

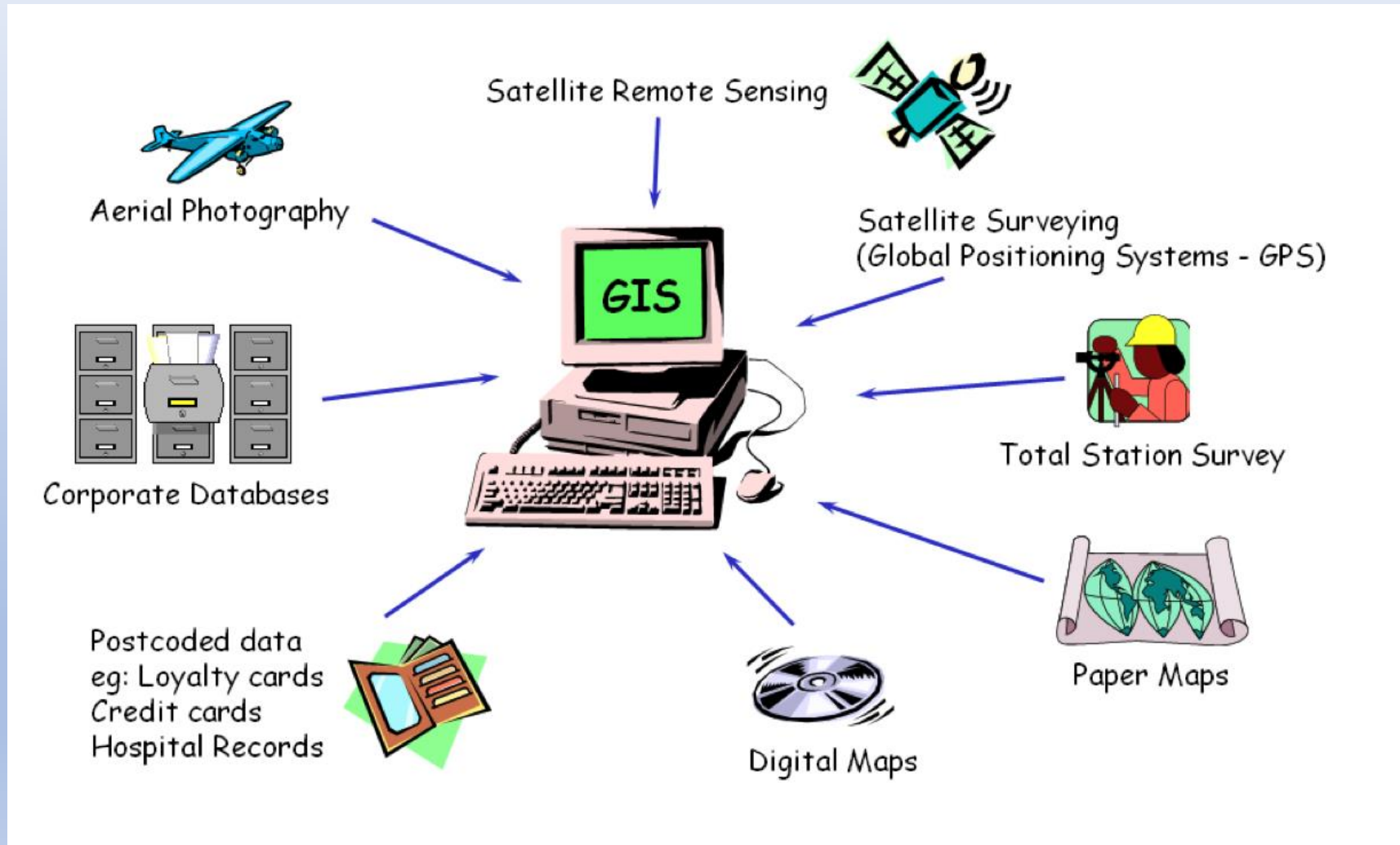


# GIS Careers

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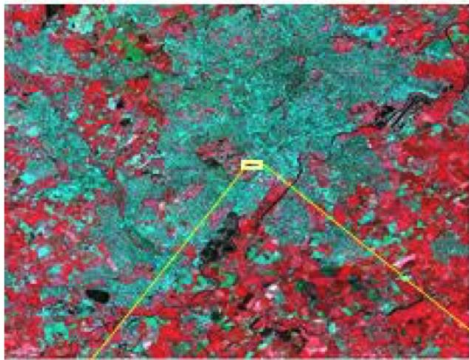
# But first, let's do a quick review...



# GIS involves lots of data...

## Image data

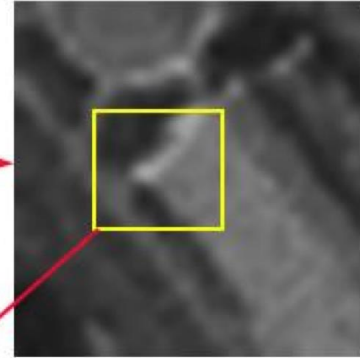
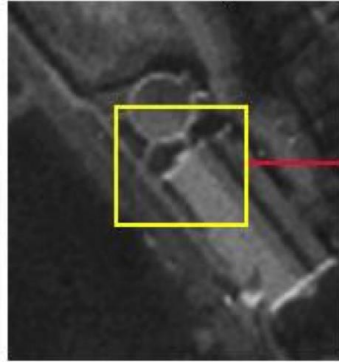
Satellite image



Aerial Photography



A RASTER 'image' of a building

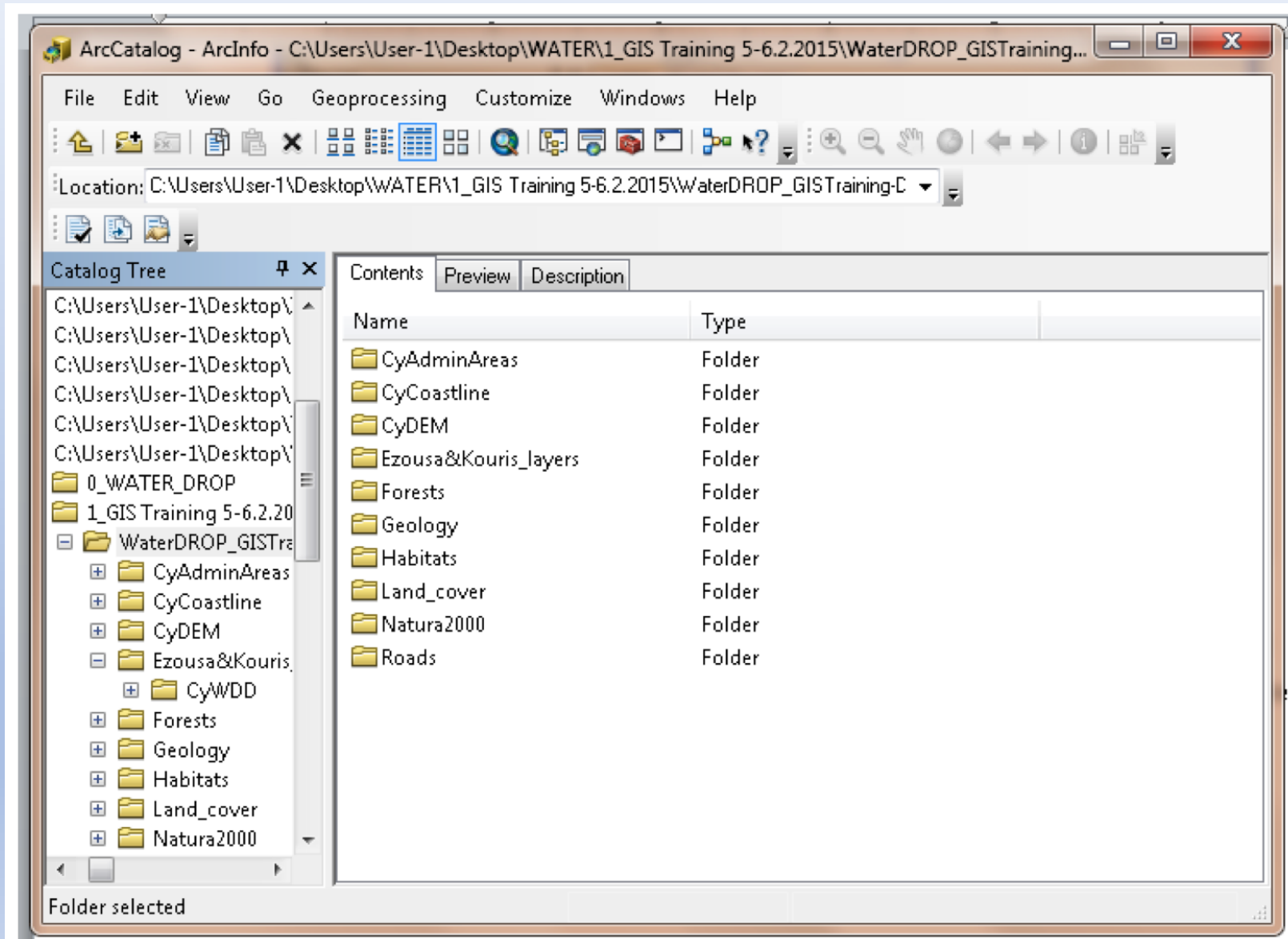


Stored as a grid of numbers

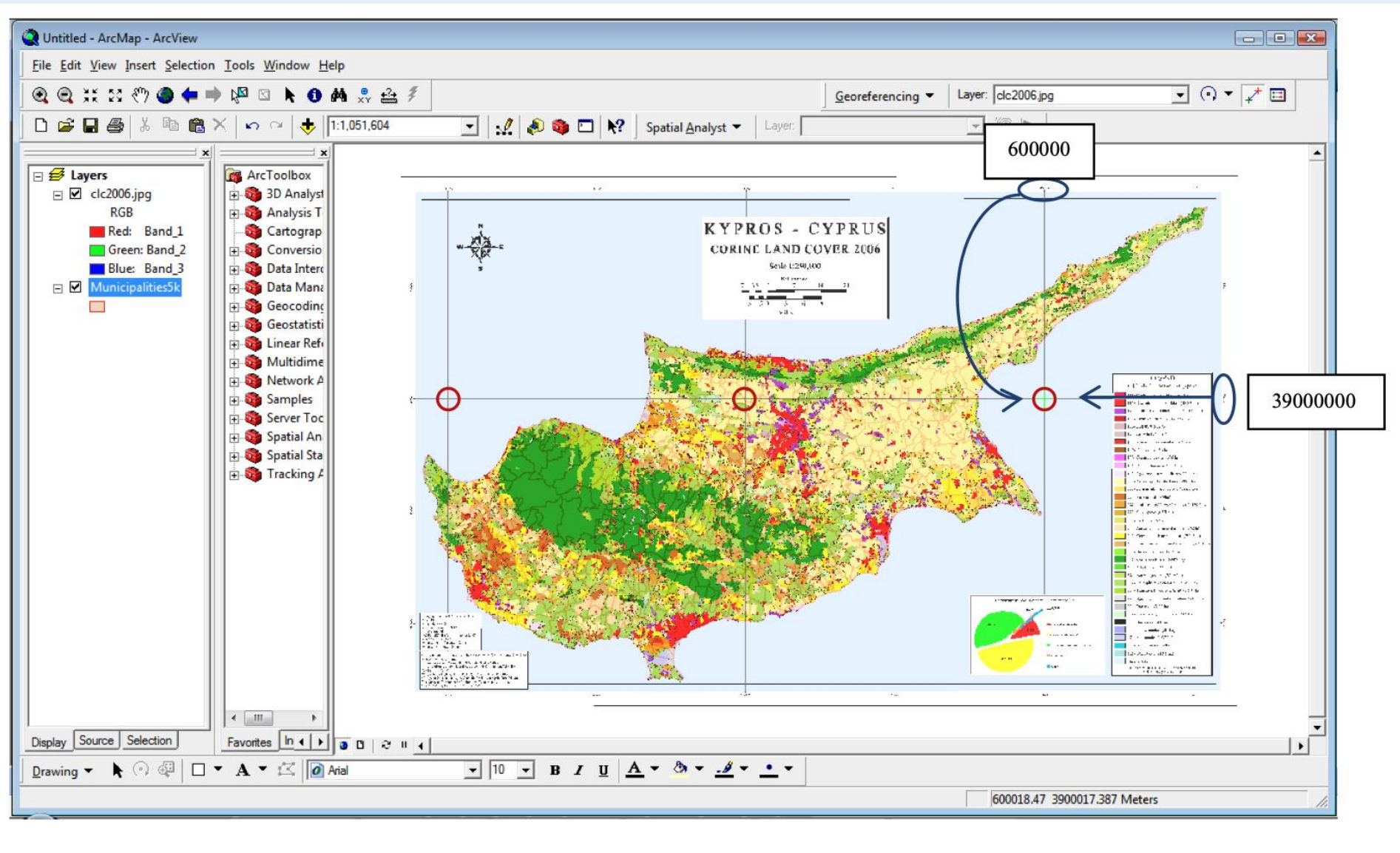
22	20	23	21	20	20	30	53	53	41
21	20	23	20	20	30	54	54	54	40
20	20	23	20	20	30	40	55	42	40
20	17	20	20	30	40	55	42	40	40
24	25	20	30	40	56	42	40	40	40
30	32	32	56	59	43	43	45	40	40
32	34	35	30	40	40	40	40	40	40
32	35	37	20	20	40	40	40	47	40
32	35	34	20	20	20	40	4	40	40
20	20	33	30	30	20	30	90	40	40



# These data are stored in a GIS database:



# And used to make all kinds of cool maps...

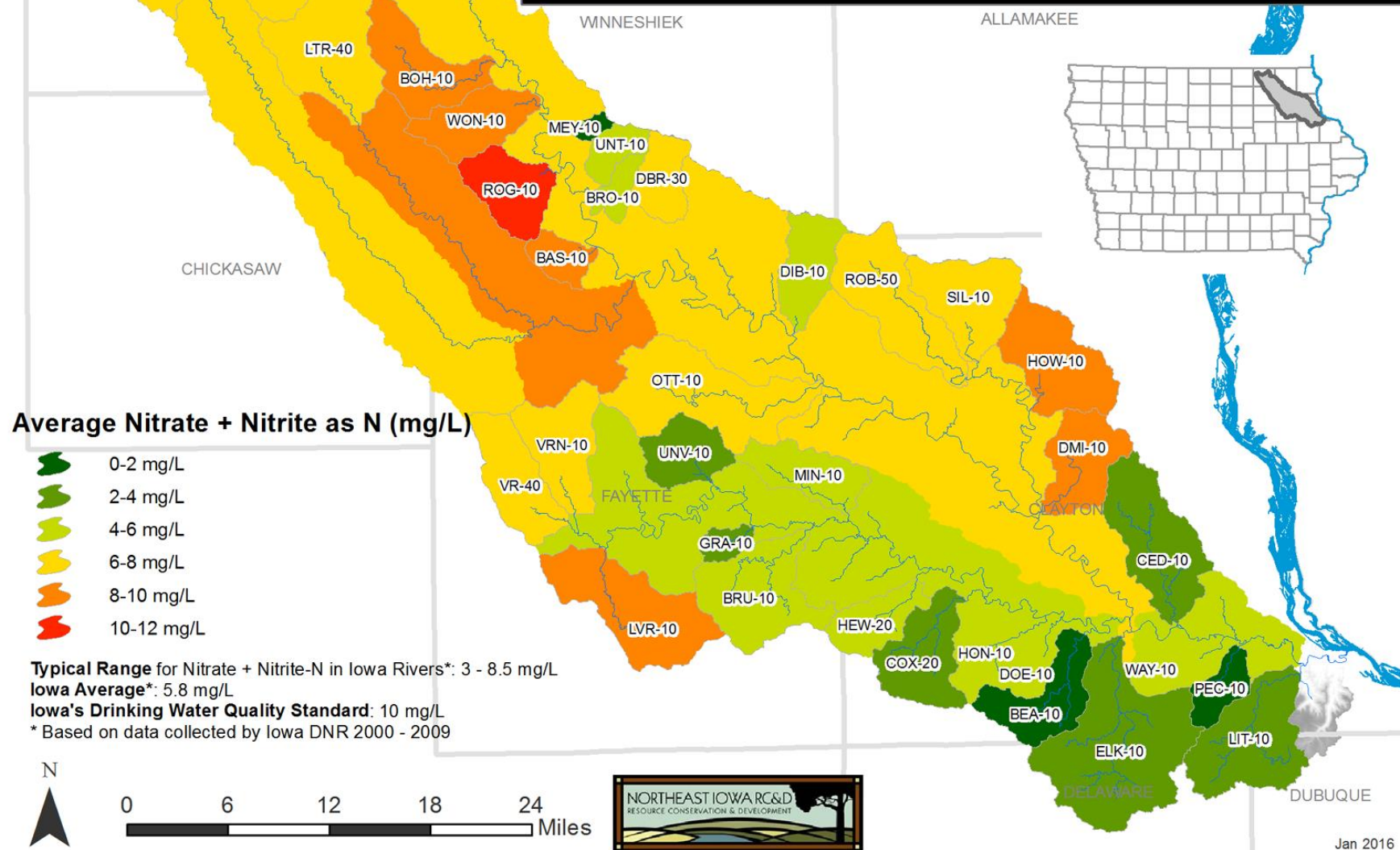


# Turkey River Watershed Project

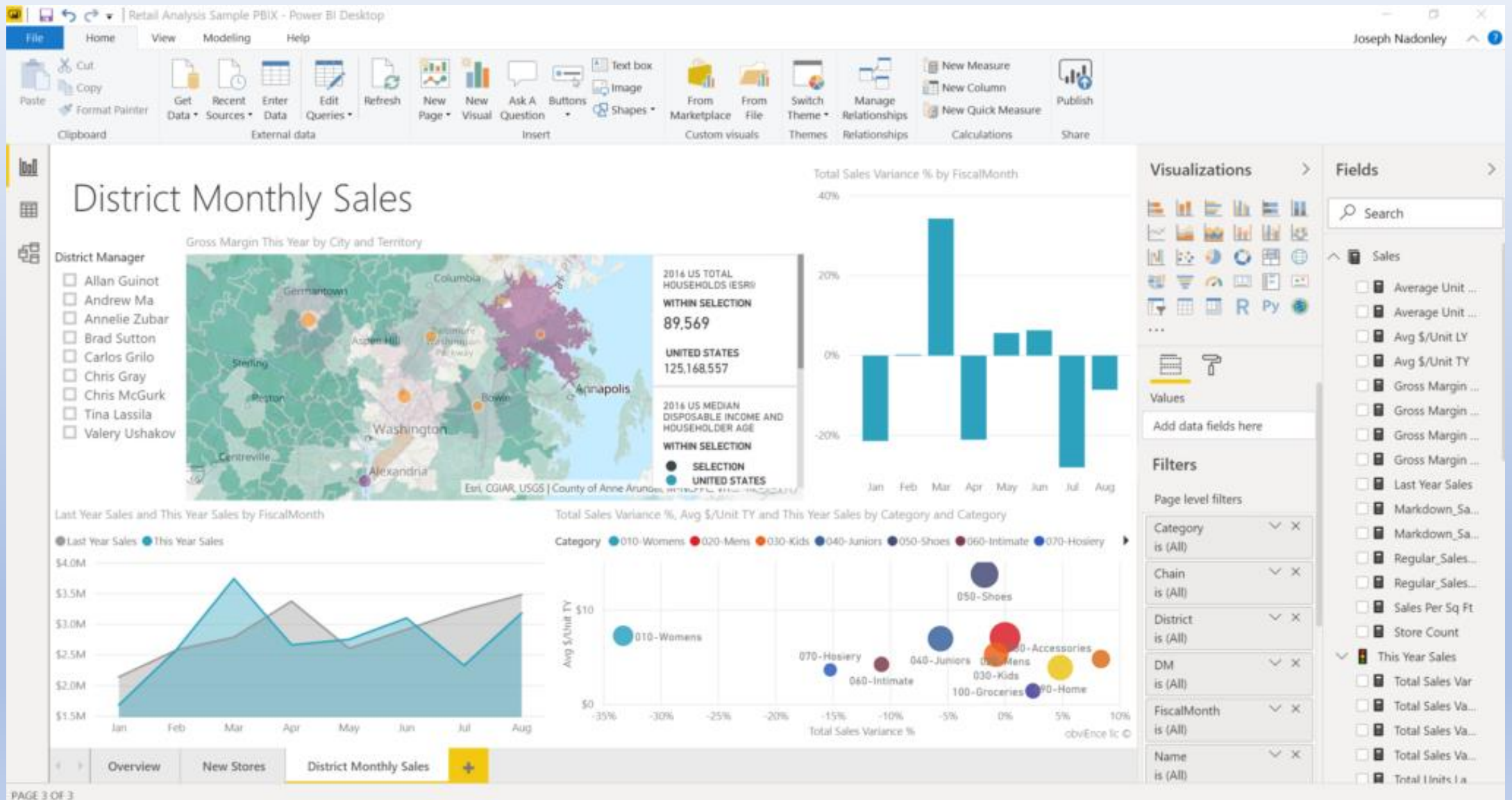
## Average Nitrate + Nitrite Nitrogen as N (mg/L)

18-23 sampling dates between May, 2011 & Nov, 2014

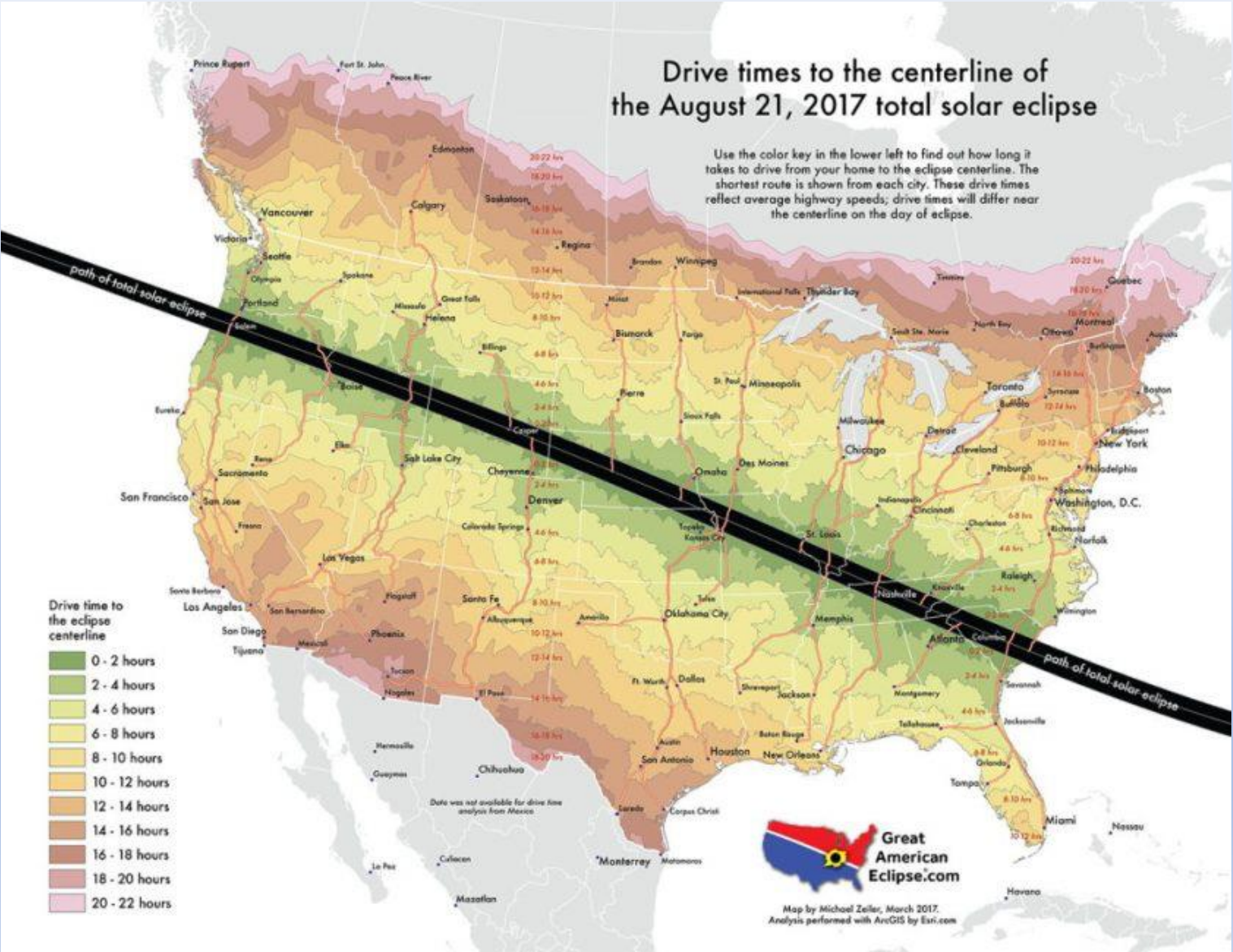
Data: [turkeyriver.org/water-sampling/](http://turkeyriver.org/water-sampling/)



And do lots of important analyses...



# Even for awesome things like a solar eclipse!





# Careers in GIS

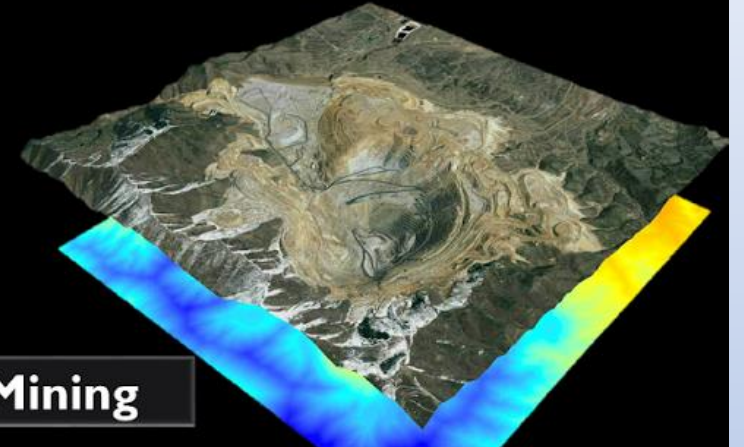
BY K.M Amen



Environment and Hazard



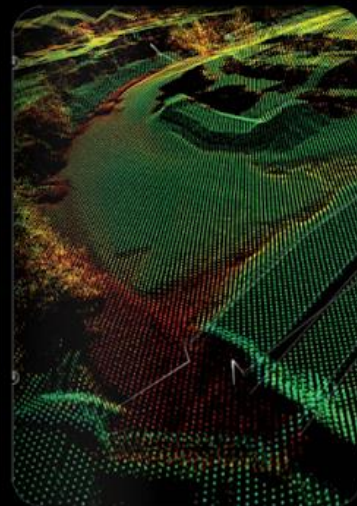
Geology



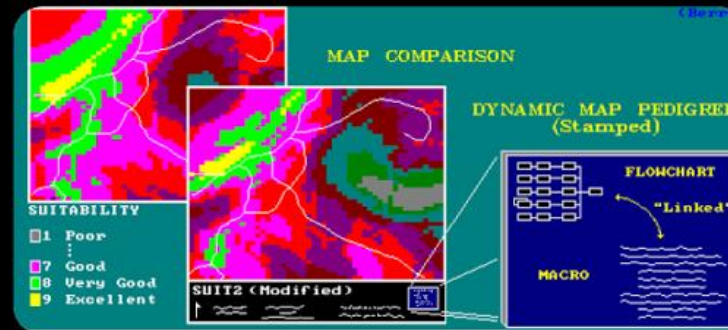
Mining



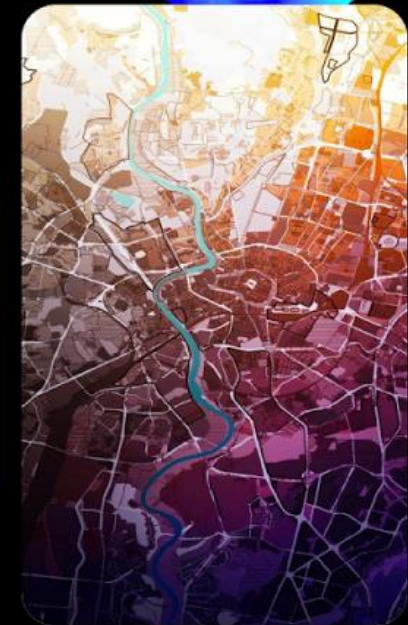
Hydrology



Geoinformatics



Biology



Urban planner

# WHAT TYPES OF CAREERS CAN I HAVE?

## Industry & Non-profit Sector

Industries such as utilities, telecommunications, and education are the largest consumers of GIS technology



 The Geospatial Information & Technology Association (GITA) reports that about **70-80%** of information managed by business is connected to a specific location


### Geospatial Jobs:

Identify and access the most relevant populations

Build efficient communication and distribution networks

Analyze the competition

## Government

Revenues from the public sector make up more than one-third of the total geospatial revenue 

### Geospatial Jobs:

Manage national natural resources

Develop defense strategies

Determine voting districts

Analyze census data

Develop campaign strategies

Strengthen homeland security

Route sanitation and emergency vehicles



### FEMA SPENT

**\$1.4 billion** to convert paper flood insurance rates maps into digital GIS-useable maps

## Law Enforcement & Criminal Justice

A civic-minded GIS specialist can work to:

Identify problems or at-risk areas

Allocate scarce resources more efficiently

Analyze crime trends over time to see the "big picture"

Map response times and create a more efficient police force

Provide real-time mapping of incidents



## Transportation

A GIS specialist can:

Synthesize and visualize large amounts of information to streamline transportation decision-making

Devise the most efficient routes for public and private transportation

Analyze traffic flow, identify problem areas, and develop solutions



The Arkansas State Highway and Transportation Department was able to reduce the amount of time spent in their decision-making process by **60%**  by implementing GIS technology

## Health & Human Services

A GIS specialist in the medical field can make a huge difference

Pinpoint those in need and locate health and human services accordingly

Analyze populations to see how their environments affects their health and well-being

### EXAMPLES:

Map pedestrian environments and physical activity

Chart air pollution and health effects



## Engineering & Surveying

Use your GIS training to build and map the physical world

From 2002 to 2012, the number of surveying and mapping technicians **grew 23%** 

Explore the possible occupations of:

Geodesigns

Geospatial Analyst

Geospatial Application Developer

Geospatial Programmer

Geographer

Surveyor

Cartographer

Civil / Environmental Engineers

LiDAR / Remote Sensing Specialists



## Real Estate & Environmental Site Selection

Location, location, location! Whether it's a new home or a new park, GIS specialists know that location is key

Find the best location for a store, home, or road by analyzing:

Traffic

Demographics

Topography

Competitive landscapes

Natural resource management

Aerial photos

Use reports and maps to weigh the merits of one site over others

## Marketing

Use your GIS skills to develop a holistic marketing plan that:



Maps, profiles, and groups customers based on purchasing habits

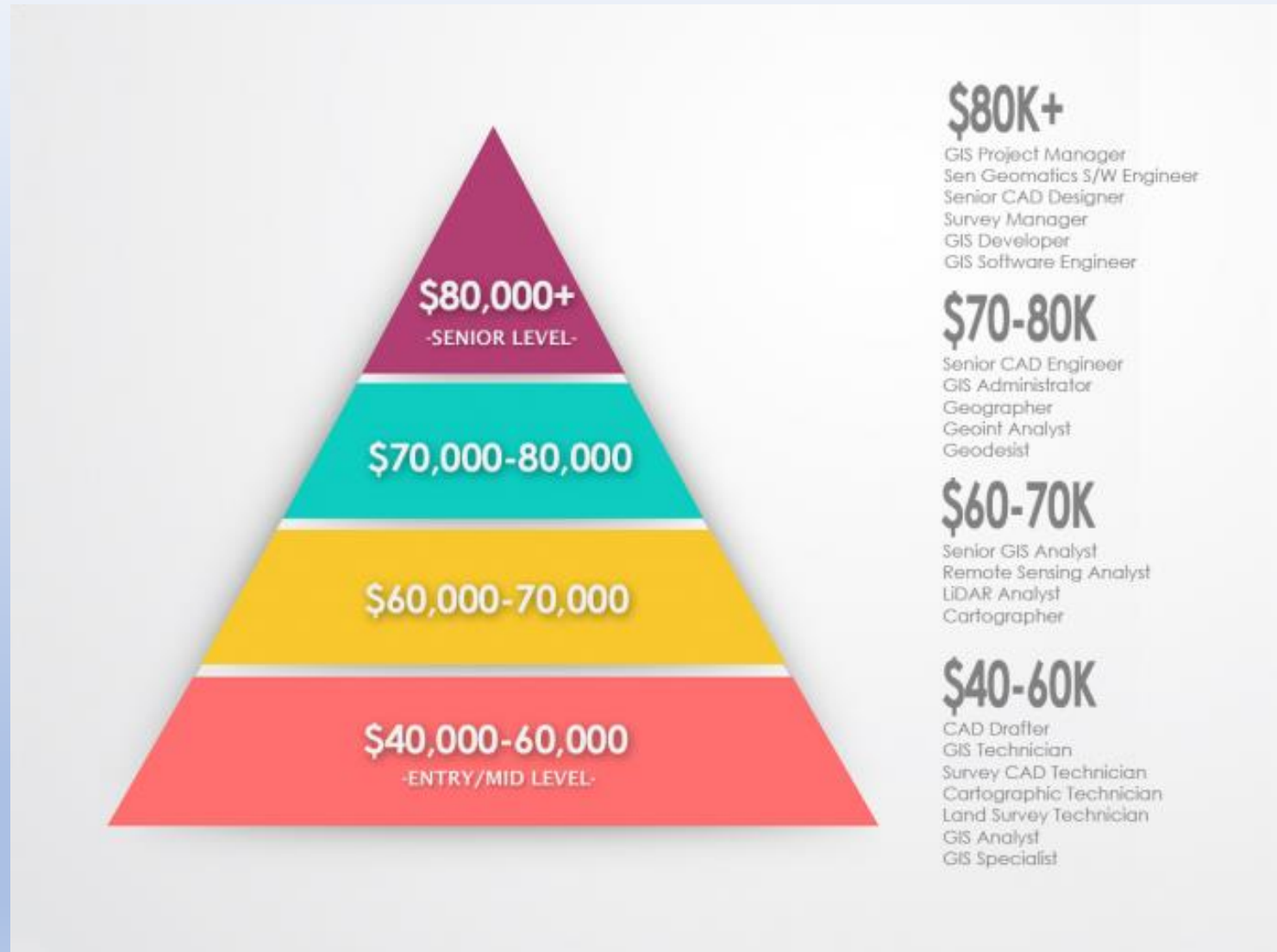
Pinpoints the "best customers" and where to find them

Maps successful campaign territories and matches advertisements to demographics

Screens product use by region



GIS jobs pay well!!!



And they are some of the least stressful jobs to have!

**CNNMoney.com™**  
A Service of CNN, Fortune & Money

SymbolGet QuoteKeyword

HomeBusiness NewsMarketsPersonal FinanceRetirementTechnologyLuxurySmall Business

**10 least stressful jobs**  
Feeling overworked and overwhelmed? Maybe it's time for a career change to one of these 10 fields from Money and PayScale.com's list of America's best jobs.

From the editors of:  
**Money**  
MAGAZINE

**5. Geographic Information Systems Analyst**

5 of 10BackNext

**Best Jobs rank: 97**  
**% who say the job is low stress:**  
55.6%

In emergencies, geographical analysts can experience a lot of stress. After all, tracking where an oil spill will spread could be one of their responsibilities. But that's out of the ordinary. A more typical -- and lower-stress -- assignment might be suggesting ideal locations for stores or forecasting flood zones. The challenging environment allows for creative release, plus there's decent job security.

  
PHOTO: THINKSTOCK

# OK let's view some videos!

- Go to:

<https://www.esri.com/en-us/what-is-gis/careers>

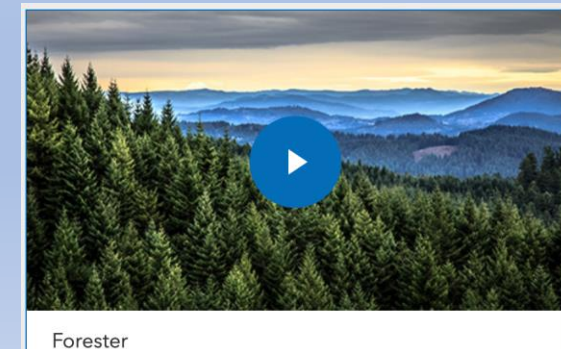
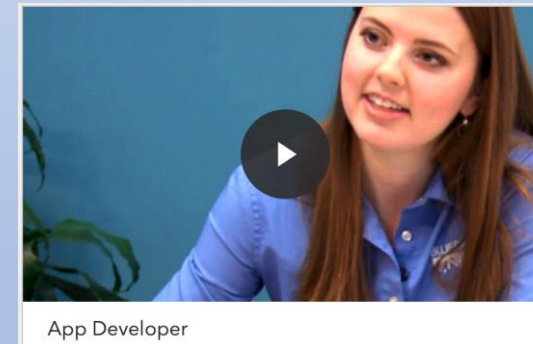
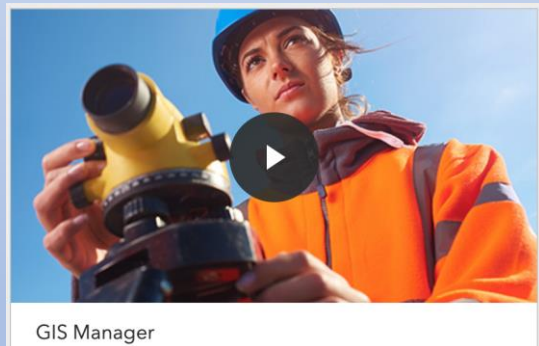
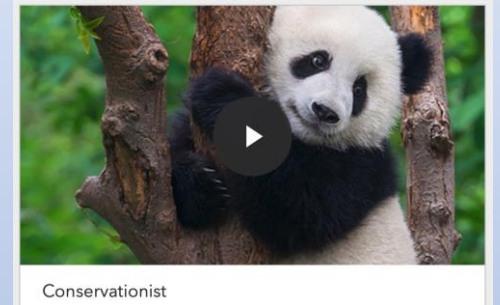
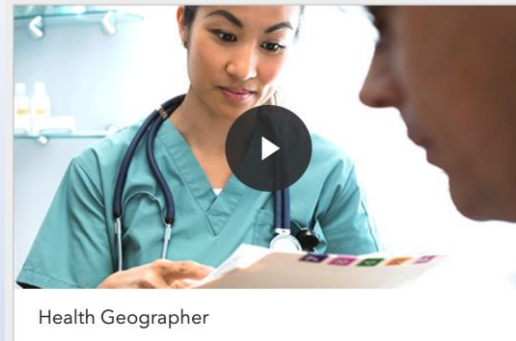
You have 5 MINUTES! Choose ONE of the videos and watch it.

Then share out to the group!

# SHARE OUT!

Which video did you watch?

Do you think would enjoy a job like that?

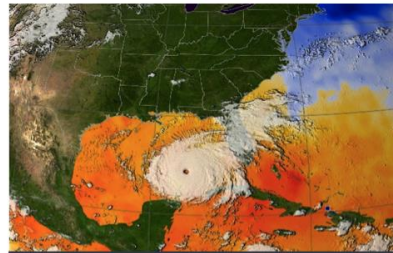


# FOR MORE COOL GIS STUFF!

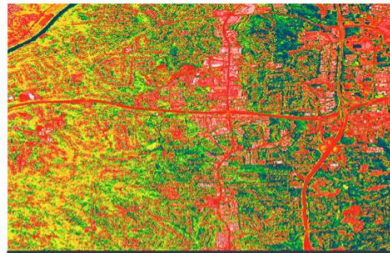
## Explore some NASA examples of GIS Storymaps:

- <https://mydasdata.larc.nasa.gov/basic-page/story-map-collections>

### Story Map Collections



Hurricanes as Heat Engines



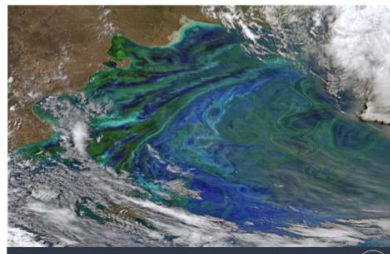
Creation of Urban Heat Islands



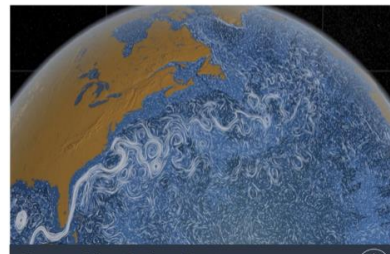
Sea Ice Extent and the Earth System



Volcanic Eruptions



Global Phytoplankton Distribution



Ocean Circulation Patterns

# THANK YOU!

If you want additional information about GLOBE Mission EARTH, go to <https://www.globe.gov/web/mission-earth>

