Rocky Mountains Cooperative Ecosystem Studies Unit (RM-CESU)
RM-CESU Cooperative Agreement Number: H2370094000

FINAL REPORT

TITLE OF PROJECT: Developing GIS Tools and Applications for Site Restoration in the National Parks

NAME OF PARK/NPS UNIT: Multiple parks - Servicewide

NAME OF UNIVERSITY PARTNER: University of Colorado-Denver, Department of Geography & Environmental Sciences

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BACKGROUND:
Past mining has left an estimated 2,500 sites with 9,000 mined features in 132 units of the National Park System. These features raise management concerns in the realms of public safety and environmental degradation, while at the same time many sites are assets due to their cultural values and the critical wildlife habitat they provide. Hazards and ecological impacts must be mitigated while protecting cultural and wildlife values.

The Abandoned Mine Lands (AML) Program was established in 1983 with 5 primary objectives:

1) site inventory, characterization, prioritization;
2) elimination of public safety hazards;
3) rehabilitation of natural resources affected;
4) preserve/interpret culturally significant sites;
5) maintain critical wildlife habitat.

SCOPE OF WORK:

This project will: 1) Collect restoration data and post results on a GIS based automated database; 2) make the database readily available to parks and used to manage restoration sites; 3) provide a methodology which has been and can be utilized for other service-wide databases. Ultimately, the park will be able to develop and distribute educational materials to inform visitors about restoration sites and the database can be used for managing and planning for visitor enjoyment and the environmental health of park lands.

PRODUCT:

To help with the inventory of AML sites and features, the National Park Service engaged with CartoPac Field Solutions to design, develop, and deploy a field data collection solution for the AML Program. This included a custom built web interface to support 10 NPS units, with the ability to add additional units in the future. This allows field users to download the correct database schema to collect site/feature data on mobile units. Custom configured forms were developed to display database fields at the appropriate size for mobile unit screens. On these forms field users can edit existing data in the AML database as well as add new sites and features. Once data collection and editing is finished users can transfer their data through the web application which downloads directly into the AML database. In addition to the CartoPac mobile application, the NPMap application (which allows users to edit and add AML data directly through a web interface) was improved. One of the most significant additions was the ability to query by a specific field. Users can now query any field within the database by a variety of operators such as Equals, Begins With, and Contains. A video tutorial was also created and placed in the help section for new users of the AML database in NPMap.

If parks are unable to use the mobile application to collect data, paper forms were updated to correspond with the current AML database schema. These forms were designed to be used by employees who want to fill out a paper copy of the AML database fields and then enter the data manually through NPMap.