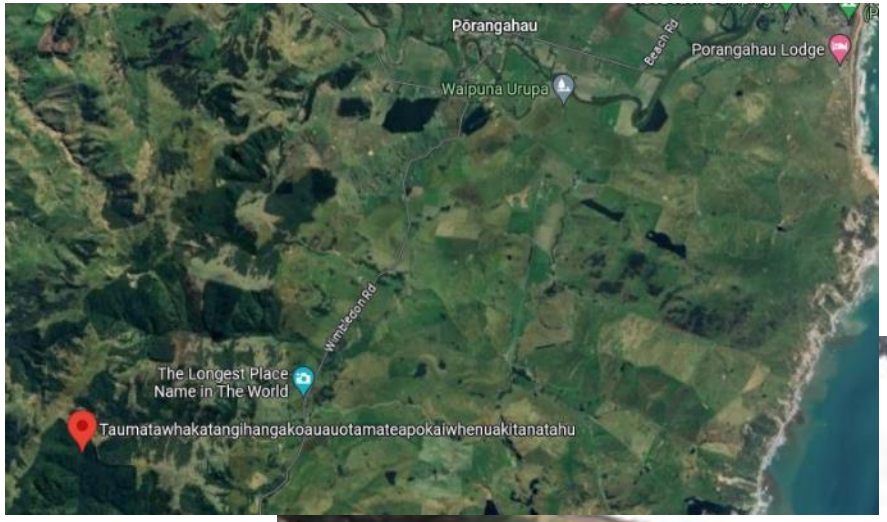
Wales, Isle of Anglesey

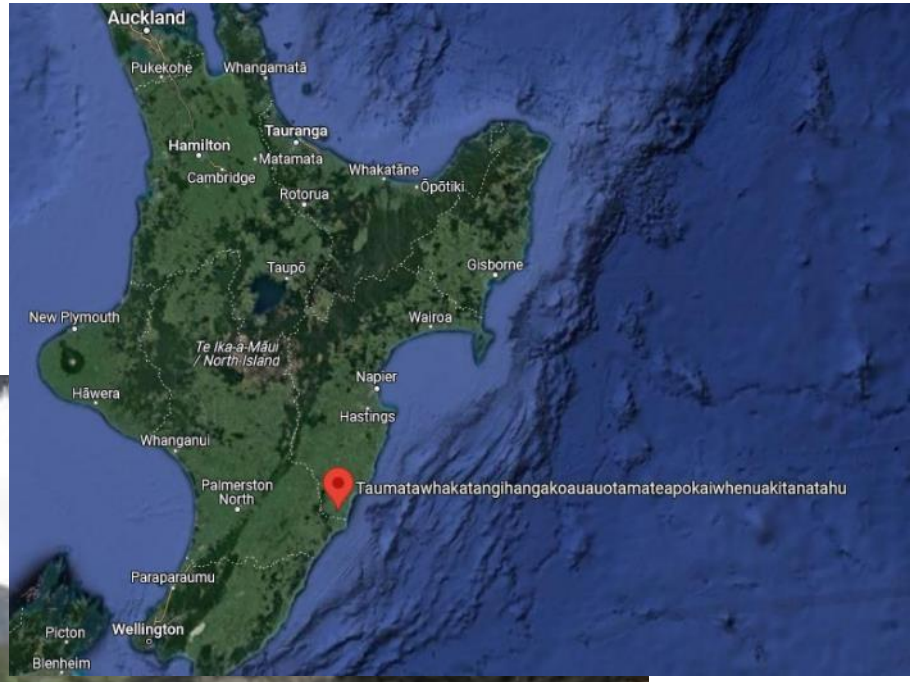
2nd longest placename in world

Also known as Llanfairpwll or Llanfair PG

Translation: "Mary's house in the hollow of the white hazel rapid whirlpool at the church of the red cave.“ (19th century ‘fake name’)

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