

**So, what is it about GIS
that makes it so useful?**

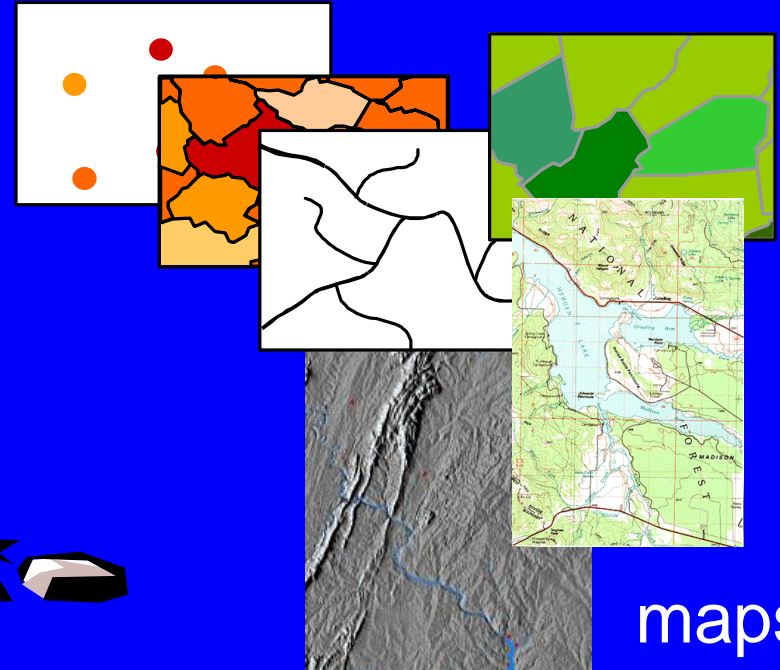
GIS allows us to bring together many types of data and information

data

Pop Id	Popdens
103	23.7
104	110.5
105	35.7
201	96.8
	73.4

LU Id	Land use
2308	Forest
2712	Urban
2487	Agric.

New Id	Popdens	Land use
23	110.5	Forest
24	110.5	Agric.
25	73.8	Forest
26	96.8	Urban
27	73.4	Agric.

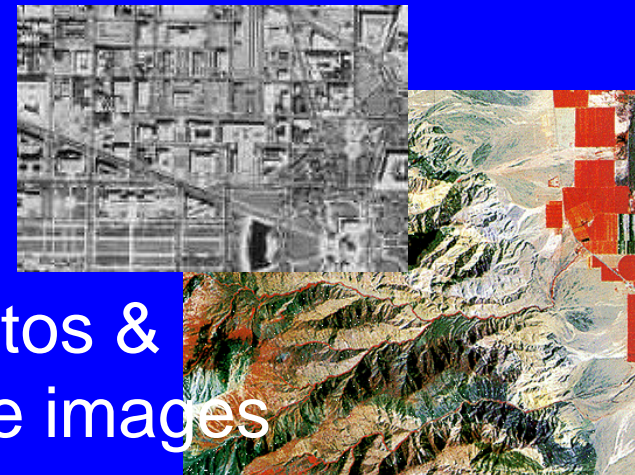


maps

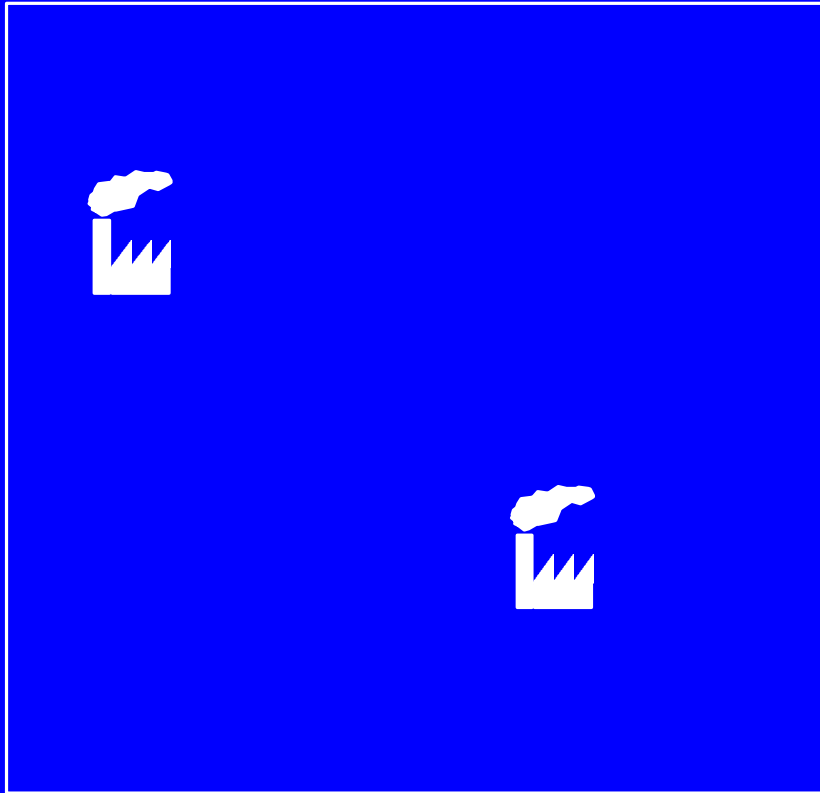
pictures & multimedia



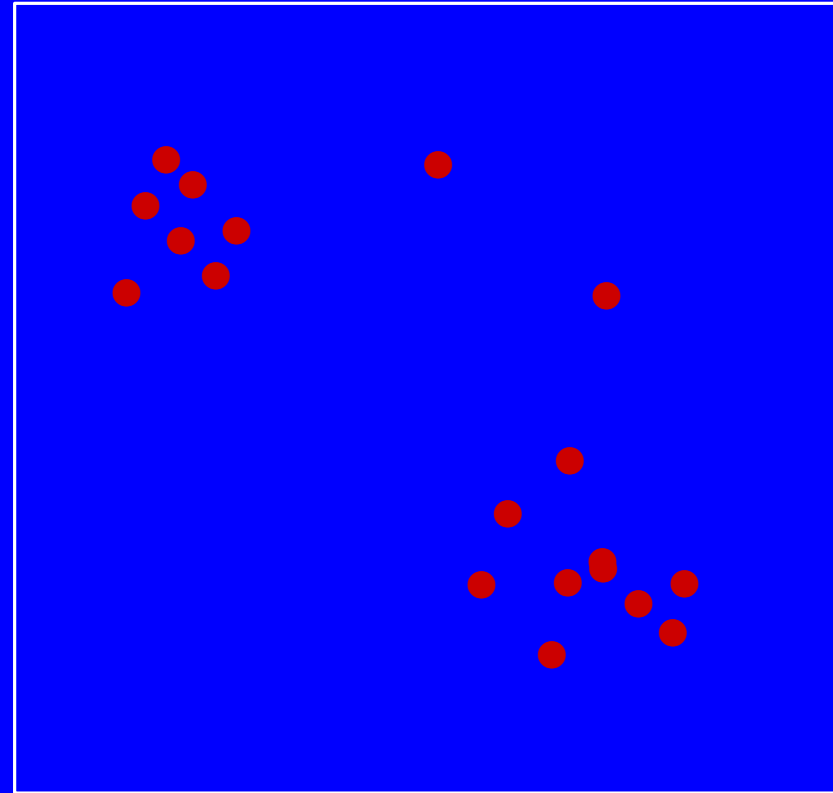
air photos & satellite images



Within the GIS we can combine data sets from different sources to look at patterns and relationships

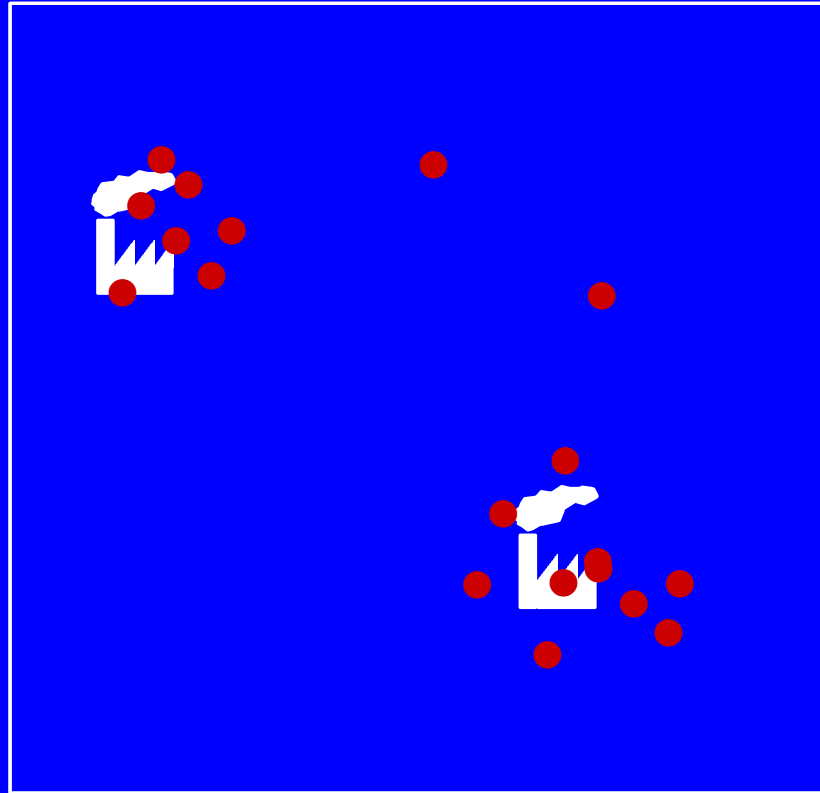


Pollution Sources



Leukemia Cases

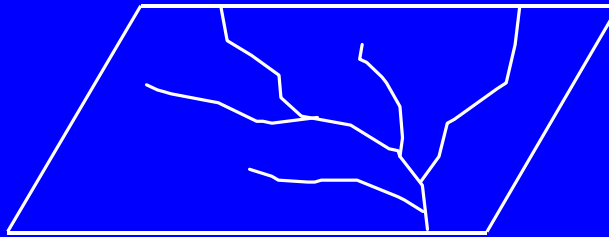
Within the GIS we can combine data sets from different sources to look at patterns and relationships



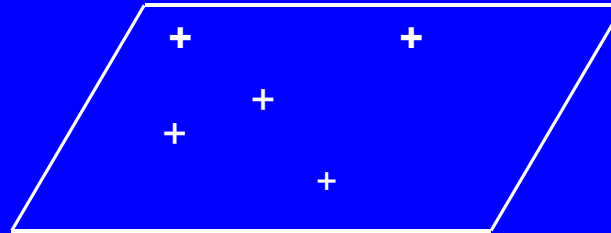
Are leukemia cases related to pollution from industrial sites?

Space as an indexing system

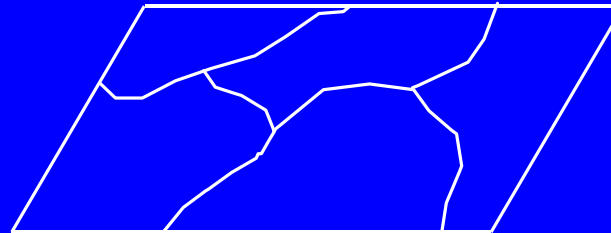
Rivers



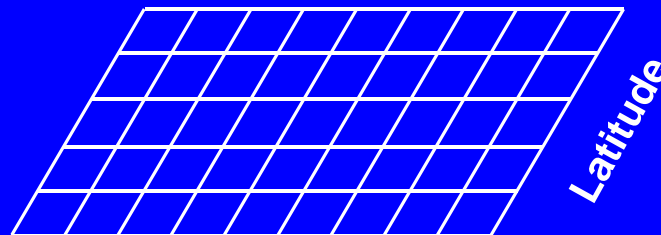
Settlements



Admin.
Units



Reference
Grid



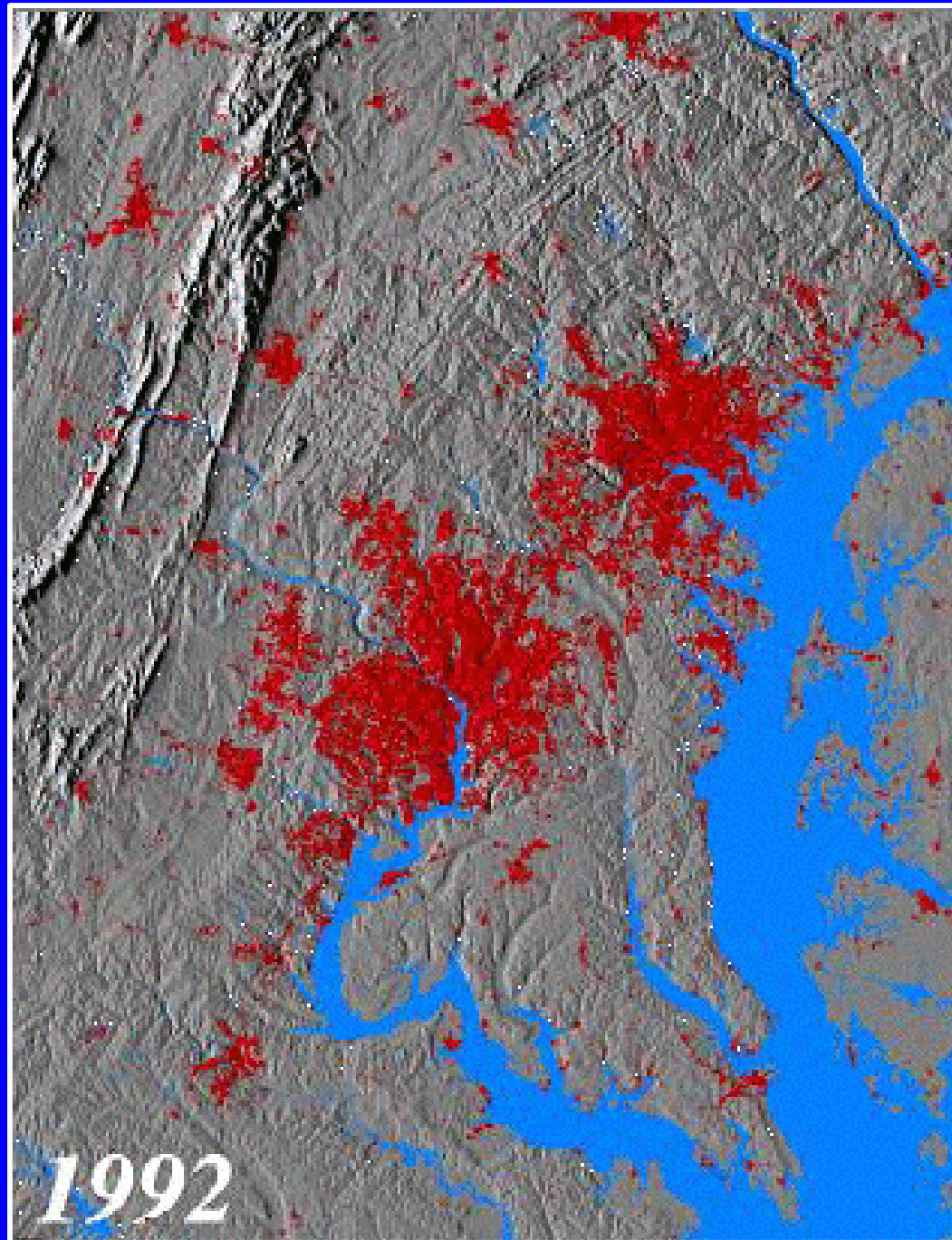
Longitude

Latitude

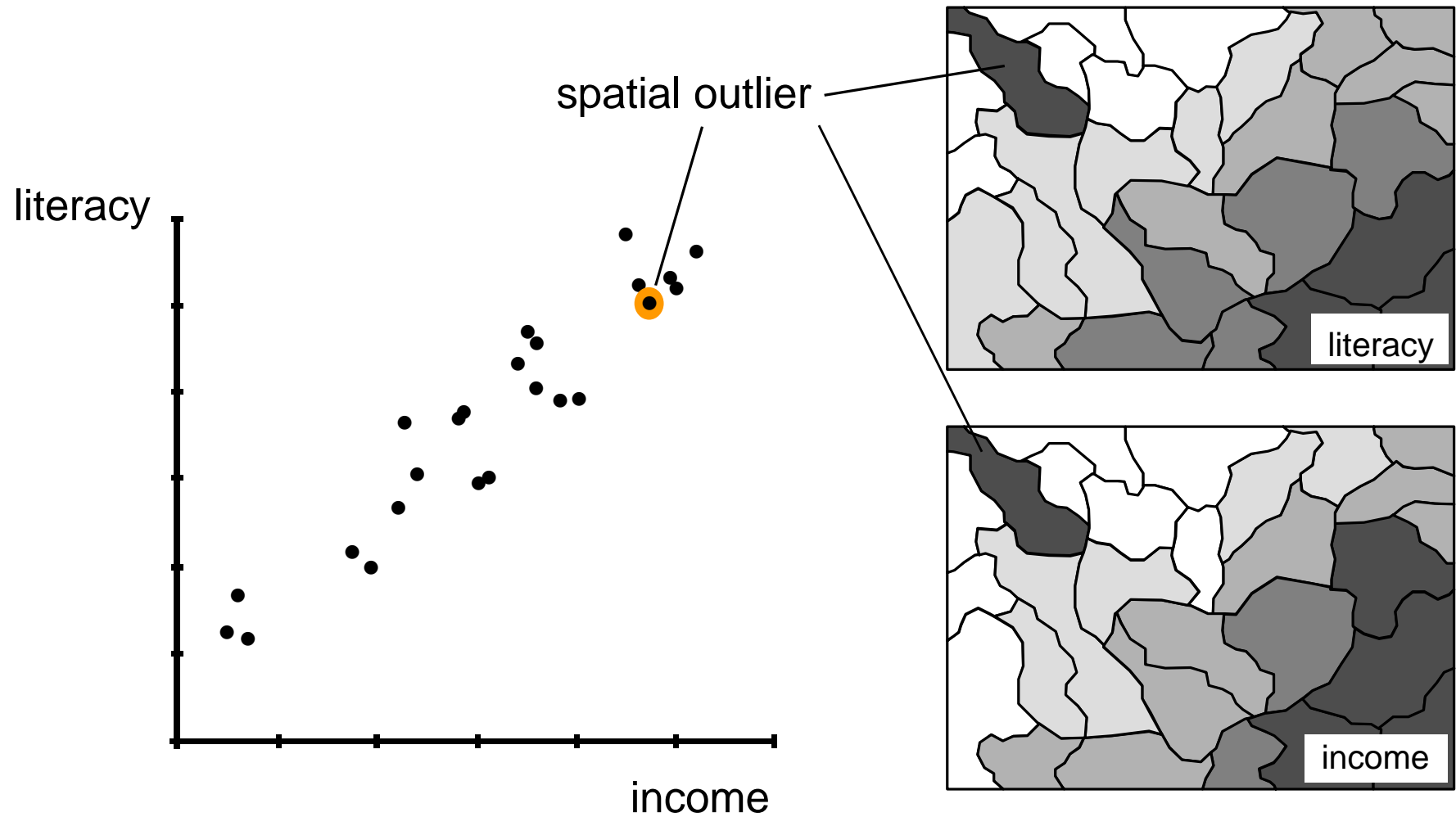
**GIS lets us visualize complex
processes over space and time**

**Urban growth in
the Baltimore-
Washington
Metropolitan
Area
1792-1992**

**Source:
USGS, NASA, University
of Maryland-Baltimore
County**



GIS visualization supports analysis



GIS enables us to handle very large amounts of data

- **Example: census data**
 - thousands of EAs
 - hundreds of variables
 - many complementary data layers (roads, rivers, public facilities)
- **Example: remote sensing**
 - satellites send huge amounts of data that need to be processed, interpreted and stored

GIS helps to make data re-usable and useful to many more users

- **Census geography**
 - EA maps do not have to be redrawn every time, only updated
 - census information can be used for many more applications
 - data sharing among agencies

Objective of the GIS component of this workshop

- **Provide a basic understanding of what GIS is and what it is useful for (with specific emphasis on population)**
- **Give a brief (!) overview of the technical issues involved**
- **Introduce a widely used GIS package**
- **Emphasis on overview, not on specific technical skills**

Outline of upcoming GIS presentations

- **Overview of GIS and mapping**
- **GIS concepts and capabilities**
- **Technical issues**
- **Cartography and map design**
- **Institutional issues**
- **Advanced topics**