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Carrying Capacity in the National Parks

Denis P. Galvin

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I. The Legal Basis for Determining Carrying Capacity in the National Park System

There are two laws that invoke the concept of carrying capacity in the National Park System. It is implicit in the Organic Act creating the National Park Service (16USC1,2,3,§4-39 Stat.535). The mandate is "...to conserve the scenery and the natural and historic objects and the wildlife.... unimpaired for the enjoyment of future generations...."

The General Authorities Act of 1970 as amended is explicit. Section 12 requires each park to have a General Management Plan. Part of that plan will be "...identification of and implementation commitments for visitor carrying capacities for all areas of the unit;...."

II. Carrying Capacity: Definitions and Terms

In spite of the use of the term in law, carrying capacity is an elusive concept. Most of the leading theoreticians have abandoned the term. It remains a persistent generic nomenclature. Wager's definition of carrying capacity is "...the level of recreational use an area can withstand while providing a sustained quality of recreation."

There are some other terms that need to be considered:
A. A descriptive component that deals with the relationships between visitor use and the resulting impacts. This can be further subdivided into:

1. Management parameters that the agency can directly manipulate and,
2. Impact parameters that describe what happens to visitors and the environment as the result of visitor use patterns and management parameters

B. An evaluative component that incorporates value judgments about the acceptability of various use impacts

III. A Variety of Theories

While they could be considered variations on a theme it is important to realize there are a variety of approaches to this subject. Some of them are:

Limits of Acceptable Change
Visitor Impact Management
Formula Based Approaches
Recreational Opportunity Spectrum
Social Carrying Capacity Model

IV. Some Applications in the National Park System

There are a number of locations that illustrate carrying capacity issues.
Among them are:

Yosemite Valley
River Trips on the Colorado River
Zion Backcountry Use
Sequoia-Kings Canyon Backcountry Use
Cape Cod Off-Road Vehicles