

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Thermal Remote Monitoring of Geothermal Features, Yellowstone National Park, years 1-2
Discipline: Natural
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: University of Montana
Effective Dates: 8/1/2005 - 12/30/2007
Funding Amount: \$80,000.00

Investigators and Agency Representative:

NPS Contact: Cheryl Jaworowski, Yellowstone Center for Resources, P.O. Box 168, Yellowstone National Park, WY 82190; 307-344-2208, Cheryl_jaworowski@nps.gov
Investigator: Carl Seielstad, National Center for Landscape Fire Analysis, College of Forestry and Conservation- 439 Science Complex, University of Montana, Missoula, MT, 59812, 406-243-6200, carl@ntsg.umt.edu

Project Abstract:

Yellowstone NP has now funded two years of a three-year project to conduct a thermal feature inventory and change assessment for Yellowstone National Park utilizing satellite remote sensing statistical techniques. Tasks include:

- 1.Acquire thermal data of the Norris Geyser Basin at a nominal pixel size of 3m, focusing on geometric and radiometric precision and accuracy.
- 2.Reproduce the data products of Hardy (2005) with a more advanced thermal imaging system to facilitate geothermal change detection in Norris Basin.
- 3.Demonstrate the efficacy of high-resolution data products for mapping and monitoring thermal features in the YNP region.

Outcomes with Completion Dates:

Report of year 1 work is due in June 2006.

Products for year two (Due July 31, 2007) include:

- Level 3 image mosaics (georeferenced and radiometrically calibrated temperature image maps in neutral data format) for Norris Geyser Basin and targets of opportunity.
- FGDC-compliant metadata record.
- Statement of temperature accuracy and precision and geolocation accuracy.
- Cost statement related to repeatability.
- Recommendations for mapping and monitoring widely dispersed geothermal features with fine-grained remote sensing data.
- Airborne thermal imagery of a vapor dominated system.

Keywords: thermal features, inventory, remote sensing, geysers, Norris Basin, Yellowstone National Park, University of Montana

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Date Annual Report Received:
Date Final Report Received:
Publications, etc. on file: