

## OUTREACH EVENT REPORT AND RECOMMENDATIONS

Attendee's Name and Report Writer:

**Joseph Kerski, Geographer:  
Education/GIS, USGS, Denver, Colorado.**

Location: Rosebud, South Dakota

Event: Conduct GIS Workshop for Sinte Gleska University and Tribal Professionals from Rosebud Sioux Tribe

Dates: 3- 6 June 2002

### **Background**

Cooperation among Native American governments, scientists, and educators, and the USGS builds Tribal capabilities to more effectively manage Tribal resources, plan for the future, and to improve the education of future generations of Tribal leaders. Working with Native Americans is one of USGS Central Region Director Tom Casadevall's priority activities.



*Southwest entrance to the Rosebud Sioux reservation, photographed on 6 June 2002.*

My work with the Rosebud Sioux tribe was the direct result of a historic agreement from Fall 2000. At that time, Lionel Bordeaux,

President of Sinte Gleska University, and Chip Groat, Director of the USGS, signed an agreement to work together to improve science education for Native students. Sinte Gleska is a tribal university with undergraduate and graduate programs. Its Baccalaureate of Science Degree is being supported by USGS technology and professional development available through the USGS' EROS Data Center. The Rosebud Sioux and the USGS intended for the agreement to be a mutually beneficial relationship that will help train Tribal students for data management careers. James Rattling Leaf of the Sicangu Policy Institute at the University, and Eugene Napier of the USGS EDC were instrumental in making the agreement a reality.



*Joseph Kerski, USGS, left, and James Rattling Leaf, Sicangu Policy Institute at Sinte Gleska University, right, work together on the GIS workshop at the University.*

### **About Sinte Gleska University**

Sinte Gleska University, is a Tribal College that has been serving American Indian students for 32 years. It was named after Sinte Gleska, a Lakota leader during the 19<sup>th</sup> Century. It was the first tribal college to gain accreditation certification and is one of two tribal colleges offering a baccalaureate

accreditation. Approximately 900 students attend the University.

### ***Acknowledgements***

It was an honor and privilege to work with the Rosebud Sioux. I appreciate all the work that James Rattling Leaf did to help make the GIS workshop a success. For example, he brought together a classroom of professionals and students from many parts of the tribal government and university. He also brought a large format HP plotter for the participants to create their final maps on. He has a real vision not only for technology and science, but for the future of the university and for the entire Rosebud Sioux tribe.

I thank the attendees of the workshop for taking time out of their busy schedules to share their issues and technical advice. I also appreciated the USGS' support of my participation in this event, particularly Mark Eaton. I look forward to working with the Rosebud Sioux tribe in the future.

### ***Description of GIS Workshop***

Attendance at the workshop was near 16, twice the number that James and I had anticipated. It was quite exciting to see the networking of staff from different organizations on the reservation, many of which had been using GIS for years, such as the Water Resources Department and the Tribal Land Enterprise.



*Most of the participants in the GIS workshop appear in this photograph, which I took during our field work GPS activity.*

James Rattling Leaf and I have been working together from time to time since 1999, when we participated in an Internet and GIS institute at Northern Arizona University in Flagstaff. During the Fall of 2001, we, together with Jhon Goes in Center, conducted a GIS presentation at the National Indian Education Association (NIEA) conference in Billings. We began discussing a series of GIS workshops on Rosebud during that conference, and it was fantastic to make these dreams become reality.

James has been working with MapTrails, the USGS, I Cubed, the Upper Midwest Aerospace Consortium, the Bureau of Indian Affairs, and Berry and Associates to create a demonstration interactive mapping and data project on CD-ROM. This CD contains maps, satellite imagery, aerial photographs, Corona photographs, photographs present and historical, land types, features, video, songs, and other data that are linked to maps. He is expanding the data to 20 communities and will work it into the curriculum of secondary and elementary education.



*Ben Black Bear (Top) and Sage Fast Dog (Bottom) collect coordinates with GPS. We also collected attributes with each coordinate pair so that thematic point maps could be constructed within the GIS.*



*The GIS workshop focused on collecting GPS coordinates with attributes and*

*bringing them into GIS software (ArcView), examining USGS elevation, land cover data, elevation data, hydrographic data, transportation data, topographic data, examining satellite imagery and aerial photographs, selecting study sites for prairie grass, GPS to GIS, selecting and querying maps and tables, creating layouts, and examining census data for Rosebud neighborhoods for 2000.*



*Participants in the GIS institute were from the tribal water resources office, cultural resources managers, university professors,*



*Ben Black Bear, Executive Director of the Rosebud Tribal Land Enterprise, outside his office in Rosebud, South Dakota.*

**Letter of Appreciation**

I received this very kind letter from James Rattling Leaf after I returned to Denver.

Hello Tom,  
I wanted to express my appreciation for the work of Joseph Kerski. As you know, SGU and USGS delivered a three day intro to GIS course on the Rosebud Sioux Reservation and it was very well received. In the future, we would like to continue working with Mr. Kerski in our efforts to promote and develop the geospatial technologies on our reservation.

Best Regards,  
James Rattling Leaf

SGU Sicangu Policy Institute  
221 East 2nd St.  
P.O. Box 557  
Mission, SD 57555  
Phone: 605-856-4262  
Fax: 605-856-4428

---

James Rattling Leaf just wrote a \$5 million proposal to name Sinte Gleska as a NASA Minority University Space Interdisciplinary Network and a NASA institute for collaborative research and education. He wants the USGS to be a partner if the proposal is funded. He also wants to set up an environmental monitoring network on the Rosebud lands and a high-speed data connection with USGS EDC. He already has one weather station ready to be installed.



*The Rosebud Sioux lands are comprised of rolling hills, valleys, and ridges of grasslands and pines.*



*One of the bison from the herd that the Rosebud Sioux Tribe owns.*



*Sinte Gleska University's technology building, where the training was held, is a beautiful spot near a reservoir just east of Mission, South Dakota. Eventually, more buildings of the university will be constructed near this site.*



*The Rosebud Sioux reservation is located in*

*south-central South Dakota, just north of the Nebraska line.*



*Sign at library at Sinte Gleska University.*

### **Materials**

At the workshop, I distributed Indian lands maps, GIPs, fact sheets, circulars, posters, and map indexes. I ordered and we used a great amount of Rosebud Sioux USGS-generated data, such as NHD, NED, DEM, DRG, DOQ, NLCD, and DLG data. We also used data from EPA and from the Bureau of the Census.

### **Recommendations**

1) The Rosebud Sioux, as I suspected before I visited the staff, are an excellent government to partner with. James Rattling Leaf is one of the best networked people I know. He is connected with many projects of scientific and educational nature, such as the Upper Midwest Aerospace Consortium, and AmericaView.

I was very impressed that Leland Bordeaux, Vice President of the University for Academic Affairs, attended part of our workshop. Also, a representative from the State of South Dakota also spent some time with us.

I believe that the USGS should continue to expand its MOU with the tribe and play a major role in helping students, educators, and tribal professionals use our data. I definitely feel that our partnership with the Rosebud Sioux is one of the very best agreements we have, and it needs to be continued and supported.

2) The Rosebud Sioux can provide the USGS with input to its publications, data sets, software, and other items related to science and education. We can also provide data and assistance to the tribal professionals and students as they use GIS and USGS spatial data.

3) It is not enough to tell **what** products are available from the USGS. The value-added in our involvement in education is that we work with educators to demonstrate **how** our products can be used in conjunction with educational standards and with the goals of the Tribe.

Tribal officials already know how to find most resources and they have access to a great deal of material. When we get involved with them--getting their input and working with them--we can understand how to best meet their needs.

### Next Steps

I will return to Sinte Gleska University on 15-16 August 2002 to work with Peggy Tilgner. I will conduct a GIS workshop for students in the Education Program. As these are people training to be teachers, they will be an excellent group to bring integrated science and technology education to the next generation. I am looking forward to returning.

### Additional Activities



*Ben Black Bear, John Whiting, and Joseph Kerski made a voyage after the institute ended to the confluence of a major line of latitude and longitude. This spot was located at 43 degrees north and 101 degrees west longitude, in the southwest corner of the Rosebud Sioux lands. The next morning, John Whiting and I visited 43 degrees north and 103 degrees west.*



*Going home... but I am scheduled to return in mid-August 2002 to conduct a GIS training session for students obtaining an education degree from Sinte Gleska University.*

**\*\*end of report\*\***