

Recreation Carrying Capacity -- Fact or Fiction?

"...shall be preserved for the use & enjoyment of the American people...in such manner as will leave them unimpaired for future generations..."



Lesson 22

CSS 287 -- Professor Ed Krumpke

The Roots of Carrying Capacity

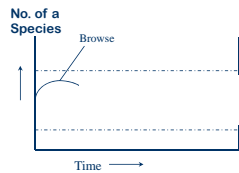
- ♦ The maximum number & density of animals a given unit of land can support on a sustained basis without destruction of the resource base.



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The Roots of Carrying Capacity

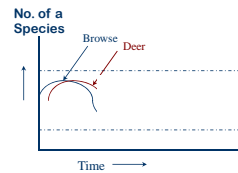
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The Roots of Carrying Capacity

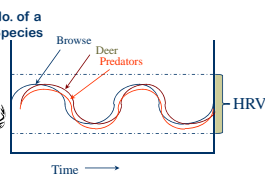
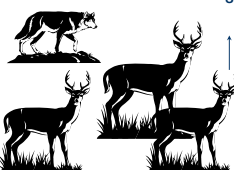
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The Roots of Carrying Capacity

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Major Assumptions of Recreation Carrying Capacity

- ♦ The amount of impact is related to the amount of use.
- ♦ Decreasing the amount of use will decrease the impacts.
- ♦ Researchers can calculate the magic number of users, below which impacts will be acceptable.



The Problem with Recreation Carrying Capacity

- ♦ CC focuses on the wrong question.
 - How many are too many?
- ♦ Implies a magical numerical fix.
- ♦ Reducing numbers of visitors may not reduce impacts!
- ♦ We want to manage for desired resource & social conditions.

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Recreation Carrying Capacity

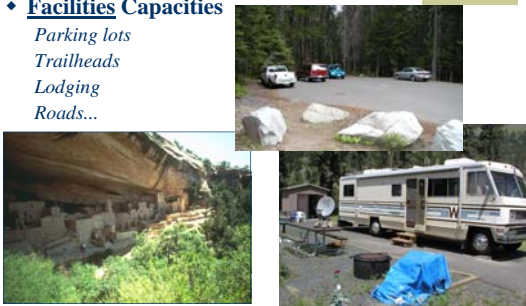
- ♦ The amount and type of use that an area can sustain over a given time period given goals to maintain the physical environment & the experience of the visitor.

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4 Different Kinds of Capacities in Recreation

♦ Facilities Capacities

Parking lots
Trailheads
Lodging
Roads...



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4 Kinds of Capacities

♦ Physical Capacities (*landscape, topography*)

Canyons, Cliffs, Water, Shorelines...

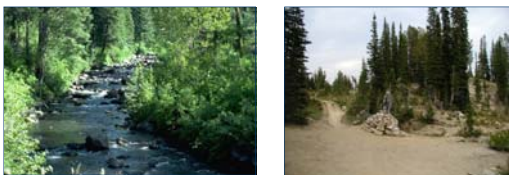


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4 Kinds of Capacities

♦ Ecologically Restricted Capacities

*Sensitive areas that require special protection:
T&E Species, Riparian areas, Fragile Soils . . .*



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4 Kinds of Capacities

♦ Social Capacities

*Encounters,
Crowding,
Behavior...*



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Different Kinds of Capacities are Interrelated

Facilities Capacities

Parking lots, Trailheads, Lodging, Roads...

Physical Capacities

Canyons, Cliffs, Water, Shorelines...

Ecological Capacities

T&E Species, Riparian areas, Soils...

Social Capacities

Encounters, Crowding, Behavior...



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Critical Limiting Factors

♦ Density independent factors

- Things which affect a population but which are not related to population density

♦ The “weak link” or anomaly which limits how a site is used for recreation

- Useable flat land, access, water, weather . . .

♦ Sometimes social factors are more limiting than physical or ecological factors.

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Critical Limiting Factors



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Why do we want to determine Recreation Carrying Capacity?

- ♦ Because of legal mandates &
- ♦ Because we want to control Recreation Impacts!

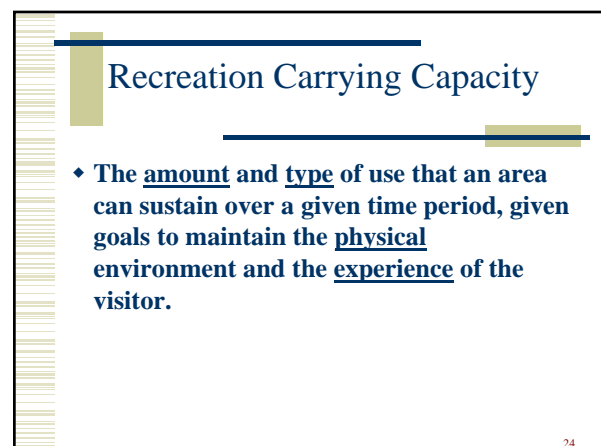
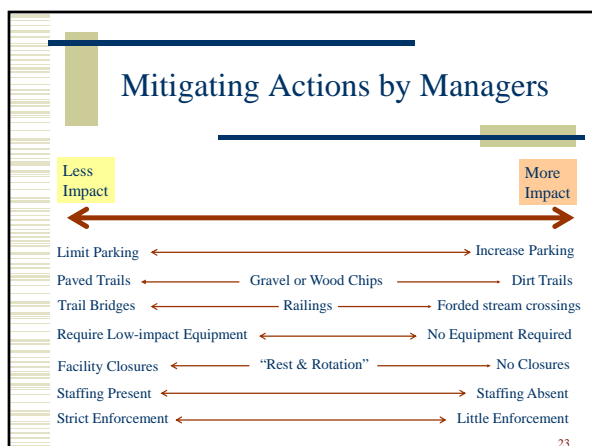
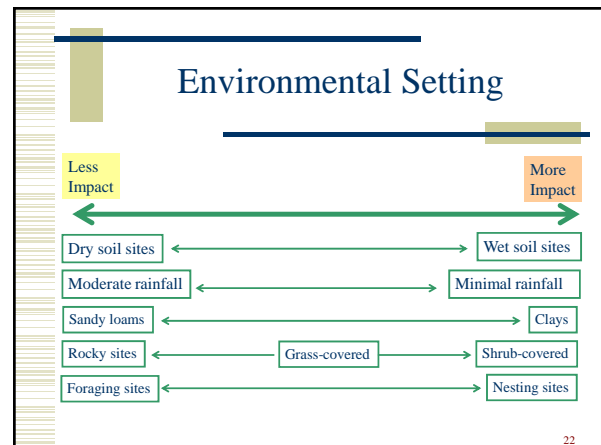
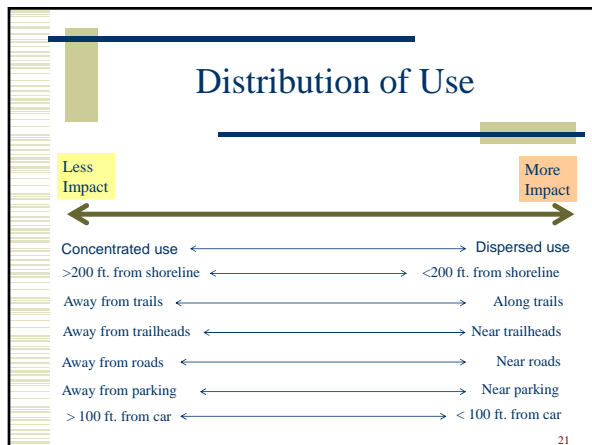
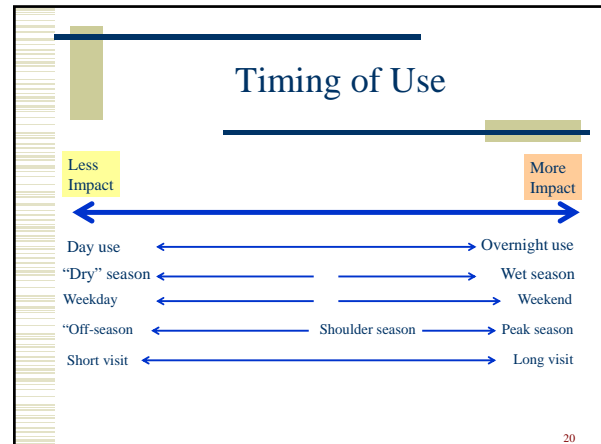
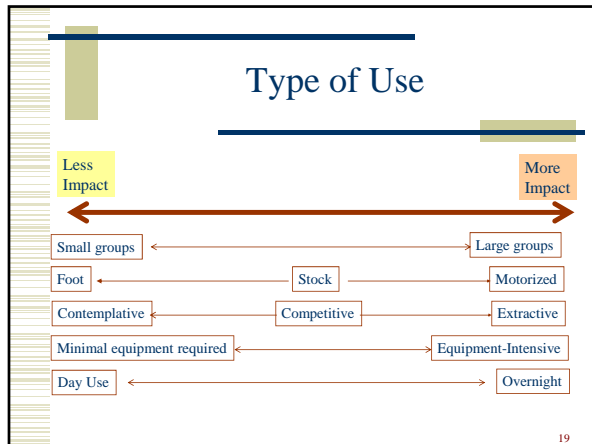


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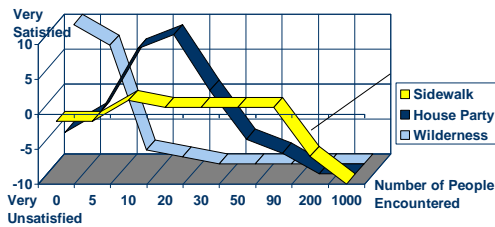
Recreation Impacts are Variable

- ♦ Vary with the type of use.
- ♦ Vary with the timing of use.
- ♦ Vary with the distribution of use.
- ♦ Vary with the environmental setting.
- ♦ Vary with mitigating actions taken by managers.
- ♦ Vary with people's expectations & norms.

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Carrying Capacities Differ



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Prerequisites for Defining Recreation Carrying Capacity

Clear statement of Desired Future Conditions that include:

- ♦ Goals defining the experience that is to be sustained over time
- ♦ Goals describing the resource conditions that are to be sustained over time
- ♦ Definition of appropriate amount and type of use.

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Managing within carrying capacity

- ♦ You do not manage to maintain a carrying capacity number...
- ♦ You do manage to stay within a prescription of desired resource & social conditions.
- ♦ In other words, by managing to stay within desired resource & social conditions you are managing within the “carrying capacity.”

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We define carrying capacities!



Golf Course



Dirt Bike Trail



Blue Ribbon Trout Stream



Campground

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