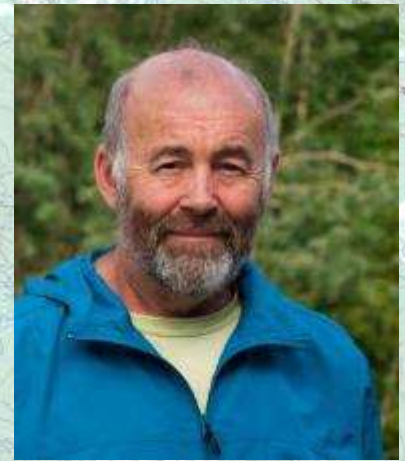


**GEOG205 Winter 2022:**

# **Cartography & Geomatics**



**Lectures Wed / Fri 10.30-11.20**

**live/online**

**Roger Wheate    [wheate@unbc.ca](mailto:wheate@unbc.ca)    (8-307)**

**Course notes:    <http://gis.unbc.ca>**

<http://gis.unbc.ca>



# **GEOG 205 Labs 2022**

## **Starting next week ...**



**Matt McLean** · 2nd  
Senior Lab Instructor for GIS @UNBC,

**Matt.McLean@unbc.ca**

**Tues 11.30-14.20 (22)**



**Jose Aragon**    **aragon@unbc.ca**

**Software: ArcGIS Pro (Esri)**  
connected to our 'Osmotar' server

**Friday 11.30-14.20 (15)**



**Rulan Xiao:**    **xiaor@unbc.ca**

# Student majors in GEOG205, Winter 2022

7 Natural Resources Planning, First Nations Planning

6 Forest ecology & management

6 Geography (+ Geog/Poly Sci)

5 Undeclared / BA general

2 Computer Science, Anthropology

1 Wildlife & Fisheries, Wildland conservation

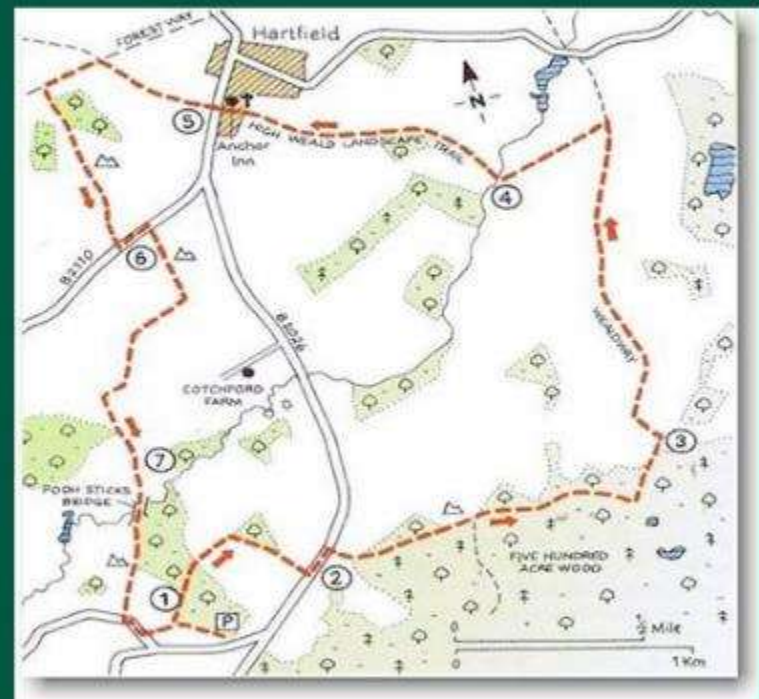
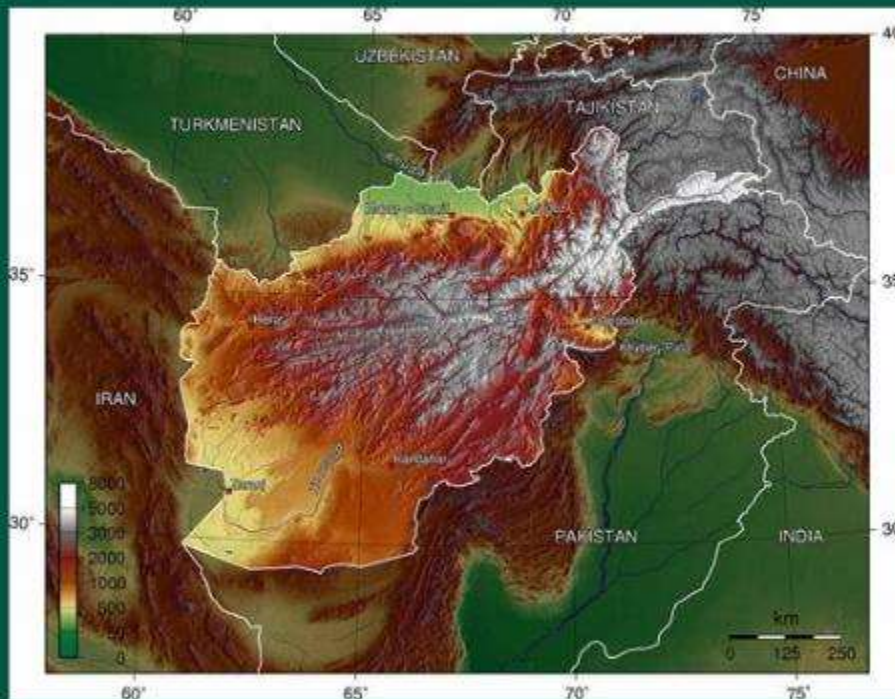
Biology, Environmental Studies, Mathematics, Public Admin, Psychology, Physics, Biomedical Studies

Why are you taking it: required or elective course ?

- Useful skill, love maps, course reputation, other ?

# GEOG 205-3 Cartography & Geomatics

The principles of projections, mapping, and symbolization using topographic and thematic data in GIS software.



**Lectures: Wednesday / Friday 10:30 - 11:20 am**

**Lab: one 3-hour per week**

**Instructor: Dr. Roger Wheate**  
**email: [Roger.Wheate@unbc.ca](mailto:Roger.Wheate@unbc.ca)**



# Why is it 'Cartography and Geomatics' ?

## Cartography

"The art, science and technology of making maps"

**Canada: Canadian Cartographic Association (CCA) 1975**

## Geomatics (geomatique)

"An umbrella term for the mapping technologies"

"the discipline of gathering, storing, processing, displaying geographic information"  
(geographic = has a spatial location)

**Canadian Institute of Geomatics (1992). [Can. Inst of Surveying and Mapping 1882]**



# Geomatics

"an umbrella term for the mapping technologies"

**Cartography:** art, science and technology of making maps

## **Geographic Information Systems (GIS)**

"The management, analysis, input and output of spatial data"

**Remote sensing** (satellite and aerial imagery)

"Acquisition of planetary information from a distance"

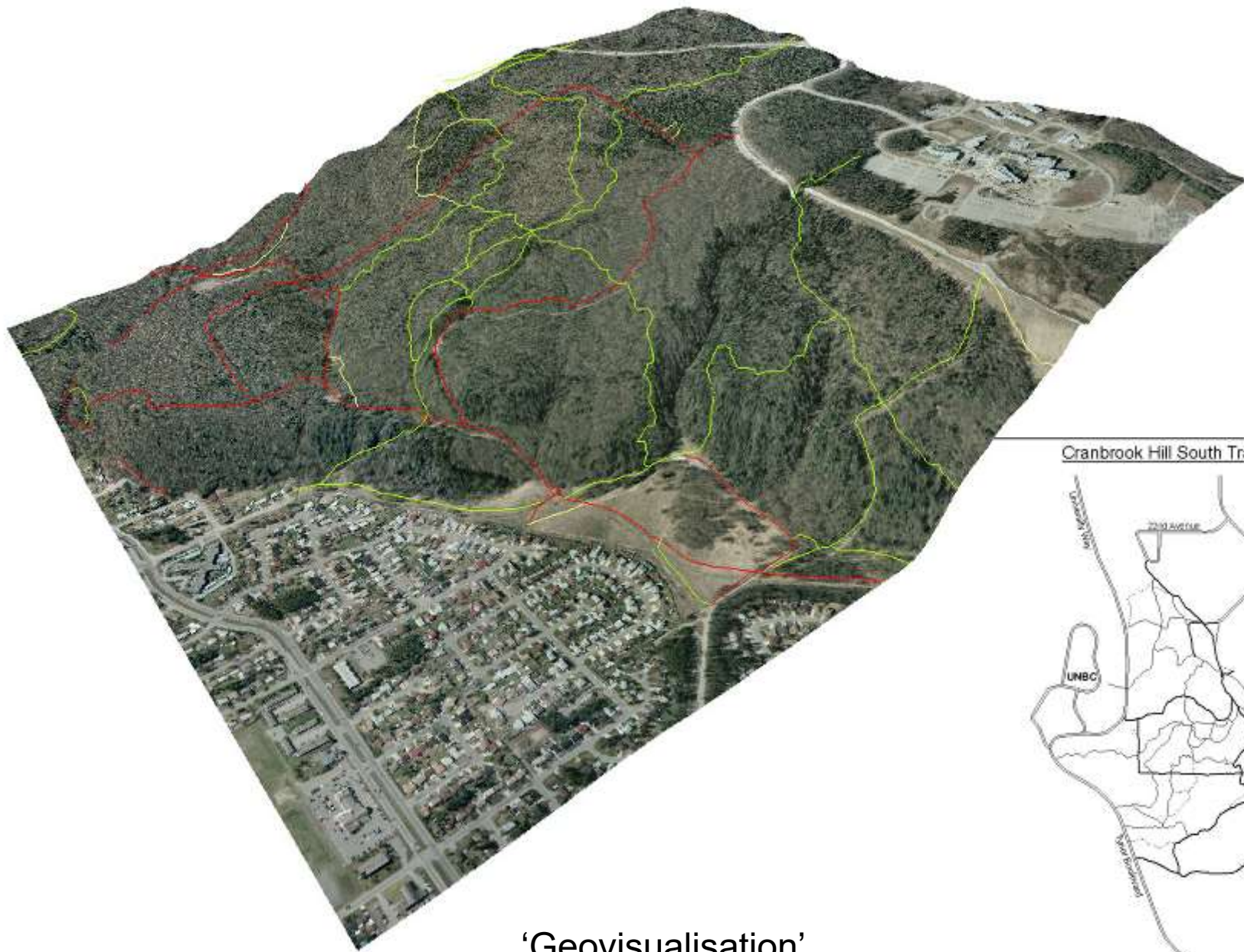
## **Global Positioning Systems (GPS)**

"determination of ground locations using measurements from satellites"

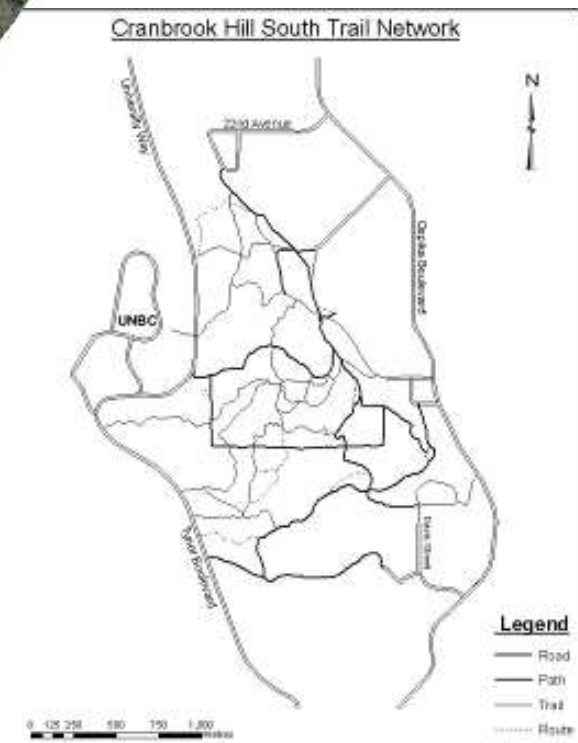
## **Surveying and Photogrammetry**

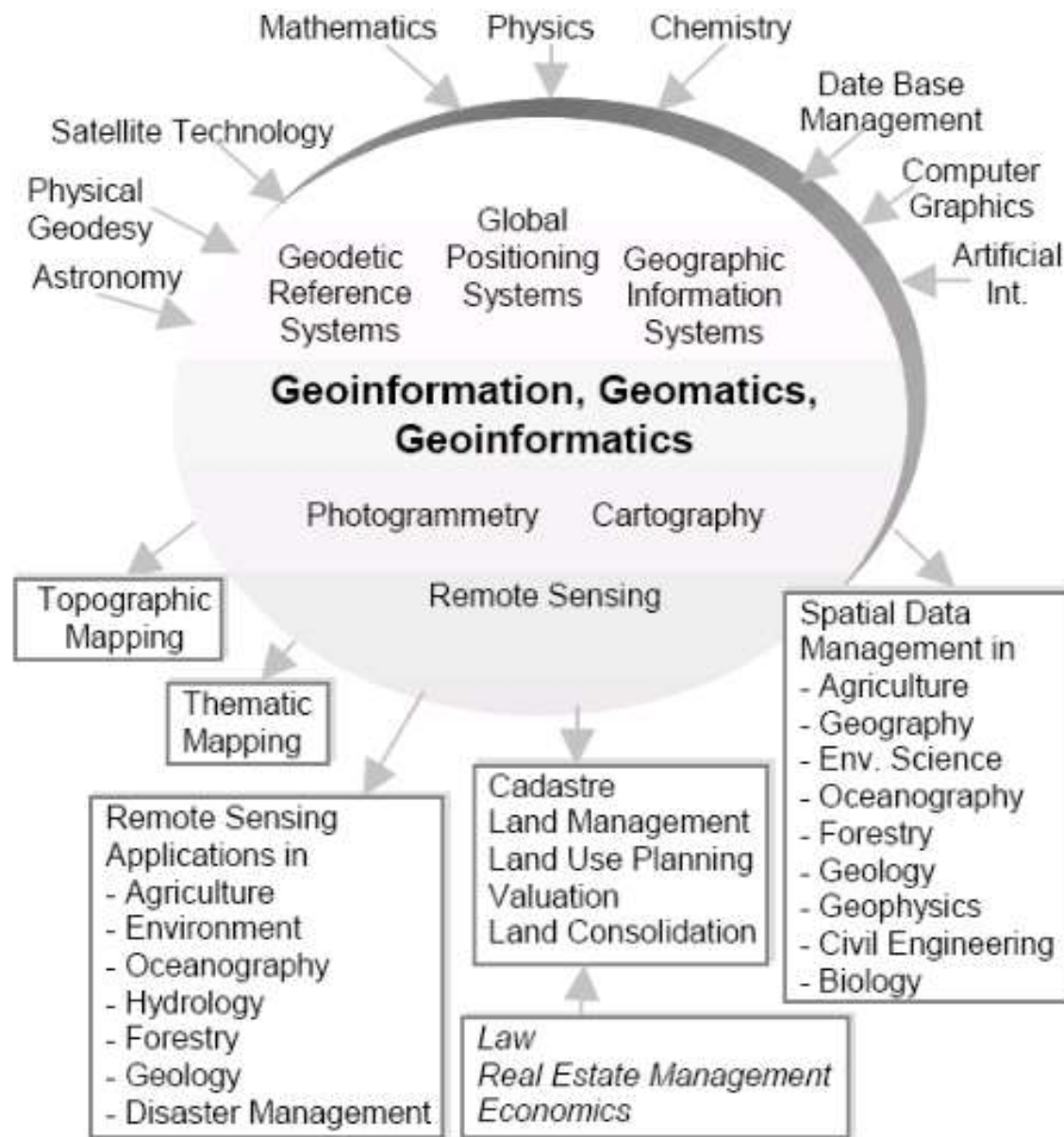
"derivation of 2D or 3D locations from aerial photography"

400 level independent study to map trails below campus 2003 (pre Google Earth / maps)



‘Geovisualisation’





**Figure 1.** Geomatics (After Konecny, 2002)



# **GEOG205 and related ‘Geomatics’ courses**

GEOG204: Intro to GIS applications – datasets, analysis

GEOG205: Focus on display / mapping

GEOG300: (Intermediate GIS) Focus on spatial analysis

Some unavoidable overlap e.g. data input

## **Software**

204: QGIS (Quantum) – freely downloadable

205 / 300: ArcGIS Pro .. “industry standard”

# Why are Cartography and Geomatics important?

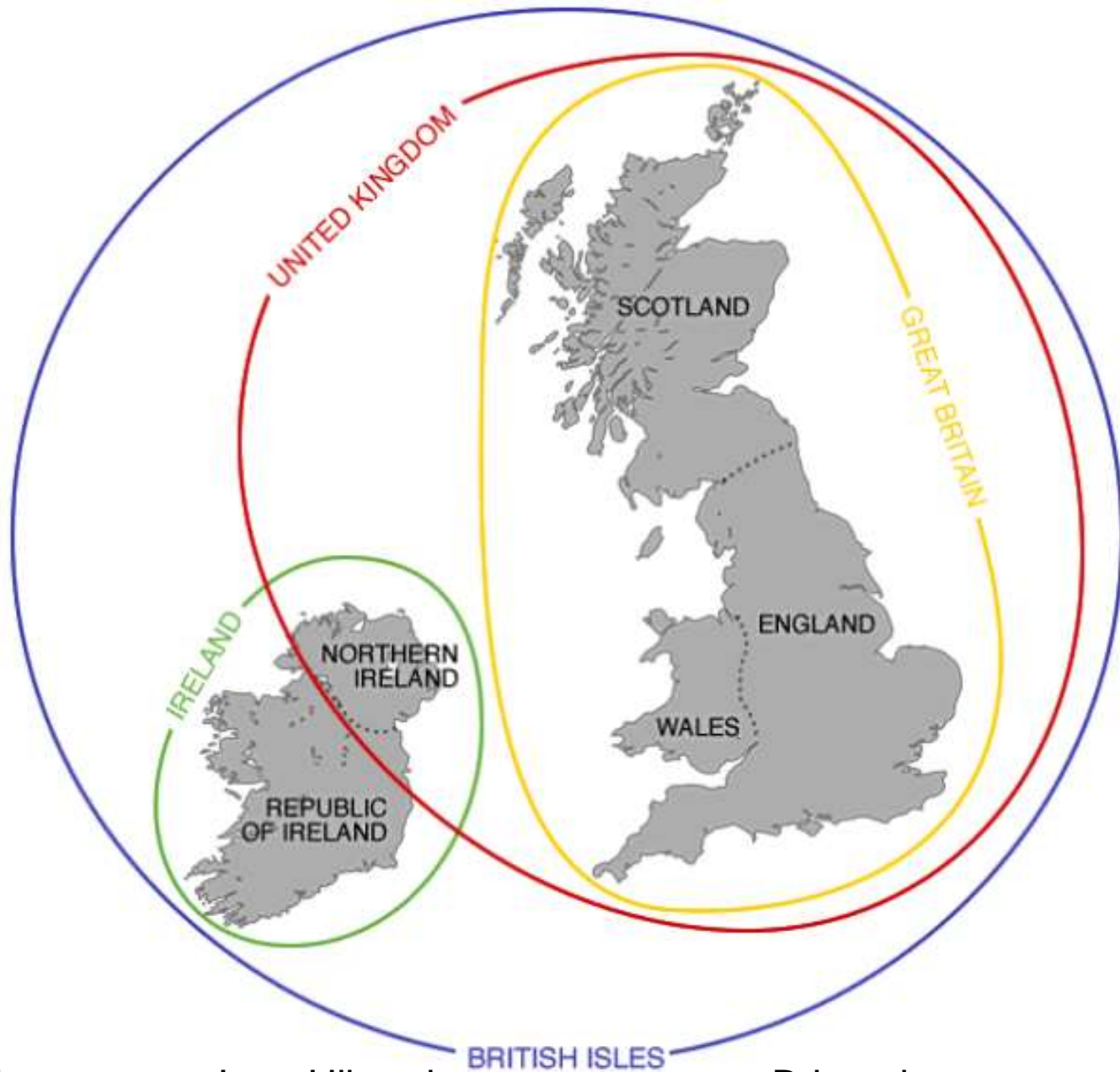
*"The **eye** will learn more in one hour from a **mappe** than the eare will learn from discourse"*

*(Thomas Fuller, 1690)*

'(geo)spatial data' display:  
a picture says 1000 words

Some educators believe that

.... *'gRaphicacy' should be the 4th 'R'*



The Irish do not agree !

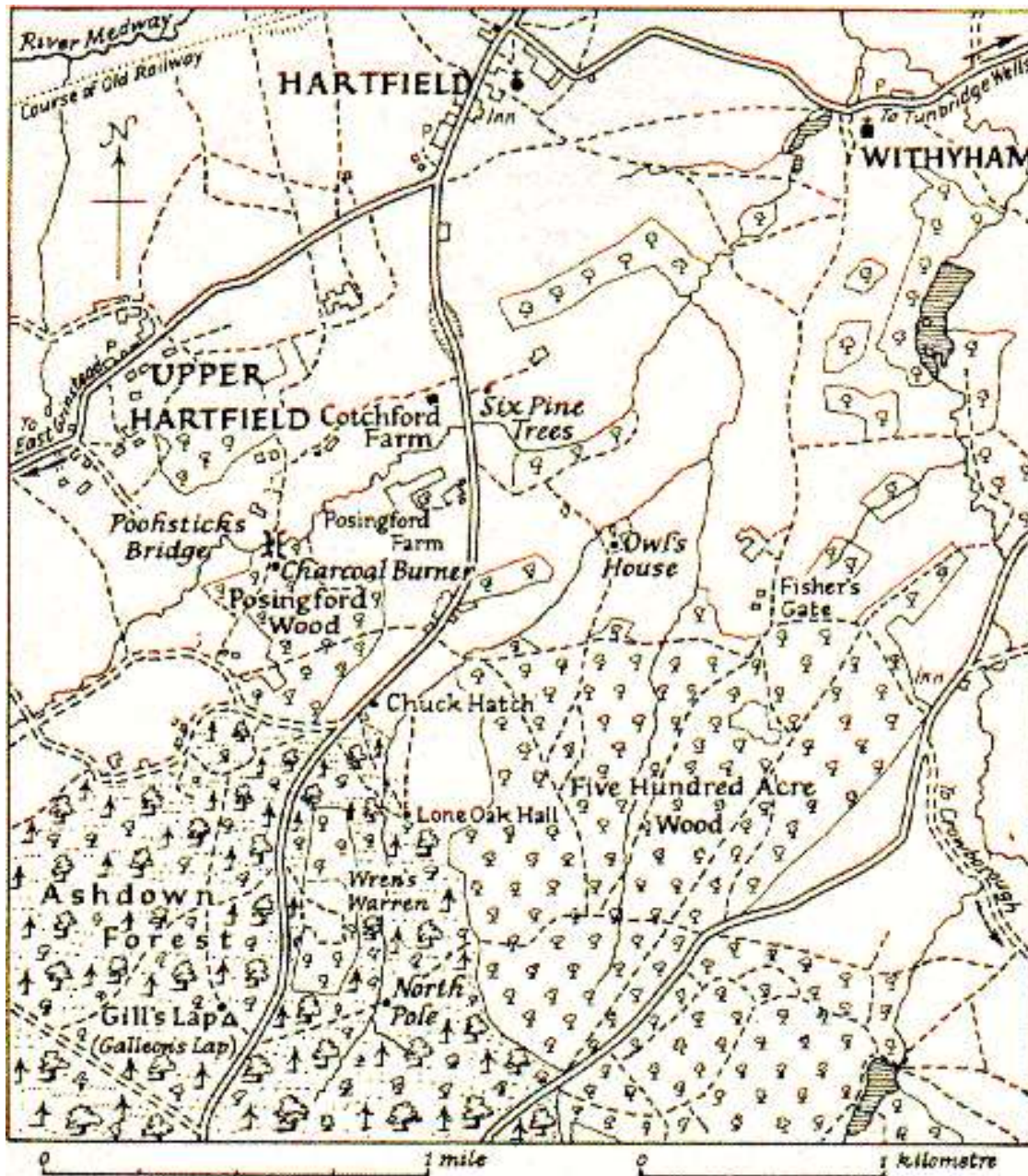
Hibernia

BRITISH ISLES

Britannia

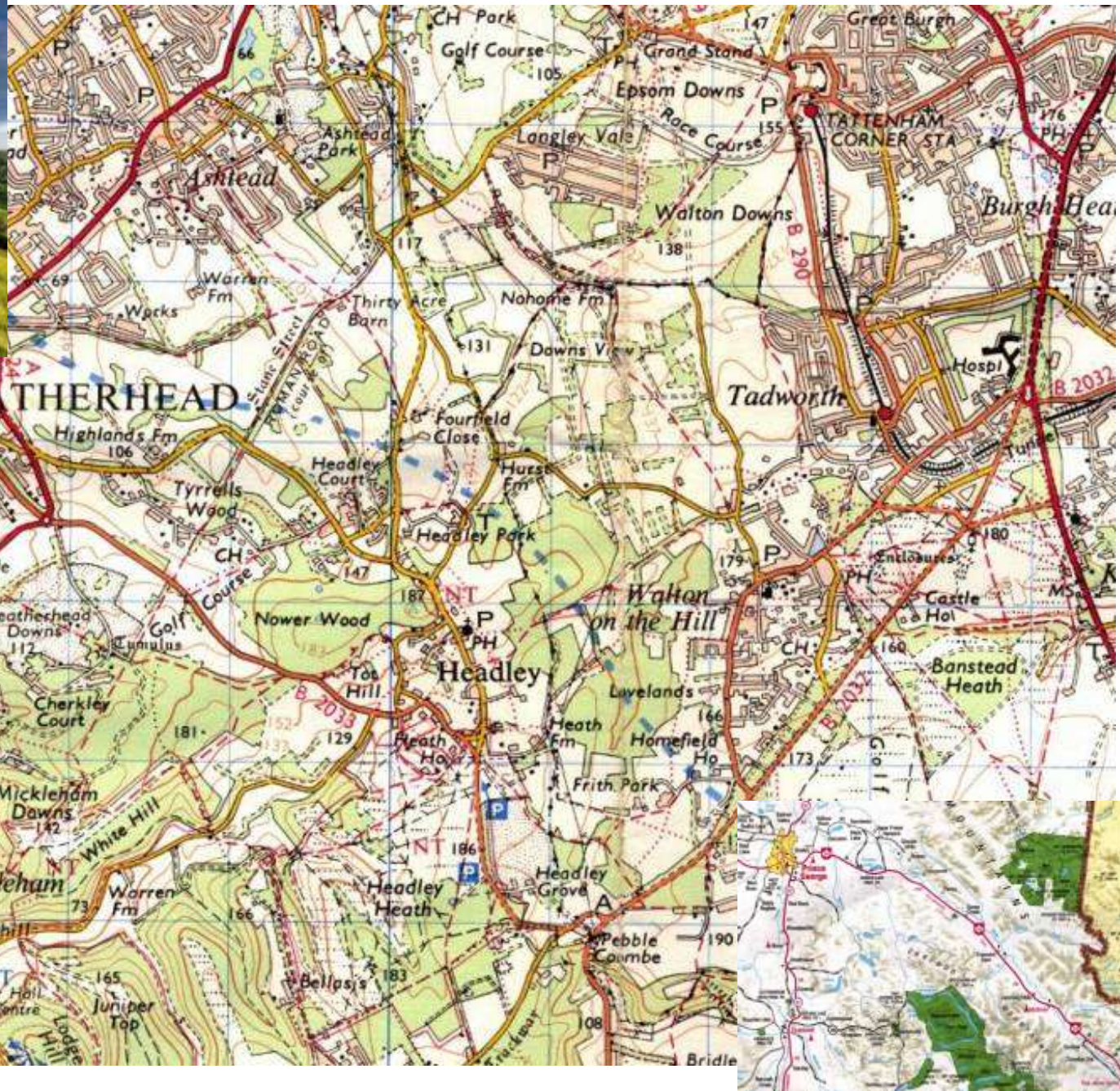


Maps are  
portals to  
new worlds





# A bit about me ... my 'most important' early map





- UNESCO World Heritage Site
- Cruise Itinerary
- Land Routing
- Train Routing
- Air Routing
- Post-Program Routing



‘Caledonia’

St. Andrews University





My jobs in Canada

1994

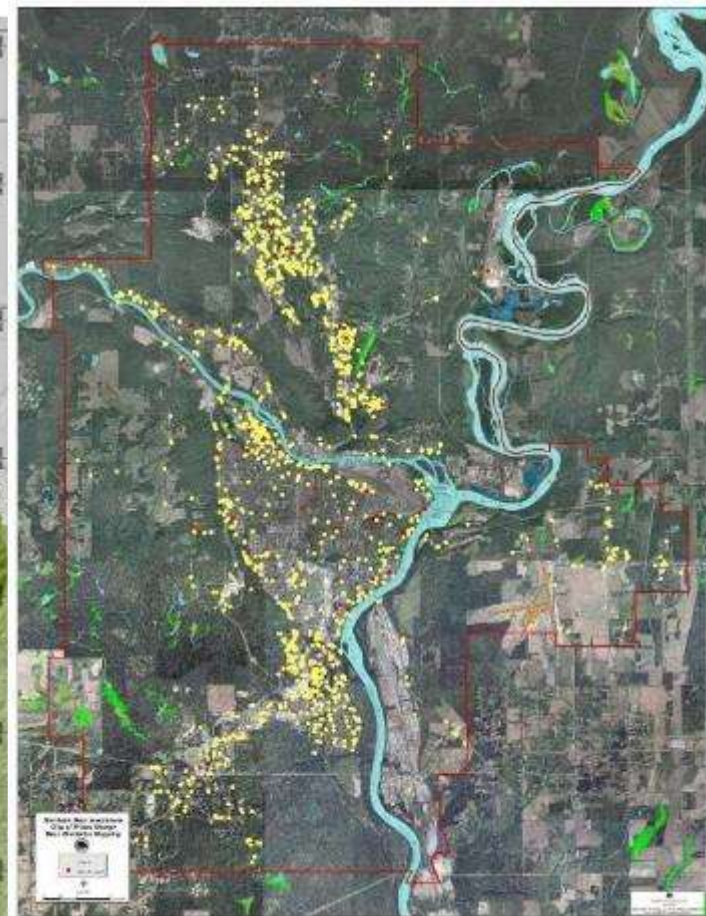
1979

1981

1978

1975







Mountain cartography [Pre-digital map]:

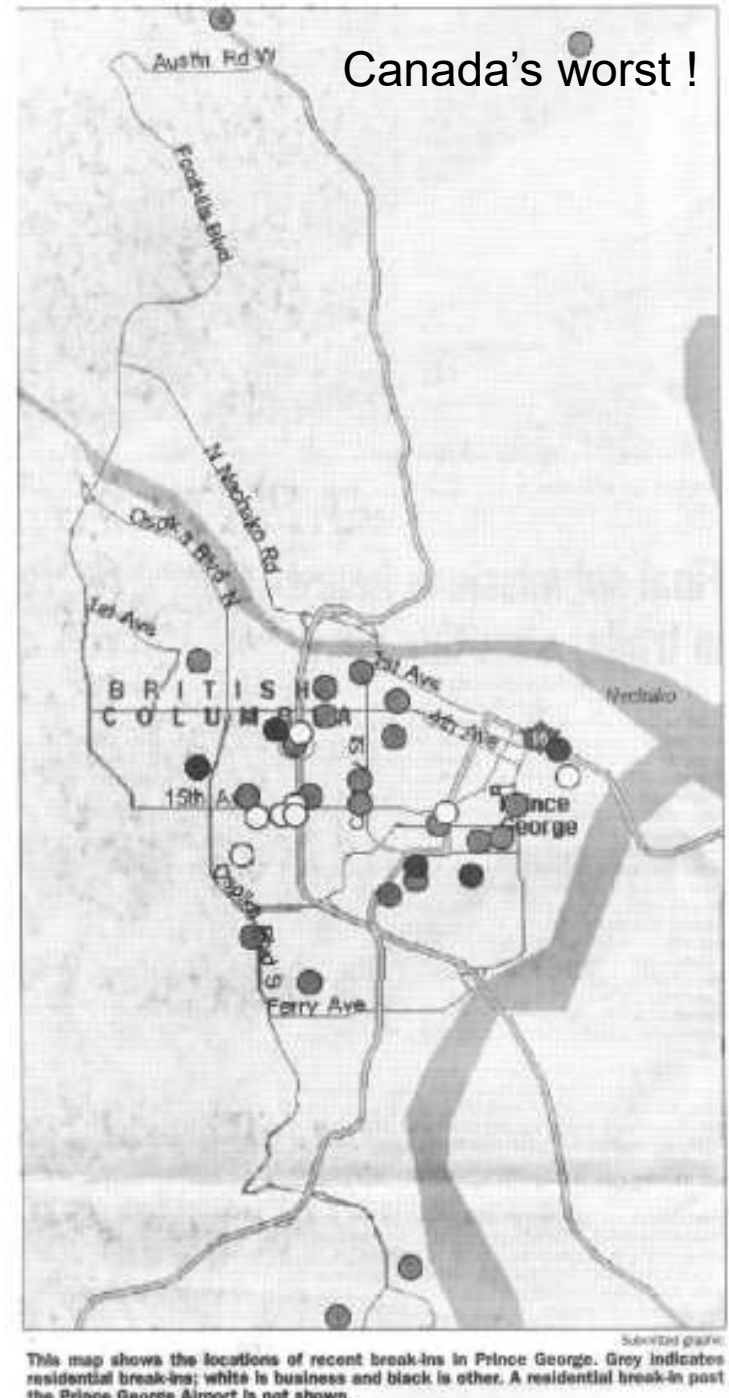
Canada's best !



**Columbia Icefield, 1981 Athabasca Glacier / Icefields Parkway**

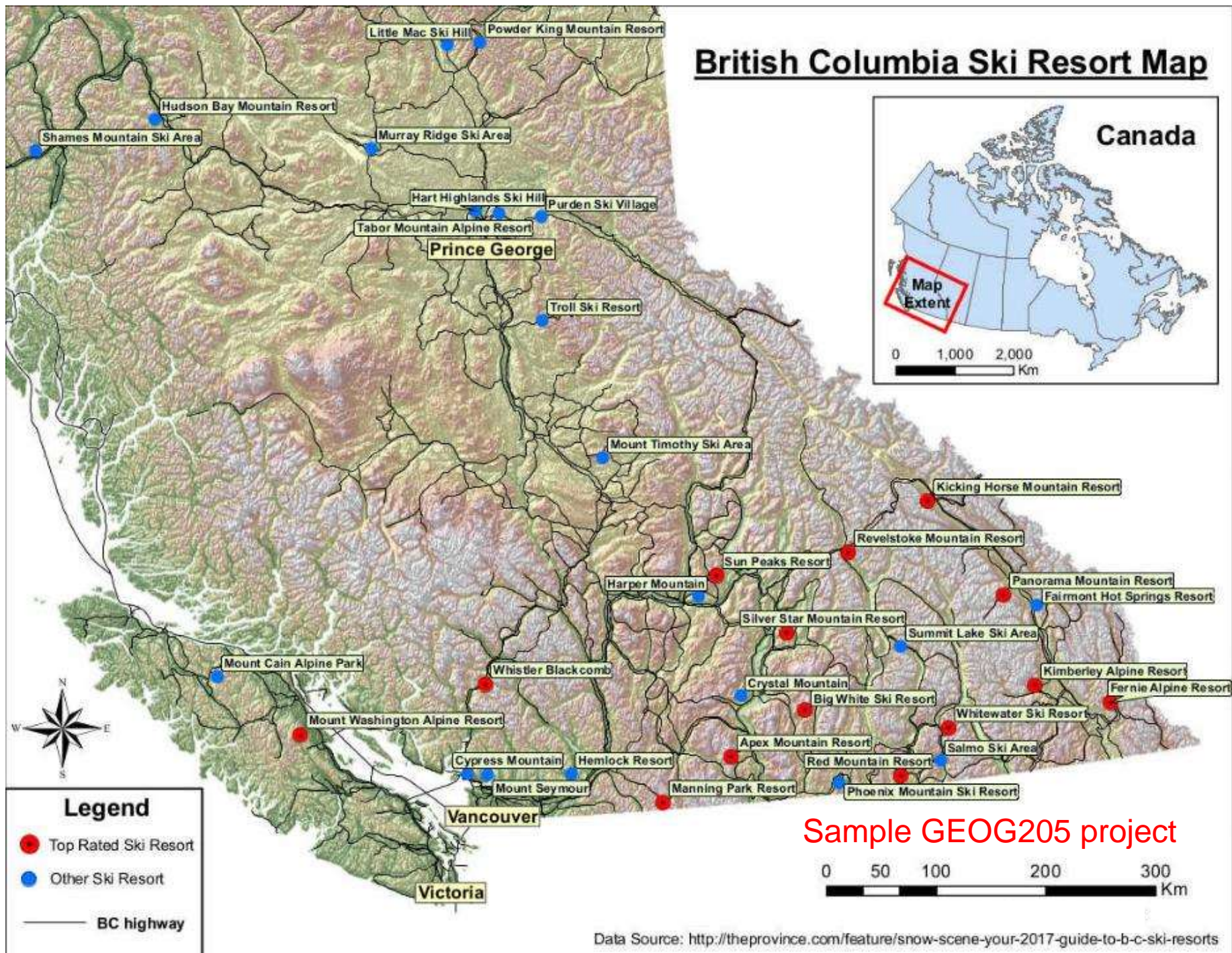
**Maximising communication and geovisualisation ... not just a 'pretty map'**







# British Columbia Ski Resort Map



Sample GEOG205 project

The impact of computers, data and software:

## The 'democratisation' of cartography

In parallel with arts and social media

= anyone can make maps - good and bad

... and also new types of maps



New (animated) cartography: 'Cartography is not dead, it is reborn'  
'Geovisualisation'



## Air Traffic around the World

<http://www.youtube.com/watch?v=NNzTPfARdwQ&feature=related>

**No required textbook:** library books on cartography (GA105.3)

## Selected online map viewer sites

**World:** <http://maps.google.com>

**Canada:** <http://atlas.nrcan.gc.ca>

**iMap BC:** <https://maps.gov.bc.ca/ess/hm/imap4m/>

**PG map:** <http://pgmappub.princegeorge.ca/Html5Viewer/?viewer=PGMapMobile>

**Today's Intro class:** <https://tmackinnon.com/cartography>

Other references: web links given with lectures

# COURSE EVALUATION

<b>Lab exercises</b>	<b>35%</b>
<b>Exams</b> (in class Feb 18, April 05)	<b>25%</b>
<b>Take home quiz</b> (Jan 12, Feb 4, Mar 11)	<b>15%</b>
<b>Map project</b> (due April 8)	<b>25%</b>

syllabus: <http://gis.unbc.ca>