

# Maps at National Geographic Magazine

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### ABSTRACT

Recently published maps in National Geographic Magazine (NGM) were described and demonstrated. Firstly, several map examples were used to illustrate use of and ongoing evaluation of relief mapping tools released in the last five years. Tools evaluated and discussed include Natural Scene Designer V5 Pro for plan oblique relief; Terrain Sculptor, Terrain Bender and Terrain Equalizer by Bernhard Jenny (Terrain Cartography), Leland Brown's partial Laplacian filtering; and Patrick Kennelly's uniform sky illumination relief shading. Tools were evaluated for general ease of use, quality of output, practical application of output, robustness of software, ease of integration of output with other software (GIS, Photoshop), novelty, and availability of software. The results of experiments with multiple approaches on the same maps were presented to workshop participants to evaluate and compared with final published map. Our design and method chosen was discussed, along with a live demonstration of the most salient features of each method to illustrate strengths and weaknesses. Maps featured include the Ansel Adams Wilderness (Sierra Nevada), Vermilion Cliffs, Adirondack Park, Papua New Guinea (the Meakumbut people), West Antarctica and Mount Erebus (Antarctica).

Other maps were featured, such as Alaska Trek, Hang Son Doong, a new reference ocean floor map and El Capitan, a climbing route map. In 2011 NGM published a 3 panel folded map of El Capitan fusing the artwork of two analog artists with oblique panoramic imagery and LIDAR scanning. The resulting work, a synergy of the manual and digital, was recently awarded the Miguel Urabayen prize for best map of 2011 by the Society of News Designers. The inspiration for the project, the data sources, the analog techniques used by the contributing artists, the methodology used to

combine them, and the lessons learned for future projects of this type, was examined in detail.

Finally, the National Geographic Magazine's print and interactive mapping endeavors celebrating the 50th anniversary of the first American Ascent of Everest were presented. A collaboration with the German Space Agency merges NGM's older Everest model with newly acquired high resolution imagery, realtime tracking of climbers on the mountain using portable GPS transmitters in an iPad application, and development of an interactive route guide to the mountain. Some of the methods used for El Capitan are applied to mapped climbing routes on a 3D model of Everest. The presentation used a live demo of these applications to discuss the challenges and opportunity offered by new publishing platforms such as mobile devices and tablets and tools such as small GPS transmitters and iPhones for passive data collection.