

## JAMES M. ELLIS, Ph.D.



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### EXPERIENCE

#### Principal (2002 - present), Ellis GeoSpatial, Walnut Creek, California

Established a remote sensing and GIS company to provide focused and timely solutions for industry and government. Deriving new GIS maps, environmental baselines, and change-detection maps from satellite and airborne hyperspectral and multispectral imagery. Acquires new & archived data, processes imagery, integrates DEMs to support visualization and modeling, develops FGDC-compliant metadata, and builds ready-to-load GIS solutions for environmental and geologic applications. Certified Veteran-Owned Small Business (Vietnam Era). State of California Professional Geologist - Certificate No. 7391.

#### Director, Remote Sensing & GIS (1997-2002), The MapFactory, Walnut Creek, California

Managed team that acquired, processed, integrated, and interpreted digital airborne and satellite imagery globally. Projects included Mongolia, Nigeria, Papua New Guinea, Australia, Peru, Thailand, and Central Asia. Developed airborne hyperspectral R&D projects funded by international petroleum companies. Part of management team that started-up The MapFactory and Harrods Natural Resources, an international minerals and petroleum exploration company.

#### Supervisor/Staff Geologist/Geologist (1985-1997), Chevron Overseas Petroleum, San Francisco, California

Provided remote sensing & GIS support for Chevron's international oil & gas exploration and production business units. Managed and interpreted airborne radar surveys in Congo, Indonesia, Papua New Guinea, and Colombia. Developed exploration and logistics maps from remote sensing data globally, including Angola, Nigeria, Namibia, Venezuela, Kazakhstan, Bolivia, and Mexico. Transferred remote sensing technology from research to operations. Completed wellsite geology and seismic interpretation.

#### Petroleum Geologist (1982-1985), Gulf Oil Exploration and Production Co., Houston, Texas

#### Visiting Assistant Professor (1981-1982), Geology, Rice University, Department of Geology

### RECENT PROJECTS

- *Airborne Hyperspectral Mapping & GIS* - Project scientist on March 2009 environmental baseline survey of 420 sq.km. of the Mojave Desert, southern California. Provided field support for ground spectra measurements, building a ground & airborne spectral library, and processing airborne imagery.
- *Airborne Hyperspectral Mapping & GIS* - Project Manager for numerous environmental baseline projects (1997-2007) creating proprietary maps and GIS solutions that detail vegetation, water, soil, and infrastructure status of refineries, oil fields, and wetlands. Integrate high-resolution IKONOS, Quickbird, and SPOT satellite images and maps with hyperspectral GIS layers and field maps. Areas included Niger Delta, Venezuela, & USA.
- *Satellite Remote Sensing & GIS* - Acquired 20 NASA experimental hyperspectral and multispectral imagery (Hyperion and ALI) over 4000 km<sup>2</sup> in western Kazakhstan.

Processed and interpreted imagery for land use/land cover, offshore, change detection, and infrastructure. Integrated GIS maps with interpretation of high-value assets derived from 1- and 2.6-m satellite imagery.

- *Bathymetry and Visualization* – Processing Landsat, ASTER, and Quickbird imagery to support change-detection and characterize nearshore and wetlands environments of carbonate reefs and islands, Bahamas. Generating new offshore bathymetry maps by integrating published soundings with spectral brightness – water depth data. Merging offshore and onshore digital elevation models to support visualization and interpretation.
- *GIS for Critical Habitat Analysis* – Design GIS, integrate multiple GIS layers, generate maps, and develop spatial statistics in support of economic modeling of proposed critical habitat areas. Projects completed for several threatened and endangered species, including Southwestern Arroyo Toad, San Diego Fairy Shrimp, Munz's Onion, California Gnatcatcher, and Tiger Salamander. Results have been published in the Federal Register.
- *Hyperspectral Group Shoot* - Designed and managed 1999-2000 R&D projects sponsored by 9 petroleum companies to evaluate airborne hyperspectral imagery for oil seep detection. Processes developed now used for detecting oil along pipelines, oil fields, and refineries.
- *Invasive Aquatic Plants* – Annually acquire/process high-resolution satellite imagery (2003-2005) for locating and monitoring invasive plants in North Carolina reservoir.
- *Airborne Hyperspectral Imaging* -Teamed with international mineral exploration company to develop acquisition specifications and complete first airborne hyperspectral survey in Mongolia (4000 sq. km.).
- *Satellite Remote Sensing & GIS* – Processed and interpreted over 800 km<sup>2</sup> of high-resolution Quickbird satellite imagery across South American oil field to establish baseline for supporting change detection and documenting interrelationship of local population expansion, petroleum infrastructure, and environmental conditions along pipeline corridors, pumping stations, wells, and other petroleum infrastructure. Detailed land use/land cover GIS layer developed.

## EDUCATION

National Science Foundation Postdoctoral Research Rice University (1981-1982)

Ph.D. Geology University at Buffalo, State University of New York (1982)

M. A. Geology University at Buffalo, State University of New York (1978)

B. A. Geology University of Rochester (1970)

## AFFILIATIONS

Geological Society of America (Chair - Professional Development Committee 2000-2003),  
American Society of Photogrammetry and Remote Sensing, Association of Engineering Geologists, American Association of Petroleum Geologists

## DIABLO VALLEY COLLEGE, PLEASANT HILL, CA

GIS-GPS Advisory Committee, Diablo Valley College (2002-present)

[www.dvc.edu/GIS/](http://www.dvc.edu/GIS/) GIS/GPS Certificate Program

### Course Instructor

*Introduction to Remote Sensing* (4 Credits, Lecture-Internet PodCast + Lab ERDAS 9.2)

*Maps & Cartography* (3 Credits, Lecture-Internet PodCast + Lab with ArcGIS 9.3)

## WORKSHOPS

- Environmental Applications of Remote Sensing for GIS (GIS-501)*, Northwest Environmental Training Center, 18-20 Oct 2005 (3 days)
- Interactive ArcGIS 9 work session*, AEG GIS Workshop for Practicing Geologists, UC Davis, California, 24 May 2005 (1.5 hr session in 1-day workshop)
- PC- and Internet-Based Remote Sensing*, Fourteenth International Conference and Workshops on Applied Geologic Remote Sensing, Las Vegas, Nevada, 6-8 Nov 2000 (1 day)
- Introduction to Geologic Exploration*, Thirteenth International Conference and Workshops on Applied Geologic Remote Sensing, Vancouver, Canada, March 1999 (1 day).
- Practical Remote Sensing for Geology*, National Geological Society of America (GSA) Meeting, Salt Lake City, October 1997 (1 day).

## PUBLICATIONS

Over twenty-five publications in industry journals and conference proceedings, including:

- 2009 Satellite Imagery, Visualization and Geologic Interpretation of the Exumas, Great Bahamas Bank – An Analog for Carbonate Sand Reservoirs (P.M. Harris and J.M. Ellis): *in* SEPM (Society for Sedimentary Geology) Short Course Notes 53, ISBN 978-1-56576-198-8, p. 1 – 49 and 2-DVD set.
- 2008 Satellite imagery and visualization of the Caicos Platform (P.M. Harris and J.M. Ellis): *in* Developing Models and Analogs for Isolated Carbonate Platforms - Holocene and Pleistocene Carbonates of Caicos Platform, British West Indies, Society for Sedimentary Geology Core Workshop 22, ISBN 978-1-56576-134-6, p. 29-46.
- 2005 Hyperspectral Imaging (J.M.Ellis): *Earth Imaging Journal*, March/April issue, p. 22 – 26.
- 2004 High resolution satellite imagery for mapping invasive aquatic plants (S. Wieggersma and J.M. Ellis): *Earth Observation Magazine*, December, volume 13, no. 8, p. 20 – 24.
- 2002 Environmental application of hyperspectral remote sensing: managing liability in an age of transparency (M.E. Evans, L.B. Hall, P.A.Samuels, L.A. Jackson, G.L. Korenaga, F.E. Hanrahan, D.P. Hagewiesche, M.J. Ainodion, and J.M.Ellis): *Proceedings of 17th World Petroleum Congress (ChevronTexaco invited paper)*, 1-5 September, Rio de Janeiro, Brazil.
- 2001 Exploring for onshore oil seeps with hyperspectral imaging (J.M. Ellis, H.H. Davis, and J. Zamudio): *Oil and Gas Journal*, 10 Sept issue, volume 99. 37, p. 49 - 58.
- Using airborne digital cameras for environmental applications (J.M. Ellis and H. Dodd): *Proceedings of the Fifth International Conference on Airborne Remote Sensing*, San Francisco, CA, 12-14 September, 7 p.
- Searching for oil seeps and oil-impacted soil with hyperspectral imagery (J.M. Ellis): *Earth Observation Magazine*, January 2001, p. 25-28.
- Multiple applications for airborne hyperspectral sensors (J.M. Ellis, H.H. Davis, and M.B. Quinn): *Proceedings of the Fifth International Conference on Airborne Remote Sensing*, San Francisco, CA, 12-14 September, 8 p.
- 2000 Airborne hyperspectral imagery for the petroleum industry (J.M. Ellis, H.H. Davis, M.B. Quinn): *Proceedings of Fourteenth International Conference on Applied Geologic Remote Sensing*, 6-8 November, Las Vegas, NV, p 89-96.