AmericaView Overview

Presentation to

The National Council of NASA Space Grant Directors

18 March 2006

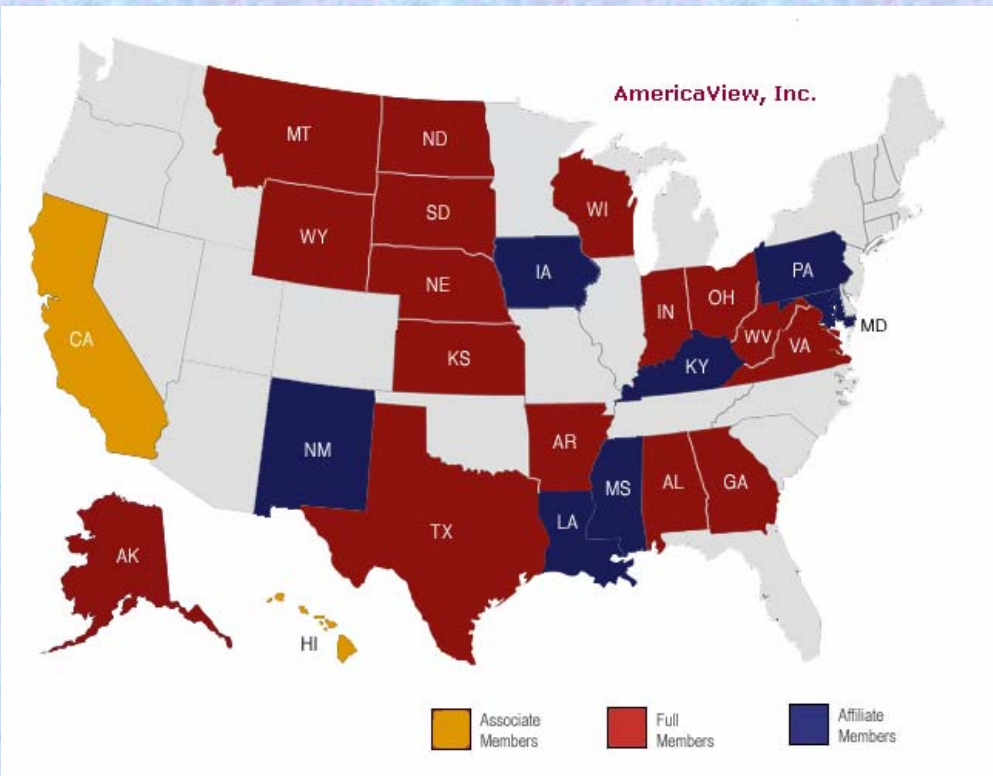
What is AmericaView?

http://www.americaview.org | http://americaview.usgs.gov

- **"AmericaView" is a program of the USGS, administered through the Land Remote Sensing Program.**
- **The basic mission of the program is to promote and further the science of land remote sensing in the United States.**
- **This mission is achieved through programs and services that emphasize education, training, and research.**
- **Established via a single state pilot project in 1996**
- **Today, AV is a $3 million dollar program comprised of a 24 state national consortium partnered with USGS HQ and EROS.**

A National Network of State Consortia

http://www.americaview.org | http://americaview.usgs.gov



- **AV, Inc. is a national network of state consortia.**
- **Each state consortium is itself a network of state-level organizations, led by a lead university within each state.**
- **There are 24 states currently participating, representing over 150 state and local agencies, state steering committees, academic institutions, and local government and commercial organizations.**

Membership

http://www.americaview.org | http://americaview.usgs.gov

- **Full members: Application accepted, and fully funded**
- **Associate members: Application accepted; awaiting funding;**
- **Affiliate members: Application in progress.**

Vision

- **Expand national consortium to 50 states; build state consortia to encompass full range of organizations using geospatial data**
- **Offer an archive of current and historical data**
- **Apply land remote sensing to support state educational standards, university instruction, and workforce development**
- **Integrate land remote sensing into routine operations of government, commerce, and industry, where effective and appropriate**
- **Conduct pilot research to develop practical applications of land remote sensing to support commerce, agriculture, and industry.**

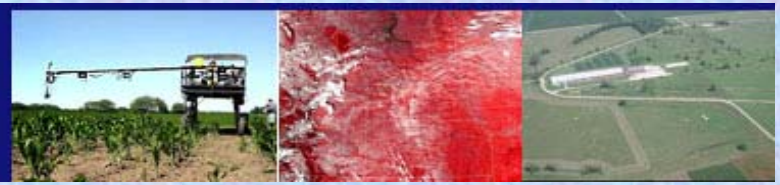
AmericaView Inc. Core Missions:

1. Build StateView Consortia
2. Archive & Distribute Digital Satellite Imagery
3. Education and Outreach
4. Applied Research.

1. Build StateView Consortia:

- Form and cultivate StateView coalitions, including universities, non-profits, state agencies
- Sponsor traditional outreach meetings, conferences, seminars
- Engage new users through informational programs
- Promote dialogue within the geospatial user community;
- Engage activities between neighboring and regional StateViews

Nebraska View



Current Partners

- The Nebraska GIS Steering Committee
- Nebraska Department of Natural Resources
- University of Nebraska-Omaha, Nebraska Space Grant Consortium
- University of Nebraska-Omaha, Department of Geography and Geology
- Creighton University, Department of Biology

http://neview.unl.edu/nebraska-view/

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VirginiaView Consortium

Initial partners include the following organizations:

- Virginia Tech
- Virginia Geographic Information Network
- Virginia Geographic Alliance
- Virginia Space Grant Consortium
- University of Virginia
- George Mason University
- Old Dominion University
- Virginia Department of Forestry
- USGS, Eastern Region Liason

2. Archive & distribute digital satellite imagery in support of land remote sensing.

- **No cost/low cost access to public: "purchase once--use many times."**
- **Distribute in easily used data formats.**

The Kansas Satellite Image Database (KSID)

- Datasets
  - Baseline Landsat Thematic Mapper Image Sets
  - “Legacy” Landsat TM and MSS Images
  - ASTER Imagery
  - MODIS Imagery
- Available online at the Kansas Data Access and Support Center (DASC)
  - http://gisdasc.kgs.ku.edu

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WisconsinView.org

MODIS Imagery Access

- Pan & zoom
- Re-center
- Full-resolution
- Archived daily (now over 1100 scenes)
- Download GeoTIFF and metadata

3. Education– develop the geospatial workforce, inform the public (including HBCUs, Tribal Colleges , & underrepresented communities)

- Advance university instruction through data, software, and curriculum support
- Training for government personnel
- Research support for students
- Internships and training for K-12 teachers
- Workforce development
- Public education– museums, posters, news media.

STATE UNIVERSITY OF WEST GEORGIA - Geospatial Courses

- Environmental Change
- Environmental Observations
- Remote Sensing
- Image Processing
- Computer Cartography
- Introduction to GIS

- Environmental Observations for Teachers
- GIS for Teachers
- Remote Sensing for Teachers
- Image Processing for Teachers

OUTREACH AND SUPPORT FOR TRIBAL COLLEGES AND HISTORICALLY BLACK COLLEGES & UNIVERSITIES (HBCUs)

- KSView Native American Student Internship - Haskell Indian Nations University (HINU)
- KSView Support for Tribal Natural Resource Managers Workshop
  - Haskell Indian Nations University (HINU)

K-12 OPPORTUNITIES & PRE-SERVICE & IN-SERVICE TRAINING

- **ALView** will hold a training workshop for high school teachers this summer.
- **ARView** supported the **EAST (Environmental and Spatial Technology)** Initiative
- **SDView** is preparing to launch the **"Adopt-A-Farm"** website -precision farming and remote sensing/GIS/GPS
- **KSView** is working with **Pathfinder Science** to develop K12 lesson packs for teachers
- **TXView -**Texas A&M University to create a website that introduces K-12 teachers and students to remote sensing

ArkansasView: K-12 Education: EAST Support

- **EAST (Environmental and Spatial Technologies): Spatial technology for grades 6-12**
- **In over 160 Arkansas schools**
- **Applications-based, hands-on, project-oriented learning**
- **Excellent opportunity for remote sensing education**

- **2003-2004 – AV helped provide training in GPS-based ground-truth data collection and image processing as part of our AV funded research project: Impervious Surface Mapping using Quickbird data and Object-Oriented Image Processing Strategies.**

CURRENT WORKFORCE TRAINING EVENTS

- GAView provided a workshop for county extension agents from North GA on Remote Sensing as a tool for land use management and basic science education.
- KSView conducted a full day outreach event in the spring to promote KSView to nearly 2 dozen agencies and other universities
- NEView co-sponsored the 2005 Nebraska GIS Symposium, which included 2 instructional short courses in remote sensing and GIS and involved participants from across the state.

Appalachian Remote Sensing Conference

May 14, 2003. West Virginia University, Morgantown, WV

You are invited to attend the 2003 Appalachian Remote Sensing Conference. The conference will be of interest to geospatial professionals and students in government, the private sector, and education.

Deadline for abstracts: April 4, 2003

Sponsored by West Virginia View: www.wvview.org

NASA Presentation to Dean Nellis, WVU

CURRENT WORKFORCE TRAINING EVENTS

- **WVView held the Second Annual Appalachian Remote Sensing Conference and Workshops event in May. This regional event drew 60 participants.**

- **WIView provided a 2-day workshop to Wisconsin DNR employees designed to transfer technology from the university's research program to DNR's operational lake water clarity monitoring program.**

- **VAView conducted a hands-on workshop in collaboration with the VA Geospatial Extension Program and Virginia Tech's Center for Environmental Applications of Remote Sensing.**

CURRENT WORKFORCE TRAINING EVENTS

- **ALView cooperated with consortium partners at the AL Extension and US Space & Rocket Center to provide 8 training events and workshops in 2005, reaching nearly 300 participants including county and state agency employees, farmers, and research faculty.**

ArkansasView: Professional Education

- **Equipped the Training Lab at the Arkansas Cooperative Extension Service (CES) in Little Rock with 20 seats of PCI Geomatica**
- **Developed materials for, and conducted, 2 "Introduction to Remote Sensing" workshops at CES.**
- **Helped establish Remote Sensing/Image processing labs at 3 universities in Arkansas (10 seats of PCI Geomatica at each new participating institution.)**
  - **Univ. of Arkansas, Fayetteville**
  - **Univ. of Arkansas, Monticello**
  - **Arkansas State University (Jonesboro)**
- **Developed materials for 2 new short courses:**
  - **RS for Precision Agriculture**
  - **RS for Forest Health**

CES Remote Sensing Training Lab in Little Rock

Abbotts Bridge North 2002 and 1999 Vegetation Comparisons

1999 Vegetation Acreage
Pine = 41.65 Mixed = 53.83 Hardwood = 49.02
Wetlands = 0 Fields = 4.12

2002 Vegetation Acreage
Pine = 10.1 Mixed = 97.51 Hardwood = 43.51
Wetlands = 0 Fields = 4.08

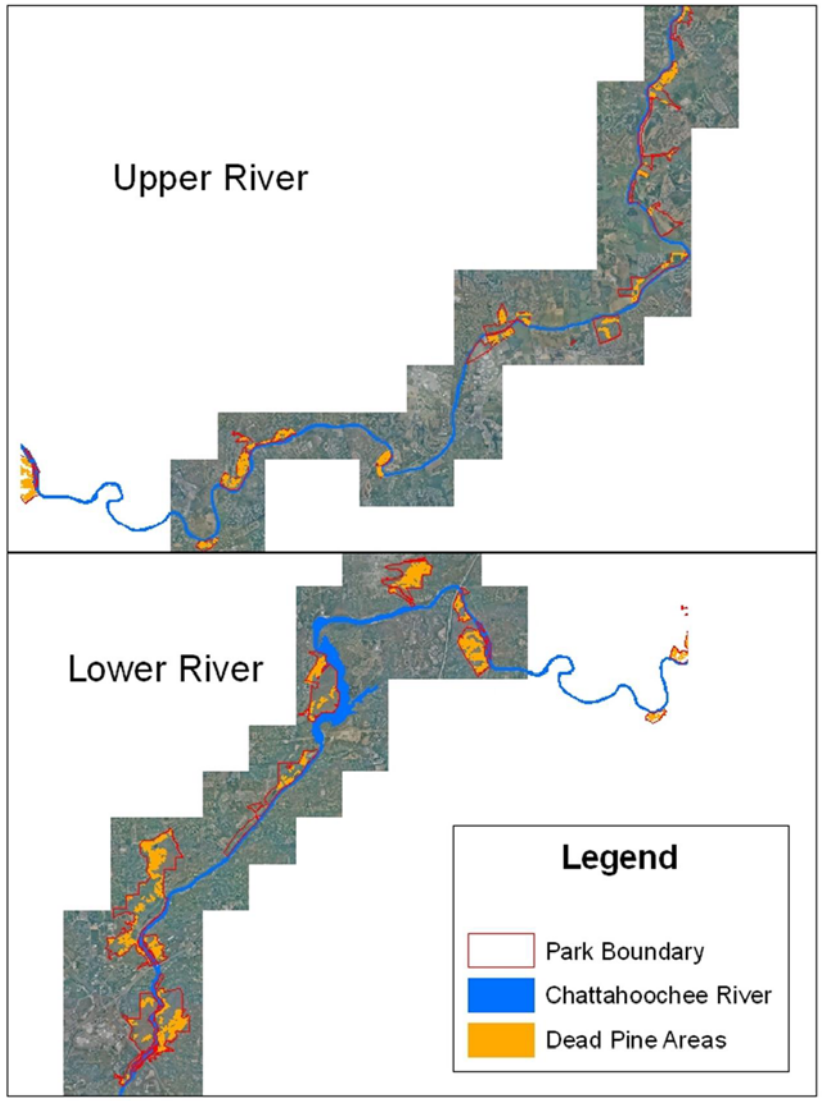
Comparison of Vegetation Acreage Between 2002 and 1999

Pine 76% reduction
Mixed 83% increase
Hardwood 11% decrease
Wetlands no change
Fields 1% decrease

Legend
wetlands
hardwood
pine habitat
field
mix pine-hardwood

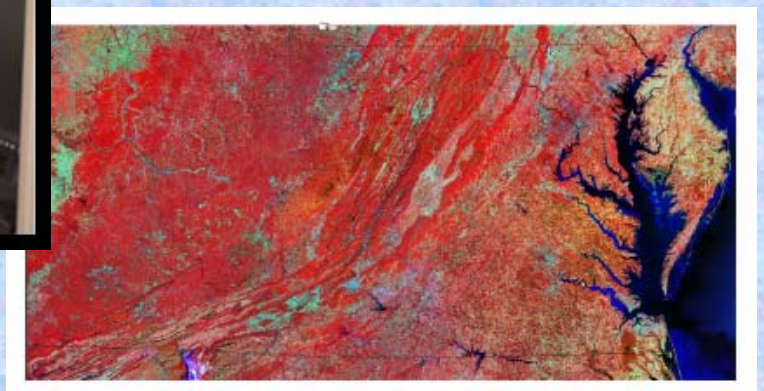
Lisa Macki
June 2004

Possible Areas of High Fuel Loading in the Chattahoochee River NRA for 2002



4. Pilot research– remote sensing applications

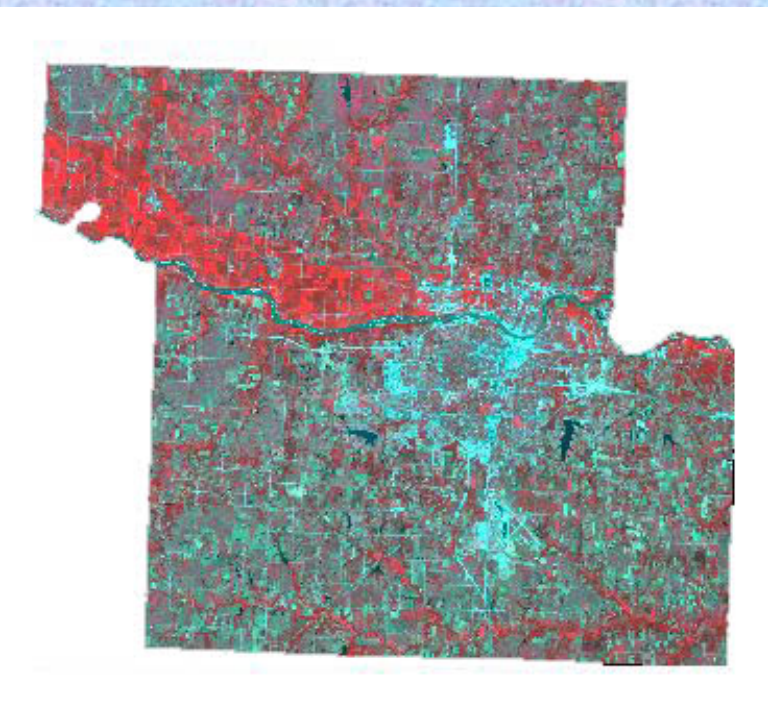
- Develop/apply new applications through pilot studies
- Innovative methods to process and deliver data
- Use StateView resources for leveraging other projects



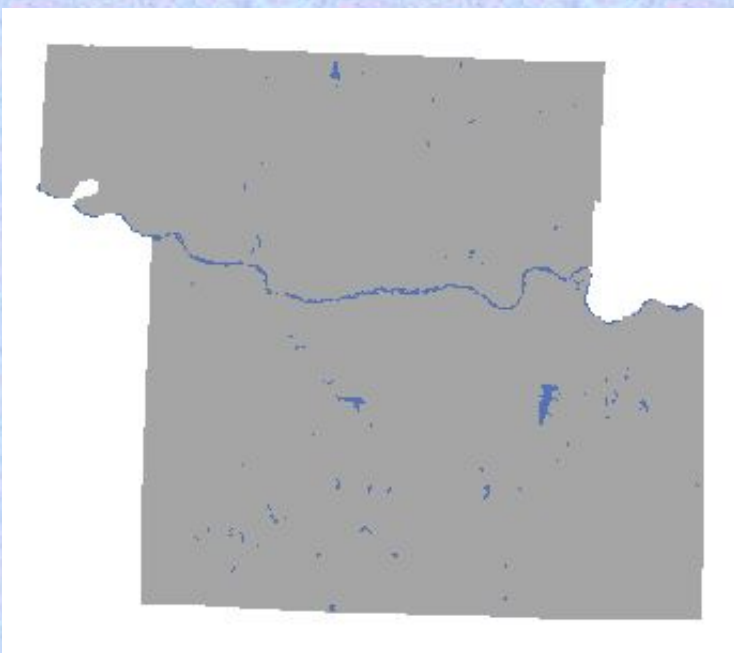
Research Activities

Inventory of Dams

Shawnee County, Kansas

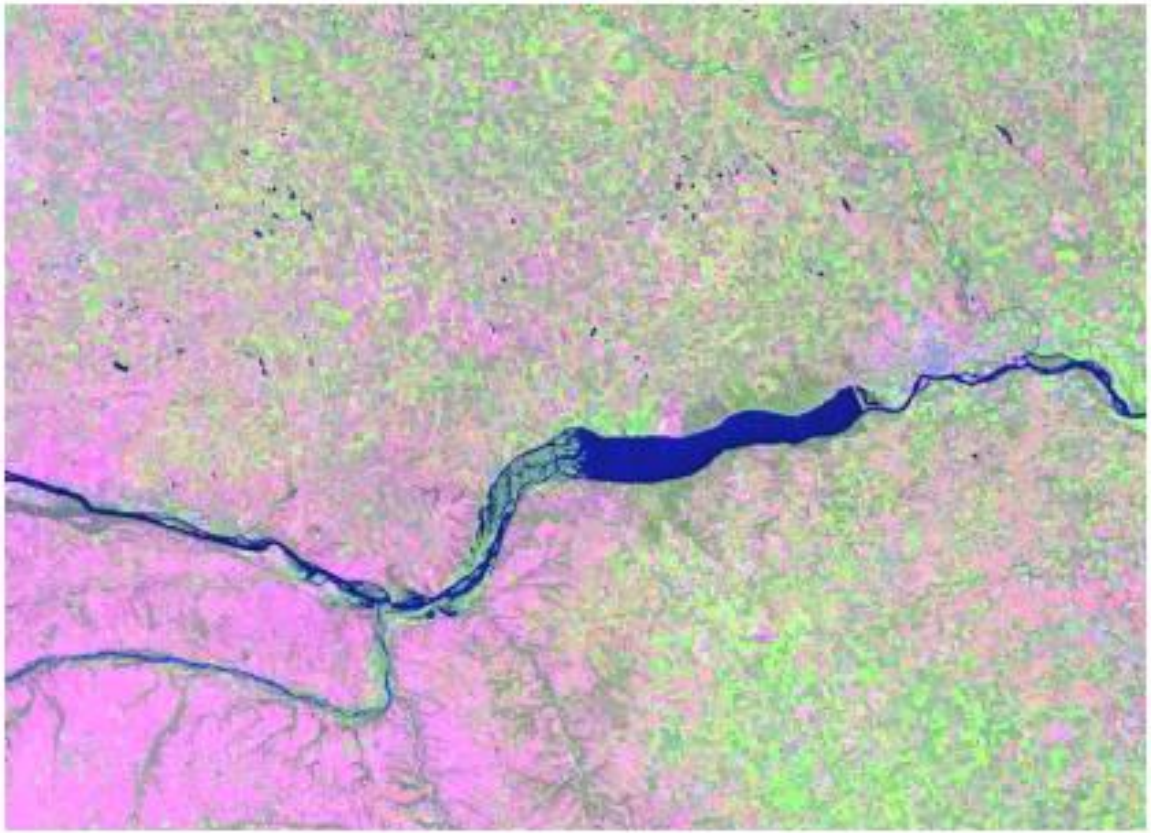


Landsat Image from KSID



Map of Water Impoundments

© 2004 KansasView



Remote Sensing and River Sedimentation

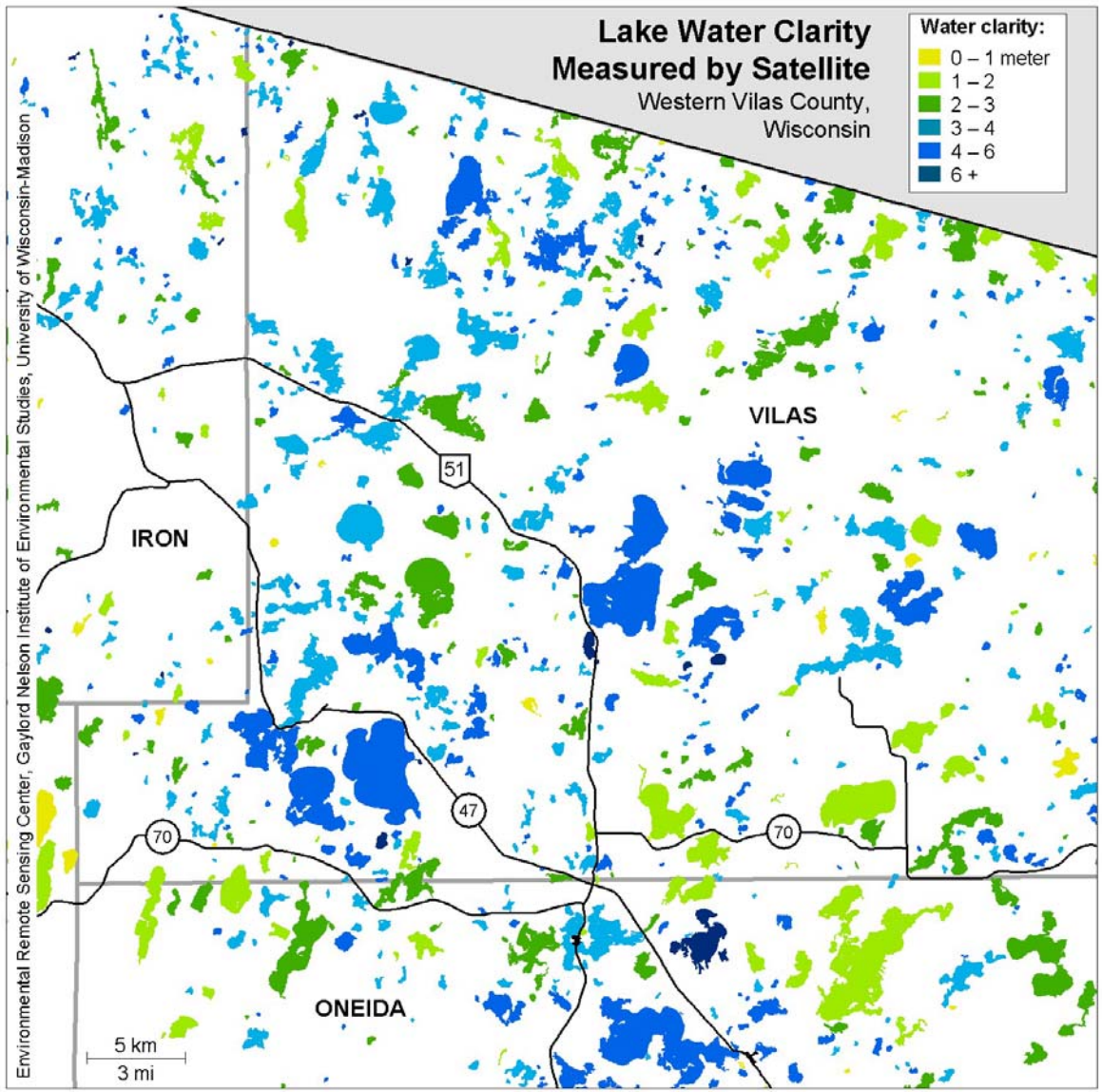
Remote sensing imagery is used by the Missouri Sedimentation Action Coalition in South Dakota to assess the location and extent of sedimentation in Missouri River reservoirs in the state. This September 2002 Landsat image shows a portion of the Lewis and Clark Lake behind Gavins Point Dam in southeastern South Dakota, one of the Missouri River areas affected by sedimentation.

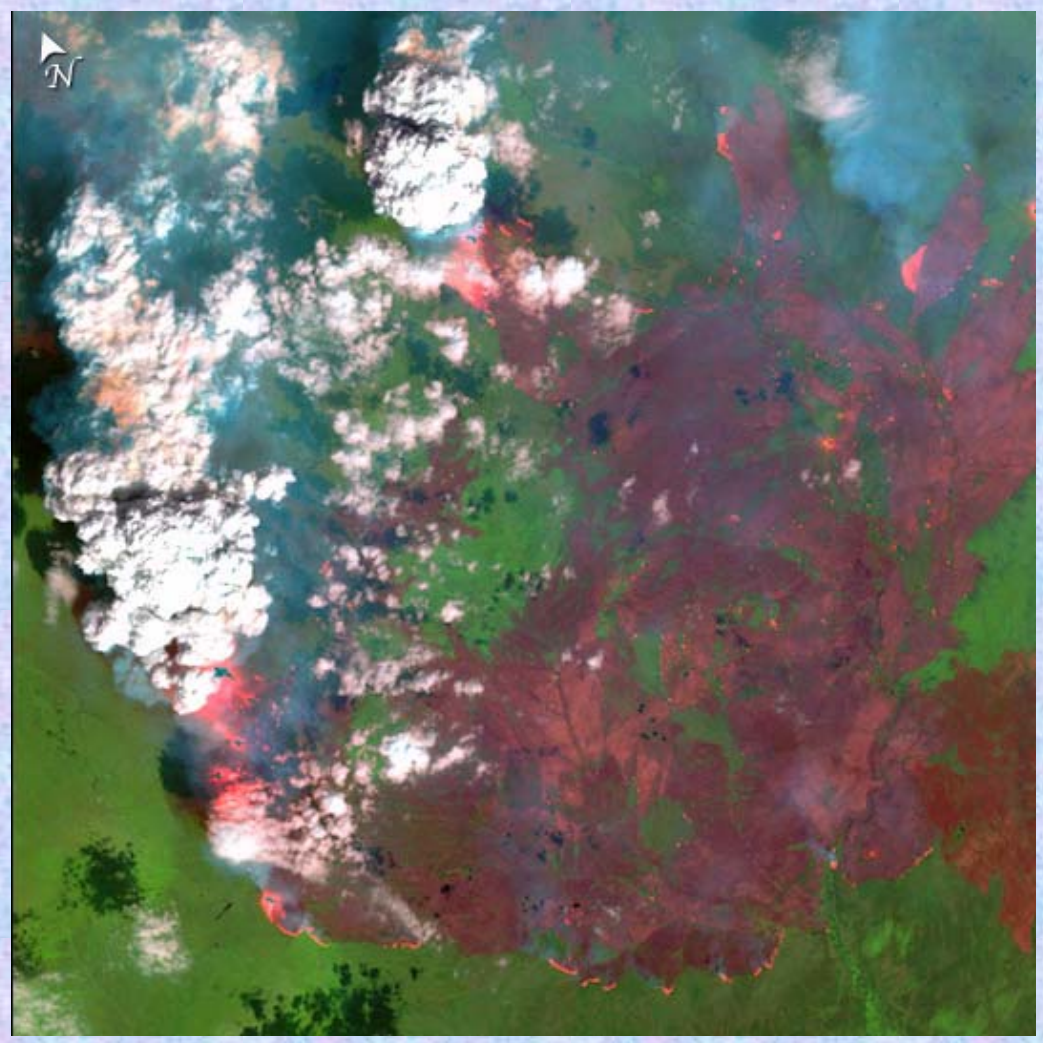
WisconsinView.org

Measuring Lake Clarity by Satellite

Northern Highland Lakes District Example

Acknowledgements:
WisconsinView activities, such as our lake water clarity work, are also supported by funds from granting agencies and programs such as NASA ARC, Wisconsin SeaGrant, and are supported through partnerships with groups such as the Wisconsin DNR, and the NSF LTER program.





Summer 2004 saw the worst Alaskan fire season on record, with more than 6.7 million acres burned. Planes used for mapping fires often couldn't leave the ground because of smoke density.

AlaskaView

GINA Program

In response, the AlaskaView team at the University of Alaska at Fairbanks provided near-real-time satellite information to Alaska's fire management agencies, including the BLM Alaska Fire Service and the National Park Service. AlaskaView also posted current satellite images on the web to keep the public apprised as major fire complexes encroached upon Fairbanks and other population centers.

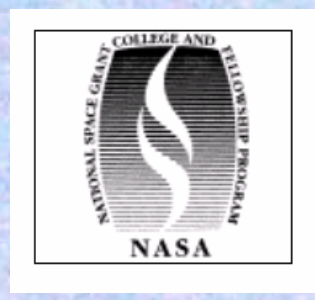
The *AmericaView* Program Next Steps

- **Further expand communications networks, facilities, and capabilities for acquiring and sharing remotely sensed data among *AmericaView* members.**
- **Expand the numbers of students following a course of instruction in remote sensing to ultimately advance the science and benefit the country economically.**
- **Increase interest in acquiring remote sensing knowledge and capabilities**

The *AmericaView* Program

Next Steps (2)

- **Increase the number of practical applications of this valuable source of information about the earth**
- **Expand support of this interest by the Federal government**
- **Continue development of the consortium membership and the availability of remotely sensed data to all**



How can AmericaView and SpaceGrant best collaborate to accomplish their missions ?

- Many similarities and commonalities in national missions
- However, each state has its own distinctive organizational structure, needs
- Our challenge is to work together to find the areas where we can most effectively collaborate to strengthen our mutual capabilities.

Cooperation between WyomingView and Wyoming Space Grant

Theme: "To promote NASA technology and satellite-based remote sensing through outreach activities". This is the area of overlap between the two programs in Wyoming. NASA WSG (NWSG) has financially supported the following activities:

- **Conduct** outreach activities for farmers and ranchers (We conducted 4 workshops in Feb 2005, and NWSG gave $1000 towards this. WyomingView, Upper Midwest Aerospace Consortium and Wyoming Coop Extension Service being other sponsors).
- **Conduct** remote sensing technology training for current workforce in state and federal government agencies (NWSG gave $9000 towards these activities).
- **WyomingView** teamed with **NWSG** to offer two additional scholarships to promote remote sensing research. NWSG offers several scholarships every year and last year WyomingView added two scholarships (1 undergraduate and 1 graduate) for $1000 each.
- **NWSG** in partnership with other SG (Nebraska took the lead) to write a proposal to NASA (Native Connections). Through this grant WyomingView received $10,000 to conduct remote sensing training (4 short courses) for Wind River Indian Reservation – Environmental Quality Commission personnel. Through this grant, NWSG also purchased a desktop PC for WRIR – EQC to process remotely sensed data.

We are continuing to work with the new associate director at NWSG to identify further opportunities for collaboration.