

Project Completion Report

Rocky Mountains Cooperative Ecosystem Studies Unit (RM-CESU)

Project Title: Evaluating and reporting landscape context and condition of parks

Project Code: J2370080538

Type of Project : Technical assistance and research

Funding Agency: National Park Service

Partner University: University of Idaho

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End Date of Project: 31 December 2010

Funding Amount: \$100,000

Project Summary, including descriptions of project deliverables, work accomplished and/or major results. If the information is restricted (e.g. location of endangered species or cultural resources), indicate the title and location of the final report. Also add web sites where project-related information may be found.

The products listed under the original Task Agreement include:

- Reviewed and approved template report on landscape context and condition for prototype parks.
- Initial set of Network or 'reporting region' specific reports on landscape context and condition of parks in the reporting group.
- System-wide evaluation of results from version 1 measurements.
- Documentation and evaluation of version 2 measurements, which are high priority enhancements to the analyses.

Additionally, the Scope of Work identified that Dr. Svancara would contribute to development of the following products::

- Final data sets for all the core variables and supporting data sets ('framework' GIS layers with administrative boundaries, town locations, etc.).
- GIS layers derived base data sets. All spatial data collected or submitted for national, regional, or network NPS programs shall be geo-referenced with projection information defined in the data file that is submitted. All spatial data shall be provided in the standard regional-scale projection(s). Park-level data will generally use UTM and NAD83 whereas regional- or national-level data will generally use decimal degrees (double precision with five or more significant digits) and NAD83.
- Final reviewed and fully tested SOPs that can easily be modified and incorporated into Network protocols consistent with the Oakley et al. guidelines.
- A set of report that includes a brief background of the process, justification of the measures and the evaluated indicators.
- Documentation on priority 'Version 2' issues. This is to include an identification of the issue, a brief statement of its relevance, and an initial evaluation of resources required to address the issue.

The NPScope working group collaboratively developed products that exceeded those articulated in the Task Agreement. Contributions by Leona Svancara were critical to the successful completion of many "Phase 1" and "Phase 2" products (data layers, reports, GIS processing scripts, and maps) that are now made publically available through the NPScope website (<http://science.nature.nps.gov/im/monitor/npscope/>) and the Natural Resource Information Portal (<https://nrinfo.nps.gov/Home.mvc>).

Important project reports where Leona shared authorship include:

Story, M., L. K. Svancara, T. Curdts, J. E. Gross and S. McAninch. 2009. A comparison of available national-level land cover data for national park applications. Unpublished report, Inventory and Monitoring Division, National Park Service, Ft. Collins, Colorado.
<https://nrinfo.nps.gov/Reference.mvc/Profile?code=663958>

Svancara, L. 2009. Measure Development Summary: Conservation Status. Office of Inventory, Monitoring, and Evaluation, National Park Service, Fort Collins, Colorado, USA.

Svancara, L. and M. Story. 2009. Measure Development Summary: Land Cover / Land Use. Office of Inventory, Monitoring, and Evaluation, National Park Service, Fort Collins, Colorado, USA.

Gross, J.E., and L. Svancara. 2009. Measure Description Summary: Landscape Pattern. Office of Inventory, Monitoring, and Evaluation, National Park Service, Fort Collins, Colorado, USA.

Svancara, L., P. Budde, and J. Gross. 2009. Measure Development Summary: Population and Housing. Office of Inventory, Monitoring, and Evaluation, National Park Service, Fort Collins, Colorado, USA.

Svancara, L., T. Philippi, and J. Gross. 2009. Measure Development Summary: Roads. Office of Inventory, Monitoring, and Evaluation, National Park Service, Fort Collins, Colorado, USA.

Gross, J. E., L. Svancara, P. Budde, L. Nelson, T. Philippi, M. Story, T. Curdts, B. Frakes, and S. McAninch. 2009. Buffalo National River: NPScape - A basis for landscape monitoring. National Park Service, Ft Collins, Colorado.

Additionally, Dr. Svancara played a major role in writing a very substantial project report that contains a number of park-based applications of NPScape data and methods:

Gross, J. E., T. Philippi, L. K. Svancara. 2009. A Guide to Interpreting NPScape Data and Analyses. NRPC-FC. Fort Collins, CO. Published Report-664369.
<https://nriminfo.nps.gov/Reference.mvc/Profile?Code=664369>

It was determined mid-way through the Task Agreement that the original goal of producing a large-series of park or network specific reports was impractical due to the unexpected work involved with properly linking NPScape landscape measures to particular resources in parks. Hence, rather than expect Leona to produce a series of separate reports, the decision was made to combine the analyses of landscape context and condition of parks in the above Interpretive Guide.

Leona helped review and test a number of our NPScape Standard Operating Procedures (SOPs) and associated GIS data processing scripts. SOPs from Phase 1 that were published in the Natural Resource Report (NRR) series include:

National Park Service. 2010. NPScape population measure – Phase 1 metrics processing SOP: Current population total and density, historic population density, and projected population density. National Park Service, Natural Resource Program Center. Fort Collins, Colorado. Natural Resource Report. NPS/NRPC/IMD/NRR—2010/254. Published Report-2165453.
<https://nriminfo.nps.gov/Reference.mvc/Profile?Code=2165453>

National Park Service. 2010. NPScape road measure – Phase 1 metrics processing SOP: Road density, distance from roads, and area without roads metrics. National Park Service, Natural Resource Program Center. Fort Collins, Colorado. Natural Resource Report. NPS/NRPC/IMD/NRR—2010/255. Published Report-2165454. <https://nriminfo.nps.gov/Reference.mvc/Profile?Code=2165454>

National Park Service. 2010. NPScape pattern measure – Phase 1 metrics processing SOP: Landscape morphology metrics. National Park Service, Natural Resource Program Center. Fort Collins, Colorado. Natural Resource Report. NPS/NRPC/IMD/NRR—2010/253. Published Report-2165452.
<https://nriminfo.nps.gov/Reference.mvc/Profile?Code=2165452>

National Park Service. 2010. NPScape landcover measure – Phase 1 metrics processing SOP: Landcover area per category, natural vs. converted landcover, landcover change, and impervious surface metrics. National Park Service, Natural Resource Program Center. Fort Collins, Colorado. Natural Resource Report. NPS/NRPC/IMD/NRR—2010/252. Published Report-2165449.
<https://nriminfo.nps.gov/Reference.mvc/Profile?Code=2165449>

National Park Service. 2010. NPScape housing measure – Phase 1 metrics processing SOP: Current housing density, historic housing density, and projected housing density metrics. National Park Service, Natural Resource Program Center. Fort Collins, Colorado. Natural Resource Report. NPS/NRPC/IMD/NRR—2010/251. Published Report-2165448.
<https://nriminfo.nps.gov/Reference.mvc/Profile?Code=2165448>

National Park Service. 2010. NPScape conservation status measure – Phase 1 metrics processing SOP: Ownership, ownership by category, and percent protected metrics. National Park Service, Natural Resource Program Center. Fort Collins, Colorado. Natural Resource Report. NPS/NRPC/IMD/NRR—2010/250. Published Report-2165442. <https://nriminfo.nps.gov/Reference.mvc/Profile?Code=2165442>

SOPs from Phase 2 that were produced and are now under review in preparation for publication in the NRR series:

National Park Service. 2010. NPScape landcover measure – Phase 2 North American Landcover metrics processing SOP: Landcover area per category and natural vs. converted landcover metrics. National Park Service, Natural Resource Program Center. Fort Collins, Colorado. <https://nriminfo.nps.gov/Reference.mvc/Profile?Code=2166956>

National Park Service. 2010. NPScape landcover measure – Phase 2 Coastal Change Analysis Program landcover metrics processing SOP: Landcover area per category and landcover change metrics. National Park Service, Natural Resource Program Center. Fort Collins, Colorado. <https://nriminfo.nps.gov/Reference.mvc/Profile?Code=2166955>

National Park Service. 2010. NPScape pattern measure – Phase 2 pattern metrics processing SOP. North American Landcover forest and grassland morphology. National Park Service, Natural Resource Program Center. Fort Collins, Colorado. <https://nriminfo.nps.gov/Reference.mvc/Profile?Code=2166957>

National Park Service. 2010. NPScape pattern measure – Phase 2 pattern metrics processing SOP. North American Landcover forest and grassland density. National Park Service, Natural Resource Program Center. Fort Collins, Colorado. <https://nriminfo.nps.gov/Reference.mvc/Profile?Code=2166958>

National Park Service. 2010. NPScape roads measure – Phase 2 road metrics processing SOP: Road density and distance from roads. National Park Service, Natural Resource Program Center. Fort Collins, Colorado. <https://nriminfo.nps.gov/Reference.mvc/Profile?Code=2166959>

Finally, Dr. Svancara provided a thorough review of the Phase 1 products in preparation for the products that we've since started releasing as part of Phase 2 of the project. This review was accomplished in part through a review of the NPScape Interpretive Guide, specifically with reference to perceived holes in our landscape metrics when considered across all chapters of the guide. As part of this review Leona provided specific comments on new metrics and park examples that we should consider in Phase 2.

One of these perceived Phase 2 needs was that we make updates to source datasets used in Phase 1 of the project, and specifically that we undertake a NPS review of the GAP status codes that define protected areas status of our NPS units. Dr. Svancara contributed to developing the strategy for and conducting this extensive review of hundreds of park units through our 32 I&M Networks, and she worked closely with the Gap Analysis Program national office to ensure that results from our review were incorporated into a new version (version 1.2) of the US Protected Areas Database, due for public release and distribution in mid-February 2011.

Number of students participating in this project: undergraduates, graduate students, degrees conferred.

Six undergraduate students participated in the the project during this time period.