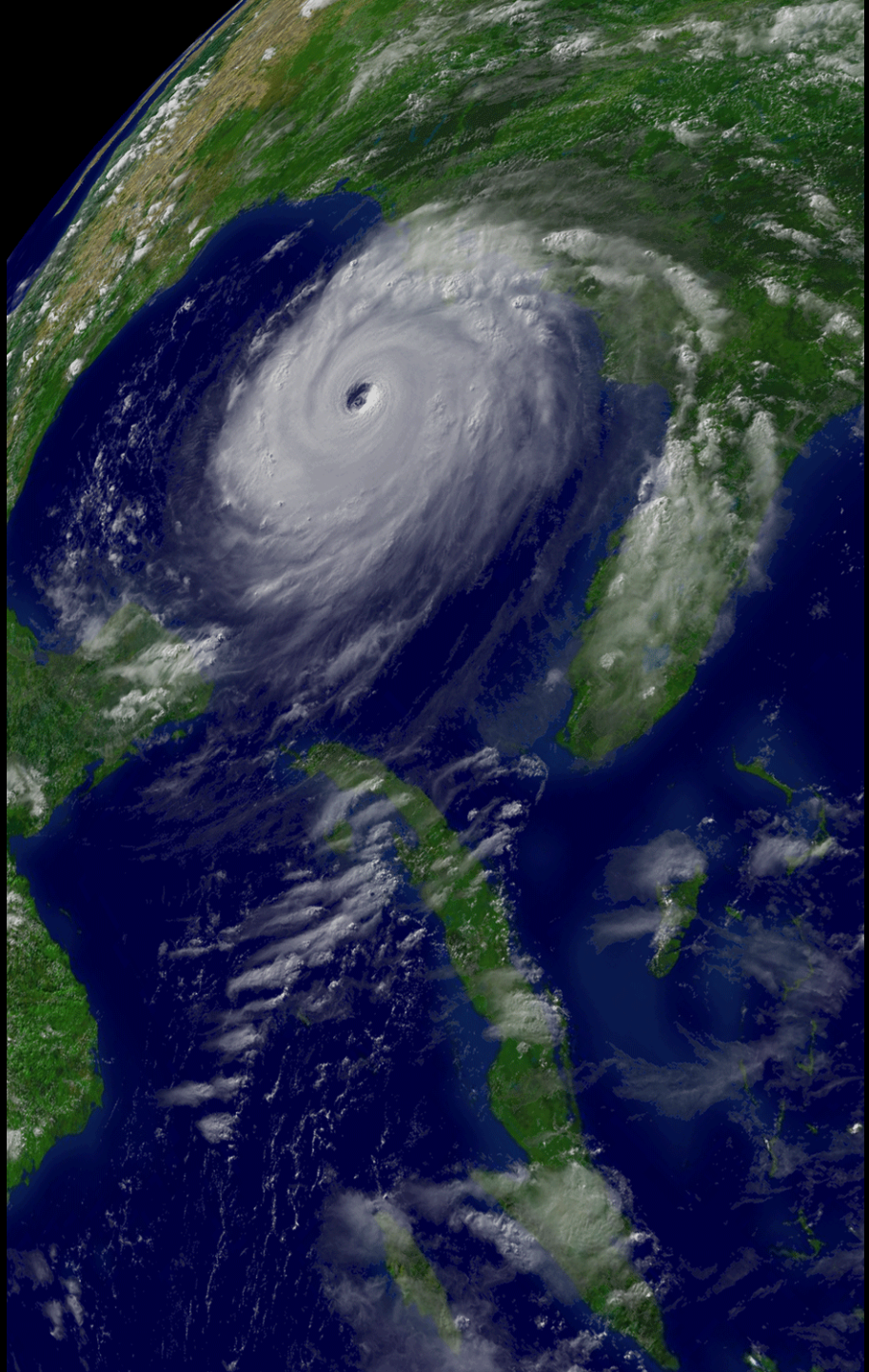
Dan Pisut
NOAA Environmental Visualization Lab
Dan.Pisut@noaa.gov

ADVANCED GRAPHICS USING MCIDAS-X AND -V



Hurricane Katrina; August 29, 2005 at 1545z
McIDAS-X and Boeing/Autometric Edge

Top 10 Reasons to Love McIDAS

- Shapefiles
- Any netCDF
- Custom analysis
- Real-time access
- Consolidated access
- Flexibility
- Free
- Time saver
- Resolution
- Batch processing

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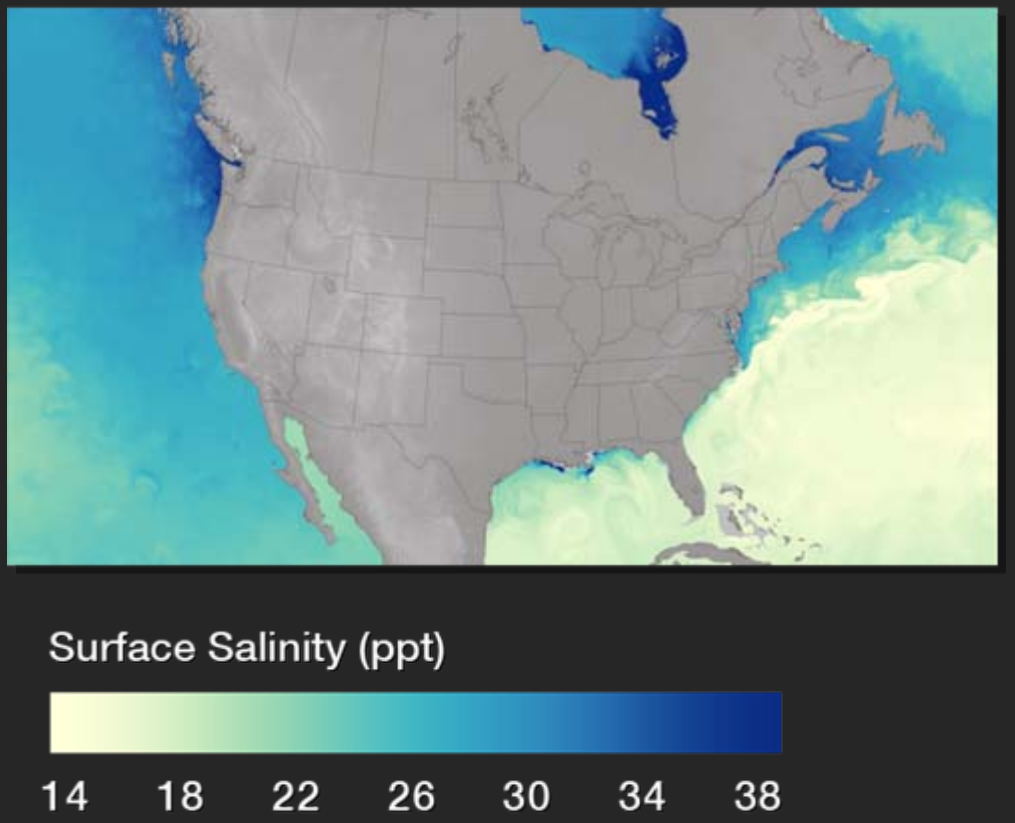

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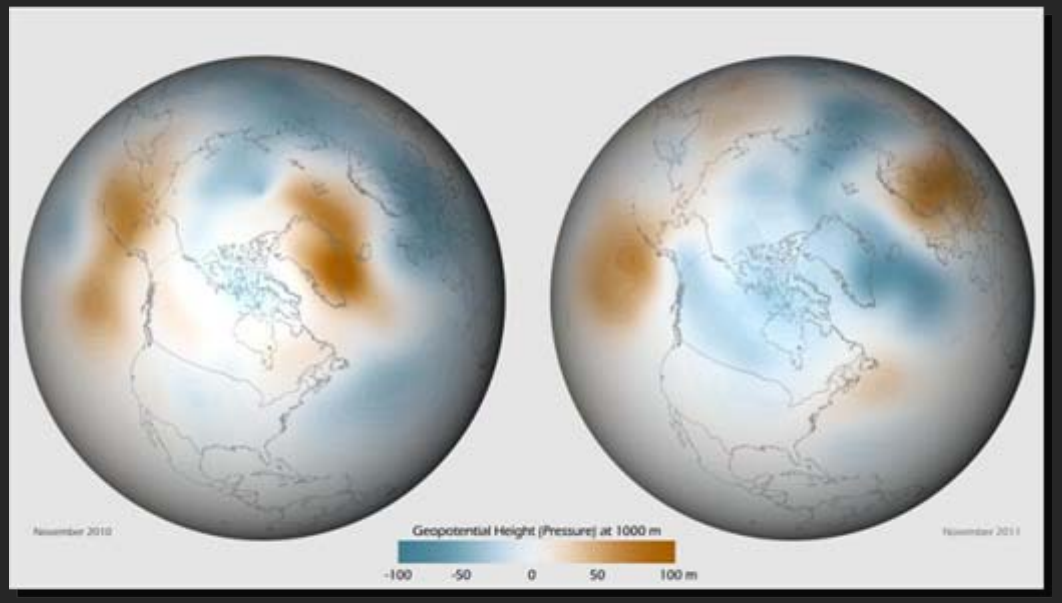

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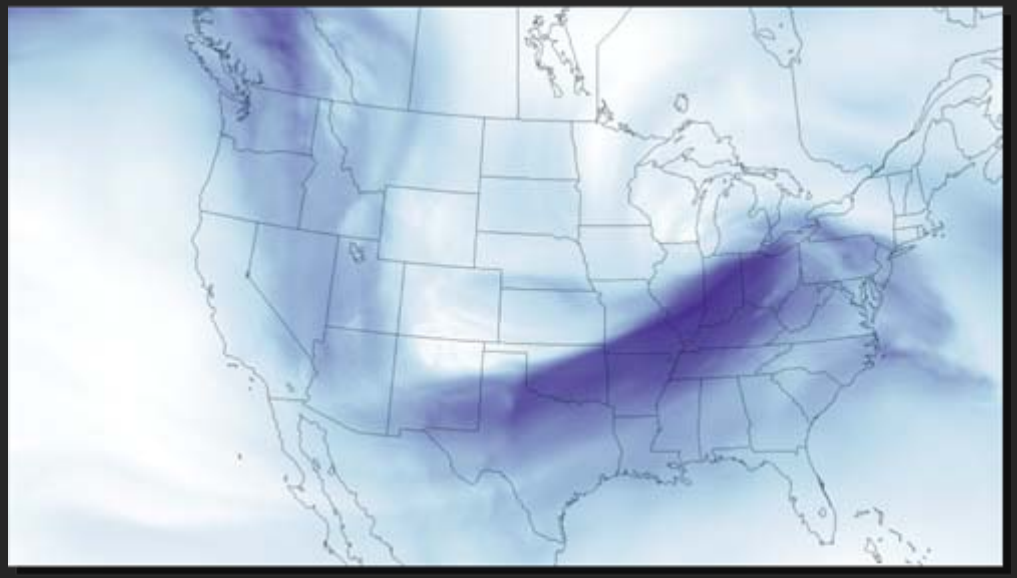

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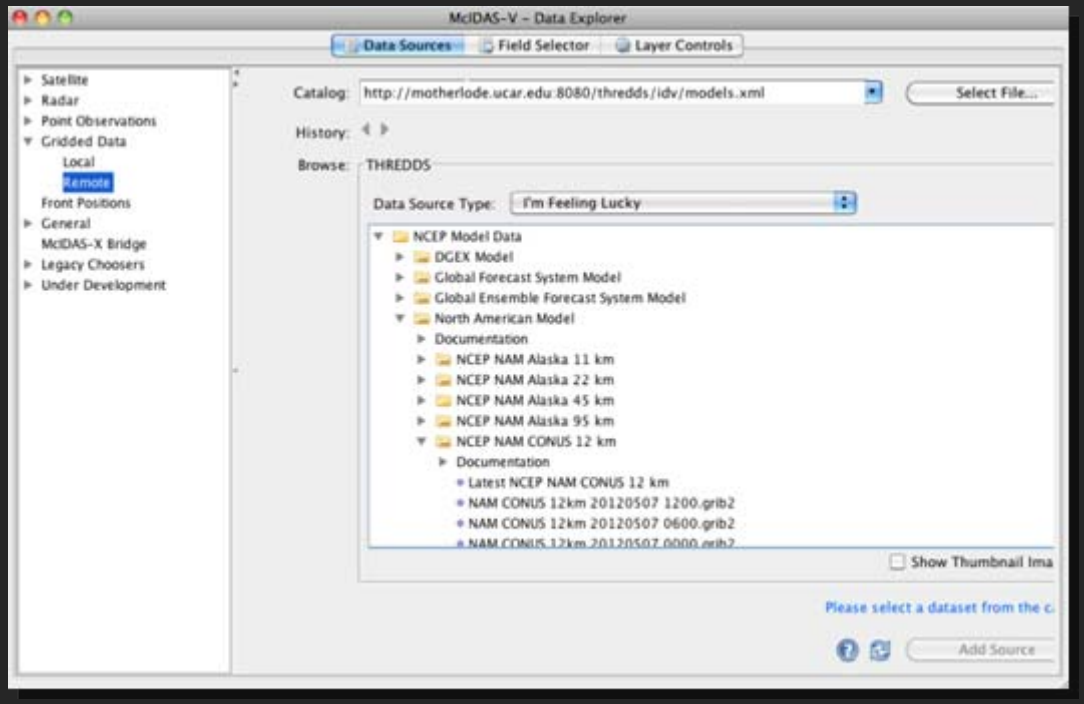

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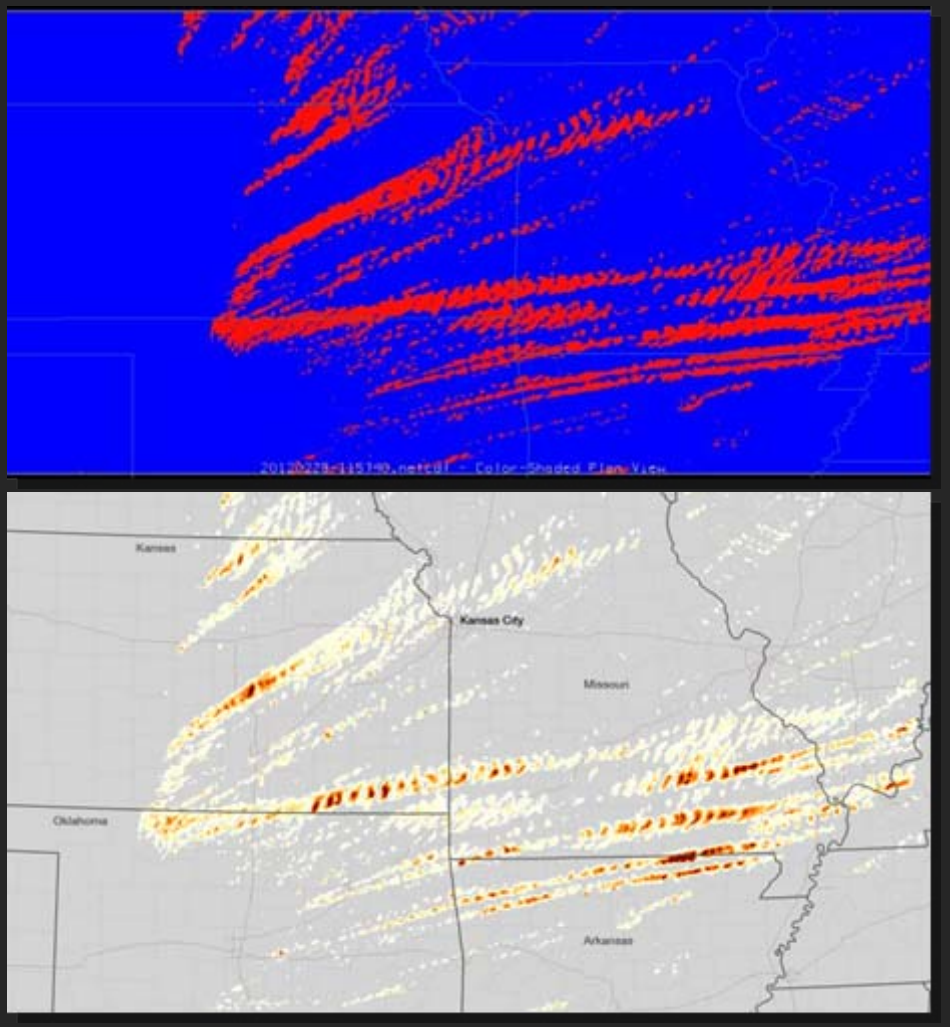

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- Shapefiles
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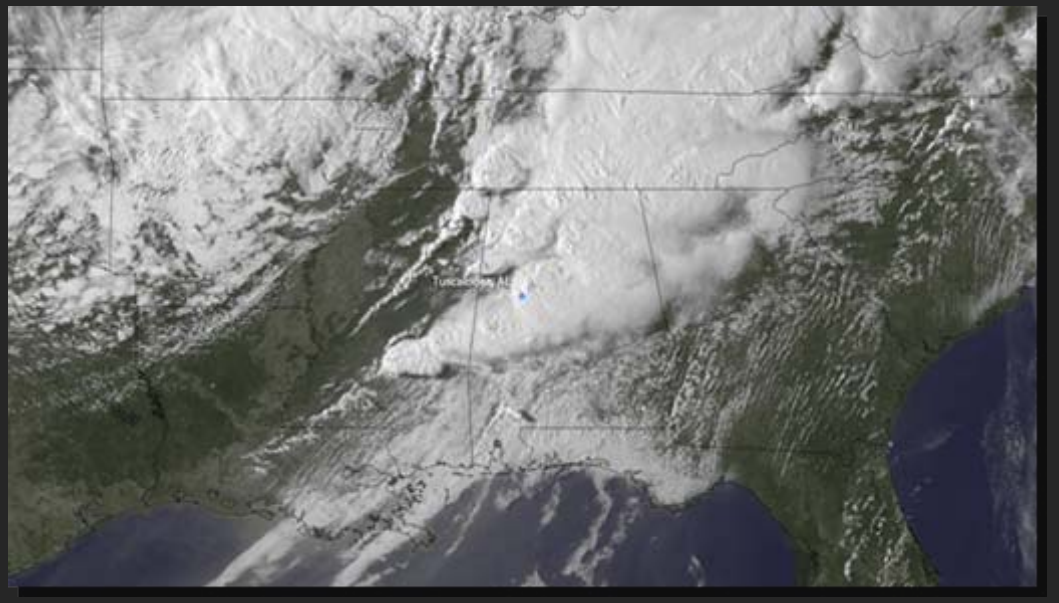
- Custom analysis
- Real-time access
- Consolidated access
- Flexibility
- Free
- Time saver
- Resolution: 10,000 x 10,000 pixels? Yes please!
- Batch processing



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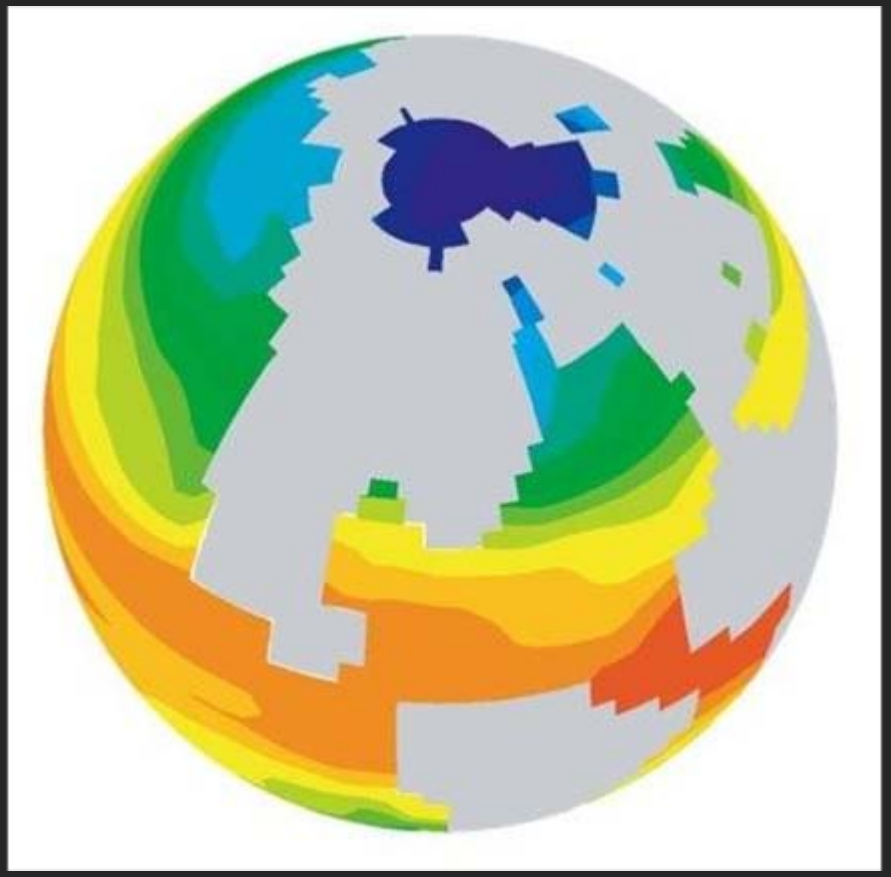
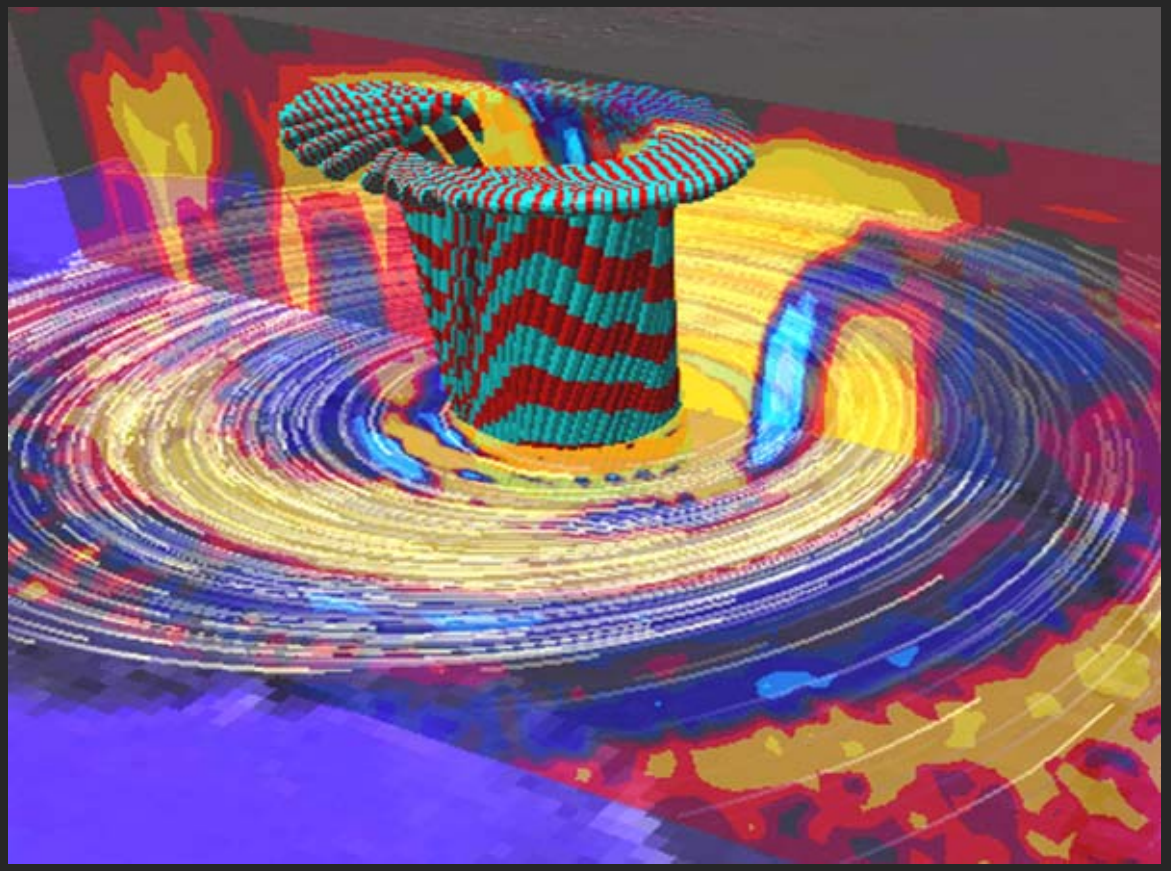
Ultra-Cool-Sexy
McMAGIC



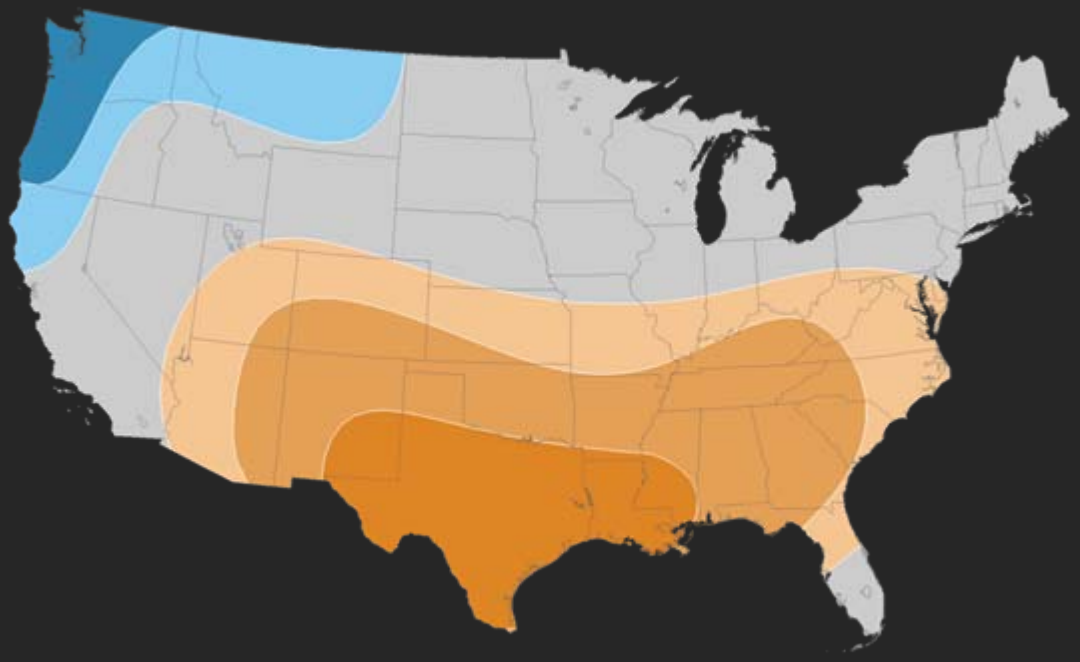
Simple

The Evolution of Visualization



Simple ⟶ **Complex**

The Evolution of Visualization



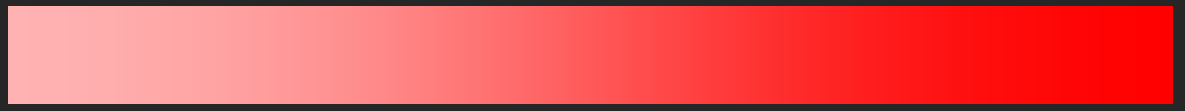
Simple → Complex → **Simple**

The Evolution of Visualization

Rules of Color in Visualization

Hue

Saturation



Brightness

Most people don't ***see*** things the same way as scientists

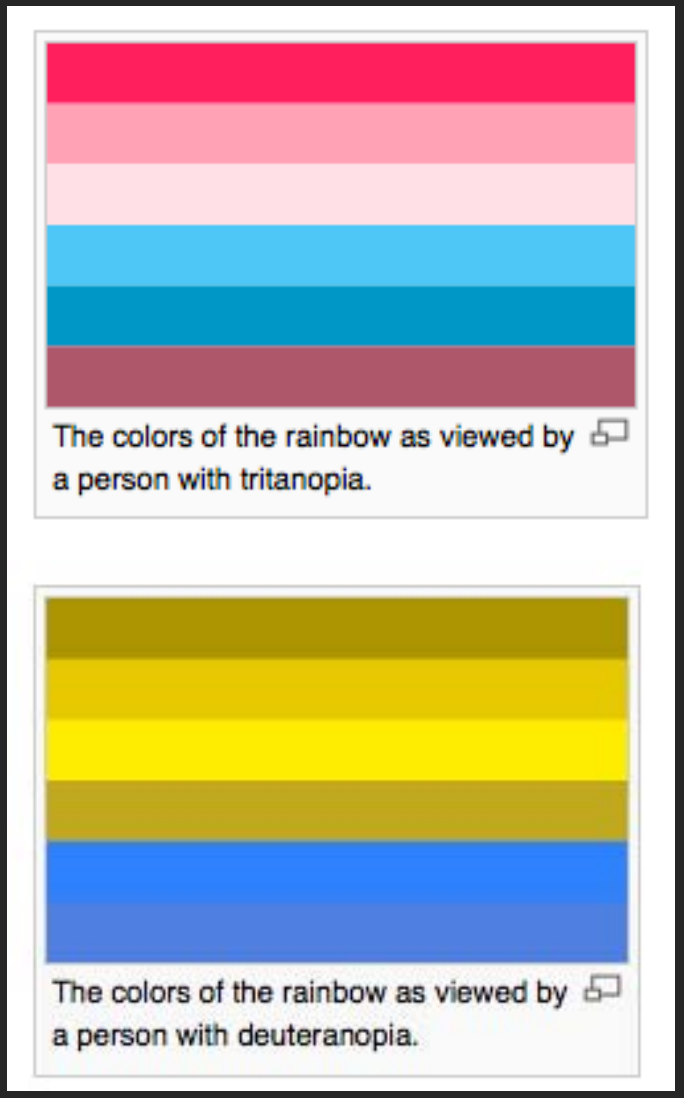
Rogowitz, Bernice and Alan Kalvin, "The 'Which Blair Project:" A Quick Visual Method For Evaluating Color Maps," Proceedings. IEEE Visualization Conference, San Diego, CA, October 21-26, pp. 183-188, 2001

Can you see similar patterns in grayscale and color?

THE LITMUS TEST

The colors of the rainbow as viewed by a person with no color vision deficiencies.

The colors of the rainbow as viewed by a person with protanopia.



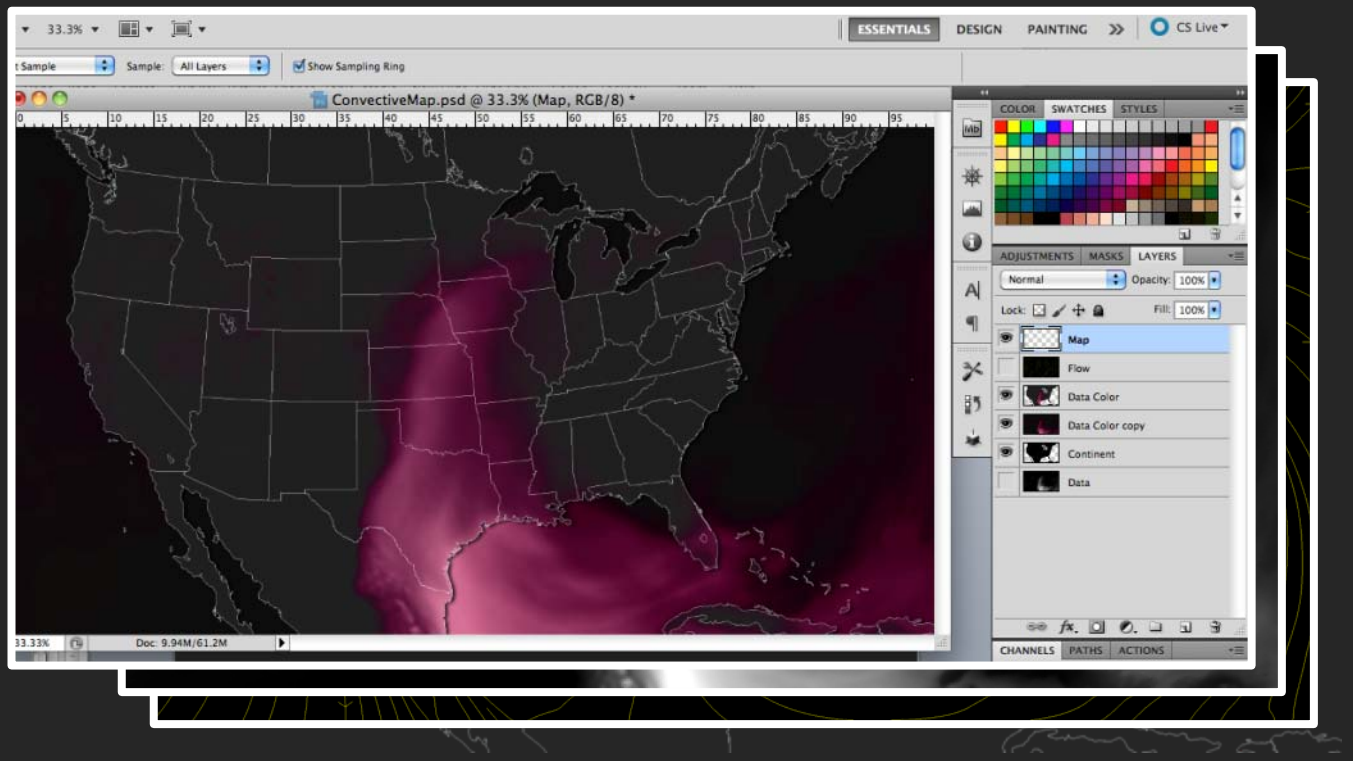
The colors of the rainbow as viewed by a person with tritanopia.

The colors of the rainbow as viewed by a person with deuteranopia.

http://en.wikipedia.org/wiki/Color_blindness#Design_implications_of_color_blindness

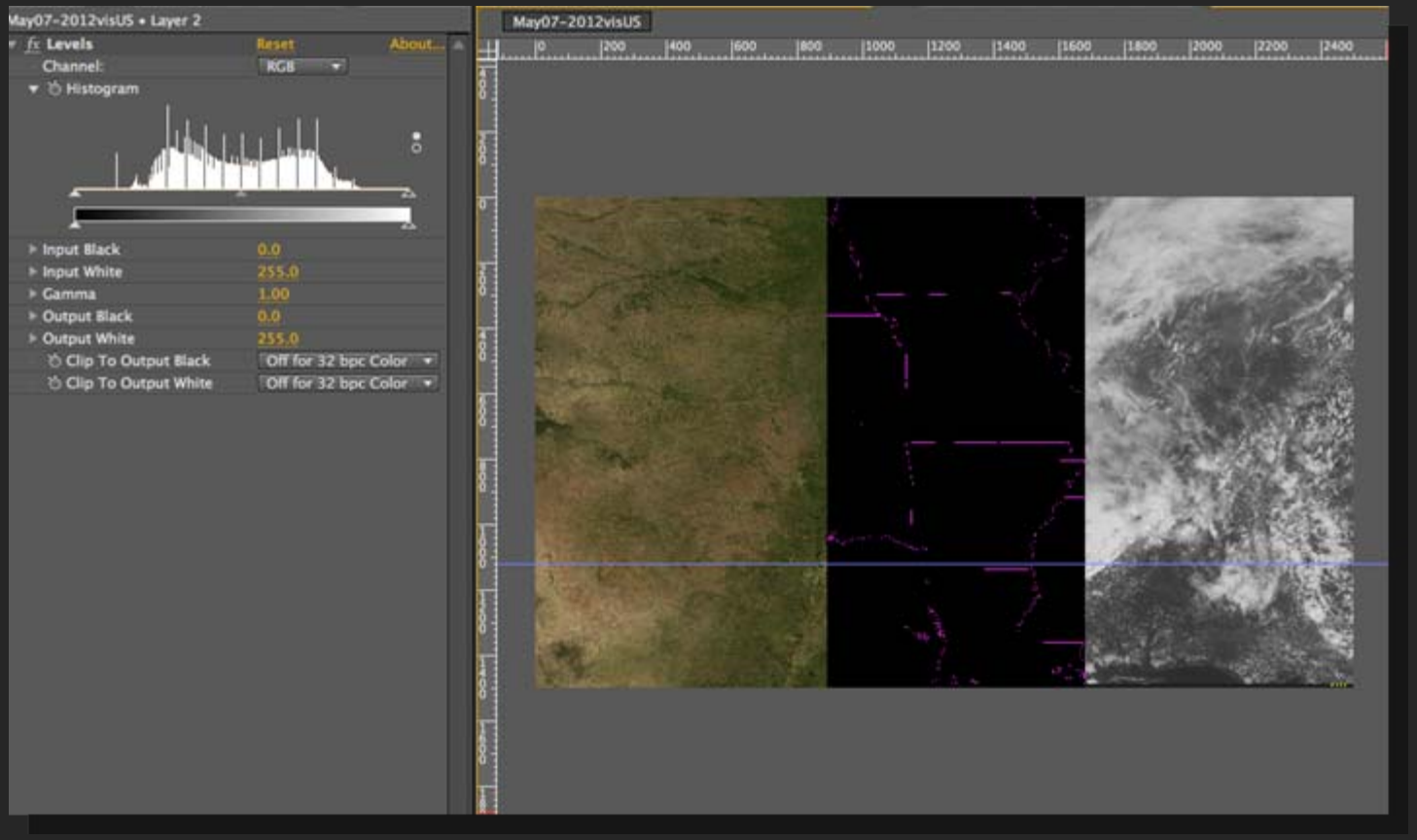
Uses NAM CAPE product and wind barbs

Visualizing the conditions setting up for major tornado outbreaks



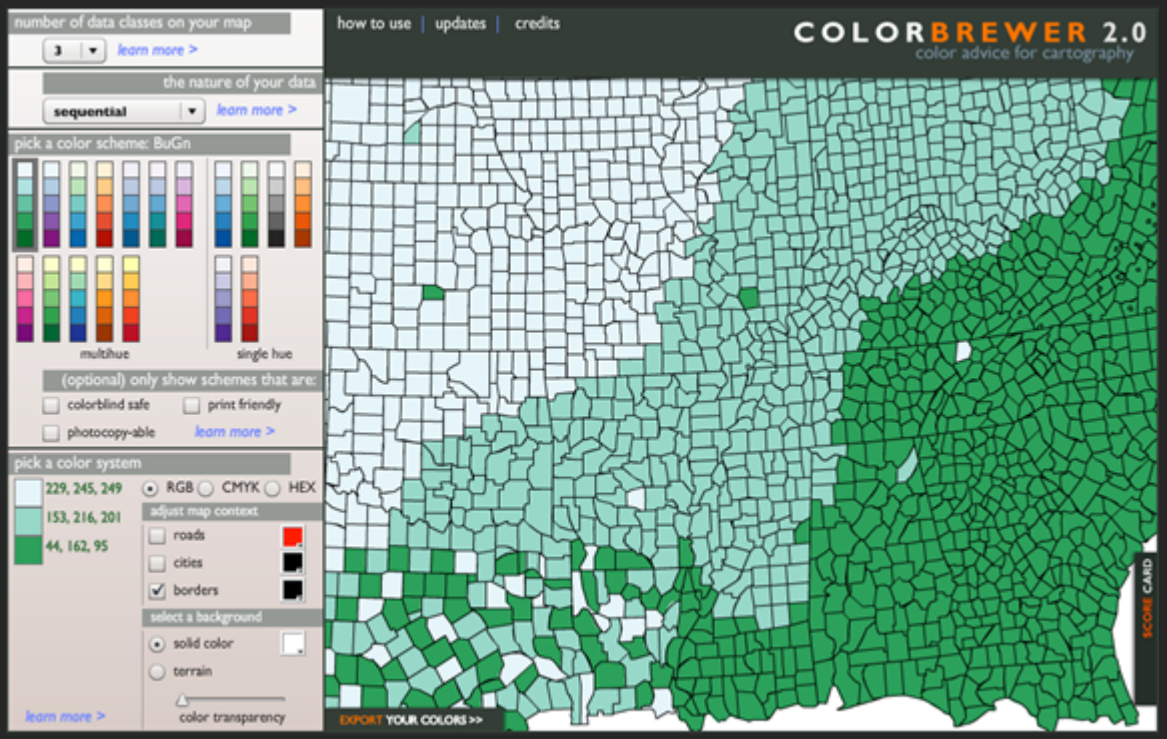
Output multiple map outlines data layers separately

Layering the displays



Same concept, different data

Layering the displays



Colorbrewer2.org

Plan or test your color treatments

Questions?

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www.nnvl.noaa.gov