

Nebraska Geospatial Extension Program

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**A NASA Nebraska Space Grant
Consortium & EPSCoR
Sponsored Research Endeavor**

Nebraska's Geospatial Extension Program

- ✦ Joined the national program in August 2002
- ✦ Goal is to get geospatial technologies out to potential users
 - ◆ Farmers
 - ◆ Ranchers
 - ◆ Public policy-makers
 - ◆ Other decision-makers
 - ◆ Tribal governments



Winnebago Tribal Council

Nebraska's Need For Geospatial Technologies

✦ These technologies can be used to

- ✦ Engage in precision farming
- ✦ Protect water resources
- ✦ Homeland security planning
- ✦ Respond to natural hazards such as drought and severe storms



**F4 Tornado in Seward,
NE June 2001**



Precision Agriculture



**Nebraska Corn During
Drought**

Program Initiatives

✦ Provide programs to maximize workforce development

- ◆ Develop and deliver geospatial programs, workshops, and seminars
- ◆ Help build future geospatial workforce
- ◆ Support current workforce with education and training



✦ Develop capabilities in distance and technology education



Program Initiatives

✦ Partner with University of Nebraska Cooperative Extension to deliver seminars to potential users

- ✦ Farmers, ranchers, others



✦ Partner with CALMIT

- ✦ Collaborate on Airborne Remote Sensing missions
- ✦ Academic and research expertise



✦ Expansion of applied research, technology transfer & commercialization



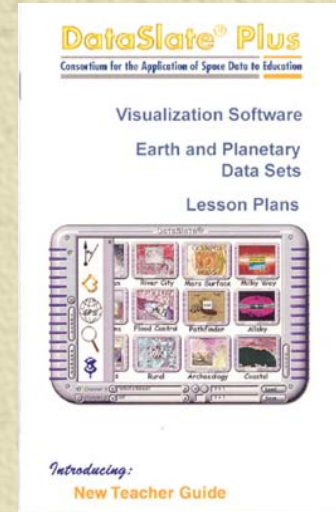
Program Initiatives

✦ Engage the K-16 community in geospatial science

✦ Outreach & education programs

✦ Focus on Native American communities in the state

✦ Establish & maintain geospatial data centers at community & tribal colleges across the state



Three Phase Implementation Plan

Phase I

- Focus on Native American communities in NE
 - Establishment of Native IMAGE

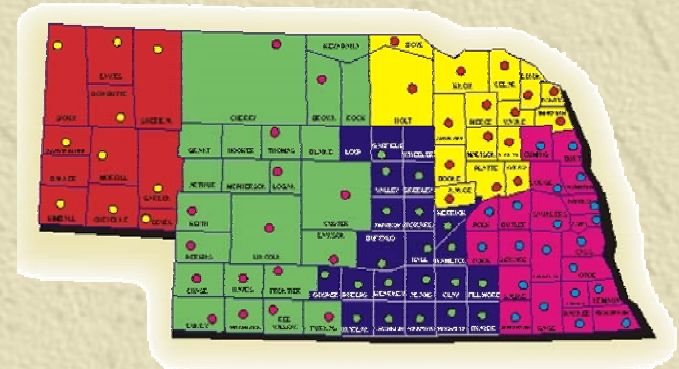


Phase II

- Focus on 3 metropolitan counties
 - Douglas, Sarpy, Lancaster

Phase III

- All counties statewide



Nebraska's 93 Counties

Native IMAGE



- ✦ Institute for Managing Applications in Geospatial Extension
- ✦ Established January 2003 at Little Priest Tribal College (LPTC) in Winnebago, NE
- ✦ Housed in the new Winnebago Cultural Center on the LPTC campus
- ✦ Dr. Hank Lehrer, Director, Native IMAGE
- ✦ Jan Bingen, Assistant Director, Native IMAGE



Native IMAGE



✦ Training in geospatial technologies

- ✦ Workshops for faculty and teachers
- ✦ GIS, GPS, and remote sensing

USGS EROS Data Center, March 2003



CALMIT, July 2003



Native IMAGE



- ✦ Course development in geospatial technologies
 - ✦ Incorporate geospatial technologies into classes
 - ✦ Elementary-College
- ✦ 2+2 transfer programs
 - ✦ UNO, UNL, Wayne State, SD State
- ✦ Library enhancement
 - ✦ Add books on remote sensing, GIS, GPS
- ✦ Geospatial data center
 - ✦ Computer workstations with software



Native IMAGE Data Center



**Winnebago/LPTC
Library**

Native IMAGE



✦ Involve the community

- ✦ Land management issues
- ✦ Planning



✦ Offer geospatial training to other tribal colleges, tribal councils, community members

✦ Serve as a Center of Excellence

✦ Outreach programs for K-12, tribal college

- ✦ Family Geospatial Science Night
- ✦ Geosciences club

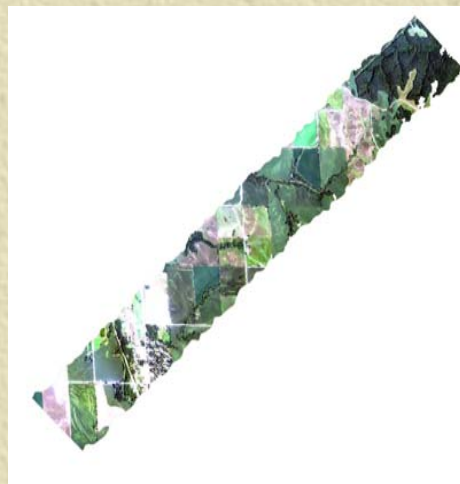
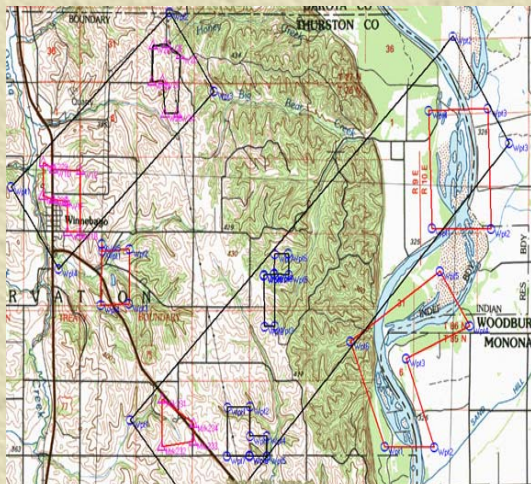


Native IMAGE



✦ Innovative research

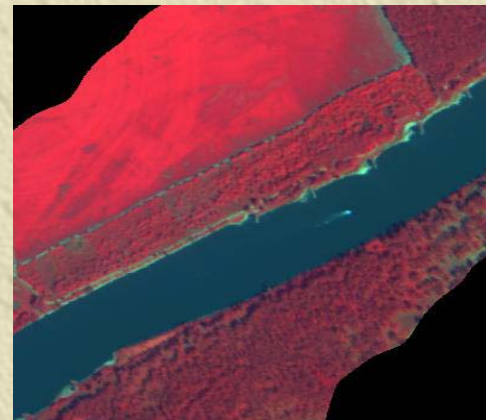
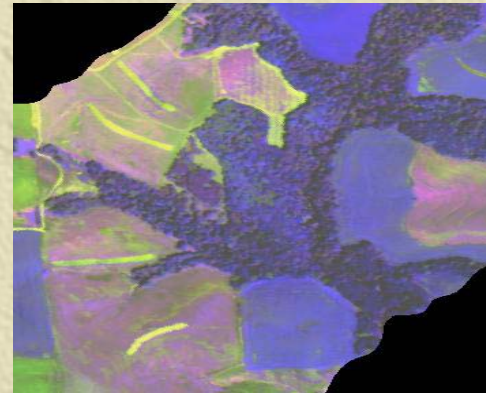
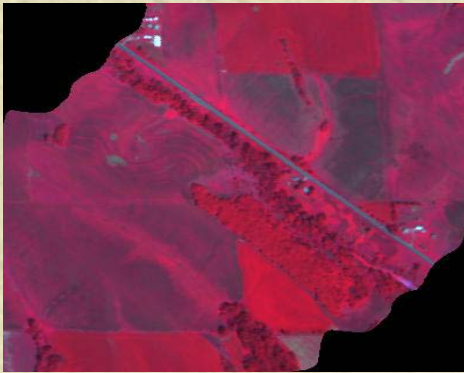
- ✦ Hyperspectral Remote Sensing of Winnebago Reservation
- ✦ 35 bands of data
- ✦ Partnership with CALMIT, Creighton, and UNO



Native IMAGE



✦ Hyperspectral Remote Sensing



Major Partnerships

✦ CALMIT-University of NE at Lincoln

- ◆ Center For Advanced Land Management Information Technologies



✦ Creighton University

- ◆ Environmental Science & Biology



✦ University of Nebraska at Omaha

- ◆ Geography/Geology Department
- ◆ College of Education



Collaborative Projects

✦ Minnesota Sea Grant Project

WELCOME TO
minnesota sea grant
Superior Science For You

- ✦ Hyperspectral Remote Sensing of Duluth, MN Area



Airborne Platform Courtesy of



Other Partnerships

- ✦ University of Nebraska Cooperative Extension



- ✦ Nebraska GIS/LIS Association



- ✦ Nebraska GIS Steering Committee

- ✦ Intertribal GIS Council



Intertribal GIS Council

- ✦ NativeView



NativeView



<http://geo.unomaha.edu>

Santee Sioux Reservation, Santee, NE

