Landscape Dynamics Monitoring Project

Background

Changes in habitat quality, habitat fragmentation, and disturbance regimes are profoundly affecting species and ecosystems across the NPS system. Understanding the rates and magnitude of these kinds of landscape changes is important to guiding effective park management. All 32 I&M Networks identified landscape dynamics as a high-priority vital sign for monitoring the condition of park natural resources. This project will provide information on landscape dynamics that is relevant to NPS at local, regional, and national scales.

The NPS landscape dynamics project will identify, evaluate, and report a small suite of landscape-scale measures for all I&M parks. Evaluations of 'core' landscape dynamics measures will rely on existing data in regional to national scale datasets. Examples of potential measures include population density and change, road density, area of land cover types, and rates of disturbance. For these measures, there are substantial economies of scale to centralized acquisition, processing, and interpretation.

The landscape dynamics monitoring project will evaluate and report on a carefully-selected set of measures that address broad-scale context and condition of parks.

Approach

This project will prioritize and select a short list (< 10) of information-rich and complementary measures of landscape dynamics, and as resources permit, will also acquire and process additional data to address a larger set of secondary measures. These secondary measures may target regional or resource-specific needs (e.g. coastal resources), or provide more detailed information related to a core measure (e.g., housing and population density are highly correlated). We will select these secondary measures based on input from networks and available resources.

No final decisions have been made on specific measures or sources of data. However, there are a limited number of suitable data sets and strong candidate measures include population and/or housing density, land cover types, and habitat pattern.

Activities within this project will leverage results from the emerging NPS social sciences program, and other related projects such as the NASA project (PALMS).

Products

The landscape monitoring project will produce a set of 32 Network-specific reports that include a narrative justifying and describing the measures, an evaluation of measures for each of the network parks (i.e., results), and an overall assessment. Appendices will include spatial datasets with the measures. The reports will provide examples of 'best practice' use of maps, graphs, and tables to communicate the findings.

This project will also produce documented data sets and methods that can readily be incorporated into I&M protocols. By using the methods and data sets, networks can generate customized results that meet Network or park-specific needs.

By evaluating and reporting a consistent set of landscape measures across NPS, this project will contribute to regional and national needs to assess and respond to broad-scale influences on park resources.

Status

This project is just getting underway. A preliminary set of core indicators and data sources is being examined. Initial products are expected to be available in fall, 2008 with substantial reports and results by December 2009.

More Information

John Gross
John_Gross@nps.gov
(970) 267-2111