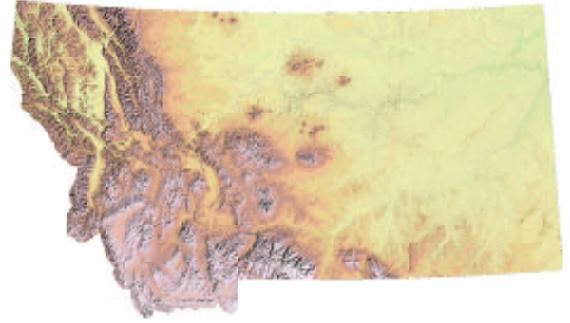


Montana GIS News



Intermountain GIS Users' Conference; Kalispell 2000 May 1-4, 2000



By Catherine McCoy

Over 400 attendees will converge to exchange ideas, network with industry peers, and view the latest in GIS technologic advances by many exhibitors. The event is "The Intermountain GIS Users' Conference; Kalispell, 2000," which will be held at the Cavanaugh's Inn at Kalispell Center, May 1-4, 2000. This year's conference theme is "The GeoSpatial New West" and will have you contemplating what you want your GIS to reflect in the year 2000, as well as in the years to come. Consider, for one, the steady regional transition of our traditional dependence upon agricultural and natural resources to evermore reliance on technology and information services.

This popular conference continues to grow and develop alongside developments in the industry of GIS. The Montana GIS Users' Group and the Northern Rockies Chapter of URISA have expanded year 2000 events to include more tracks, more workshops, very dynamic speakers, and let's not forget...more fun!

You can look forward to hearing Mr. Steven Hock, who has received widespread recognition for his leadership role in addressing major systemic problems such as Y2K, including testimony before the United States Senate, appearances on ABC World News Tonight, CNBC, MSNBC, PBS and other national and international broadcasts. He has also received coverage in prominent business, technological and legal periodicals such as The New York Times, Forbes, Business Week, Newsweek, Time, The Washington Post, CIO Magazine, the ABA Journal, Corporate Legal Times and many other publications. Over the past five years he has worked with organizations in virtually all industry segments, and in government.

We'll also welcome Mr. SJ Camarata, Jr. Mr. Camarata is Director, Corporate Strategies at ESRI, Inc. He works closely with ESRI's CEO and focuses on ESRI's worldwide corporate strategies and directions. He has been one of ESRI's key executives and has been instrumental in its growth and development since he started with the company in 1984. Through 1996 he served as a Director of ESRI and managed ESRI's worldwide expansion, including all corporate

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operations related to sales, marketing and business development. Prior to ESRI, he was co-founder and vice president of IRIS International, Inc., a GIS consulting and software development company in Washington, D.C. and was a research associate at Utah State University. He has a B.S. from the University of Utah and an MLA from Utah State University.

Concurrent tracks this year will include Natural Resources, Local Government, Native American Issues, New Technology, Vendor, Education, Health & Human Safety, and Remote Sensing. Abstracts for paper presentation submittals are due on or before February 14, 2000. If you did not receive a call for papers notice and registration form with your Fall 1999 Edition of Montana GIS News, you can print it from the conference website, <http://www.gis.umt.edu/gisconf> or contact Pam Smith, psmith@state.mt.us or Catherine McCoy, cmmcoy@esri.com.

Conference registration forms are enclosed along with the Intermountain GIS Conference announcement. You can expect to pay \$125 if you get your registration form in by April 10, 2000. Late registrants pay \$150. All registrations cover lunch and dinner on Monday and Tuesday, a T-shirt you'll be proud to own with this year's conference logo design on it, and all conference materials. See the great conference logo on the conference website (noted above)! Hotel reservations can be made by calling 1-800-325-4000 (To get the discount rate, specify that you are with the GIS conference).

Top off those days of enlightening workshops and presentations by attending Public Night on Monday. On Tuesday, there will be a dinner banquet, followed by a live band. You really won't want to miss any of these evening events! Public Night is a festive event in which several area school groups participate in various geography and mapping activities designed for the K-12 skill levels. You'll enjoy watching kids really get excited about GIS, and even go so far as to 'show-up' adult GIS professionals in their own knowledge of the technology and industry!

So have a good look at the Intermountain GIS Users' Conference announcement that will detail all the great events happening! And remember, now is the time to start talking about the *Intermountain GIS Users' Conference; Kalispell, 2000* with your colleagues, teachers, all the University/K-12 students you know...everyone! Thanks in advance for your participation. ■



Conference Scholarships Available for Students and Educators

By Mike Frankovich

Scholarships to the 2000 Intermountain GIS Users' Conference in Kalispell will be available again this year for students enrolled in a course of study that incorporates GIS/GPS as part of the curriculum. A total of 20 scholarships will be available. Those receiving scholarships will be asked to work at various assigned tasks at the conference. The Conference registration fee will be waived, however students wishing to attend workshops must pay the cost of the workshop. In addition students will receive a T-shirt and be admitted to the banquet dinner. Lodging will be the student's responsibility.

To apply, students should submit a letter describing their course of study with a recommendation from the program advisor. The conference will be held May 1st – 4th in Kalispell, MT, and the application deadline is April 10, 2000. Selection will be made in the order received. E-mail your application letter to Mike Frankovich Mfrankovich@mtech.edu

In addition to student scholarships, there will be 10 scholarships available to K-12 teachers who have an interest in GIS/GPS. These scholarships will allow a teacher to attend the workshop of their choice or one day of the conference. Teachers will not be expected to work at the conference.

To apply send a letter describing how GIS is or could be a part of the classroom curriculum in which you teach. Selection will be made in the order received. E-mail application letter to Mike Frankovich Mfrankovich@mtech.edu ■

Awards Program

By: David DelSordo

The Montana GIS Users' Group is a statewide consortium of Federal, State, Local, Tribal, University and private entities engaged in GIS technology. The Group's purpose is to provide a forum for exchanging information and ideas on GIS. It is a non-profit organization; any funds generated by Group activities are fully invested in projects that serve the Montana GIS community. Over the last decade, the Group has developed a number of educational outreach programs, including scholarships, lessons and equipment for teachers, and web-based teaching tools.

Recognition of an individual's achievements is an important part of our professional development. The Board of Directors of the Montana GIS Users' Group has authorized an Awards Program to recognize outstanding contributions by its members. The awards will be presented at the GIS Conference in those years when the Conference is held in Montana (even numbered years). In 2000 there will be two awards: the Education Award and the Career Achievement Award.

The Education Award will honor a member who has made a significant contribution to the Group's Education goals. The Award will recognize the member's work to increase the knowledge and understanding of teachers and students of the GeoSpatial Sciences. The awardees will have been a member of the Education Committee, been active in Public Night, and worked actively with teachers or students on GIS projects.

The Career Achievement Award will honor a Member who has made a significant contribution to the GeoSpatial Sciences profession in Montana. The awardees may have

mentored students, worked on conference planning committees, worked on the Education Committee, or participated in outreach to political leaders and other professions. The Career Achievement Award will show our appreciation for consistent dedication to the goals and programs of the Montana GIS Users' Group. This member will also have played a role in the growth and development of the GeoSpatial industry and profession in Montana.

If you would like to nominate a member for either of these Awards, please contact David DelSordo at david_delsordo@nps.gov or 206-220-4071 Lance Clampitt at lsclampitt@usgs.gov or 303-202-4514. Please let them know whom you would like to nominate, specify Education or Career Achievement Award, and state the reasons they deserve the award. ■

Bio Control and GIS

By: Linda Weaselhead

In 1994 the Confederated Salish and Kootenai Tribes put in place an integrated weed management plan. As part of this plan, biological weed control agents (insects) were released in many locations across the reservation. The agents feed on various parts of the weed, usually the seed heads or the roots, causing weakening of the plants.

In May 1998, Salish Kootenai College joined the Tribe to monitor the bio control release sites. The Tribe's Weed Department consisted of one full time staff, and other duties did not allow time for monitoring release sites. Since there is still much that we do not understand about the different agents, it is important to monitor the sites to observe the success or failure of the agents in a habitat.

A common problem in monitoring these sites is finding them. Personnel changes and poor record keeping are problems. Fifty to 200 insects can be hard to find in a large field of weeds. We came up with four ways of overcoming these problems:

1. A fence post was placed at the center of each site.
2. Photos were taken in all four directions from release center.
3. Photocopies of topo maps were marked with site locations.
4. Sites were GPSed and these files were converted to GIS files

Each of these methods has good and bad points. Fence posts are easy to see but can be taken; we have lost one so far. Photos need to include a tree, large rock or some other item that helps pinpoint the location and direction. Photos are valuable to show impact on the target weed over several years. Photocopied topo maps can be hard to read. GPS/GIS required more time and work but could be used in many ways.

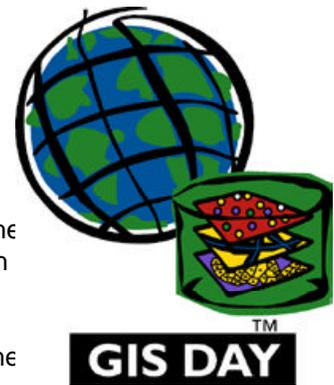
GPS readings were recorded using a Trimble GPS unit and corrected using "Pathfinder Office" software, which we had just purchased and really did not understand. It was then converted to ArcView. The first year we had data in several different "themes", the "Site names" were listed as "Location" and "Comment" and the data had to be merged using the geoprocessor in ArcView. I added a field to the tables for the target weed. In 1999 we used a data dictionary written for the project and saved a lot of time. We are now able to see where we had made releases and can also view releases sorted by target weeds. As more data is gathered, more fields can be added so that we can see when the insects are doing well. ■

GIS Day 1999

By: Kristina Gurrieri

The inaugural GIS Day was held November 19, 1999. This global event gave users of GIS the opportunity to open their doors to schools, businesses, and the general public to showcase real-world applications of this growing technology.

GIS Day, a grassroots event, is an extension of the National Geographic Society's Geography Awareness Week. The goal of GIS Day is to create a single, annual, worldwide event that effectively communicates the benefits and significance of GIS to both children and adults. There are currently more than 2,000,000 GIS users in the world, but most of the public is unaware of this growing technology. GIS Day is an opportunity for people to learn more about GIS and its role in society.



There were a number of GIS Day events held throughout Montana. One such event was held in Helena where a group of folks from the Department of Administration, Lewis & Clark County, Montana Department of Natural Resource and Conservation, Montana Department of Transportation, Montana Fish Wildlife and Parks, Natural Resource Information System, Tetra Tech, and Western Water Consultants hosted a GIS Day Open House at Ray Bjork Technology Center. During the day, 104 students plus their teachers and some of their parents attended the open house. There were five classes - two third grades, two fourths, and one fifth grade - scheduled for one hour time slots during the school day so that all could get some hands-on experience. Six different activity booths were setup varying from "Ask Dr. GIS", "Pick & Plot a Map", "Scavenger Hunt", "Where in Montana am I?", "Make & Print Out Your Own Map", and "Routing on Montana Highways." In addition to these activities there were displays from area GIS professionals along with maps and posters explaining GIS, and a computer lab was available with web sites bookmarked so that students could readily find GIS info over the Internet. From 3:00 pm till 7:30 pm the open house hosted the general public. Over fifty persons attended and all left with a better understanding of what GIS is and how it affects their everyday lives. Several map galleries were setup during Geography Awareness Week throughout the Helena area at schools, public libraries, and the shopping mall.

For information on similar GIS Day events held throughout Montana check <http://nris.state.mt.us/wis/mtgisday.html>. ITWG hosted a virtual map gallery <http://www.forestry.umt.edu/itwg/gallery/default.htm> for those unable to attend a GIS event. For national and global information check <http://www.gisday.com/>.

The next GIS Day will be held Wednesday, November 15, 2000, during Geography Awareness Week, November 13-17, 2000. Check the web sites as the date gets closer to learn more about the plans for the GIS Day 2000. You may want to attend an event or participate in hosting one. ■

Digital Atlas of the Greater Yellowstone Area Debuts on GIS Day, 1999

By: Gretchen Burton

Among the GIS Day events held at the Geographic Information & Analysis Center was the official release of the Digital Atlas of the Greater Yellowstone Area. The Digital Atlas was developed under the Aurora Partnership, a public/private collaboration established in September of 1998 to promote the design and production of decision support systems for use by natural resource management agencies. The US Geological Survey and ESRI produced the Atlas with contributions from Montana State University, the University of Wyoming, the US Forest Service, the National Park Service, Gallatin County, the City of Bozeman, and others. ESRI also donated the ArcView Data Publisher software licenses for the compact disks, which provide a read-only version of ArcView 3.1. The Atlas resides on two CDs and contains more than 440 spatial data layers covering portions of Montana, Wyoming, and Idaho. Featured study areas include Yellowstone National Park, Grand Teton National Park, the Bridger-Teton National Forest, Gallatin County, and the City of Bozeman.

A limited number of the Digital Atlases will be available at the Intermountain GIS Users' Conference in Kalispell, May 1st - 4th, 2000. An online version of the Atlas is now under development and will ultimately replace the CD version; go to <http://mapserver.giac.montana.edu/gyaatlas/welcome.html> to explore the available data. This online Atlas will continue to be developed under the auspices of the Greater Yellowstone Area Data Clearinghouse (<http://sun1.giac.montana.edu/gyadc/gyadc/home.html>) at Montana State University. ■

Who Will Control the GIS? Part I *By: Rick Breckenridge*

The cut line for the lead story for the November 1999 issue of *Professional Surveyor* reads: "Who will control the GIS?". This is the question that the surveying community wants answered and the question will not go away until the surveyors hear the right answer.

This article did not appear by happenstance. The opinion expressed is not an isolated point of view. Most GIS professionals are quietly doing their jobs and are oblivious to the national debate heating up. At the heart of the debate is the demand by the surveyors that a GIS be controlled by a surveyor. The fight along this front is being promulgated by every publication or organization that provides a forum for surveyors to air their concerns.

The ammunition for this fight comes from the California board of registration. In July 1998, that board ruled that GIS was in fact surveying and therefore, in California, must be under the direct control of a licensed surveyor. With this decree in hand, the California delegation lead a charge on the National Council of Examiners for Engineering and Surveying (NCEES) to incorporate their ideology into the Model Law Definition of the Practice of Land Surveying. With the Model Law up for review this past September, the California Land Surveyors' Association (CLSA) feared that a separate, geomatics-based profession would result. In the October, 1999 issue of *Point of Beginning* (POB), Steve C. Wilson, immediate past president of CLSA, argued "that when GIS *practitioners* are issued licenses as Professional Surveyors, it would imply that a GIS would then comply with National Map Accuracy Standards." (Emphasis mine.) The article continues: "Although this should be the norm for any GIS, he said, only Professional Land Surveyors are qualified to make that assessment."

GIS is not the first professional field

that has drawn the attention of CLSA or NCEES. In the early '80's, the field of photogrammetry came into the sights of land surveyors. The fight that ensued with this debate nearly destroyed the flagship of the land surveying community, the American Congress on Surveying and Mapping (ACSM). After the dust settled, photogrammetrists had agreed to a national certification program. This is a voluntary program and not required by law. This capitulation, however, has not completely satisfied all of the surveying organizations. In California, you guessed it, only a licensed surveyor can practice photogrammetry. The certification, in their opinion, does not provide enough protection or assurance of competency for the general public.

Now the surveying community is looking for elsewhere to satisfy their endless desire to *control* the world. The same tactics are being deployed that worked against the photogrammetrist. In the *Professional Surveyor* article mentioned above, author Fred Henstridge argues: "Once a rubber-sheeted GIS database is complete, it is not a distant step to begin printing maps or giving data to the public. Even with disclaimers as to the accuracy or reliability of the map, *the public will not be well served.*" (Emphasis mine.)

The quotations that I have sited, in my opinion, show a lack of education about GIS issues among these publications. For instance, labeling a GIS database as "rubbersheeted", implies that a data set lacks sufficient control when originally developed. This simply isn't true. GIS parcel data sets are built from deeds, not surveys. Rubbersheeting is a process utilizing least squares theory to minimize the error that is inherent in all measurements. Statistical reliabilities then tell the users if this data set will meet the needs. These

reliabilities serve in the same manner as do ingredient labels on consumable products. The public makes an informed decision based on the label. This method has served the public well for many years. Reliabilities work the same way. Again, labels without education promote fear.

Fear is another avenue utilized in these publications. "Service to the public" is a noble, overworked metaphor. The public has neither the time nor the ability to piece together hundreds of deeds in order to understand a neighborhood plan. Counties need the ability to communicate these plans to better serve the public. The GIS is the perfect tool.

The argument that only surveyors can apply national map accuracy standards is fallacious. These standards were developed by photogrammetrists and have been ably applied by cartographers for years. The *current* National Map Accuracy Standards were adopted in 1947 and have proven to be insufficient. These insufficiencies have led to the development of additional standards by the Federal Geographic Data Committee.

I bring these two points to the attention of the Montana GIS Users' Group for several reasons. It is my intent to educate and activate GIS professionals as to the events that are out of their immediate sphere of information. It is also my intent to bring together cartographers, geographers, data base managers, geodesists, photogrammetrists, software programmers, and land surveyors to understand that a GIS is the result of all of these disciplines combined without domination by a single profession or subjected to the regulations of any one group. Fear is simply the absence of knowledge. We can be alienated by the ignorance of others or we can choose to help develop a solution. ■

Digital Raster Graphics Change Mapping

By Ed Madej

The USGS DRGs, called Digital Raster Graphics, are changing the way mapping is done, both on and off the web. The DRGs are scanned, georegistered images of USGS topographic maps. Three scales of DRGs are available at NRIS the 1:250K, 1:100K and the popular 1:24K.

DRGs can be viewed and printed directly from web using the new NRIS Topo Finder at:

<http://nris.state.mt.us/topofinder.html> You can enter township, range and section numbers and the Topo Finder will zoom to that location on the 1:24K quad map for you, plus identify the point by latitude longitude, state plane and UTM coordinates. The next version of the Topo Finder will search by latitude longitude coordinates as well as township and section. The resulting image can be saved as a GIF file or printed directly from your web browser.

If you go to the main DRG web page at <http://nris.state.mt.us/nsd/drug.html> you can view and scroll through all of the DRGs available and download the files to use on your computer in two different formats; georegistered TIF files or compressed MRSID image files. You can use these files with ArcView 3.2, or ArcExplorer 2.0 from the Environmental Systems Research Institute, (ArcExplorer is free from <http://www.esri.com>). You can view and translate MRSID files into TIF files using the MRSID Standalone Viewer available for free from Lizard Tech (<http://www.lizardtech.com>).

The DRGs are great when used as background images in ArcView maps, or as images popped into presentation programs such as Microsoft PowerPoint. With the DRGs as a base, you will never be lost in Montana again, at least if you have your computer with you!

**GIS PHYSICAL TOOLBOX NOW AVAILABLE
to K-12 Teachers in Montana
Call 406-994-6921 for More Information**

Montana GIS Users' Group
Montana State Library
Natural Resource Information System
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