

McIDAS-V : It's More Than Just a Great Application for Satellite Meteorology



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10 Sep 2013

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Space Science and Engineering Center

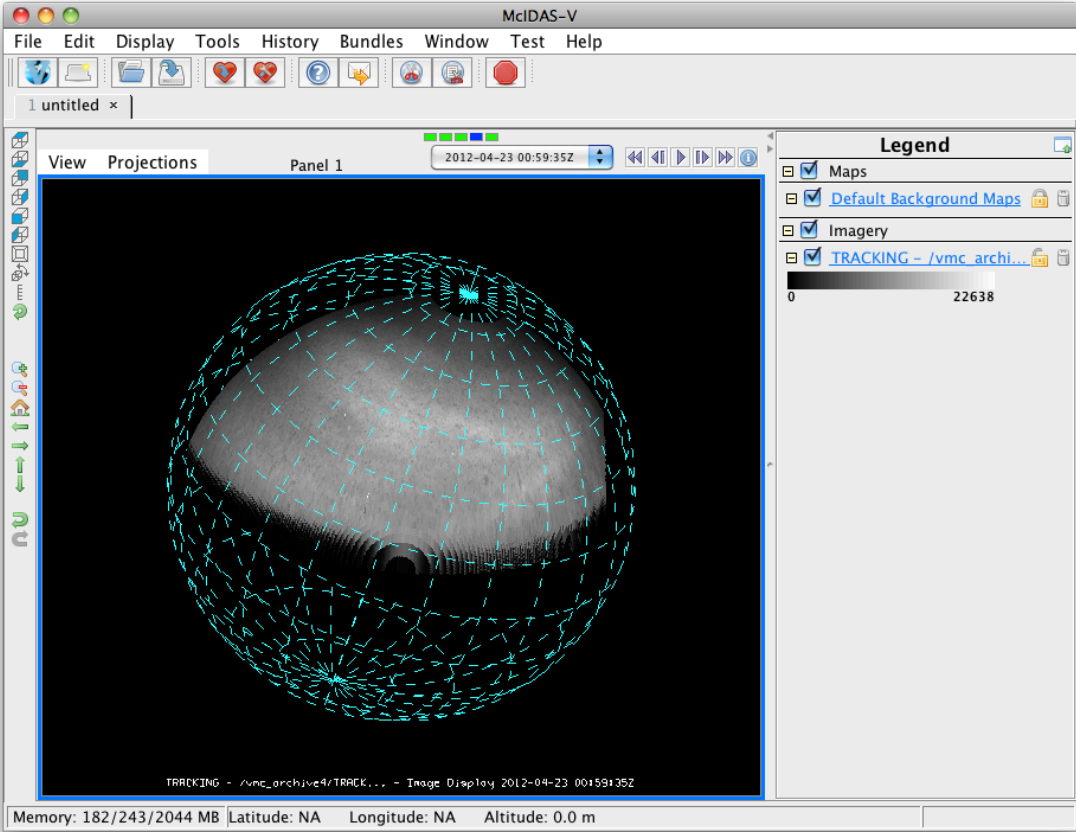


Today's Topics

McIDAS-V Applied to:

- **Planetary Science**
- **Education**
- **Socioeconomic Data**
- **Archaeology**
- **GIS Mashups**

Venus Express Data in McIDAS-V

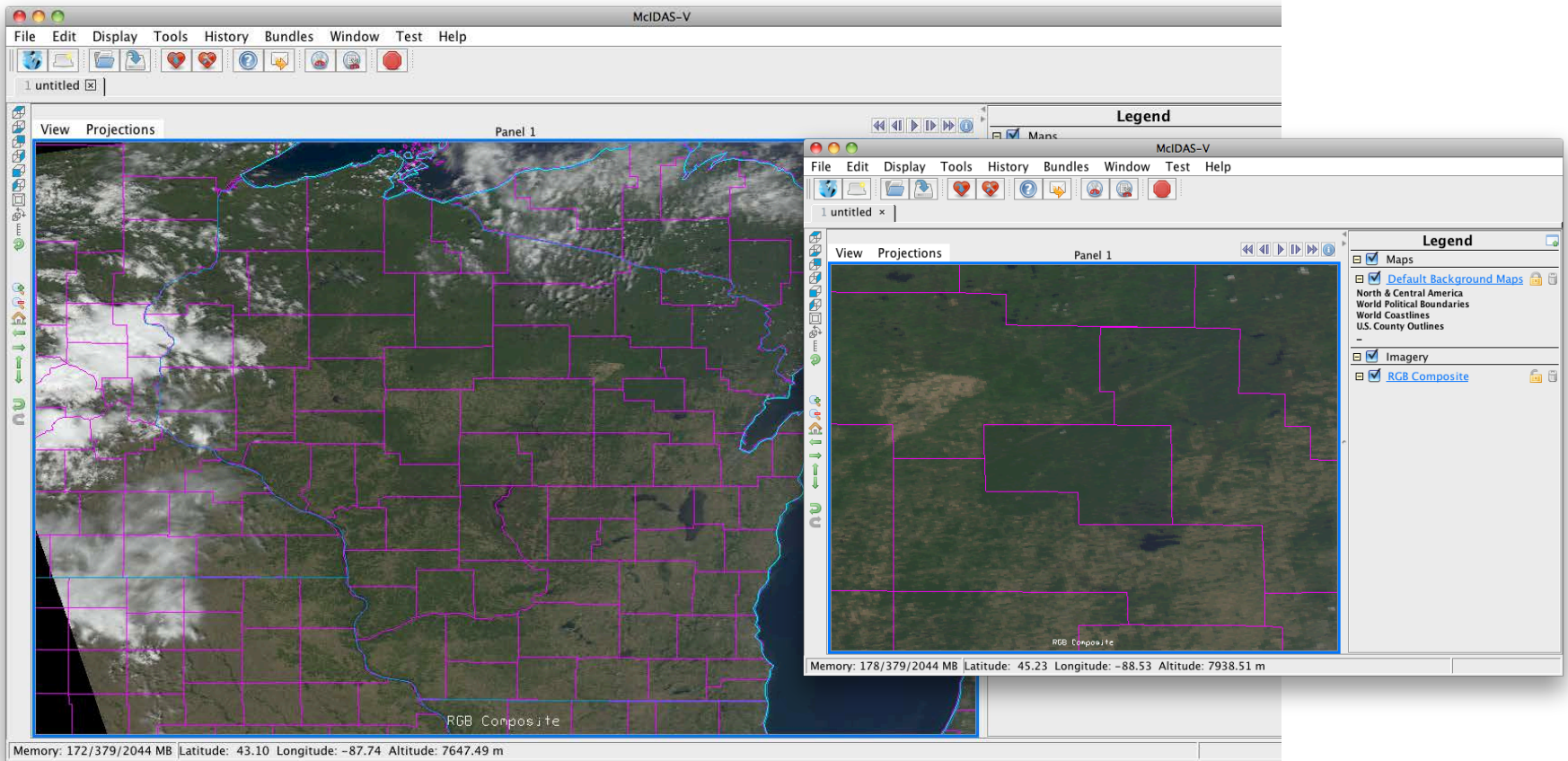


Education Section Lead-In

Geospatial Grand Challenges

- **Poverty, Disease, Food and Water**
- **Natural Disasters**
- **Environmental Sustainability**
- **Population Growth**

RGB of Wisconsin, 0.5 km MODIS

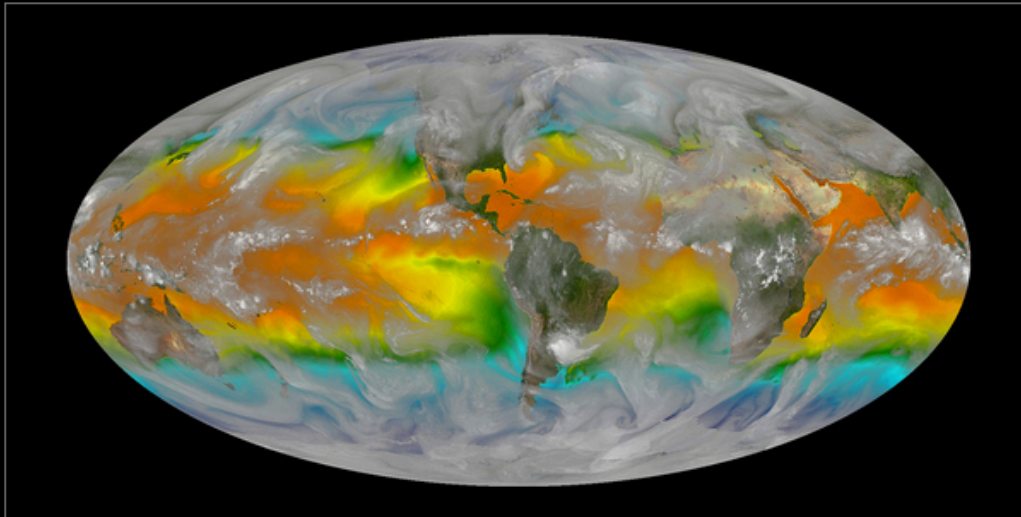


A Map is a Million Words

SLIDE SHOW: **2013 Cool Science Image Contest Winners**

Posted April 1, 2013

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Air Sea Interaction

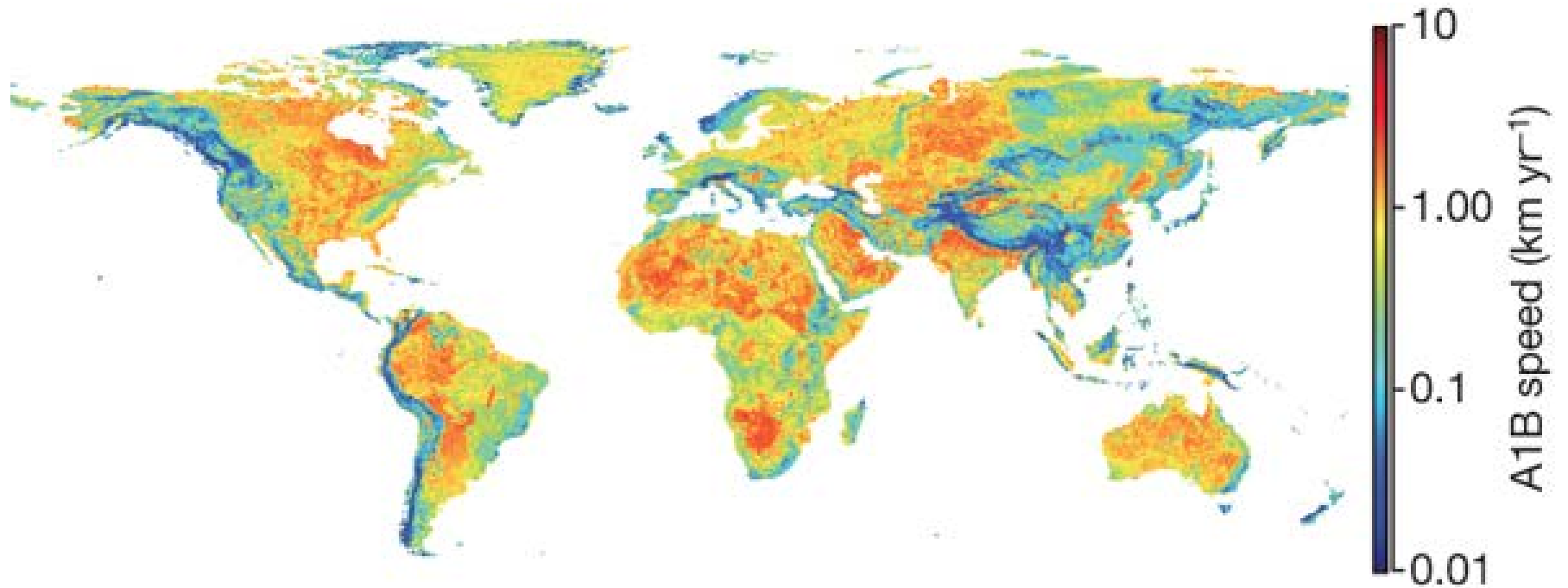
This image from October 28, 2012 shows the amount of water vapor in the atmosphere and sea surface temperatures. Super storm Sandy can be seen off the East coast of the United States as she strengthened due to the warm waters of the Gulf Stream. Moist air rises over warm water, seen in orange and red, and provides the fuel necessary to strengthen tropical storms. As storms pass over colder waters, seen in blues and greens, tropical storms begin to weaken due to the lack of energy-laden moist air rising from the sea surface.

Rick Kohrs, staff, Space Science and Engineering Center

Like 29

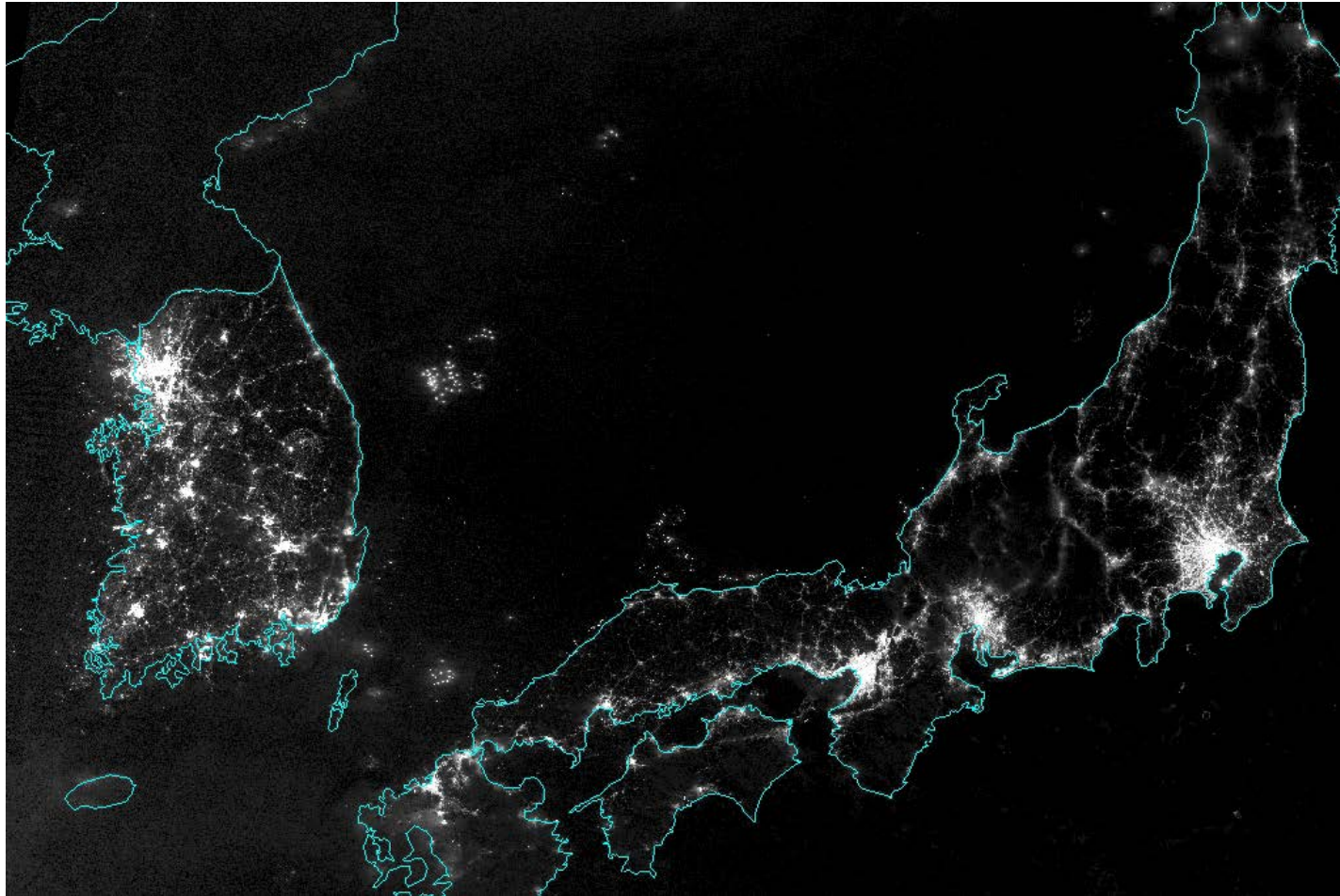
Tweet 4

Velocity of Climate Change

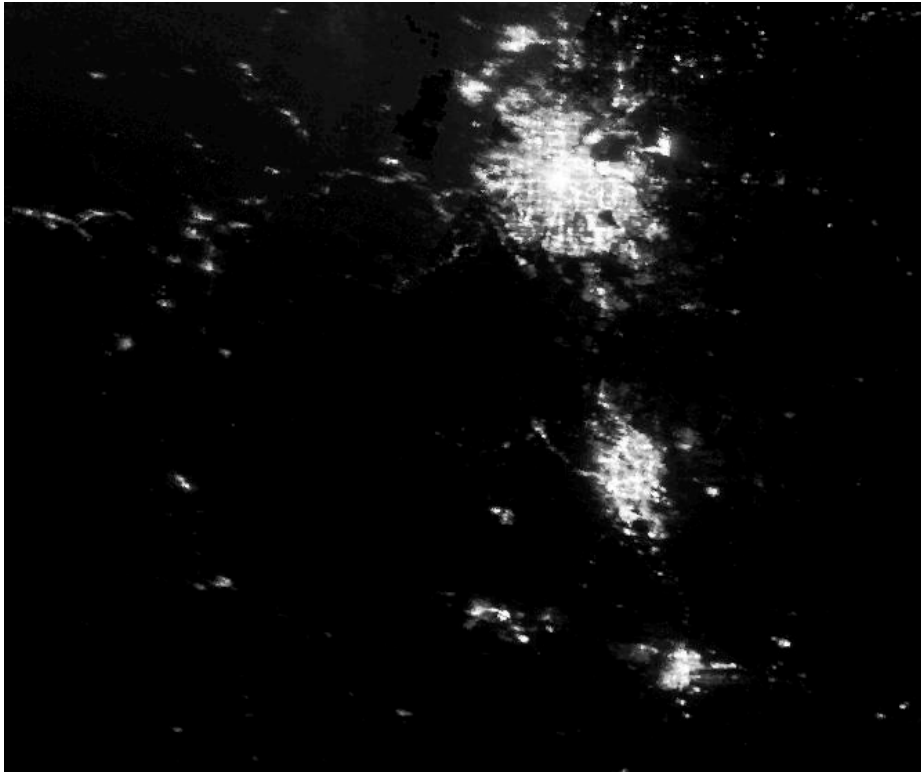


Loarie, et al: Nature, 2009

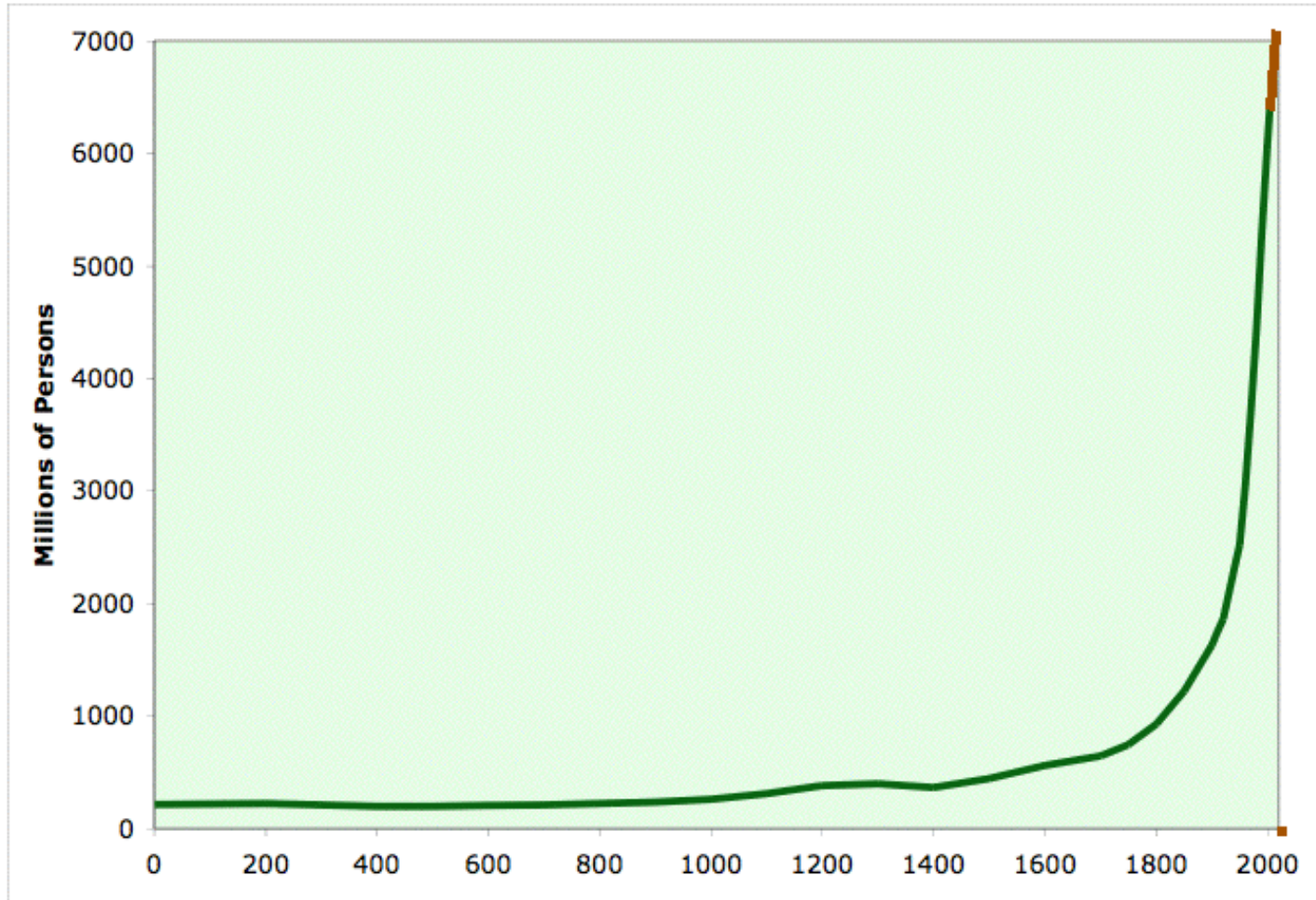
Socioeconomic Data Lead-In



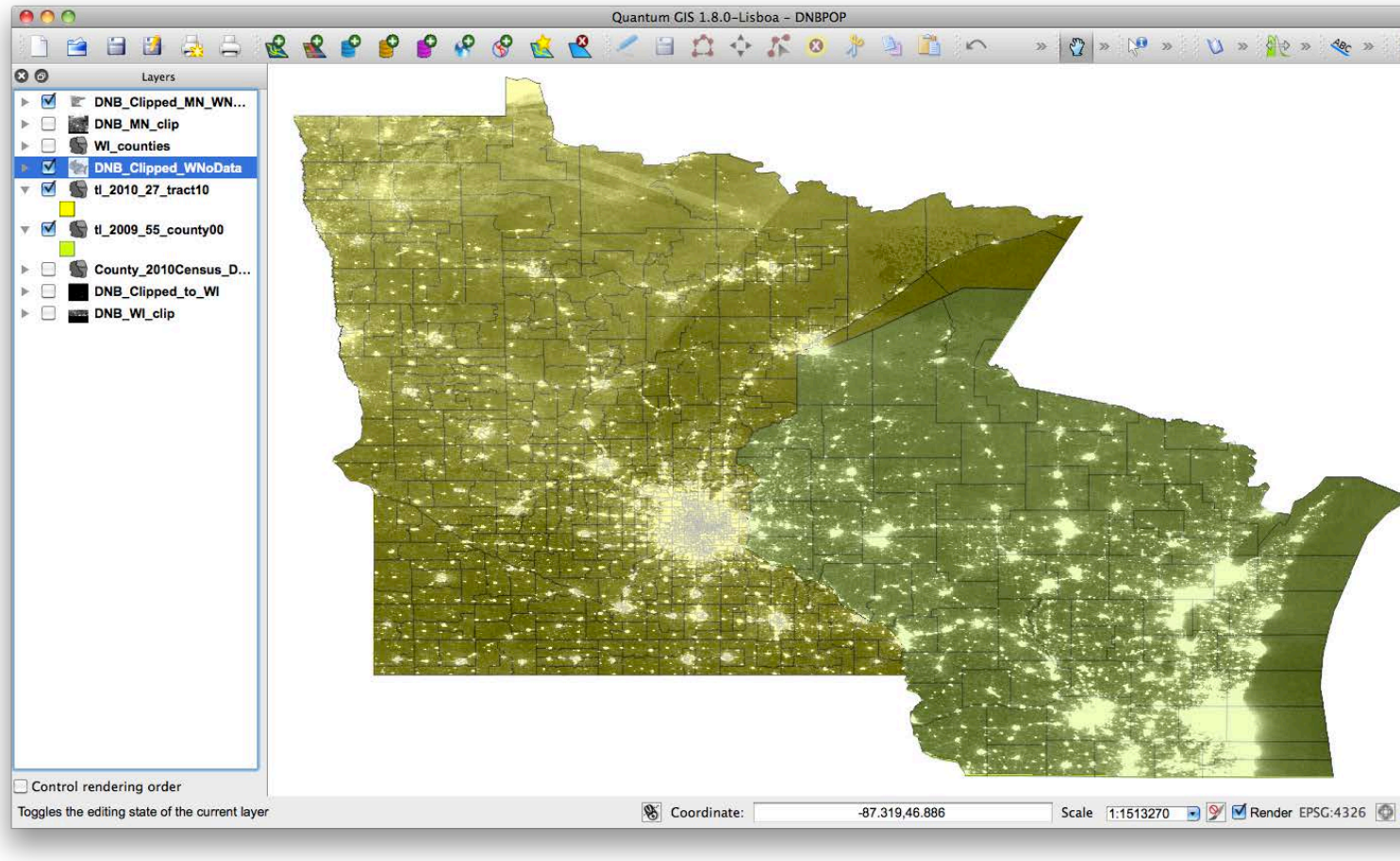
VIIRS vs. DMSP – Denver, CO



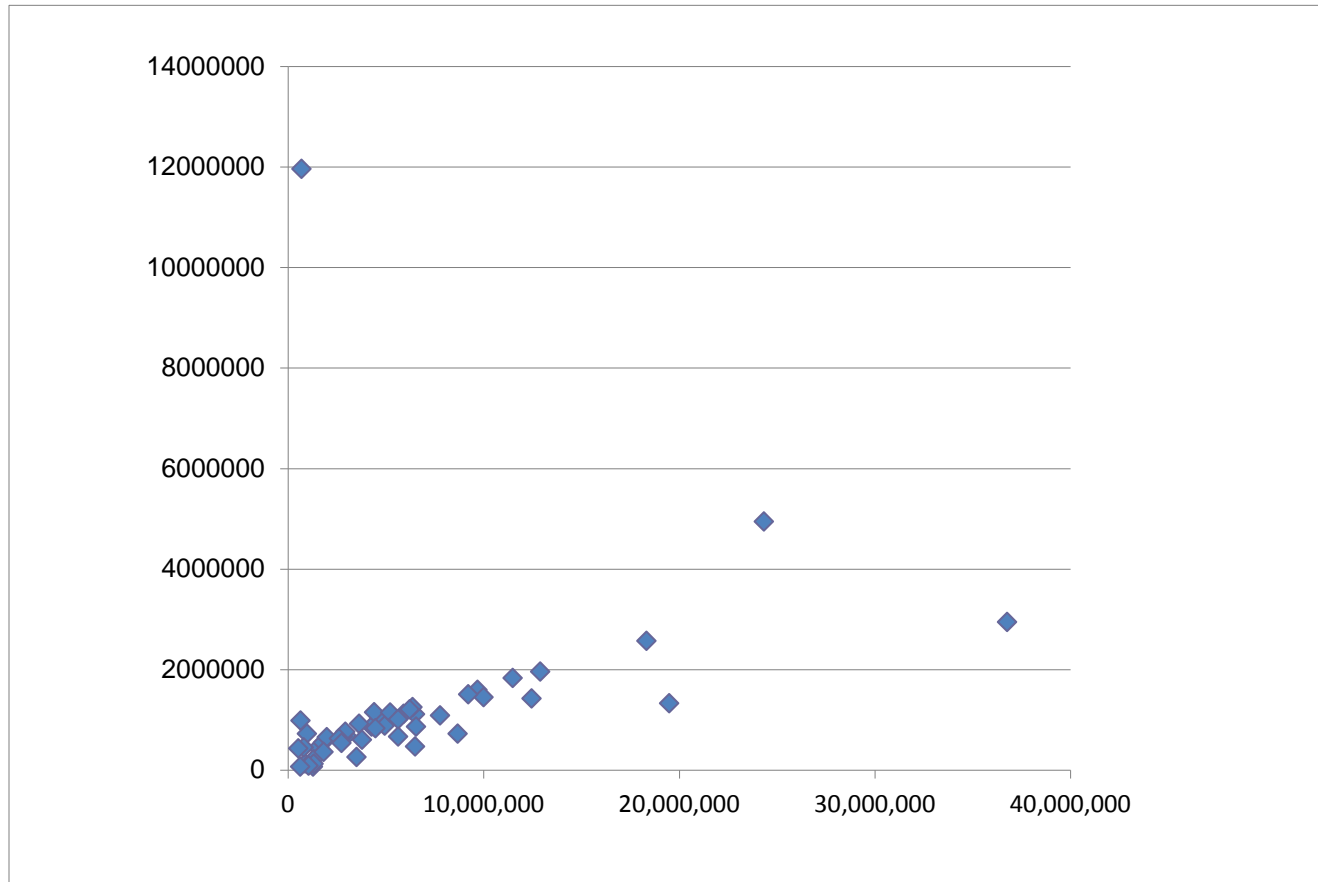
World Population



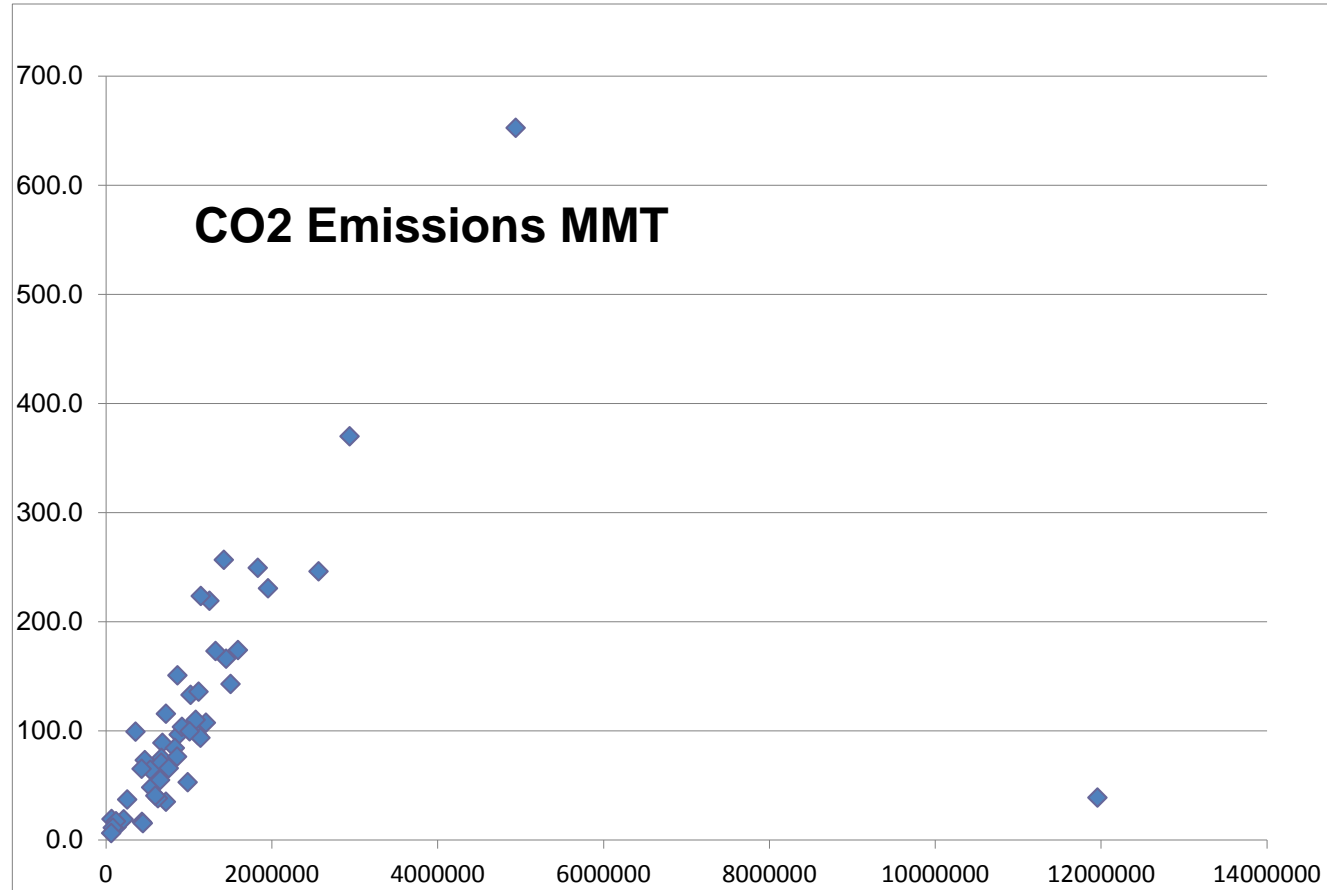
DNB Clipped to State Boundaries in QGIS



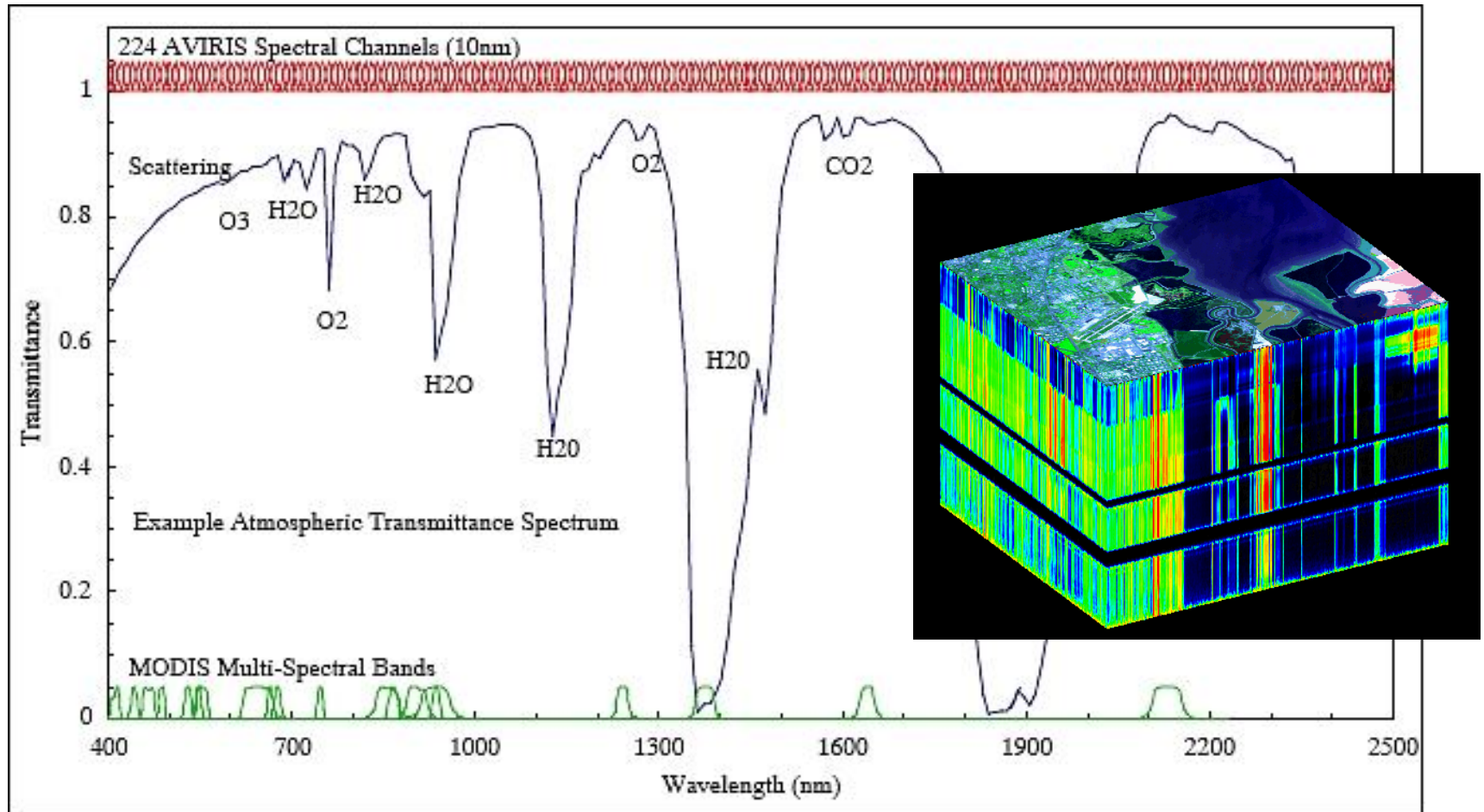
State Population vs. Sum DNB Radiance



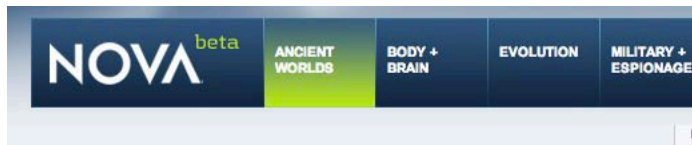
CO2 Emissions vs. Sum DNB Radiance



Archaeology Lead-In



Remote Sensing and Archaeology



17 lost pyramids discovered in Egypt by space scientists

'Indiana Jones is old school, we've moved on from Indy ... sorry, Harrison Ford'

Jump to explainer
Tales of seven cities, lost and found

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Maya

Posted 01.09.07 | NOVA scienceNOW

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Maya: Expert Q&A

Archeologists Bill Saturno and Tom Sever answer questions about the mural, using satellites to find lost sites, and more



Profile: Julie Schablitsky

Meet an archeologist who is helping to rewrite the history of the Donner Party and the

This NOVA scienceNOW video shows how experts use satellite photography to find ancient Maya architecture in the rain forest of Guatemala. It's a marriage of 21st-century technology and centuries-old archeological techniques that has already unearthed some striking Maya remains, including a jungle-covered temple containing an extremely rare, 2,000-year-old mural.



msnbc.com staff and news service reports
updated 5/26/2011 6:00:01 AM ET
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Seventeen lost pyramids are believed to have been found in Egypt by a team of space archaeologists from Alabama, according to a report.

Sarah Parcak and her team at a NASA-sponsored laboratory at the University of Alabama at Birmingham made the discoveries using a satellite survey, and also found more than 1,000 tombs and 3,000 ancient settlements in infrared images that show up buildings underground, BBC News reported.



LAUNCH VIDEO

Running Time: 13:37

Mashups Lead-In

Current Accumulation Rate for Georeferenced Data?

IMO: one of the next big waves of technological innovation will be a direct result of “mixing and matching” Earth-located data in new, novel ways.

McIDAS: First geo-data mashup?



Mashups – Wolf habitat in WI

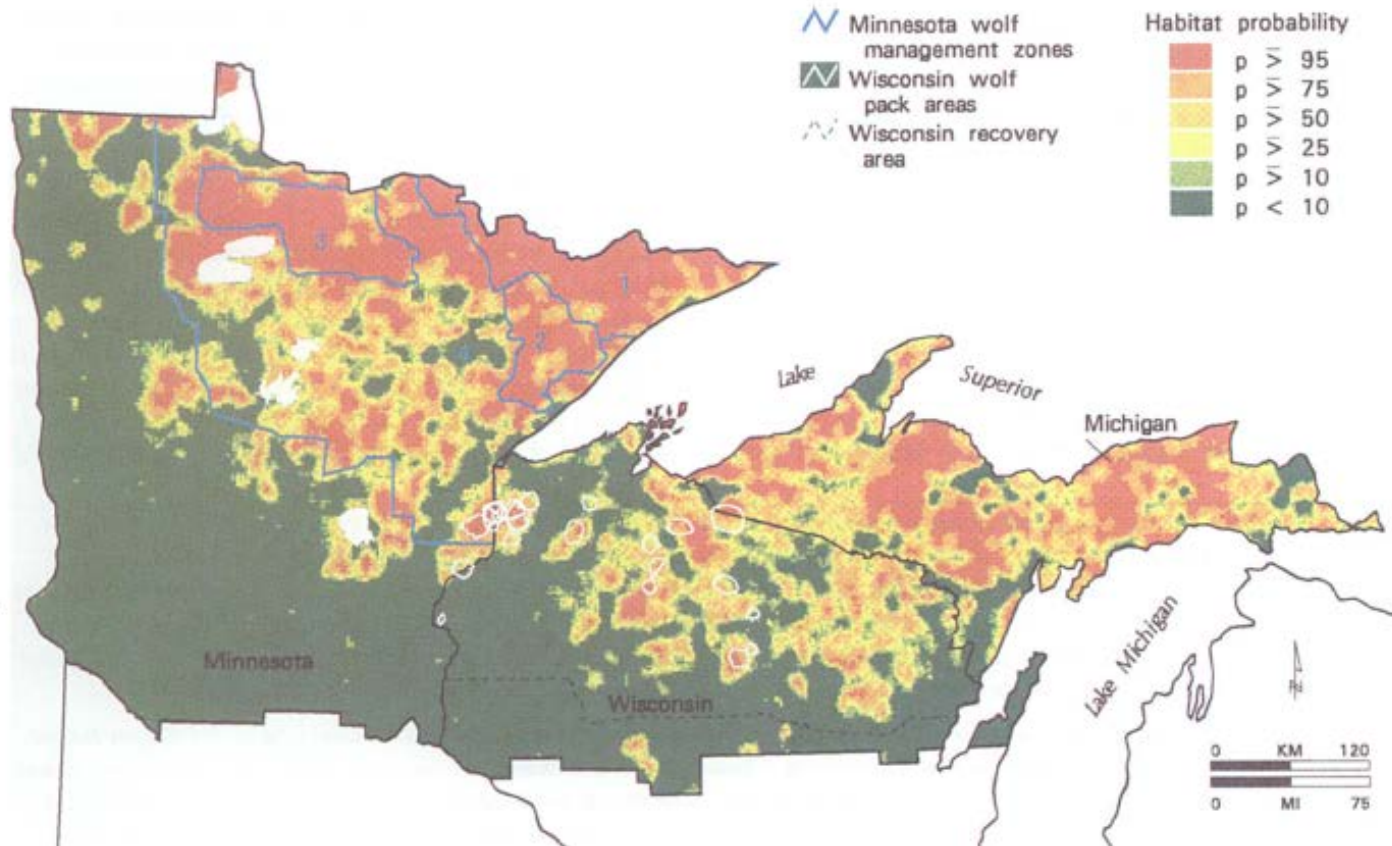
Linear regression model

Dependent variable: wolf pack ranges

Independent variables: human population, prey density, roads, land cover type, land ownership, and more

Wide variety of geospatial data types, sources, and formats used

Wolf Pack Probability Map



What was the biggest factor?

GPS Data in McIDAS-V?



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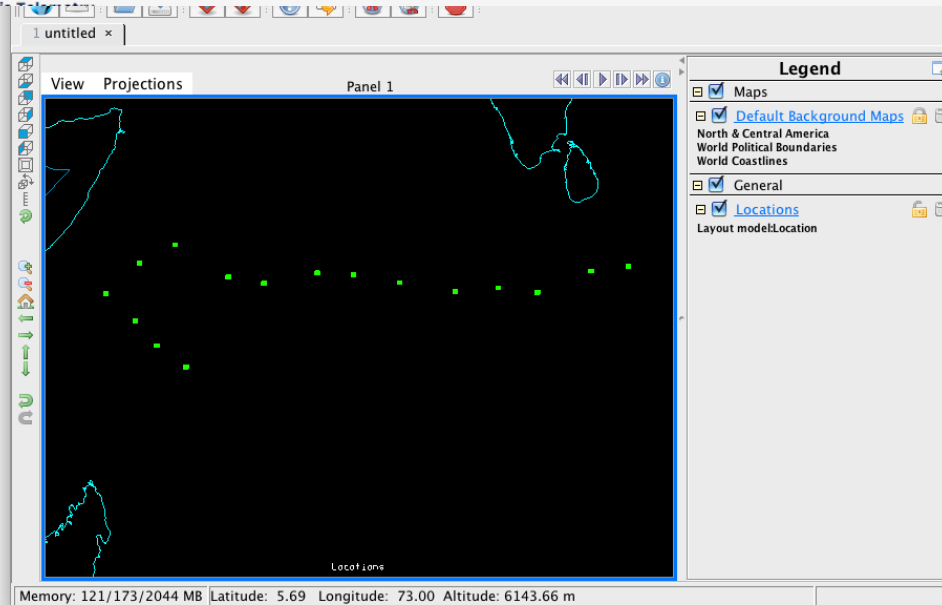
PROGRAMS

Track Wild Wolves

Search the Track Wild Wolves Database

Track Wild Wolves

Note: The ongoing wolf location data on this page have been removed from our Web site because, now that wolf management has been returned to each state, wolves will be subject to regulated public taking during certain seasons, and USGS researchers would like to minimize chances of their radio-collared wolves being killed.



Whale Shark migration route from KML file

Closing Clip: Superstorm Sandy

