Place names – Origin

Canada: Kanata = 'village'
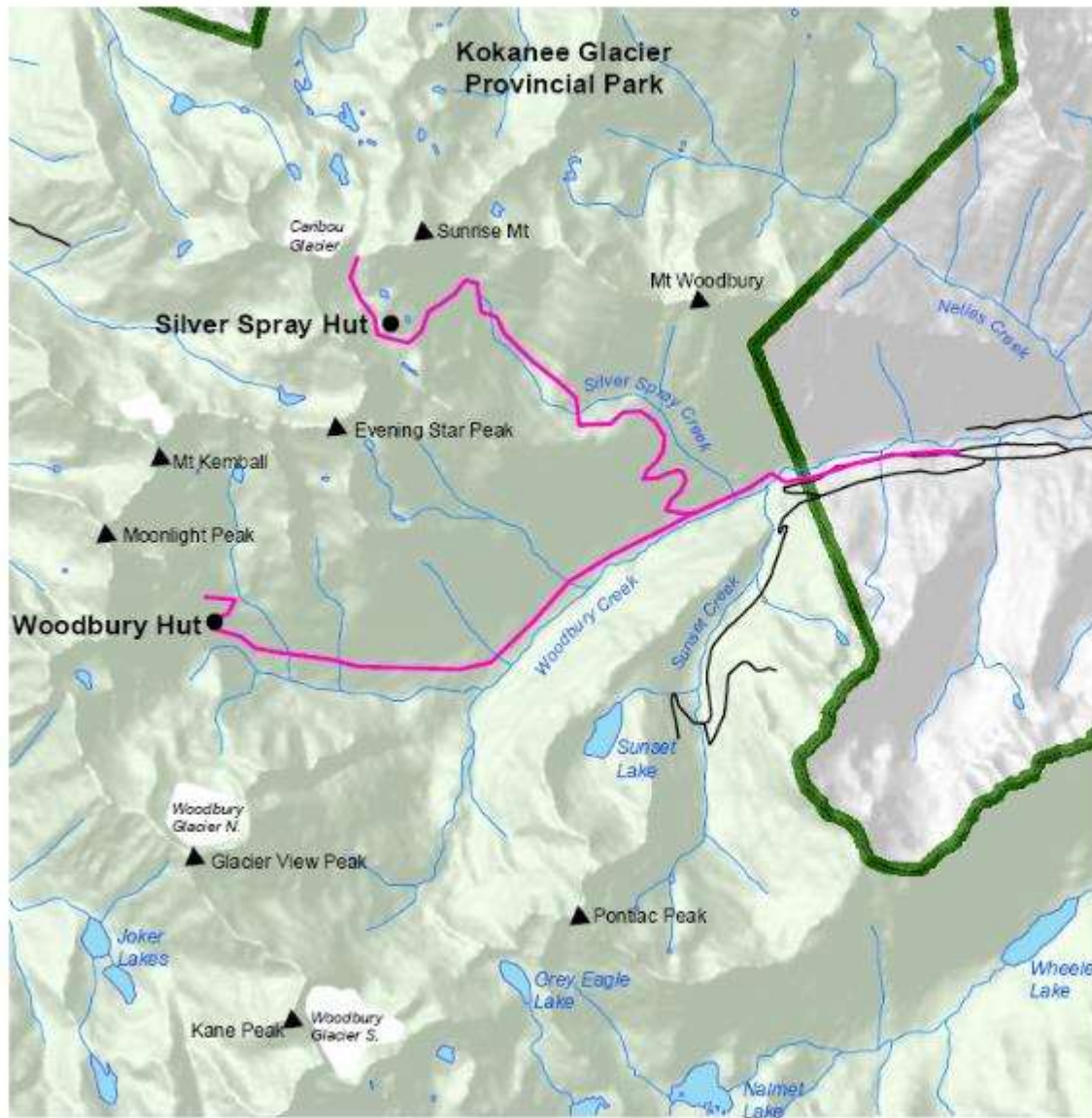
Not from Spanish 'Aca nada' … "nothing here"

Nunavut: Our Land

America: Amerigo Vespucci
(early explorer/navigator) … or was it

Richard Amerike – Anglo-Welsh merchant ?

Ancillary data
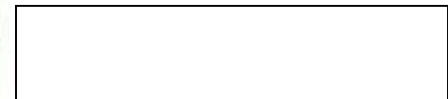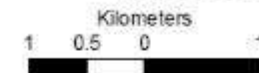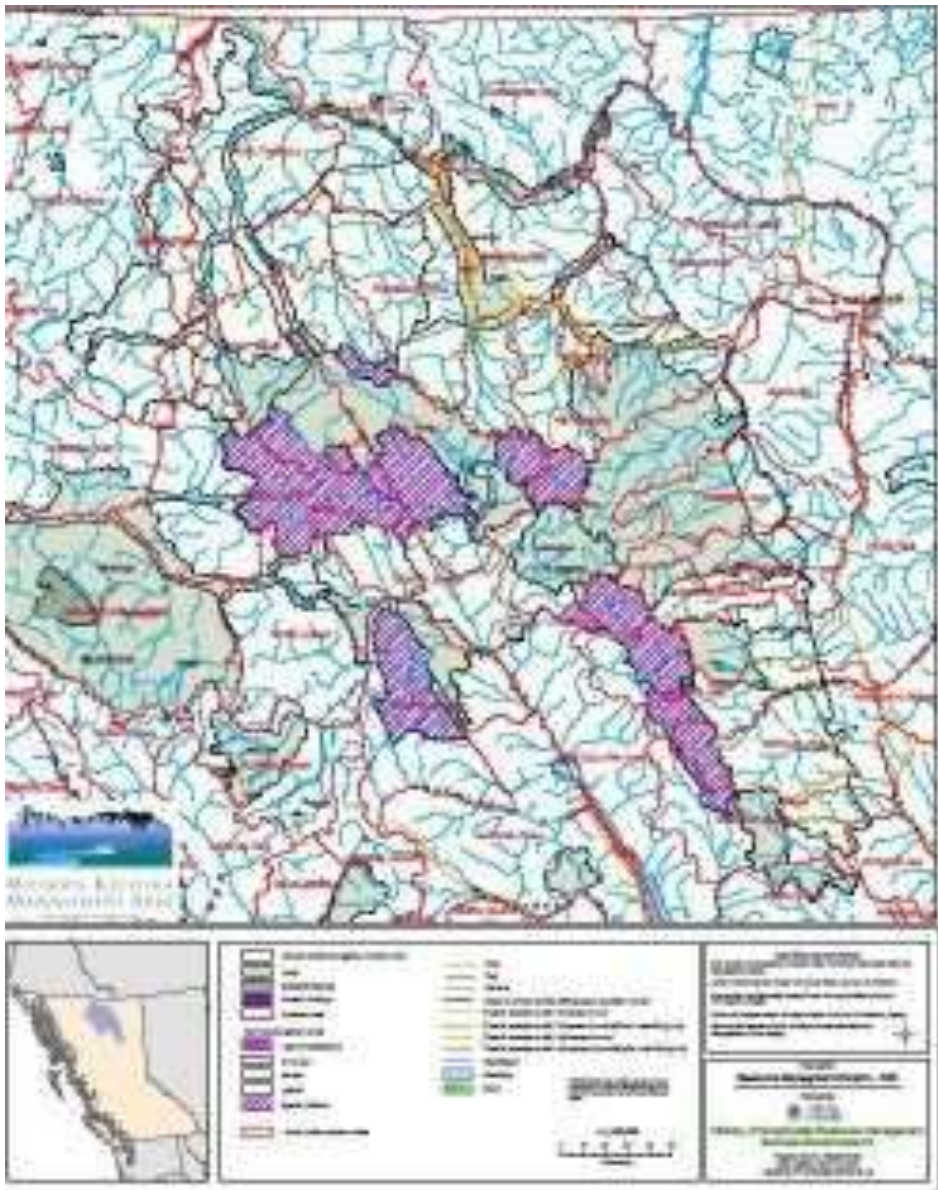'subordinate' = Information required to explain the display contents

http://www.muskwa-kechika.com/resources/map6.asp

inadequate ancillary information

1.Title: often/usually at the top

Geographic area

map purpose / content:
(if not general)
and date (if variable)

No need for the word
'map'

Usually required – it may be a caption in journal/magazine/newspaper articles

http://www.wwu.edu/huxley/spatial/tut/what_all_maps_must_have.htm

2. **Scale** is **required** – it explains the amount of reduction
No scale – it's a diagram, not a map

Peace River

PLANE CRASH

N

2

Joussard

High Prairie

34

EDMONTON 223 km.

Paul Van Ginkel, Calgary Herald

Map locates crash site

Pigeon Mountain Commercial Area

N

Bow River

Trans-Canada

Proposed Road

Mount Allan

40

Roger Watanabe, Calgary Herald
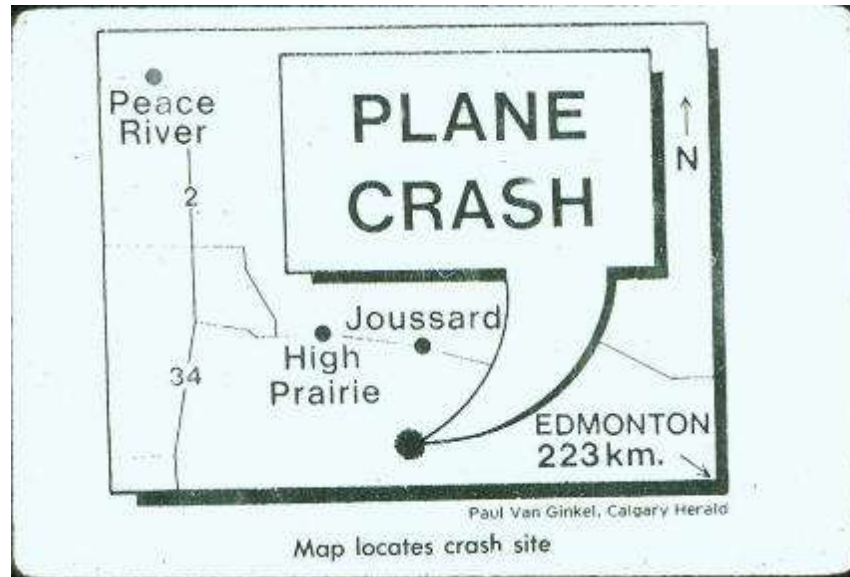
olatnon
petitions

ay also
f Can-
as ser-
naskis
d gov-
ed.

Valley
ecover
e that

ort
Q

ling in two high

Scale

➤ Scale **must** be given on the map / display

➤ it is usually placed near the bottom of the map

➤ *Verbal statement,* ratio or <u>graphic bar</u> (best for output)
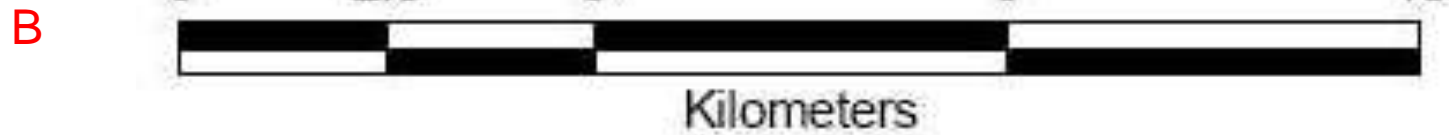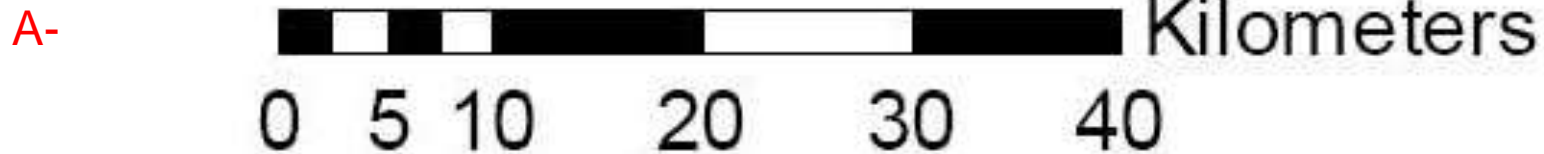
A+

| 0 | 0.5 | 1 | 2 | 3 | 4 |

Kilometers

➤ Use round numbers

➤ Subdivide as appropriate

➤ Use appropriate units   e.g. 1km not 1000m

Examples of scale bar abuse (#1 ArcGIS error)
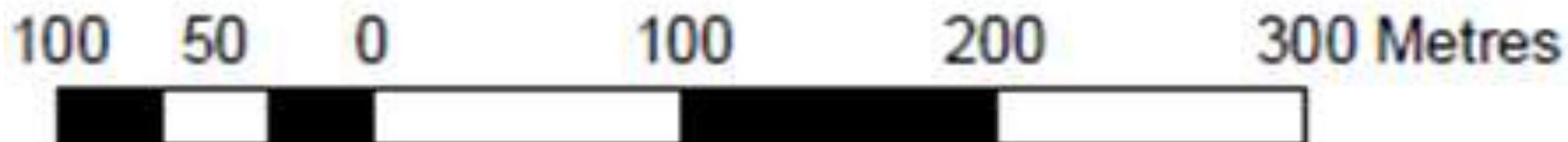
The least worst   Kilometres …

A-


```
0  5 10    20    30    40
```
Kilometers

B


```
5      2.5      0              5            10
```
Kilometers

B-


```
30      15      0           30
```
Km

C

1   0.5   0   1 Kilometers

D

100   50   0   100   200   300 Metres

F

0 365730   1,460 2,190 2,920

Meters

(a) 2001

(b) 2005

(c) 2009

Legend
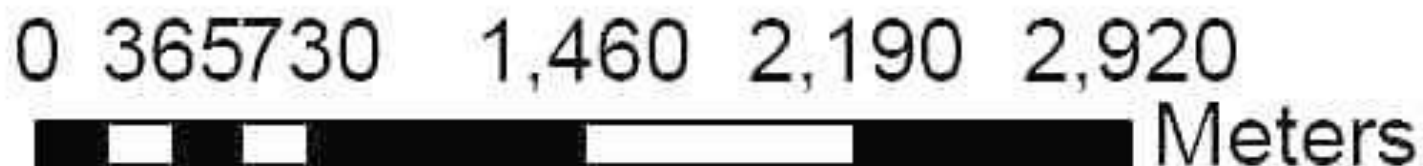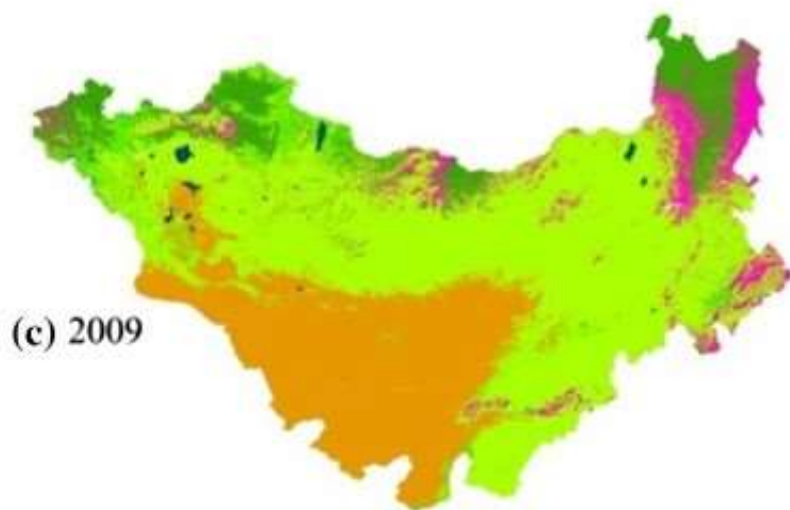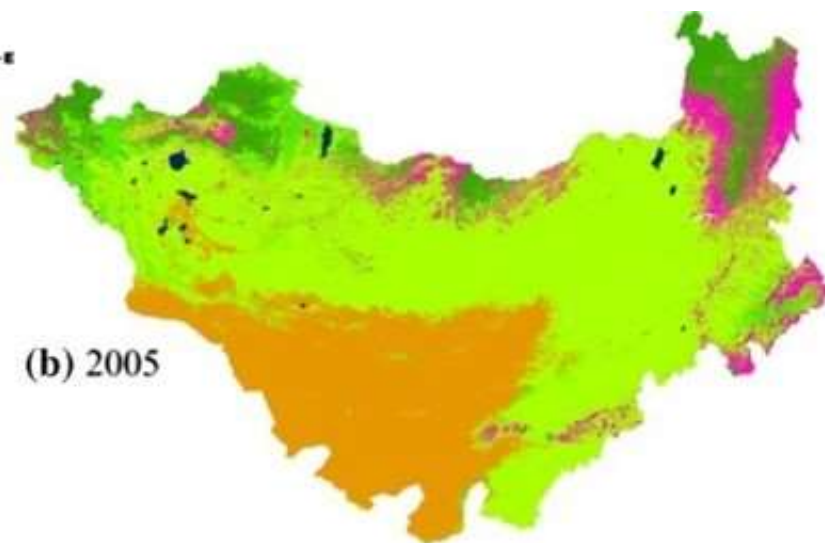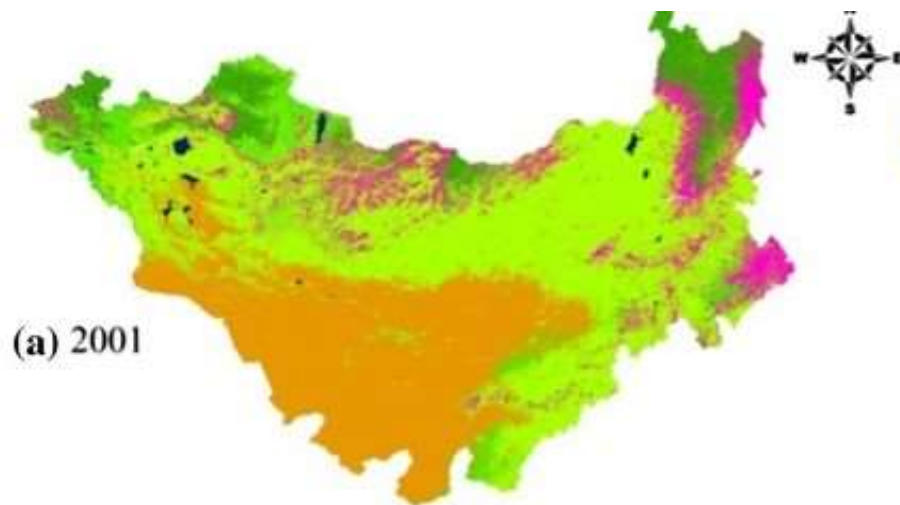
- Forest
- Shrub land
- Grassland
- Cropland
- Bare land
- Construction land
- Wet land
- Others

0   437,500 875,000   1,750,000
Meters

3. Direction

A North arrow is **optional** if it is clear that (true) North is to the top
If North is **not** to the top, a North arrow is required
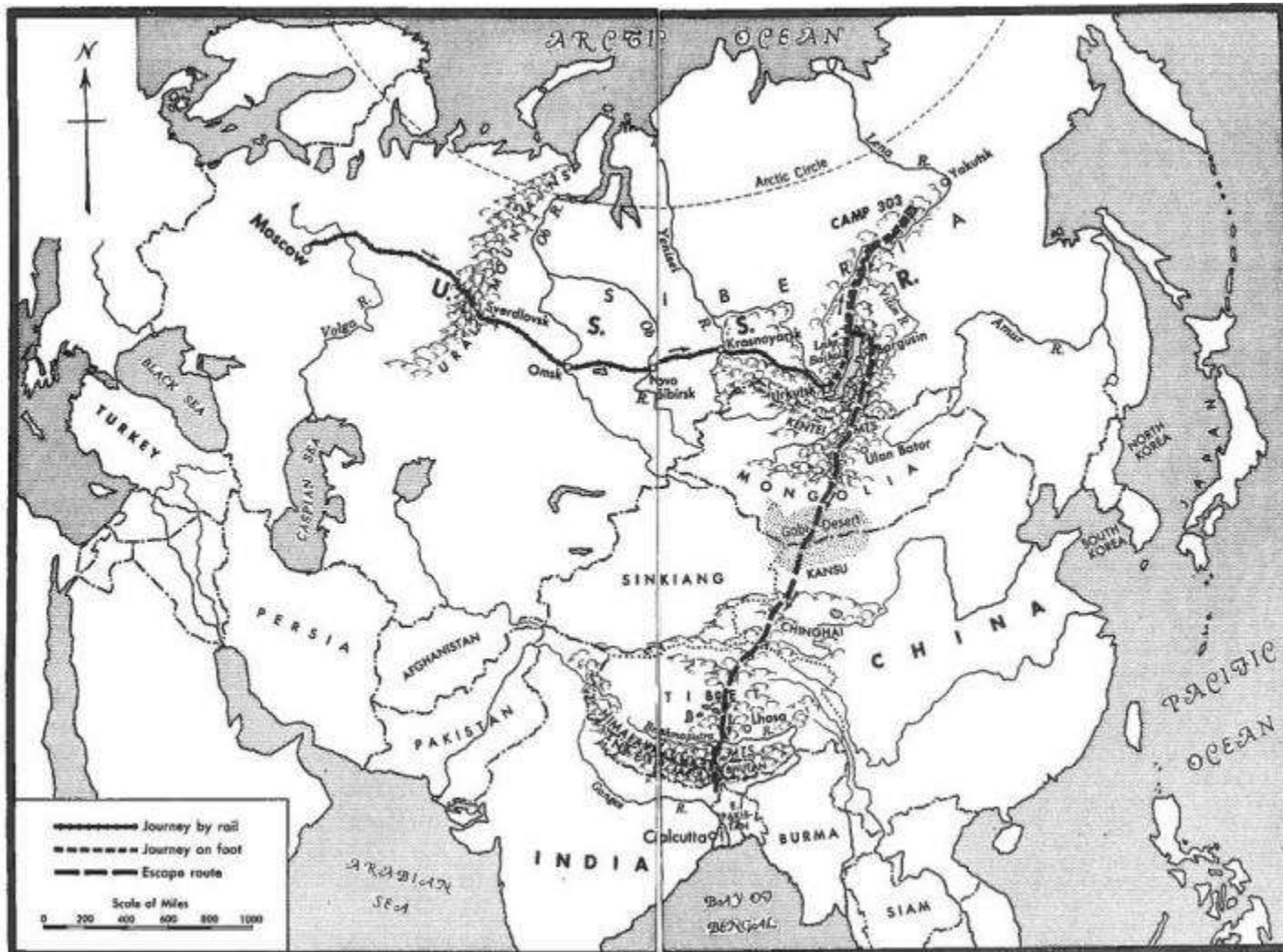A North arrow is wrong for some maps (another ArcMap error)

4. Direction
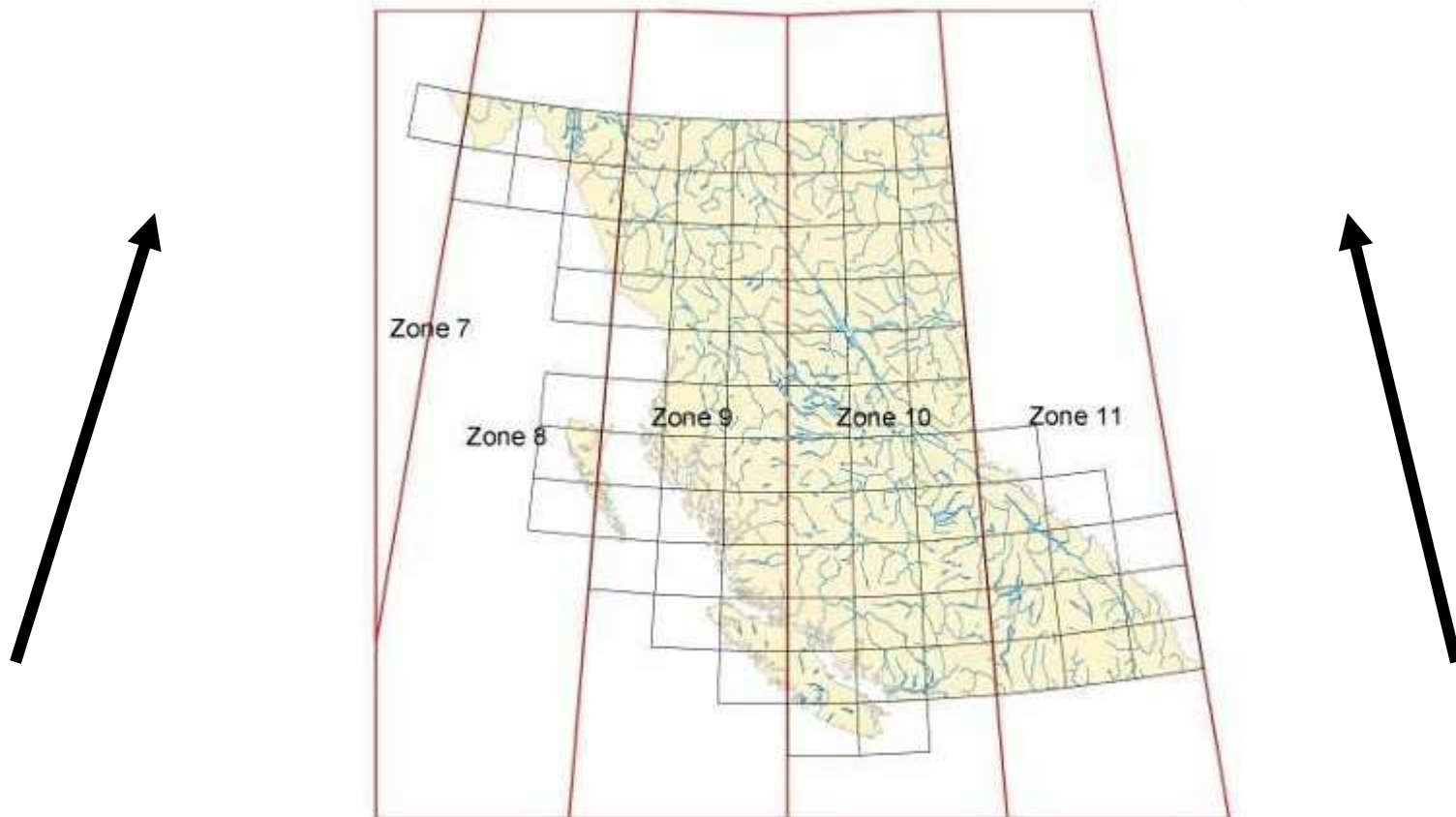
A North arrow is **<u>optional</u>** if it is clear that (true) North is to the top

If North is not to the top, a North arrow is a **MUST**

A North arrow is wrong for some maps (ArcGIS error #2)

True north and Grid north

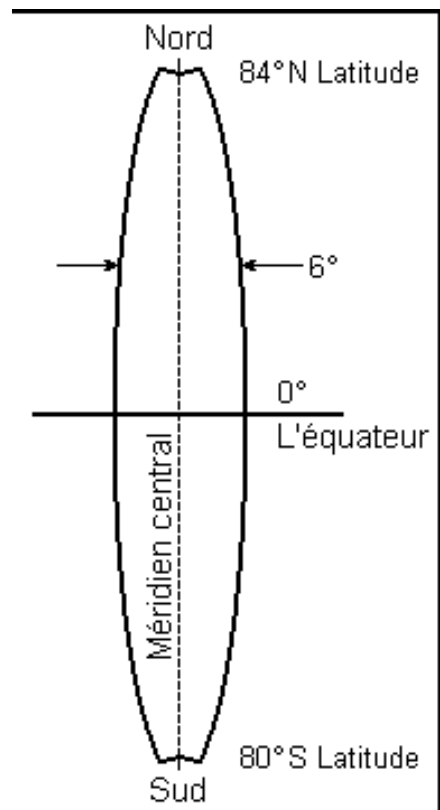Figure 1 - Zone UTM

Nord
84°N Latitude
6°
0°
L'équateur
Méridien central
80°S Latitude
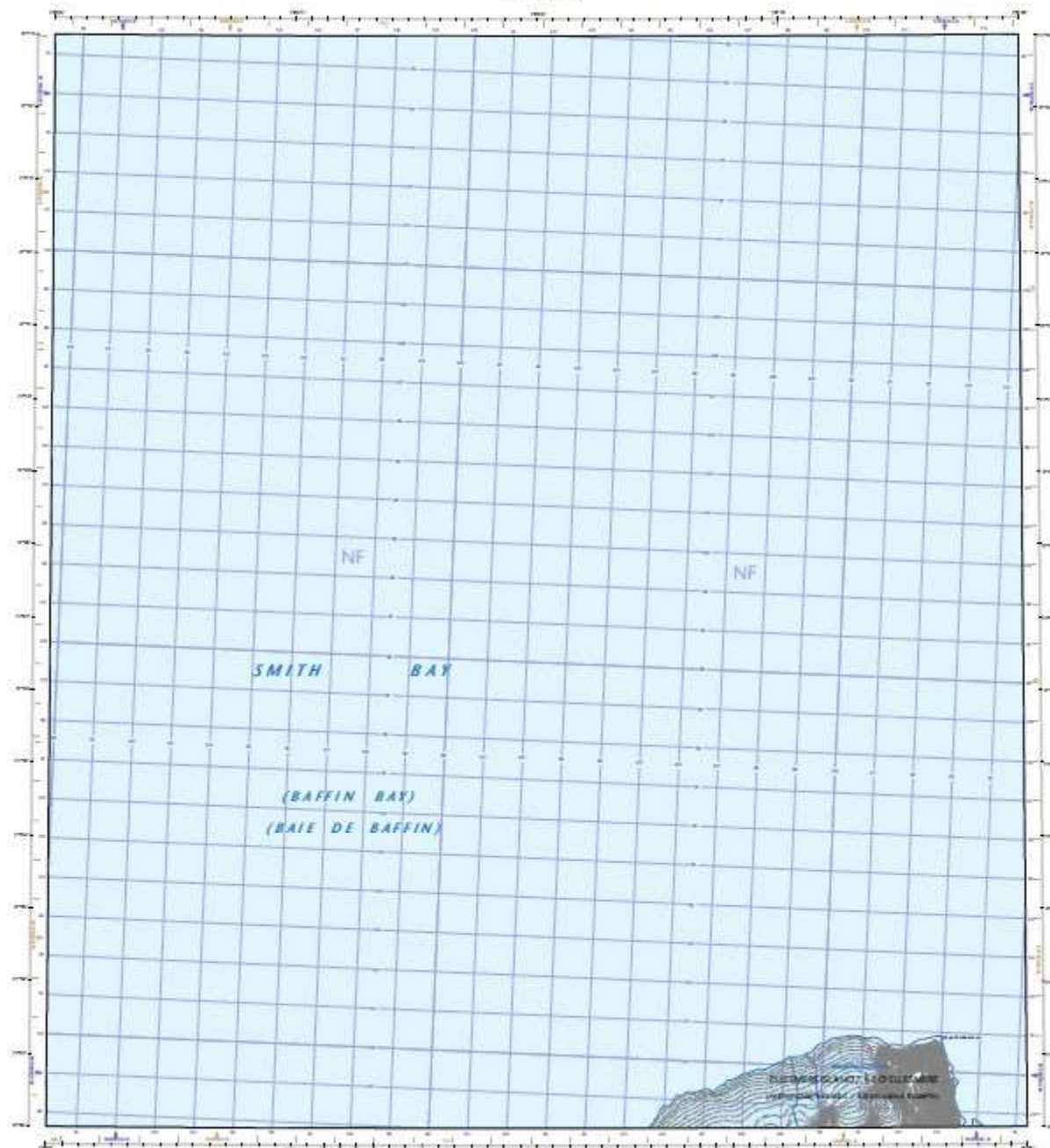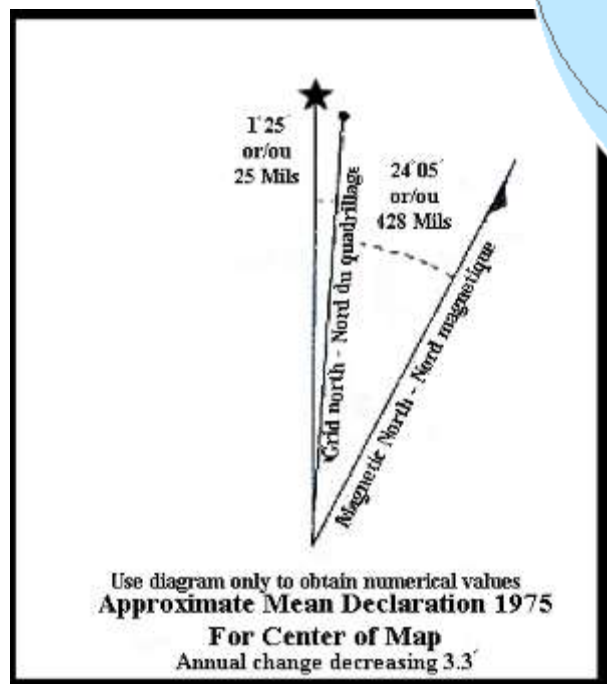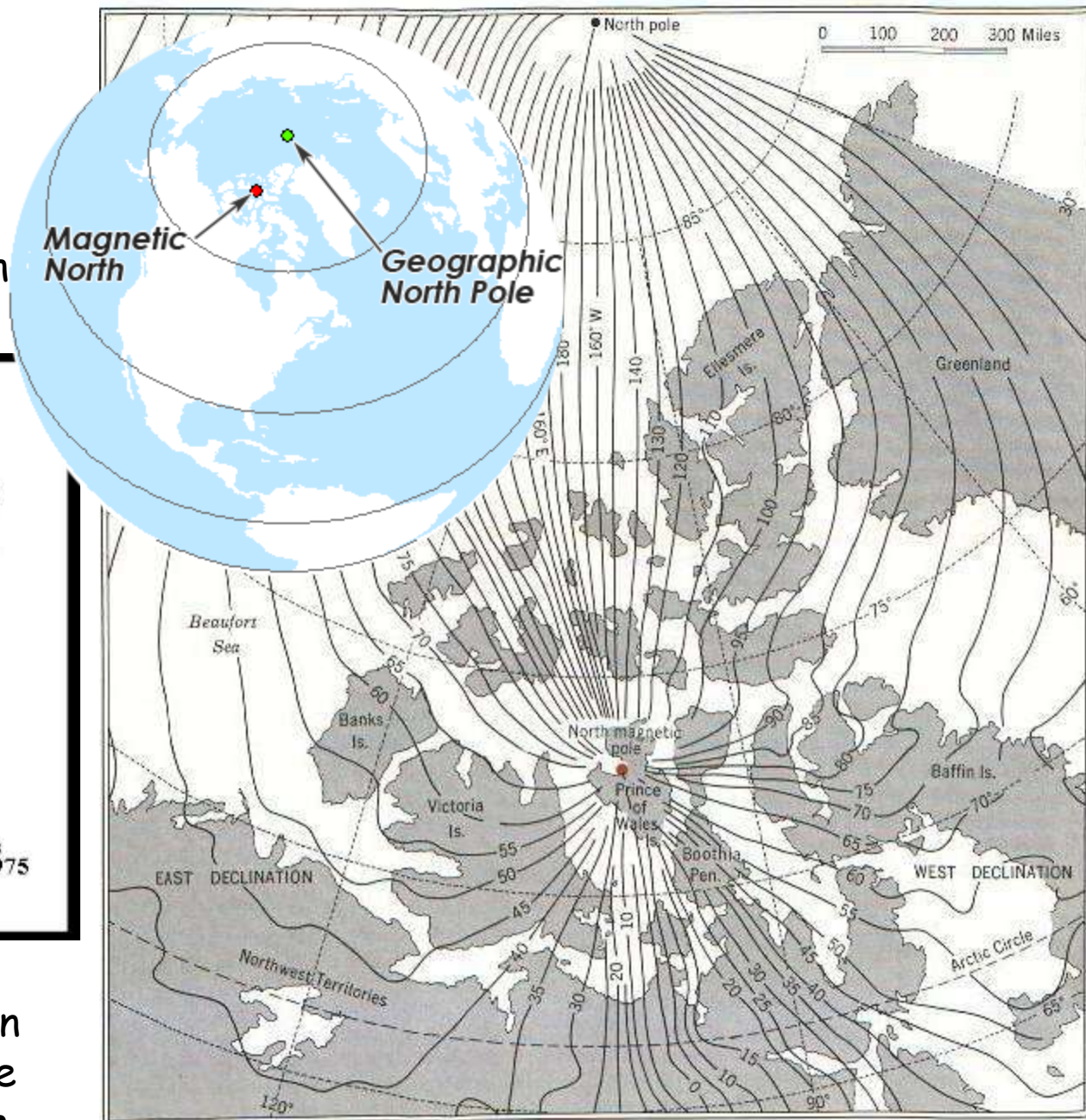Sud

Canada

NF

NF

SMITH   BAY

(BAFFIN BAY)
(BAIE DE BAFFIN)

Magnetic North

There are 3 'Norths'
The compass points to the magnetic north pole, not the 'true' north pole or grid north
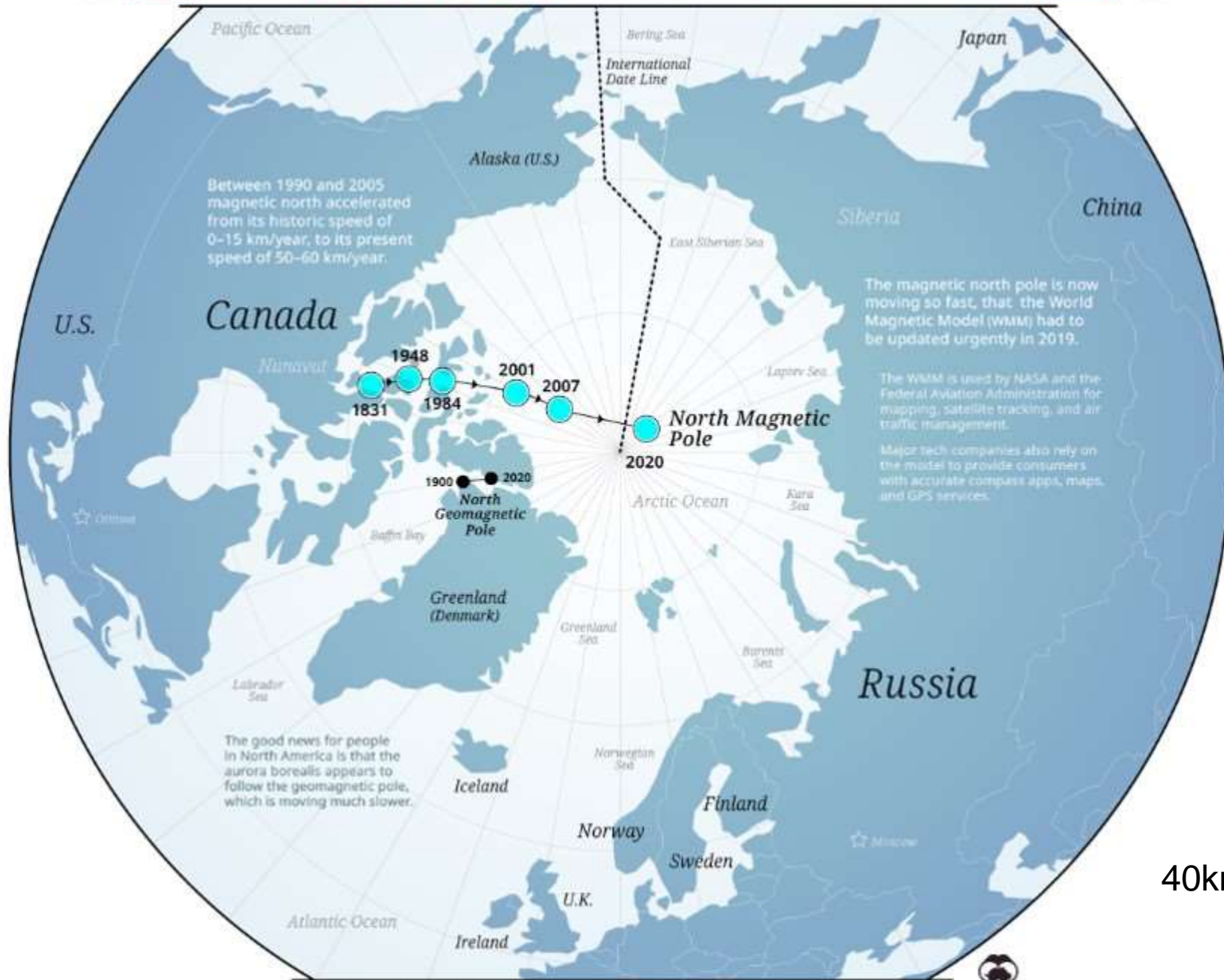

The difference between magnetic north and true north is the **declination**

This map shows lines of equal declination (isogones)
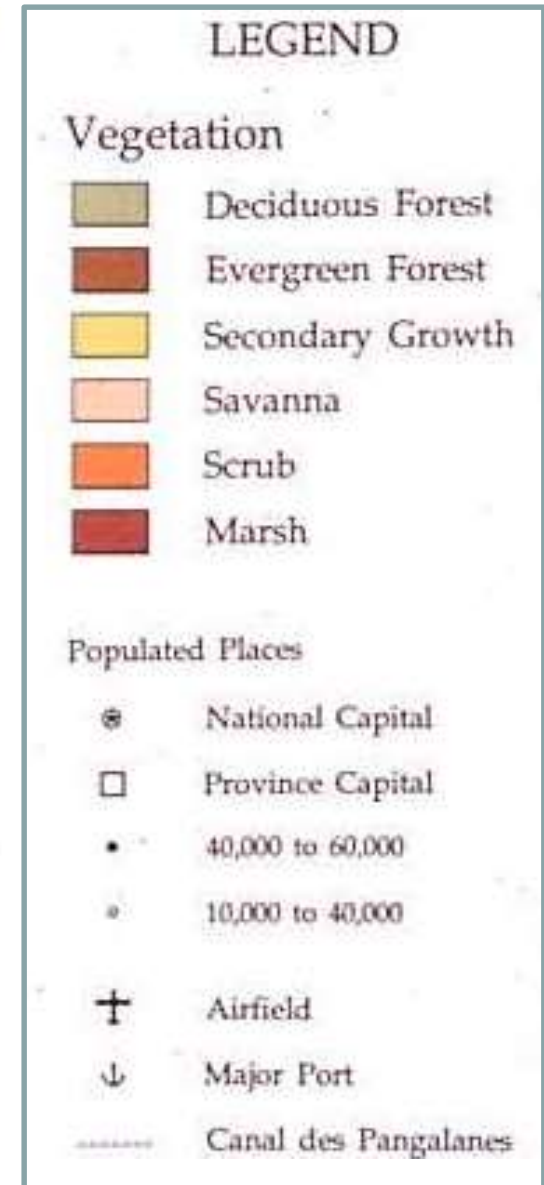
THE NORTH POLE IS MOVING TO RUSSIA

Pacific Ocean

Bering Sea

Japan

International Date Line

Alaska (U.S.)

China

Siberia

East Siberian Sea

Between 1990 and 2005 magnetic north accelerated from its historic speed of 0–15 km/year, to its present speed of 50–60 km/year.

Canada

The magnetic north pole is now moving so fast, that the World Magnetic Model (WMM) had to be updated urgently in 2019.

Nunavut

Laptev Sea

The WMM is used by NASA and the Federal Aviation Administration for mapping, satellite tracking, and air traffic management.

1948

2001

1831   1984   2007

North Magnetic Pole

Major tech companies also rely on the model to provide consumers with accurate compass apps, maps, and GPS services.

2020

Ottawa

1900   2020

North Geomagnetic Pole

Arctic Ocean

Kara Sea

Baffin Bay

Greenland (Denmark)

Greenland Sea

Barents Sea

Labrador Sea

Russia

The good news for people in North America is that the aurora borealis appears to follow the geomagnetic pole, which is moving much slower.

Norwegian Sea

Iceland

Finland

Moscow

Norway

Sweden

40km/year

U.K.

Atlantic Ocean

Ireland

Sources: Thébault et al. Earth, Planets and Space, National Centers for Environmental Information

4. Border – neatline
also for legend – see next one

5. Legend

➤ Symbols should be in the legend <u>unless</u> explained by lettering e.g. lakes

➤ Symbols must appear in legend **exactly** as on map, same size etc..

➤ Symbols on the left, labels on the right

➤ Boxes for area symbols

➤ Optional box for legend
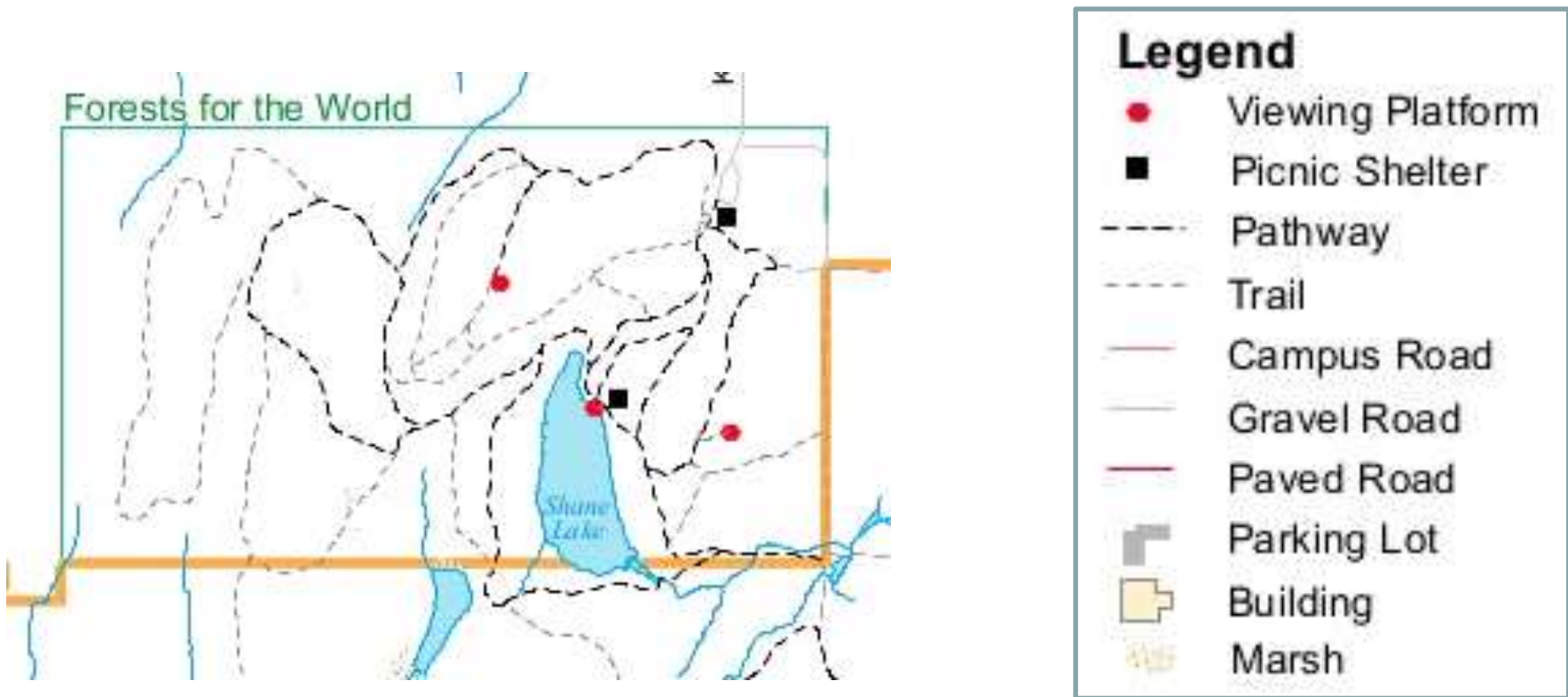
➤ Capitalise the first letter

LEGEND

Vegetation

	Deciduous Forest
	Evergreen Forest
	Secondary Growth
	Savanna
	Scrub
	Marsh

Populated Places

⊛	National Capital
□	Province Capital
•	40,000 to 60,000
∘	10,000 to 40,000
✝	Airfield
�	Major Port
-------	Canal des Pangalanes

No 'ziggie-zaggies' ... (early versions of ArcGIS/ArcView)

Line symbols should be a straight or gently curved section

Boundaries

⋀	Federal Electoral District Boundaries
⋀	International
⋀	Provincial / Territorial
⋀	EEZ (200 mile)
⋀	Canada / Kalaallit Nunaat dividing line

⟍	Main Trail	🟢	Logging Block
⟍	Block Trails	⬜	Gravel Pit
⟍	Hell Trail		

Alternate polygon design

Legend
- ● Viewing Platform
- ■ Picnic Shelter
- ----- Pathway
- --- Trail
- —— Campus Road
- —— Gravel Road
- —— Paved Road
- Parking Lot
- Building
- Marsh

<u>Do not take software defaults</u> which includes all layers

... no need to include the obvious e.g. lakes

Legends
https://pro.arcgis.com/en/pro-app/latest/help/layouts/add-a-legend.htm

6. Data source

A set of statements usually at the bottom in small text explains how the data were derived, and when

Not required for common base data e.g. coastlines

123°00'   501000m. E.   0
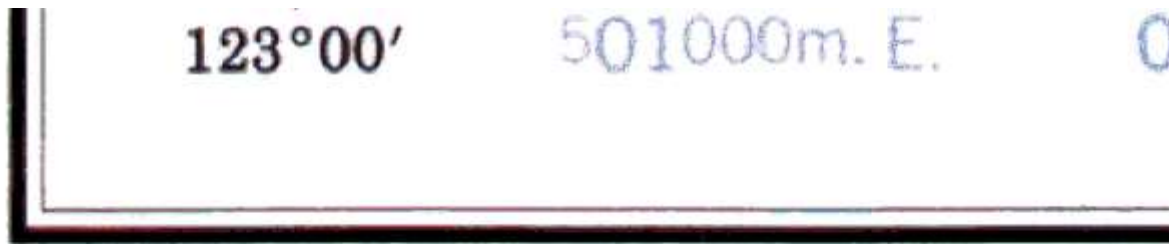
Produced by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES, from aerial photographs taken in 1980. Culture check 1982. Published in 1985.   e.g. 2020 version: Roads updated 2019

Data source: GIS / digital mapping: 'Metadata'

Metadata = 'data about data' – how, when, where etc.. (often stored in a text file)
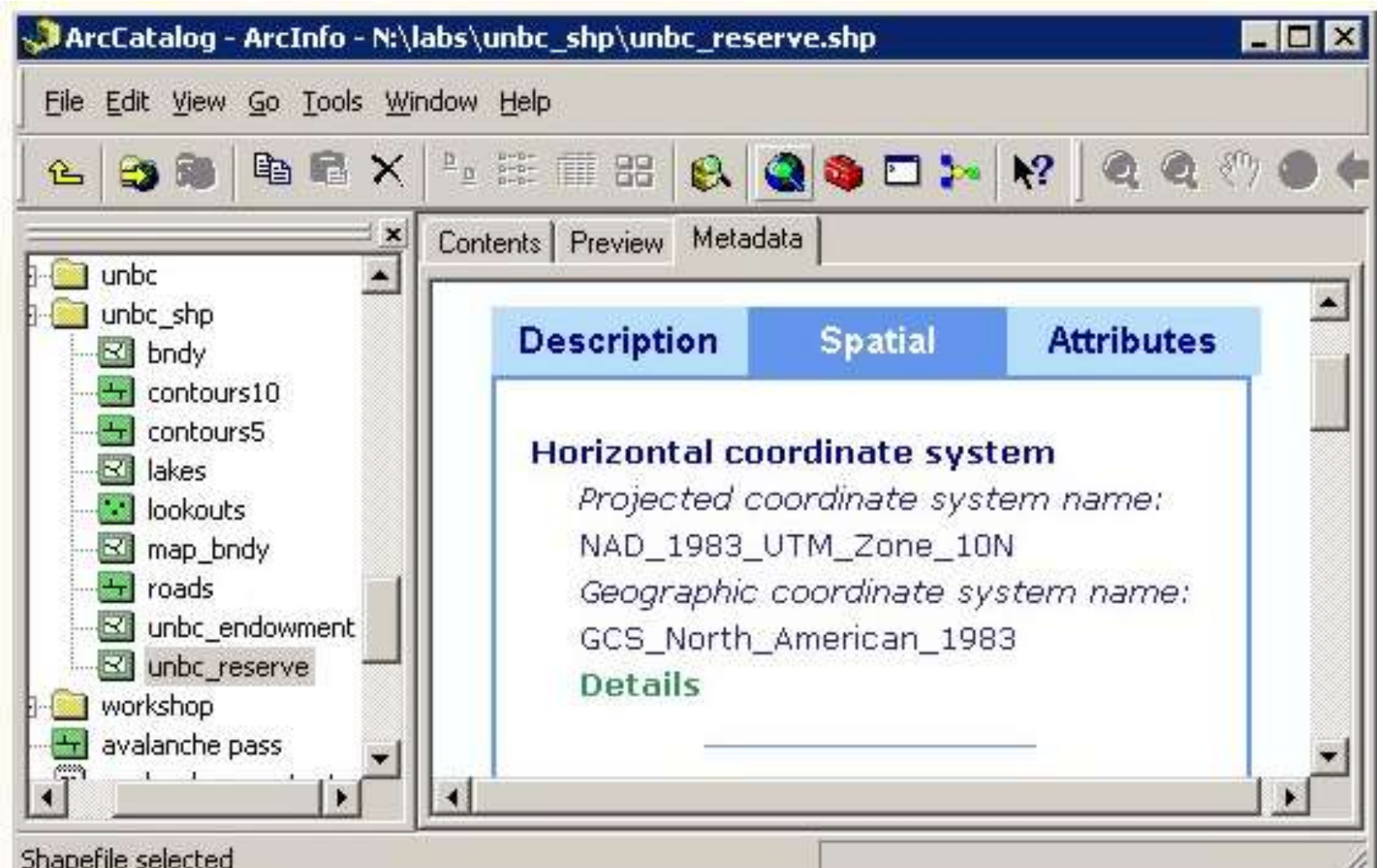
7. Location

a. Direction / distance indicators   (e.g. x kms to Edmonton)

b. Locator maps, including scale of locator /inset

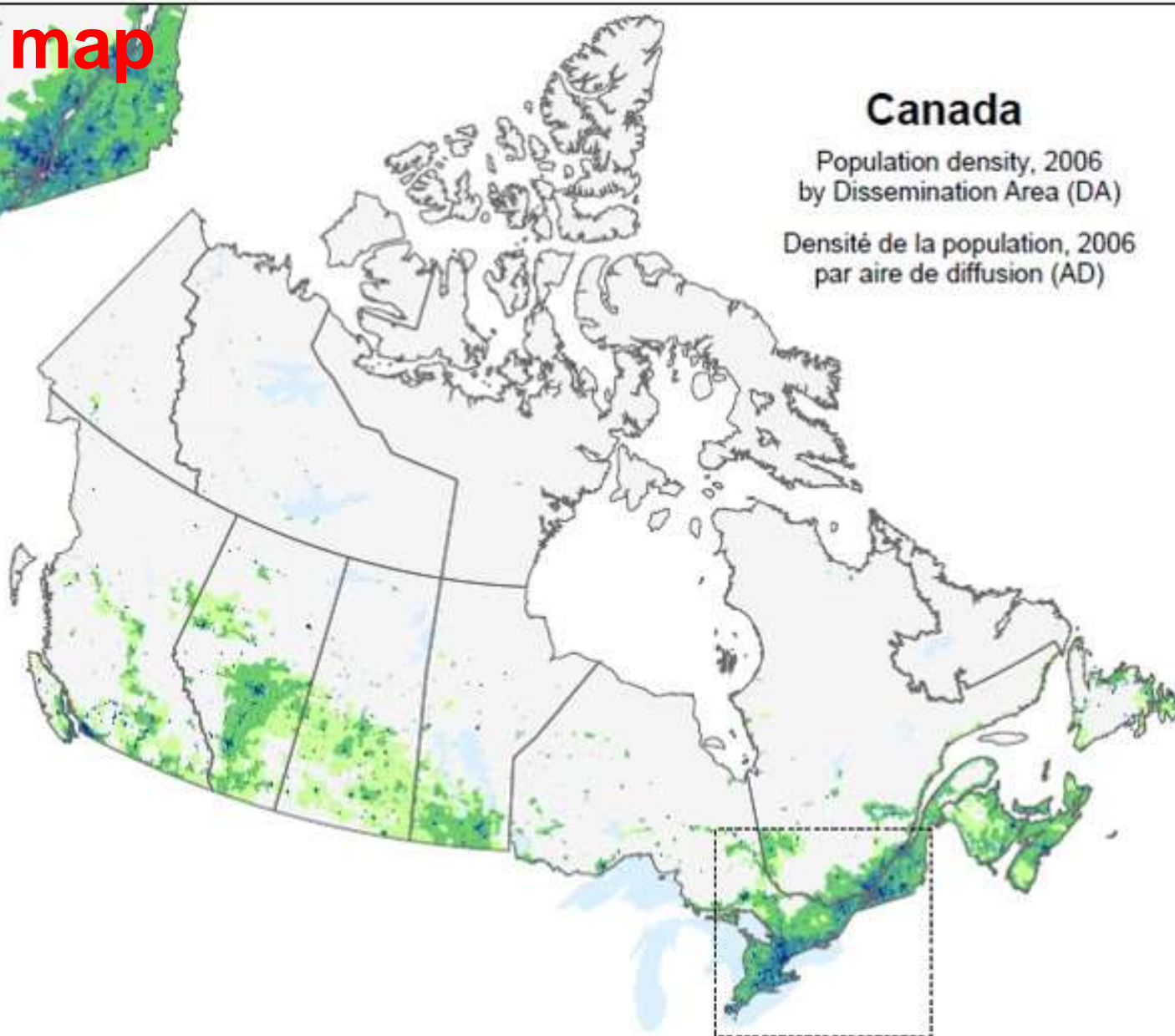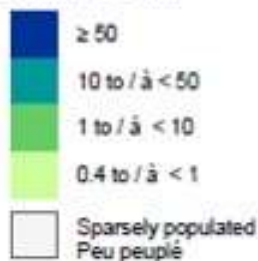c. Grids showing latitude and longitude (or UTM)

Locator map

Inset map

Canada

Population density, 2006
by Dissemination Area (DA)
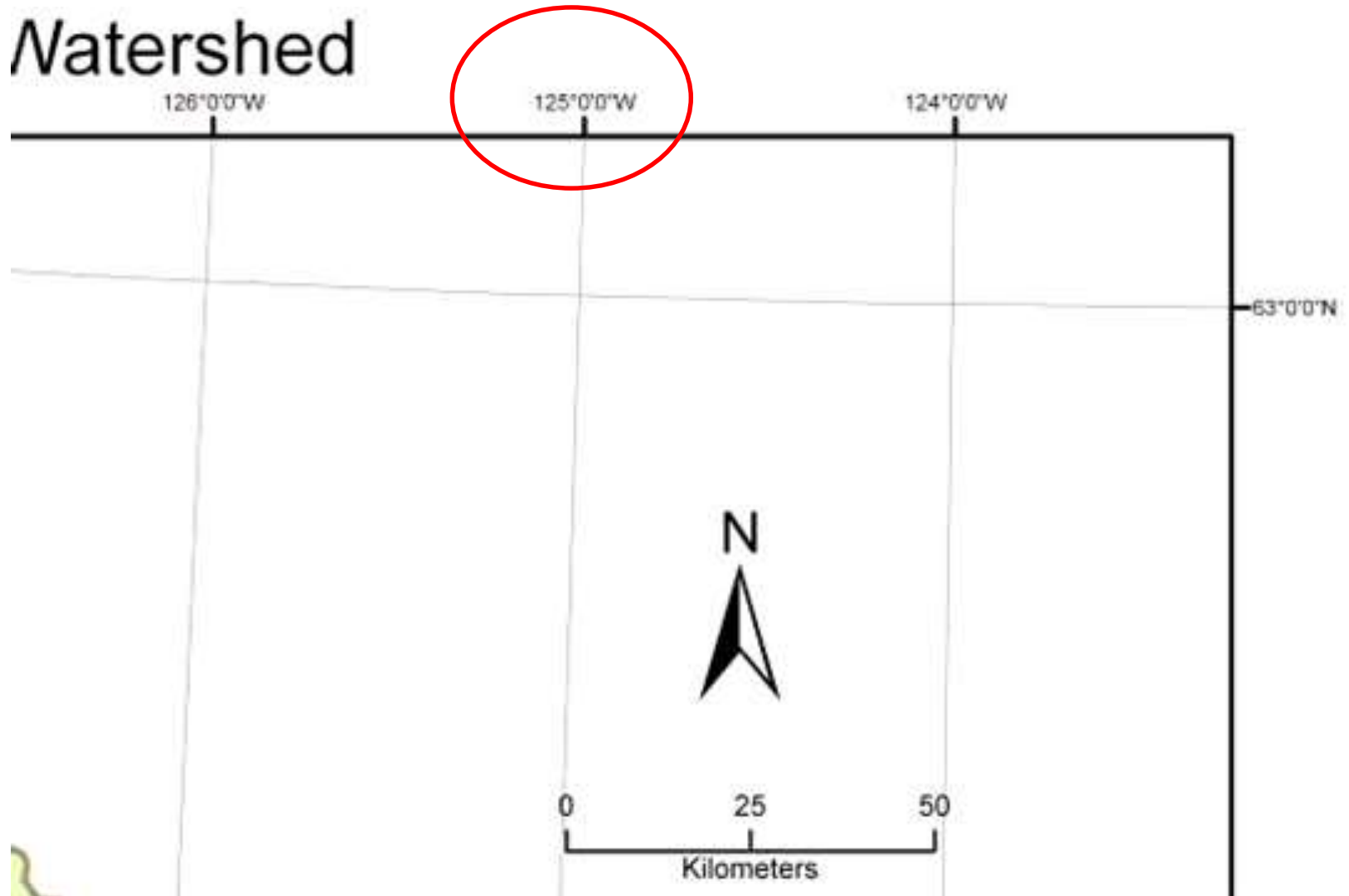
Densité de la population, 2006
par aire de diffusion (AD)

Persons per km²
Personnes au km²

- ≥ 50
- 10 to / à < 50
- 1 to / à < 10
- 0.4 to / à < 1
- Sparsely populated / Peu peuplé

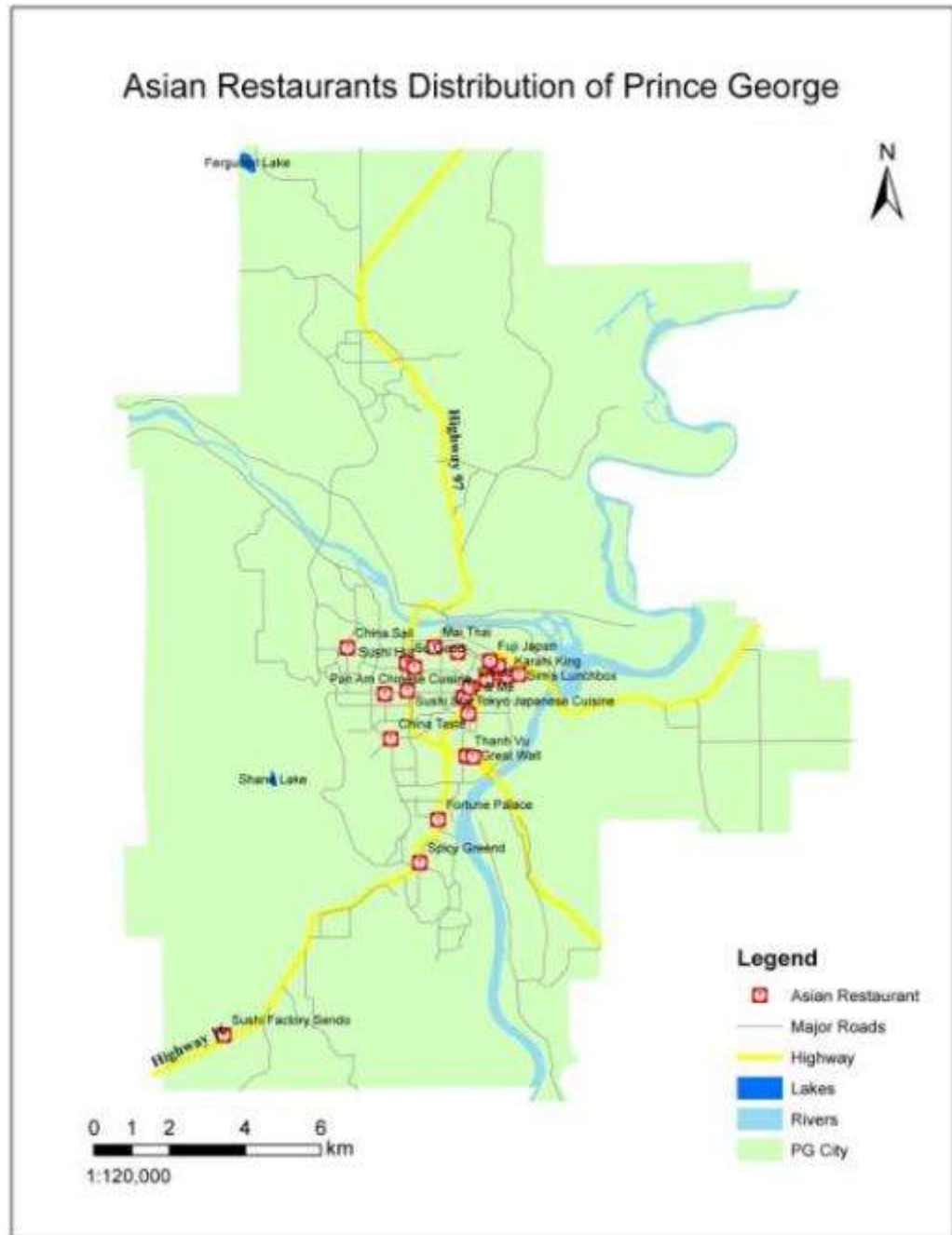# Grid labels: common ArcGIS error #3 software default: silly graticule precision

8. Overall Layout

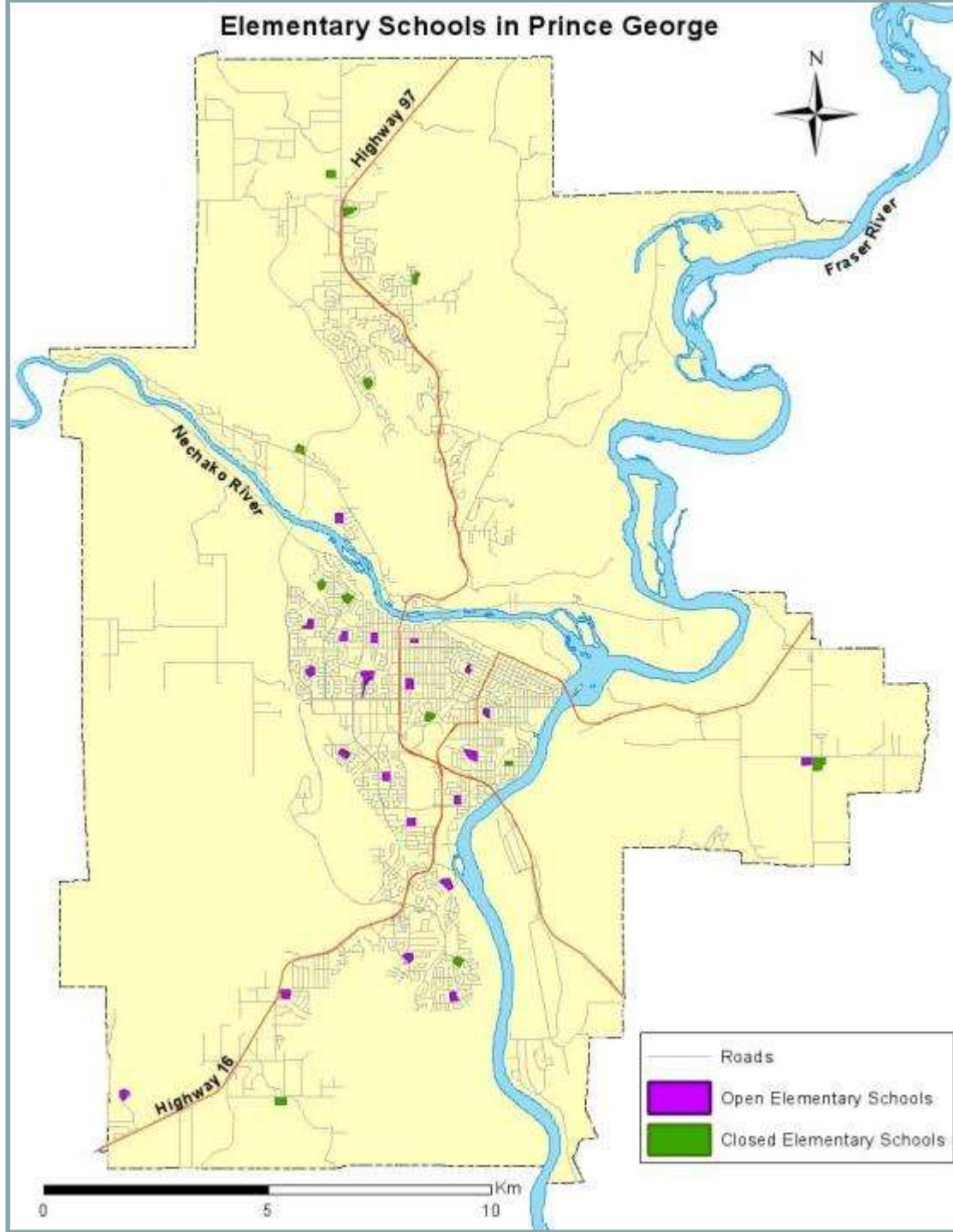Optional) 'neatline' around the map as a whole and/or the legend

Use space wisely –don't waste white space

Maximise map content space – use white area for ancillary info
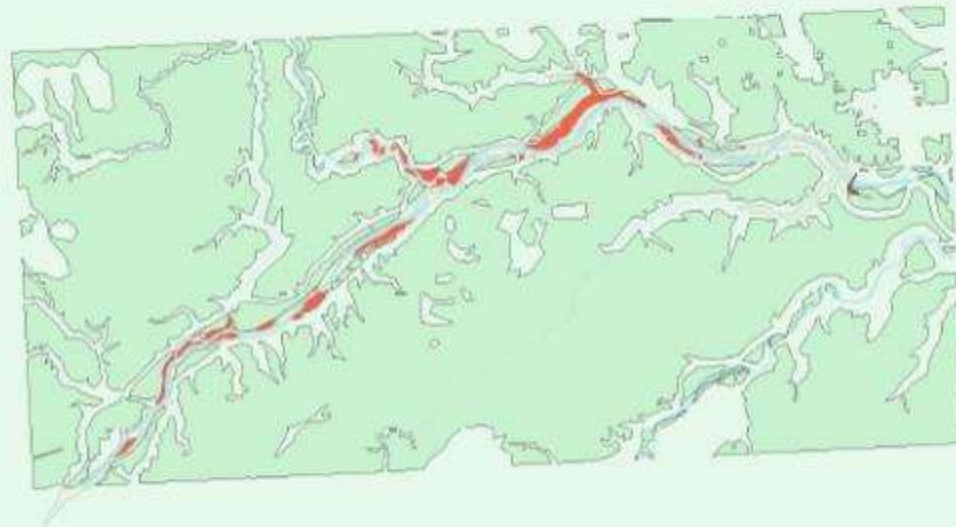
This map could be bigger

This one works …
… better

Elementary Schools in Prince George

This could hardly be worse …

British Columbia's Site C Dam Land Effect

Important Features

- Site C Dam
- Rivers
- Reservoir Boundary
- Agriculture Land Within Floodzone
- Agriculture Land Reserve

Ancillary map content summary: visual position and prominance

	Item	Best Position
TITLE	what?	Prominent, near top
SCALE	how big?	Near bottom
LEGEND	what (details)?	On side, may be boxed
DIRECTION	which way is up?	Side
LOCATION	where?	Side ticks, or insert
SOURCE	where from?	Very bottom, inconspicuous
LAYOUT	Shape and space	Visual Balance, Neatline etc

Good summary for ancillary map information:
http://www.wwu.edu/huxley/spatial/tut/what_all_maps_must_have.htm

Summary of main ancillary info errors

- Too much white space, maximise map content

- Fit ancillary in the spaces, extra panel only if needed

- Scale Bar – avoid silly subdivisions and numbers

- Coordinate ticks – remove false precision

- Legend – remove unneeded layers from legend

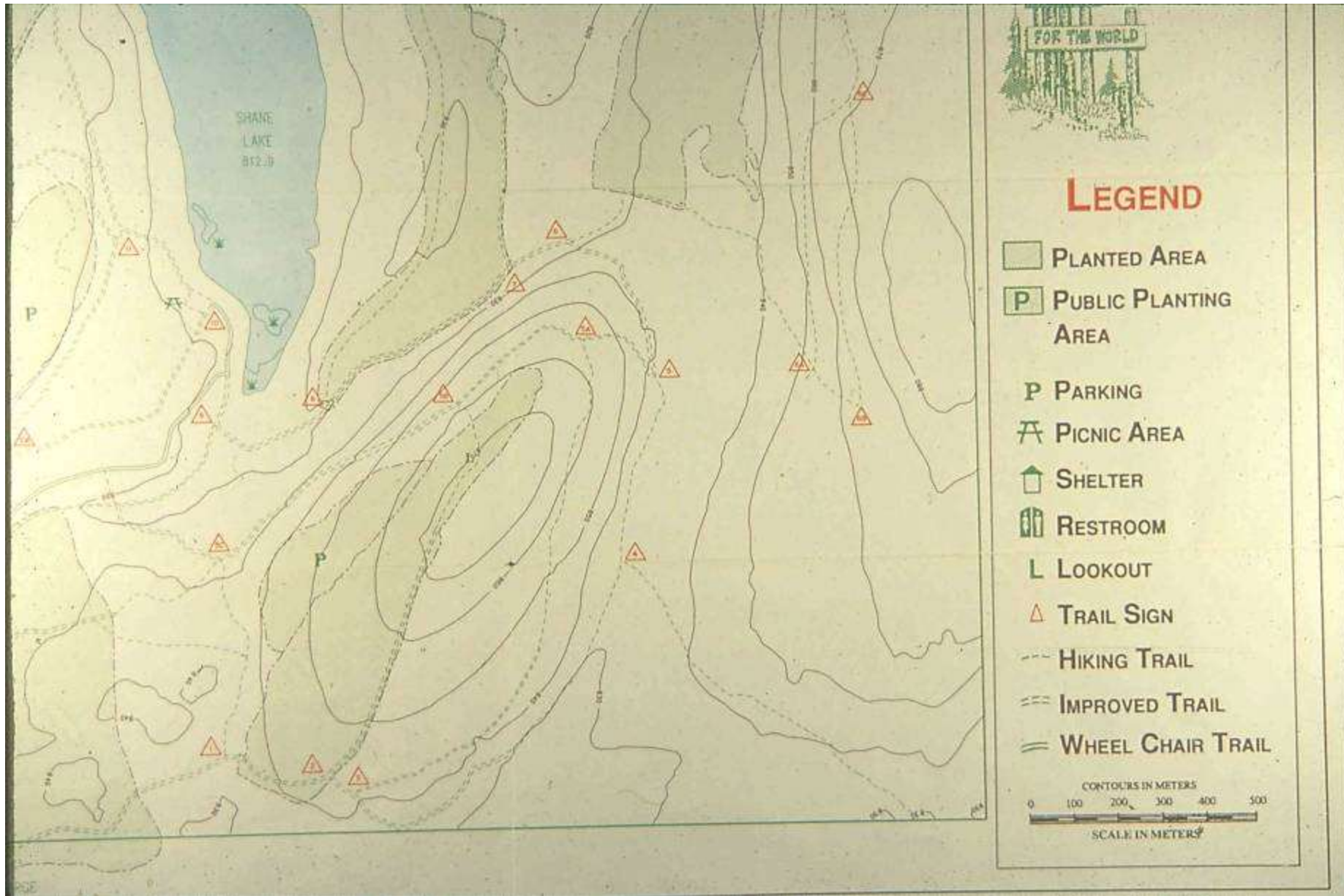- Ancillary information too prominent, should be smaller

Design and ancillary information - local example
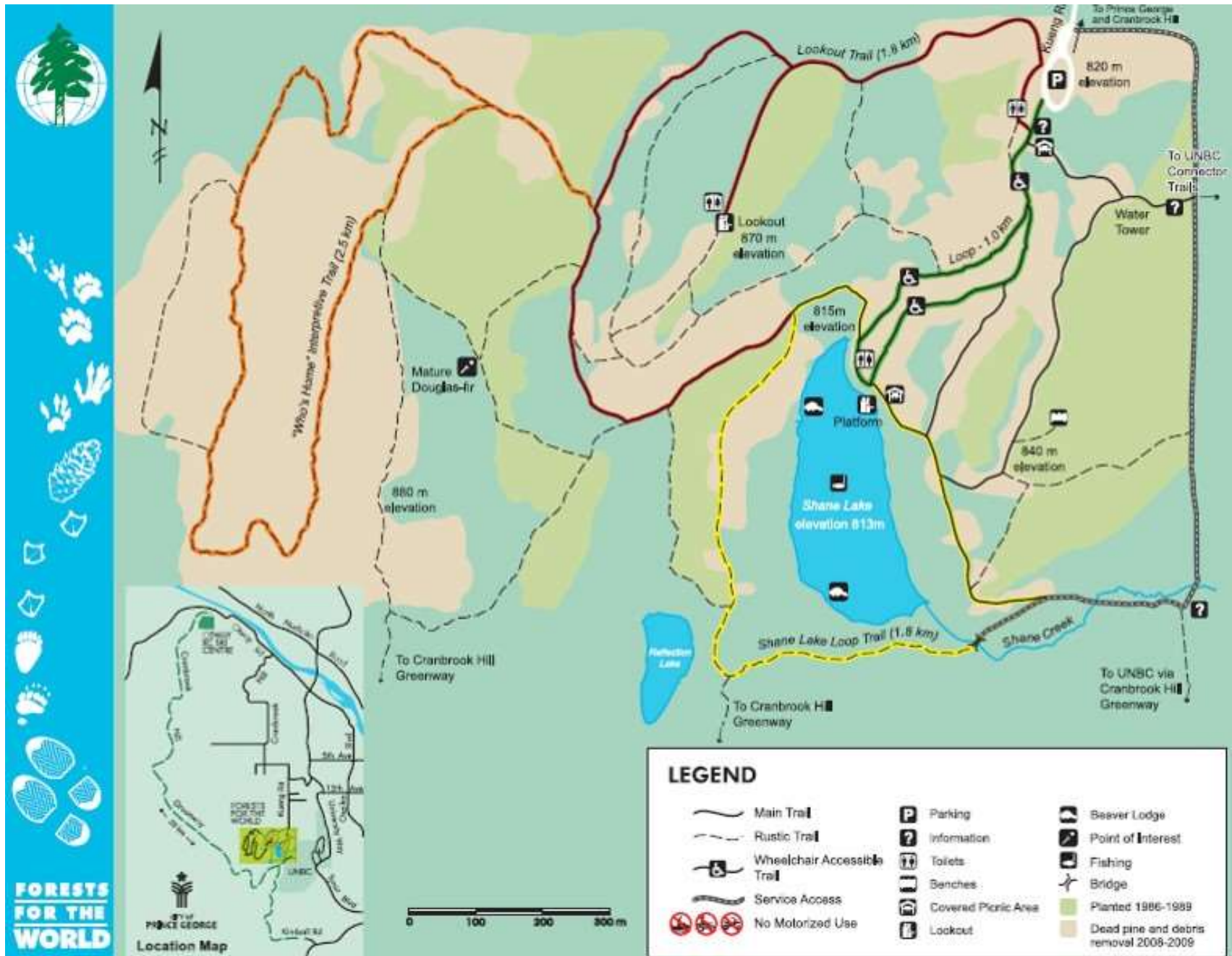# Forests for the World 1986-95
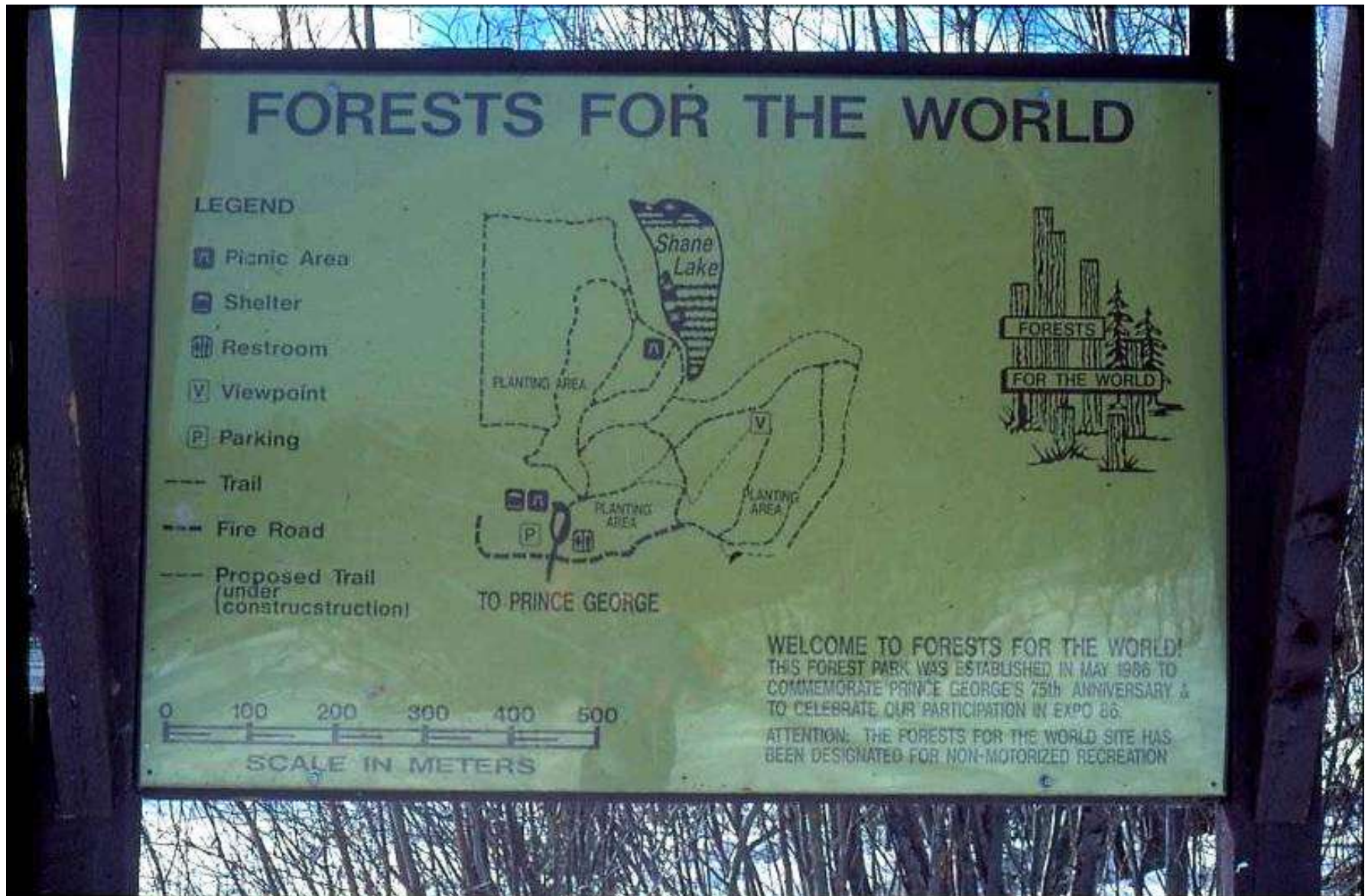
Scale bar size, north to the bottom

1993-96

Scale bar size incorrect, north to the bottom, P and P

1997-

Redesigned by UNBC GEOG205 student, fall 1994

2010 – includes mountain pine beetle blocks

2013 – full use of ArcGIS options

Map page layout

➢ **Rectangle ~3 x 2 preferred over a square**

➢ <u>**Landscape**</u> **v portrait   orientation**

➢ **Letter v tabloid v poster**   (if printed)

Don't use this shape …. What were they thinking ?

Removed by CBC / transit ….   but still out there on the internet