Fish Tales - GIS applications for fisheries research and researching fisheries

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Background

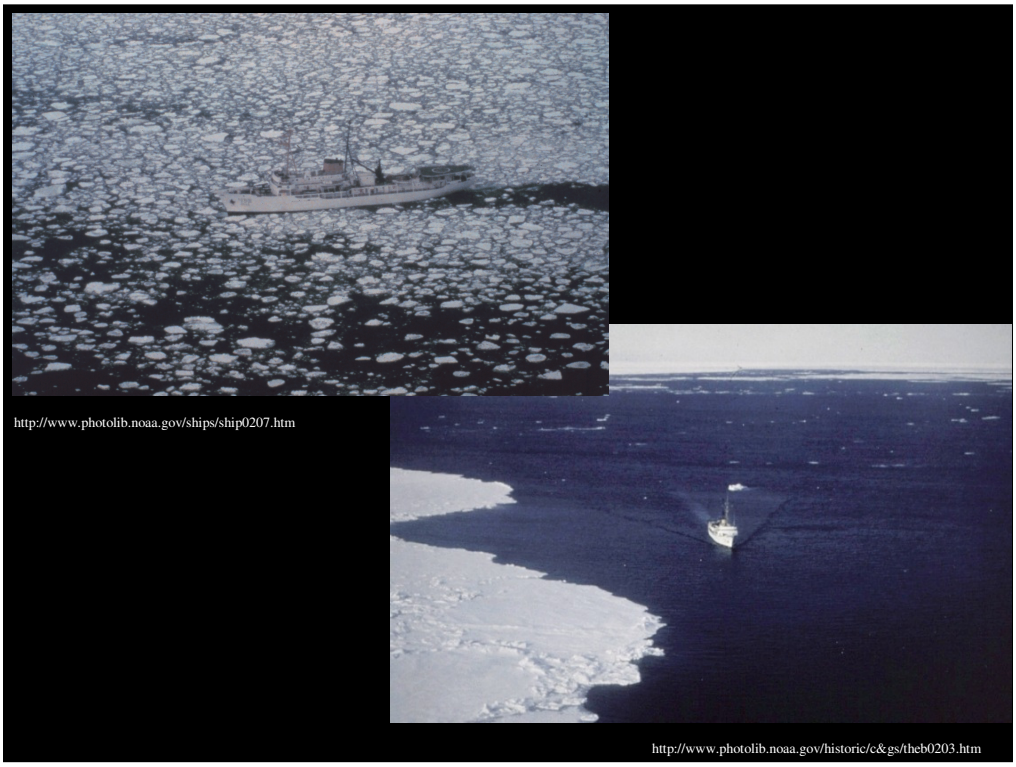
- Geographer by birth
- Masters in Geological Oceanography
- IT Specialist for NOAA – oceanographic and fisheries research
- PhD (much later) in Geography and Ecosystem Informatics
- Geographer/visualization specialist for a group studying the early life history of fish species being commercially exploited in the Gulf of Alaska and Bering Sea

Research interests

- Current research interests range from technical programming for GIS to applying GIS to historical research.
- Applying multidimensional (spatially and temporally) GIS in non-traditional realms.
- Research areas – Bering Sea and Gulf of Alaska

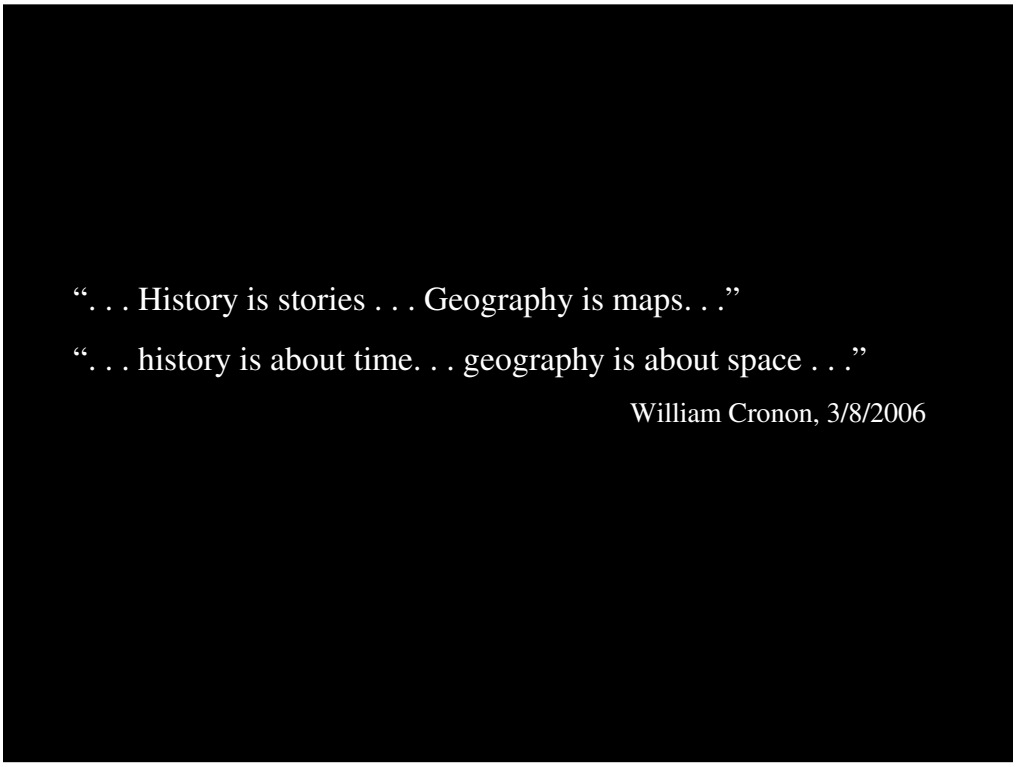
Fieldwork examples – the north Pacific at its worst, and best.

Researching fisheries: geographic approaches to studying the patterns of scientific research



While the location of terrestrial field camps and research stations may be due to obvious geographic features – e.g. at mouth of river for access or at ford when studying animal movement – the location of station on the ice or of oceanographic research projects may be due to invisible environmental and human factors.

Describe PMEL research:

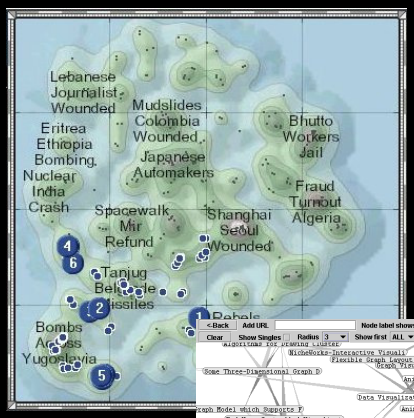


Visual is intuitive to GIS folks - not for historians

linear-verbal versus non-linear-visual

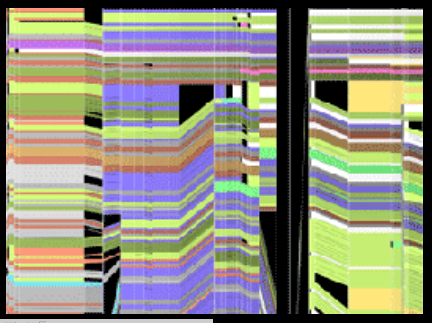
The history of research, and research stations, in the Arctic has traditionally been presented as written narratives. However, since time and space are linked, visual and spatial views of the locations and interrelationships of research locales are exceedingly valuable, leading to new insights and questions. Livingstone (2003) and others have stressed that 'where?' matters for understanding scientific research. For instance, spatial patterns in the placement of camps can reflect challenges of logistics and resupply, extensions of previous research, political motivations tacked onto supposedly 'pure' scientific goals, and national styles of science. These patterns can be described in writing, but they can best be perceived and interpreted in maps and animations.

Mapping Thought



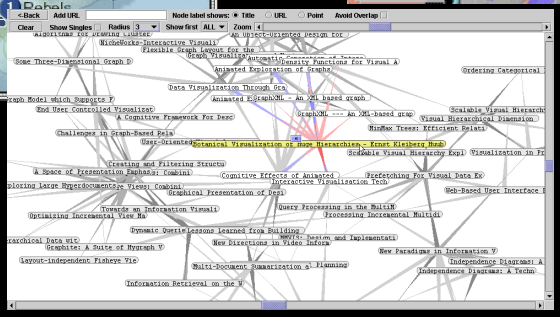
ThemeScape

http://www.infovis.net/printMag.php?num=168&lang=2



history flow

http://researchweb.watson.ibm.com/history/

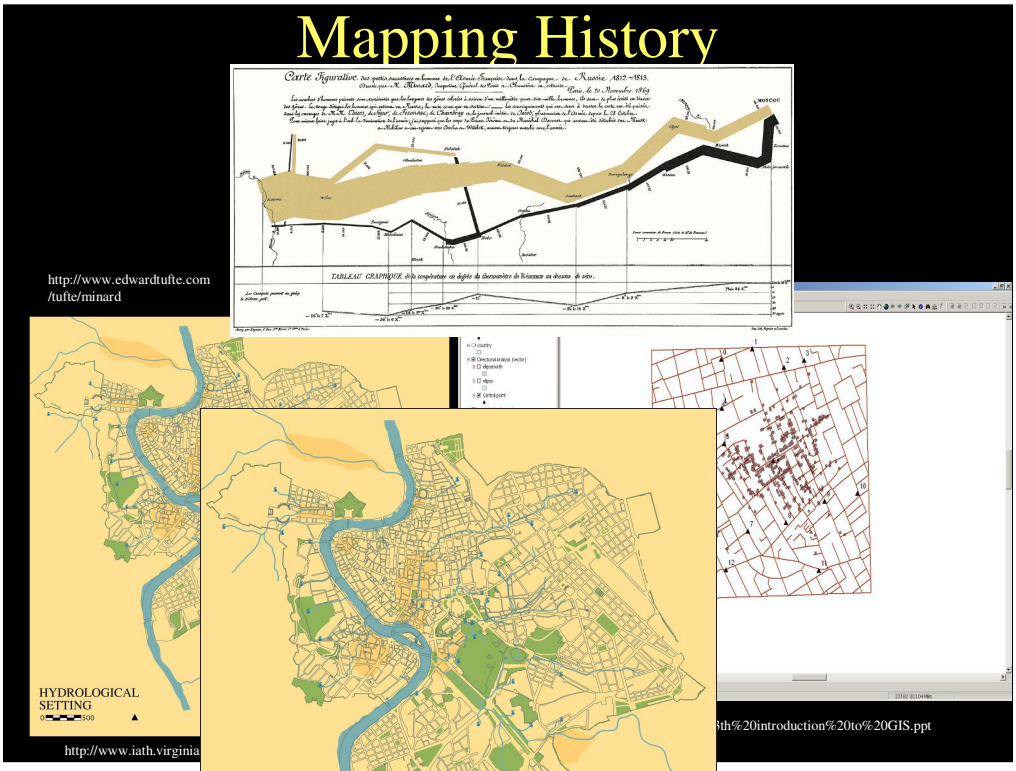


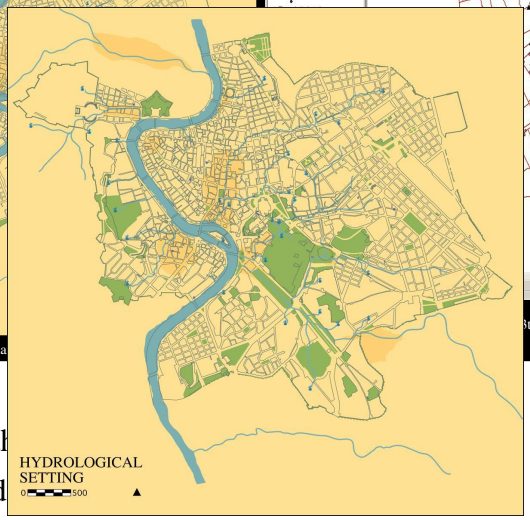
http://www.pmbrowser.info/citeseer.html

CiteSeer Browser

Spatialization of the non-spatial

Examples of visualizations of intellectual relationships, development of on-line Wiki pages





Spatialization of th

Mapping time and

More time though.

Might find another historical GIS example. - Rinnie maps of Rome?

Contrasts

- Historians of science / Scientists who do history
- Textual / Visual
- Archival / Public
- History / Geography
- Aural / Spatial
- Linear (book) / Non-linear (web)

Speak to tensions inherent in project

‘Cold History’ - Background and Goals

- Funded to conduct oral history interviews (OHI) of NOAA researchers in the Arctic.
- Pacific Marine Environmental Laboratory (PMEL) research as first focus
- One aspect is exploring ways to map the spatial and temporal patterns of research, and interconnections - ‘Mapping Cold History’

Quick description of PAIG – yes, it is ‘corporate history’ but also allows for exploration of true history. Program doesn’t limit what we do or what we present.

Chose PMEL as focus for this presentation – did much of the NOAA arctic scientific research, accessible, archival info for lab, but not limited to PMEL folks, interviewing program managers, NOAA managers, field technicians etc.

Trying to combine disparate folks – use skills of each while recognizing paradigms of each discipline.

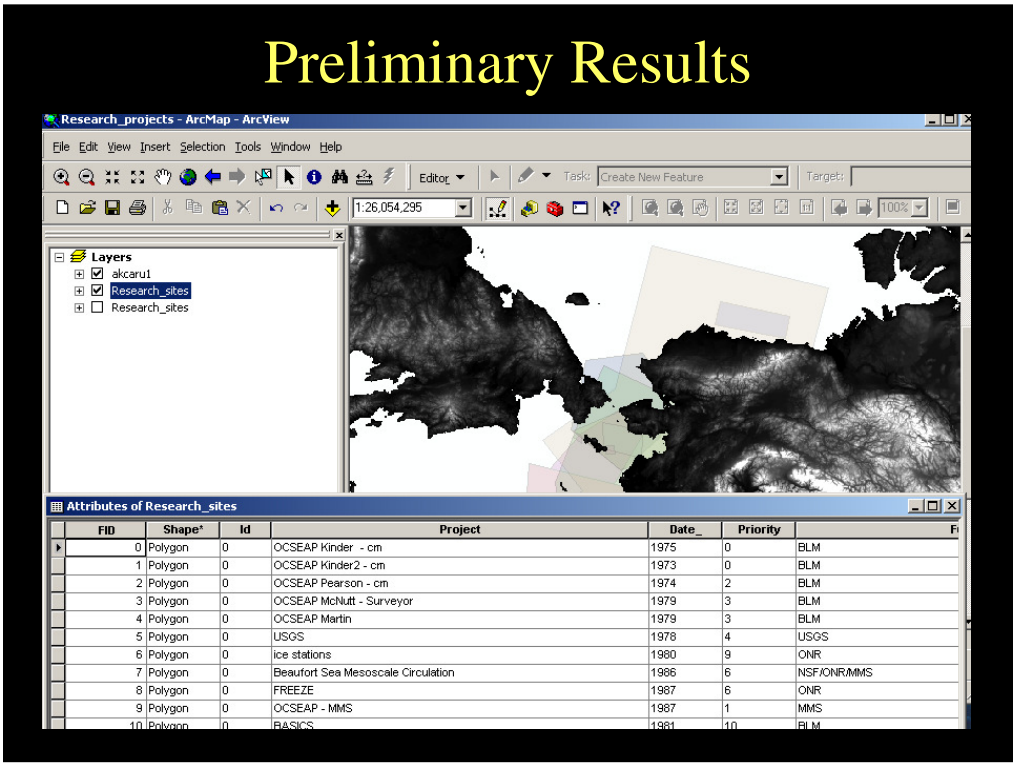
One way to expand ‘tacit knowledge’ of how history of science should be done is to use new analytical tools – cold mapping, and new ways of conveying information – OHI on web etc.

Methods

- Data gathering
  - Oral history interviews (OHI)
  - Scanning/archiving of supporting materials
  - Papers, annual reports, funding summaries, proposals
- Analysis/display
  - 'Mapping Cold History'
  - Web pages
- Sparking discussions
  - Discussions with historians about new methodological approaches to the history of recent science

Summary of what we have done so far.

Preliminary Results



FID	Shape*	Id	Project	Date_	Priority	F
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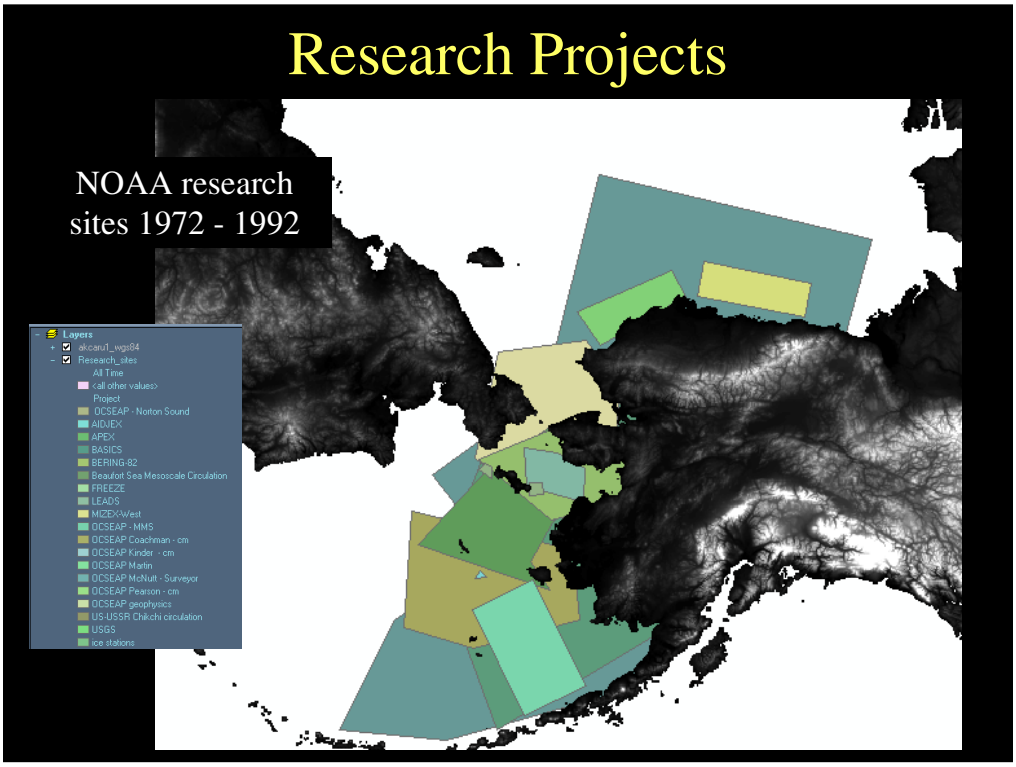
1	Polygon	0	OCSEAP Kinder2 - cm	1973	0	BLM
2	Polygon	0	OCSEAP Pearson - cm	1974	2	BLM
3	Polygon	0	OCSEAP McNutt - Surveyor	1979	3	BLM
4	Polygon	0	OCSEAP Martin	1979	3	BLM
5	Polygon	0	USGS	1978	4	USGS
6	Polygon	0	ice stations	1980	9	ONR
7	Polygon	0	Beaufort Sea Mesoscale Circulation	1986	6	NSF/ONR/MMS
8	Polygon	0	FREEZE	1987	6	ONR
9	Polygon	0	OCSEAP - MMS	1987	1	MMS
10	Polygon	0	BASICS	1981	10	BLM

Describe data gathering, shapefiles of locations, ancillary data

Desc. Ideas of mapping development of research by time, funding agency, person doing research, students of person doing research etc.

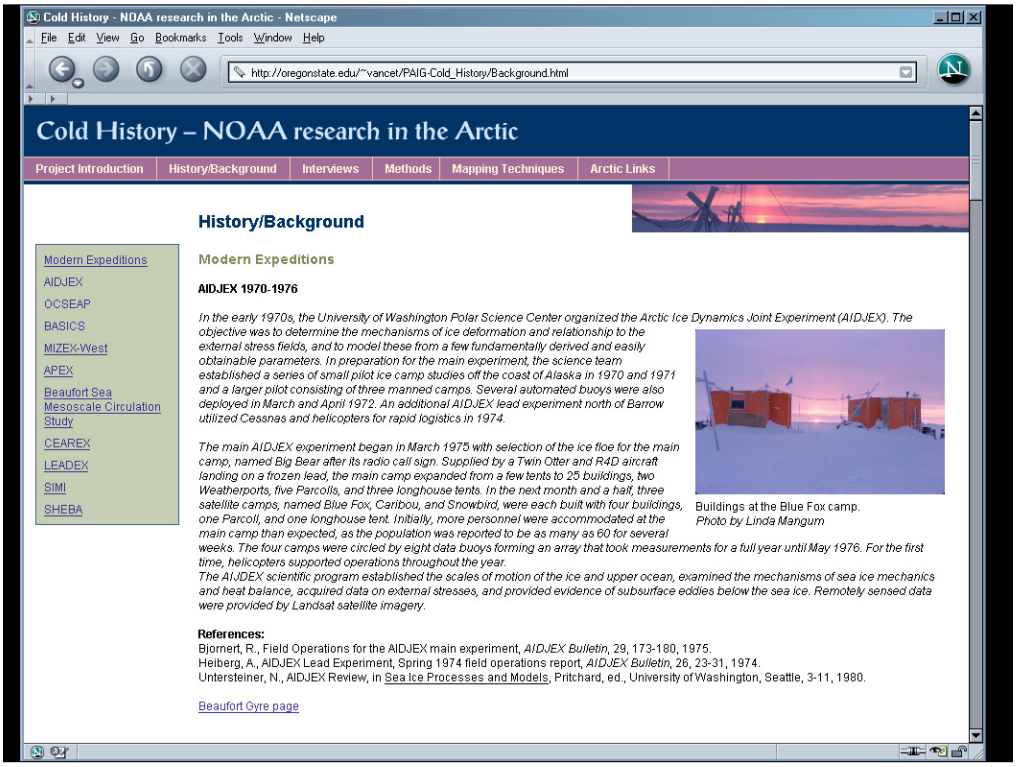


Visualizing the spatial and temporal that is driven by thought/research

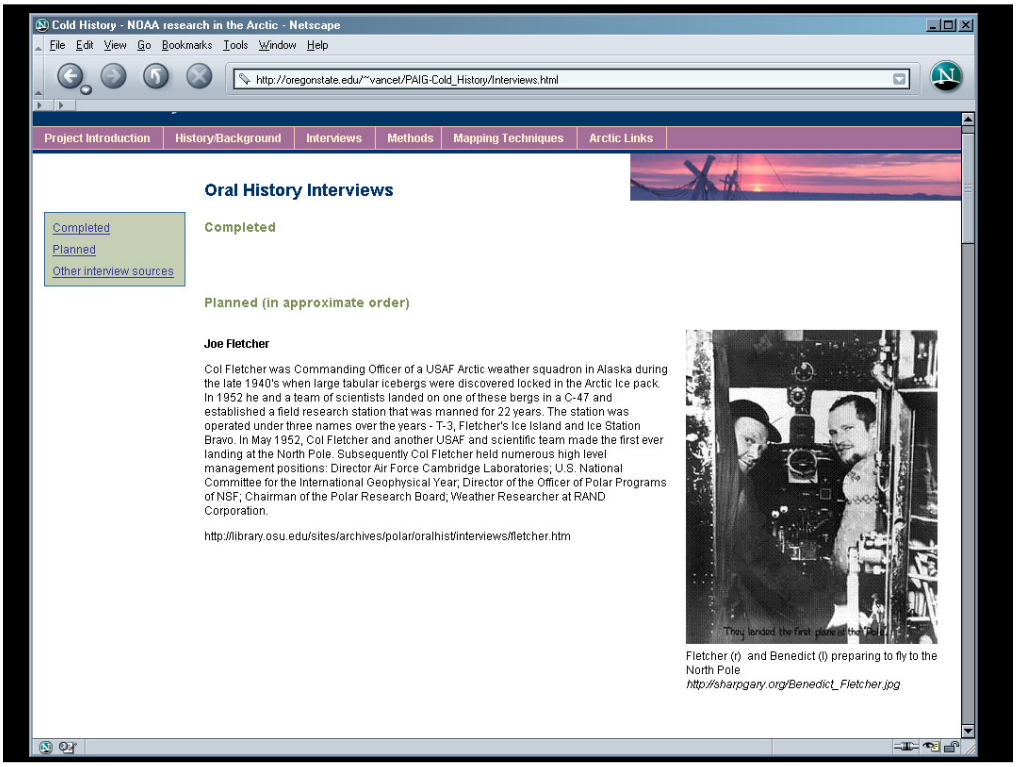
progression of research spatially/temporally, spatially/by funding agency?

Desc. Ideas of mapping development of research by time, funding agency, person doing research, students of person doing reserch etc.

“Mapping research”



Explain draft web page



Explain plans for OHI? Or just more web page description

The End

Questions?