
Precision Agriculture Research Association

Vol. 1 No. 7

April 1, 2001

Dear members and potential members,

The Precision Agriculture Research Association (PARA) idea originated with a group of producers who had been working in the realm of site-specific farming issues. Many of these producers had projects with MSU faculty. With support from MSU staff and UMAC (Upper Midwest Aerospace Consortium), PARA was established in January 1997 as a non-profit organization, producer-driven, with the goal of sharing and helping each other accomplish various GPS/GIS tasks. In the fall of 1998, a group of producers got together to begin sharing ideas and needs. The group decided to take the concept of PARA, which was already in place, and become active.*

Since that time, several producers, faculty and students have evolved into a learning group. The learning group conducts on-farm, field-scale research. This group decided they needed capabilities for sharing data using similar software, especially for analysis and map making. The GIS package picked by the learning group is SSToolbox (SST). The group is beginning its third year working with SST.

During the 2000 growing season, the learning group began participating in a project sponsored by NASA-Raytheon to determine whether remote sensing images (downloaded using a DirecPC satellite dish) could assist management decisions. Raytheon has renewed funding for the 2001 growing season. Learning group members hope to use NDVI and Landsat imagery coupled with higher resolution IKONOS and aerial imagery.

The PARA site can be found at <http://www.montana.edu/places/para>. There are back issues of the newsletter posted, as well as links to other sites, information on the officers and directors, and more. Please contact Chris Erlie if you have any questions, comments, or suggestions for additions to the site.

**Membership Information can be found on page 4 of this newsletter.*

Election of new officers

New officers were elected at the PARA February meeting:

President: Carl & Janice Mattson - CoChair
Vice-President: Steve Raska
Secretary: DeImna Heiken
Treasurer: Bruce Wright
Board of Directors: Gary Arnst
Mike Choriki
Chuck Merja

PARA Research Opportunities

1. Several learning group members who have used Landsat and AVHRR/NDVI (weather satellite data used to determine vegetative health) decided they needed better resolution and more frequent images to actively manage their operations. They have embarked on a program to get 13 images of their farms this season. They have obtained a color infrared digital camera that will allow them to capture images on which an NDVI can be displayed. They will also be collecting some regular color images which may also prove useful. The idea here is to see if wild oat patches can be observed, so they may be dealt with in this growing season. Of course, producers hope to see other field anomalies, too, like differences in moisture holding capacity, old production practices, irrigation differences and irrigation system “leaks”, among other things. Early images have already shown some interesting things. Involved producers will have image examples at the PARA Field Day (June 28 at Dan Keil’s), and hope to have some examples on the internet, yet this season. If you have any interest in this topic, send your e-mail address to chuckm@3rivers.net. Once the internet examples are up, we’ll send you the link.
2. One of the Board of Directors, Chuck Merja, has been working on a website that displays Montana agricultural information such as NDVI and associated departure from average, precipitation values, counties affected by disaster declarations, etc.
<http://www.3rivers.net/~chuckm/Projects/GIS/index.htm>
3. Those of you who have not yet purchased a GIS program can still download weekly remote sensing images of vegetation from UMAC, using free software from either ESRI (ArcExplorer) or ERDAS (MapSheets Express) to look at it.

Obtaining ArcExplorer

- C Open your Internet browser and navigate to <http://www.esri.com>
- C Scroll down the left-hand side until you see the heading “free”. Click on the **Free Resources** link under that heading.
- C Under **Software**, click on the **ArcExplorer** link.
- C When you click **Download**, you will be prompted for some information. The download will commence after you have filled out the web form.

Obtaining MapSheets Express

- C Open your Internet browser and navigate to <http://www.erdas.com/>
- C Scroll to the bottom of the page and click on **MapSheets Express** under **Get it FREE!**
- C Scroll to the bottom of the page and click **Windows NT/95/98/2000** under download.
- C You may be asked to register at this point.
- C Click on **ERDAS MapSheets Express 1.3**, you will get the download dialog box.

Obtaining the imagery to add into the ArcExplorer or MapSheets.

- C Go to <http://www.umac.org/farming/> Click on the **Weekly Vegetation Maps** button in the sidebar.
- C Read through the background information on how the NDVI images were made into GeoTIFFS, the role of EROS Data Center, etc.
- C Click on one of the links to the NDVI composites at the bottom of the page. You may choose to

View the image or download the **Weekly NDVI** or **NDVI Departure from Average**. The Departure from Average is an illustration of how different the current NDVI values (pixel by pixel) are from the 10-year average for the same week.

- C Left click on the image that you are interested in.
- C After you have saved the image that you want to disk, you may display it in either of these programs.

Displaying imagery in ArcExplorer or MapSheets.

You can download an entire growing season's worth of NDVI images into the same view, and get them to play like a movie. The earliest image should be at the bottom of the table of contents, and the most recent image at the top. If you have all of these themes checked off, they will draw layer by layer, from the bottom up. You will have a way to look at the passing of the growing season as each of the layers draw.

3. New learning groups
Producers interested in forming new learning groups that focus on either range management or irrigation agriculture should contact Chris Erlien (cerlien@montana.edu; 406-994-6034).

PARA Summer Meetings

Growing season is upon us again. It is unlikely that PARA will be holding monthly meetings. The group has, however, planned to join in with the **Canola Trial Field Day** at Dan Keil's in Conrad **June 28**. Topics covered will include:

- C a comparison trial on the priming process, where seeds are treated pre-germination for quicker emergence and more vigor.
- C using GPS for field guidance
- C aerial and satellite imagery - uses for agriculture
- C soil mapping, particularly Veris

Directions:

7 miles east of Conrad on Sollid Road, 1.5 miles north on gravel road. Signs will be posted.

If you have any questions, please e-mail Dan at ddkeil@3rivers.net

MSU Field Days

Northwestern Ag Rresearch Center	June 19	Kalispell (Mint Tour)
Central Ag Research Center	June 21	Moccasin
Western Ag Research Center	June 28	Corvallis (Herb and Specialty Crops Tour)
Central Ag Research Center	July 9	Moccassin (Cereal grains variety tour)
Western Triangle Research Center	July 10	Conrad
Northern Ag Research Center	July 11	Havre
Eastern Ag Research Center	July 18	Sidney
International Safflower Conference	July 23-27	Sidney, MT/Williston, ND

National Meetings

5th International Safflower Conference
Williston, North Dakota and Sidney, Montana
July 23-27

<http://www.sidney.ars.usda.gov/state/saffcon/>

3rd International Conference on Geospatial Information in Agriculture and Forestry
Denver, Colorado
November 5-7
<http://www.erim-int.com/CONF/3rdag/3rdag.html>

Annual Membership Dues

Membership to the PARA organization is open to the public. Presently, members include producers, ag industry, and university academia. It is felt we can learn from each other no matter what our experience has been in site-specific farming. Anyone wondering if PARA is an organization that can provide something to them in their pursuit of precision farming are welcome to attend a meeting and then make a commitment. PARA's annual dues are \$100 per representative per year. The new year begins January 1, 2001.

Those wishing to submit their dues, please print this page and supply the following information:

Name:

Organization:

Address:

Town:

State:

Zip Code:

Phone:

e-mail:

Also include a check or money order for \$100 made payable to PARA and mail to either of the addresses below:

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