

**THE INTERNATIONAL INSTITUTE FOR INDIGENOUS RESOURCE MANAGEMENT**

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**WORKSHOP ON REMOTE SENSING AND GIS FOR TRIBAL NATURAL AND CULTURAL RESOURCES  
MANAGEMENT**

Designed for Tribal Council Members, Environmental Protection, Natural and Cultural Resource Managers, Planners, Economic Development Staff, Attorneys, and Information Technology Personnel

**May 29-30, 2003**

**Red Lion Hotel/Denver Central**

**4040 Quebec Street**

**Denver, Colorado 80216**

**(303) 321-6666**

Remote sensing is the science (and to some extent, art) of acquiring information about the Earth's surface without actually being in contact with it. This information, when processed, analyzed, and integrated into the tribe's geographic information system along with tribal histories, songs, stories, and other information can be a powerful tool for tribal natural and cultural resources managers to identify and incorporate economic, environmental, recreational, geo-political, and cultural interests in their management and development plans and programs. This workshop will introduce participants to the technologies and the application to forestry, agriculture, mineral development, water resource management, and cultural resource protection. Workshop participants will get hands-on demonstrations of recent technologies.

**PRELIMINARY AGENDA:**

**May 29, 2003**

1230 **Registration**

1300 **Welcome and Introductions**

1310 **Principles of Remote Sensing**

Jason San Souci, Senior Remote Sensing Analyst, Native Communities Development Corporation

1355 **Achieving Remote Sensing Information Superiority with the ENVI Software**

Digital image analysis, image data types, sensors, platforms, field spectrometry  
Keith Nicholson, RSI, Inc.

1440 **Break**

1500 **Basic Geographic Information Systems**

Graeme Aggett, Central Washington University, Center for Spatial Information

1545 **Using ESRI's ArcGis Software to Manage Data and Produce High Quality Maps**

(ArcMap, ArcCatalog, ArcToolbox, Migrating from Arcview 3.x to ArcMap, Using shade relief to enhance cartography)  
Drew Stoll, Landscape Architect, EDAW Inc.

1615 **Ground-Penetrating Radar Applications for Cultural Resources Management**

Dr. Larry Conyers, Department of Anthropology, Denver University

1700 **Adjourn**

**May 30, 2003**

0830 **Continental Breakfast**

0900 **Understanding the Global Positioning System**  
Tom Tulk, Ph.D., Consulting Economist/Engineer

0945 **Remote Sensing Applications for Forest Management**  
Timber, The Times They Are a Changin': Remote Sensing in Defense of Tribal Resources William J. Whatley, Native Communities Development Corporation

1030 **Break**

1045 **Mining Audits and Environmental Management Using GPS: Assessing the value of sand & gravel removed. The use of GPS and statistical analysis to counter a \$1.5-million offer to resolve long-standing royalty litigation**  
Tom Tulk, Ph.D., Consulting Economist/Engineer

1130 **Remote Sensing Applications for Cultural Resources Management**  
**Rez Mapper and GeoPresenter - The Interactive Approach to Tribal Cultural Resource Management using Geotechnologies**  
Rob Fenwick, Spatial Data Technologies, Inc.

1215 **Lunch** (on your own)

1315 **Land Use Planning**  
GIS Project Case Studies and GIS Data Sources for Conservation and Recreation Planning, Site Selection, Water Demand Modeling, and Environmental Analysis  
Drew Stoll, Landscape Architect and Environmental Planner, EDAW, Inc.

1400 **Break**

1415 **Tribal Remote Sensing and GIS Applications**  
**Participatory Land Use Planning and Water Resource Modeling**  
Graeme Aggett, Central Washington University, Center for Spatial Information

**Data Ownership and Protection**  
Lea Shanley, University of Wisconsin-Madison

1515 **Making Tribal Geographic Information Systems Tribal**  
Mervyn L. Tano, International Institute for Indigenous Resource Management

1600 **Adjourn**

#### **FACULTY**

- Graeme Aggett has been working in the Geospatial Sciences for twelve years. He graduated with a BSc. in physical geography from the University of Auckland (New Zealand) in 1994 with a solid background in remote sensing and geographical information systems, tools he quickly recognized would offer new and exciting methods to characterize, examine and model physical systems and human impact on these. Studies at Graduate School in Auckland included remote sensing, GIS, geomorphology and hydrology. His dissertation work utilized GIS to develop a seismic hazard and risk assessment for Wellington City, New Zealand.

- Larry Conyers is an assistant professor in the Anthropology Department of the Denver University. He is also a principal in Geophysical Investigations Co., where he performs GPR surveys for an international clientele. Dr. Conyers is the lead author of Ground-Penetrating Radar: An Introduction to Archaeologists. He has done cultural surveys in Indian country and throughout the world.
- Rob Fenwick is a Product Specialist at Spatial Data Technologies, Inc. - A native Coloradoan, Rob received degrees in Biology and Marine Science in Florida. Rob's ten-year career in natural resources management included time spent with the Colorado Natural Areas Program, where he used GIS and GPS to collect and analyze field data and generate reports for land managers. Rob helped to build the Rez Mapper product for cultural resource management, working closely with Sinte Gleska University's James Rattling Leaf and Jhon Goes In Center. Rez Mapper is a customized version of GeoPresenter.
- Keith Nicholson, RSI, Inc.
- Jason San Souci, Senior Remote Sensing Analyst, Native Communities Development Corporation.
- Lea Shanley, University of Wisconsin-Madison.
- Drew Stoll, Landscape Architect, EDAW Inc.
- Mervyn L. Tano is an attorney and the president of the International Institute for Indigenous Resource Management. Mr. Tano has written and lectures on issues related to the interface between technology and traditional cultures, including the application of GIS to cultural resource management and sacred landscape preservation.
- Tom Tulk, Ph.D., Consulting Economist/Engineer.
- William J. Whatley is the director of operations of the Native Communities Development Corporation. He has over twenty years experience in resource management and environmental protection in Indian country. He is at present directing a large-scale satellite-based remote sensing project for the mapping of forest-based resources located within the USDA Forest Service's Valles Caldera National Preserve in Northern New Mexico and is also working on state-of-the-art remote sensing projects with the Navajo Nation Forestry Department. He is an authorized distributor of the high resolution "IKONOS" satellite imagery and is a global partner of Space Imaging, LLC who owns and operates the IKONOS satellite.