



Rocky Mountain Mapping Center

Isn't That Spatial? # 5: Teaching with *The National Map*

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Computerized geographic tools are becoming increasingly common in our everyday world--GPS in cell phones, Mapquest on the Internet, and OnStar in vehicles, to name a few. Despite these tools, one of the most commonly used geographic tools is still the USGS topographic map. These maps form the foundation for many of the digital maps that we take for granted.

USGS topographic maps were the first set of maps that covered the entire country accurately, at a consistent scale (1:250,000, 1:100,000, and 1:24,000), and with consistent symbology. They show contour lines, survey markers, buildings, roads, railroads, boundaries, lakes, rivers, and much more. Mapping the country at these scales was a mammoth undertaking, requiring 55 years, costing between \$1 and \$2 billion, and resulting in 57,000 maps. Although the USGS was created in 1879, it wasn't until 1990 when the last new map was published to complete the coverage of the country at the 1:24,000 scale.

Since 1990, although some paper topographic maps have been updated, most of them are becoming increasingly out of date. Paper cannot provide the kind of current map data that today's researchers, educators, and decision-makers need. Therefore, the USGS has begun a collaborative effort with tribal, federal, regional, and local governments called *The National Map*. Most government agencies maintain their own digital information in GIS form. *The National Map* effort seeks to use the most recent data from these organizations that partner with the USGS to serve the data to the public.

What does this mean to us as geography educators? It means that the Web site nationalmap.gov should be included as part of every geography educator's toolkit. *The National Map* represents the latest base map for the USA. Do you need to print a map of the area around your school? Would you like to show the watershed that your school is located in, and its relationship to the neighboring watersheds? Would you like to print a topographic map showing next week's field trip location? Would you like your students to explore the land use in your community, using satellite images, aerial photographs, and land use maps? What does the impervious surface look like in your community, and why should students be concerned about it? All of these things, and more, are possible by taking advantage of the wealth of data on *The National Map* web site. To use the site, click on nationalmap.gov and then select "View Maps." You will then be able to select individual themes and zoom in on specific areas of interest.

The screenshot displays the National Map Viewer interface. The browser window title is "National Map Viewer - Microsoft Internet Explorer". The address bar shows the URL "http://nmviewogc.cr.usgs.gov/viewer.htm". The page features the USGS logo and "The National Map" branding. The main content is a shaded relief topographic map of the Grand Mesa area in Colorado, showing various reservoirs like Rapid Creek, Vincent, Bolen, and Grand Mesa. A sidebar on the left contains navigation tools like Overview, Zoom In, Zoom Out, and Full Extent. A sidebar on the right shows a "Layers" panel with "Elevation" and "Other" categories, and a "Legend" panel. At the bottom, there is a footer with contact information and a "FIRSTGOV" logo.

Shaded relief view of the Grand Mesa, Colorado, from *The National Map*.

Each map in *The National Map* can be customized by zooming in to specific neighborhoods, or out to states or regions. Specific map layers can be turned on and off. Distributed map-server technology using open-GIS Consortium standards makes all of this possible from any Web browser, although a fast connection is advised to take full advantage of its capabilities. Map layers are displayed according to the scale that the user specifies, so that the map never becomes too cluttered. As terrain is traversed on the site, different layers become available depending on *The National Map's* data partners in that area.

In addition, some of the data on the site can be downloaded to the local computer for further investigation within a GIS environment. For example, an instructor could download high-resolution digital aerial photographs and topographic maps from the site. These could be used as a base for GPS coordinate and field data collection. Data in the GIS could also be used to investigate how many wetlands are within 5 km from a local landfill, or to calculate how much local land

is urbanized or cultivated. Students could "fly through" the landscape in their region using the elevation data from *The National Map*.

I encourage you to use *The National Map* in your geography courses.

National Map Viewer - Microsoft Internet Explorer

File Edit View Favorites Tools Help

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Address <http://nmviewogc.cr.usgs.gov/viewer.htm> Go Links

USGS The National Map

The National Map Viewer

Overview Zoom In Zoom Out Zoom Region Full Extent Re-center Identify Find Place Elevation Measure Clear Print Download Options

Scale

Layers Legend

BOUNDARIES

ELEVATION

[US NED Shaded Relief](#)

OTHER

ORTHOIMAGERY

[UA_ORTHO_Houston03](#)

No legend available.

LAND USE/LAND COVER

GEOGRAPHIC NAMES

ADMINISTRATIVE

[Hi-Res Ortho Index](#)

Redraw Map

Layer Metadata | Map Information | USGS | U.S. Forest Service | U.S. Fish & Wildlife Service | BLM

U.S. Department of the Interior, U.S. Geological Survey, Lakewood, CO, USA

URL: <http://nmviewogc.cr.usgs.gov/>

Contact: [National Map Team](#)

Last modification: 01/30/2004

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FIRST GOV

Map: -95° 25' 53", 29° 49' 10" -- NatGrid: 15R TP 65032 01245 (NAD83) -- ScaleFactor: 0 dec degrees/pixel

Internet

High-resolution digital orthophotoquad of a high school in Houston, Texas.

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URL: http://rockyweb.cr.usgs.gov/outreach/isntthatspatial_theationalmap.html

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