

A Standards-Based Approach to Addressing User Capacity

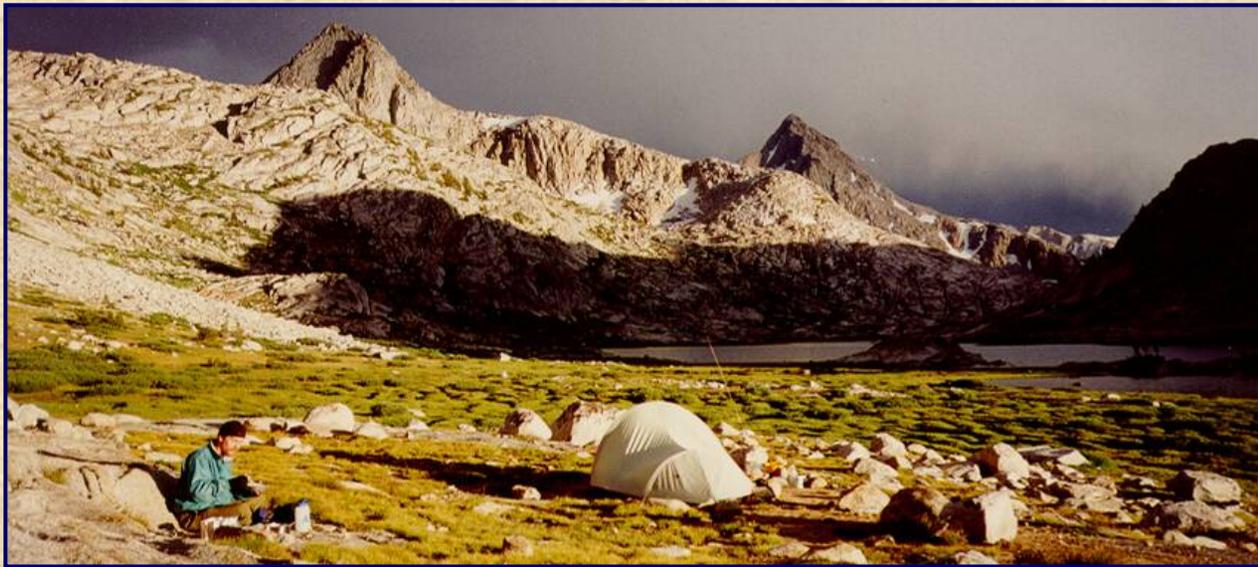
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Outline of Presentation

- My background
- Historical perspective
 - Where did standards-based approaches come from?
 - And why?
- A standards-based approach to address user capacity
 - How it works
 - Pros and cons

My Background: Wilderness/Backcountry



The validity of formula-based approaches to capacity decreases as spatial and temporal scale increase, as the complexity of resources and values being considered increases and as the the need for adaptive management increases

My Background: Ecological Impacts of Recreation



User capacity must consider both ecological and social values
and not in isolation

My Background:

Member of Team that Developed the Limits of Acceptable Change (LAC) Process around 1980

- first step-by-step articulation of a standards-based approach
- first applied in the 1.5 million+ acre Bob Marshall Wilderness complex around 1985



Team: Sid Frissell, Bob Lucas, George Stankey, Randy Washburne, David Cole

In association with: Glenn Haas, Steve McCool, Jerry Stokes

Influenced by: Al Wagar, Tom Heberlein, Dave Lime, Bo Shelby and many others

What is a Standards-Based Approach?

An approach in which decisions about appropriate management—including estimates of user capacity—are based on **standards, specific (measurable) statements about desired future conditions or outcomes.**

User capacity is addressed by implementing a suite of management actions that ensure that standards are not violated—that desired future conditions are attained.

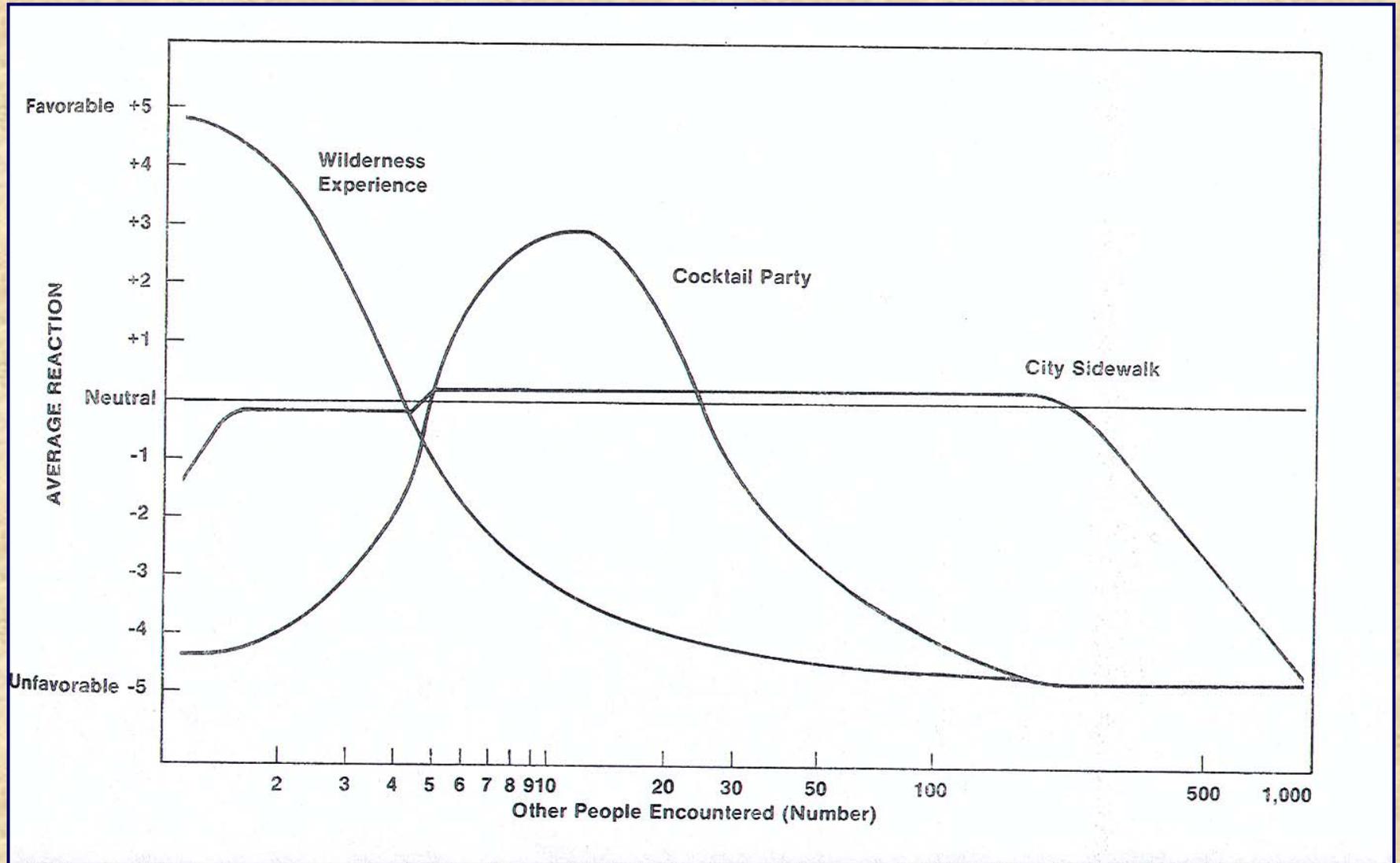
If a numerical estimate of capacity is desired, it is the maximum amount of use that can be sustained without violating standards, given a defined suite of management actions.



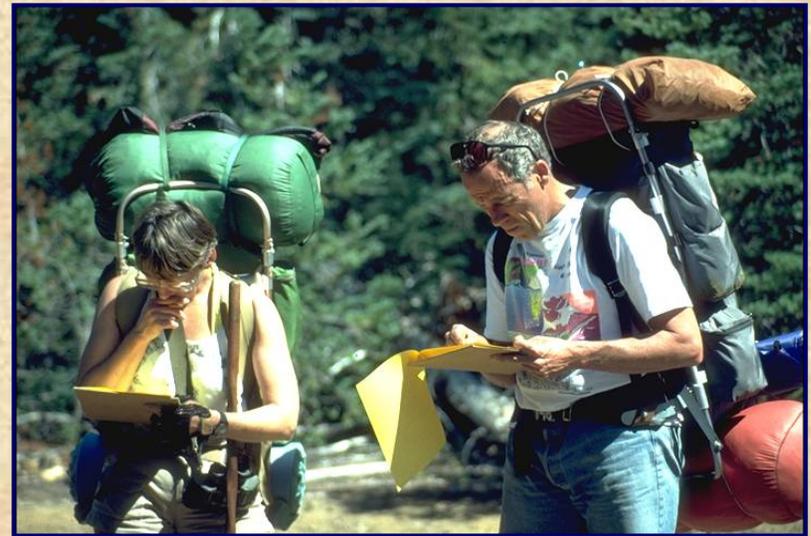
Beliefs At Core of the Standards-Based Approach

- 1. User capacity is dependent on management objectives.**
2. Objectives need to be specific and measurable.
3. Capacity can only be defined in the context of the suite of management actions that will be taken in the area.
4. Addressing user capacity is usually more about managing user behavior and distribution and about facility development than about amount of use.
5. Research on the relationship between recreation use and management objectives is seldom adequate to set capacities. Adaptive management is needed—take action, estimate capacity, monitor and adjust.

User Capacity Depends on Objectives



Different user groups and different individuals vary in their perceptions about user capacity



Any place has many possible user capacities

To define capacity, objectives must be VERY specific--measurable

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Think about the capacity of this river bank as a put-in for boating?
What happens to capacity if we build a boat ramp?

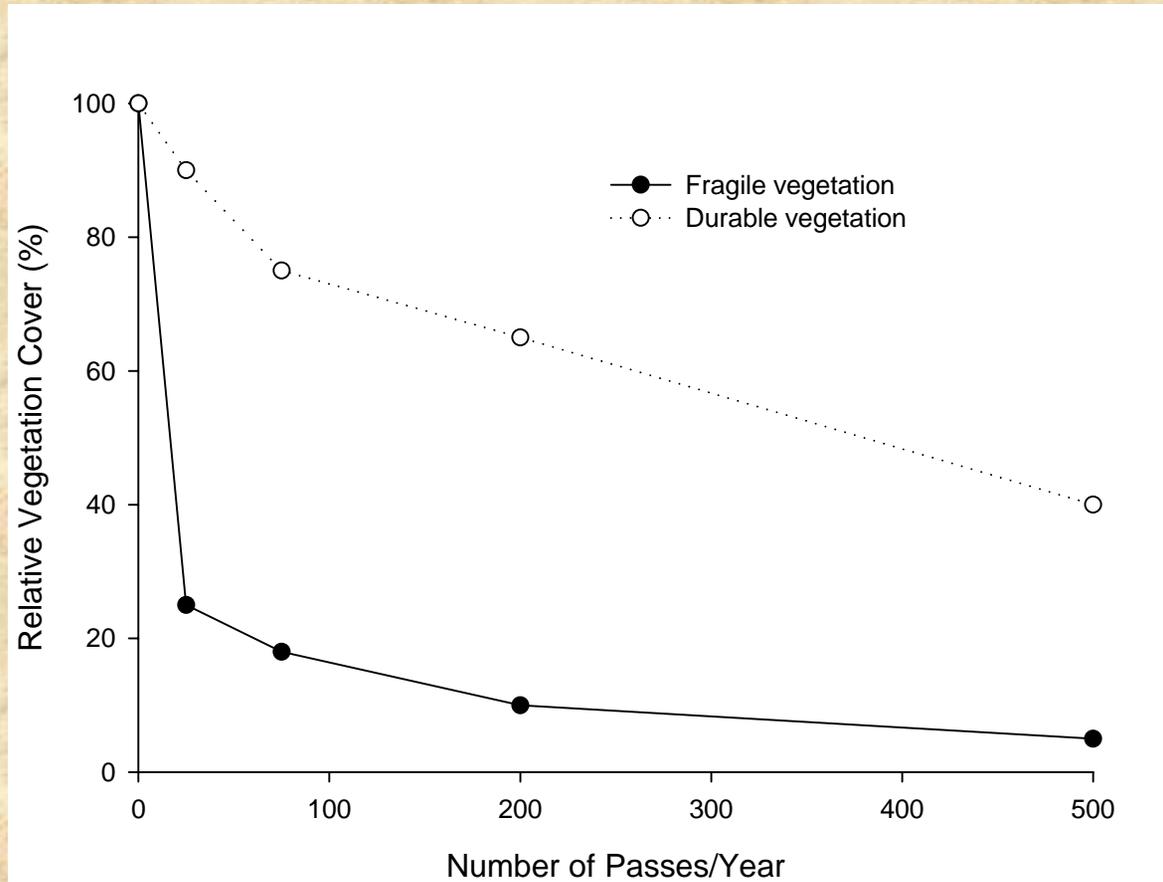


Any place has many possible capacities depending on the suite of management actions that are taken

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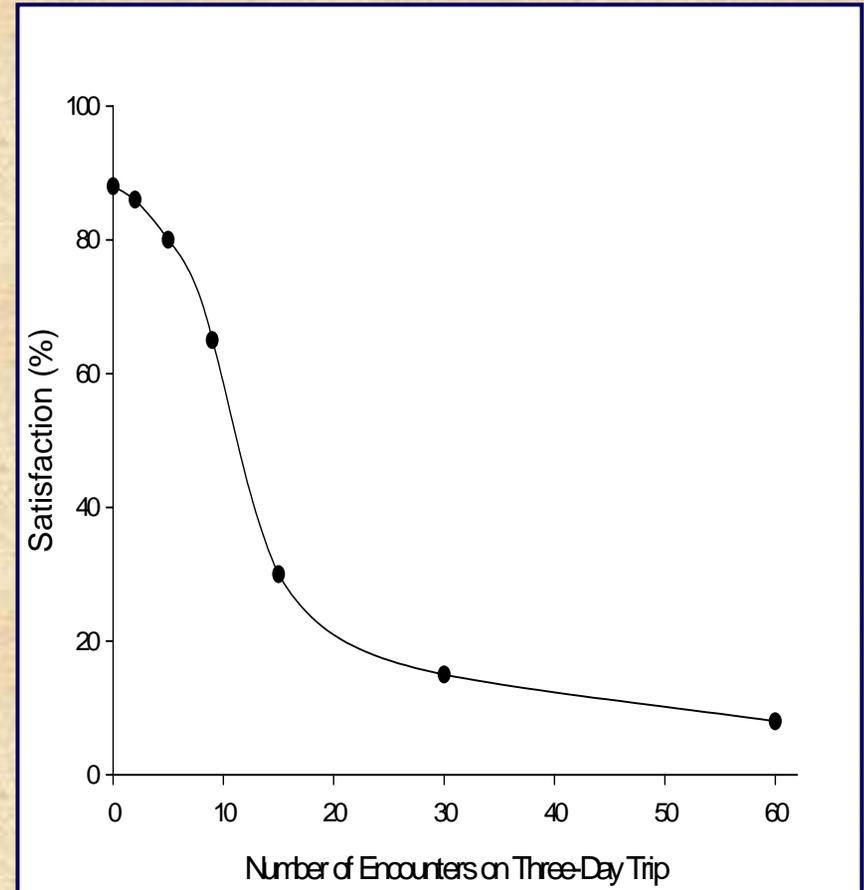
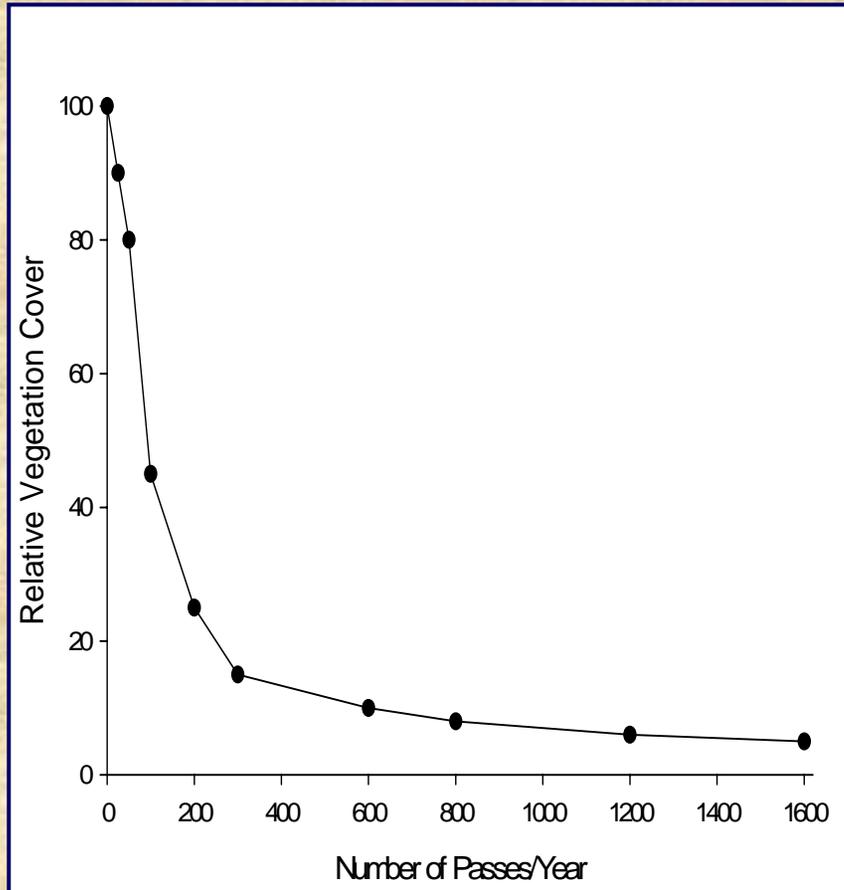
Directing use onto durable sites is a more effective way to avoid ecological impact than reducing use



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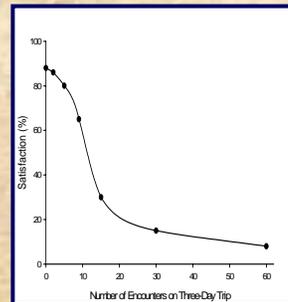
We Know Something About the Relationship between Use and Indicator Variables



But Every Place Is Different

Some of the Elements Necessary to Address User Capacity

- Specific, measurable management objectives—indicators and standards
- Specification of the entire suite of management actions to be taken
- Knowledge about relationships between amount of use and indicator variables
- Monitoring data for visitor use and for indicators and standards—to allow for adaptive management and adaptive estimation of capacity



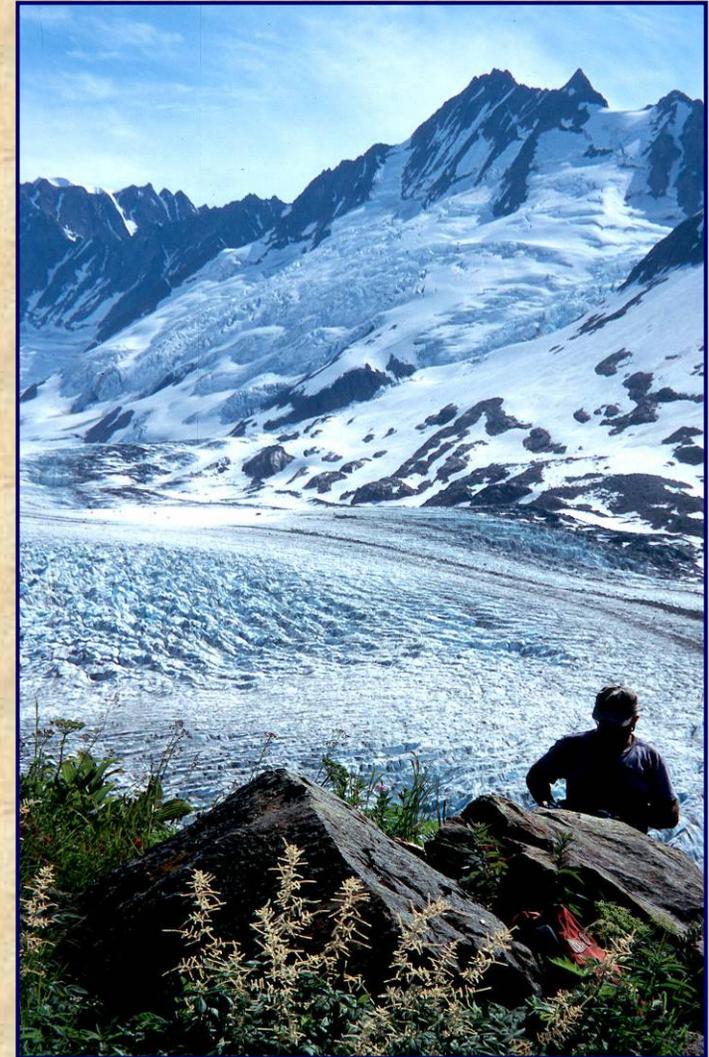
Standards-based Process for Addressing User Capacity



- 1. Develop specific, measurable objectives, outcomes, indicators and standards.**
2. Monitor use and indicators—assess current conditions.
3. Assess management program, based on comparison of conditions to standards, and take new actions as needed
4. Estimate numerical user capacity, if needed
5. Monitor and adjust management actions and capacity estimates as needed



For example, which of these experience opportunities do we want?



How Specific Objectives are Developed in LAC and VERP

1. Set Goals

- Describe mission, mandate, purpose, significance, niche, desired future conditions

2. Identify Issues, Concerns and Threats

- Barriers to achieving goals

3. Describe Prescriptive Management Zones

- General statements of less-than-desirable (acceptable) conditions

4. Select Indicators

- Attributes we want to protect (or indicators of those attributes)

5. Specify Standards

- Limits—minimally acceptable condition for indicators

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We Can Derive A Numerical User Capacity Estimate Because:

- We have specific management objectives—including standards
- We have data on use and on the conditions of indicators
- We have specified the suite of management actions that will influence capacity
- We have knowledge about the relationship between use and indicator variables



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What Does a Standards-Based Approach to Addressing User Capacity Do?

- Provides a process for making **all** the decisions needed to address user capacity issues—the entire suite of necessary management actions, as well as numerical capacity estimates or use limits if they are needed

A numerical capacity estimate is not a decision: it is the outcome of other decisions

- Decision 1—management objectives, indicators and standards
- Decision 2—the suite of management actions to be taken to meet objectives and standards
- Based on these decisions
 - and knowledge about the relationship between use and objectives/standards
 - a capacity estimate can be **logically derived**



What Does a Standards-Based Approach to Addressing User Capacity Do?

- Provides a process for making **all** the decisions needed to address user capacity issues—the entire suite of necessary management actions, as well as numerical capacity estimates or use limits if they are needed
- Produces management objectives that are specific and that are made explicit
- Produces management objectives that describe desired conditions rather than management actions
- Makes monitoring integral to planning and management—consequently actions are defensible; managers are accountable
- Explicitly provides for a diversity in conditions

What's the Downside To a Standards-Based Approach to Addressing User Capacity?

- It takes **time, resources and professionalism**—because it is based on information and knowledge that is calibrated to the specifics of real places.
- It requires **hard decisions** about what we want these places to be in the future—decisions that will please some and displease others.
- It requires **proactive decision-making** rather than reactive decision-making



Thank you!



Example Where Use Exceeds Capacity

Indicators and Standards

1. Minimum of 5 breeding pairs of speckled buntings.
2. Stream biotic index of at least 8 on a scale of 1-10.
3. No more than 3 encounters with other groups per day.

Monitoring Data Indicates:

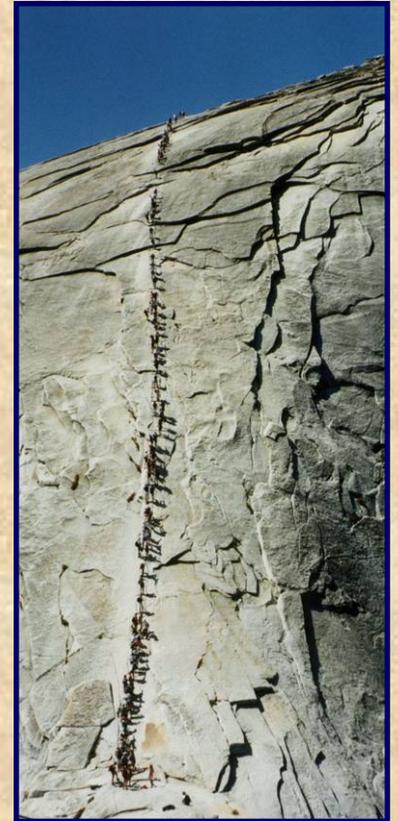
1. There are 8 breeding pairs of speckled buntings.
2. The stream biotic index always exceeds 8.
3. Number of encounters per day is less than 3 on weekdays but averages 6 on weekends.

Use Monitoring shows that weekday use averages 6 groups per day while weekend use averages 15 groups.

Analysis:

1. The limiting factor is number of encounters.
2. Assuming a linear relationship between use and encounters, capacity is on the order of 7-8 groups per day.
3. Capacity could be higher by building more trails or limiting length of stay.

Monitor and adjust capacity estimate as needed



Example Where Use Does Not Exceed Capacity

Indicators and Standards

1. Minimum of 5 breeding pairs of speckled buntings.
2. Stream biotic index of at least 8.
3. No more than 10 encounters with other groups per day.

Monitoring Data Indicates:

1. There are 8 breeding pairs of speckled buntings.
2. The stream biotic index always is 9.
3. Number of encounters per day is less than 1 on weekdays and less than 2 on weekends.

Use Monitoring shows that weekday use averages 6 groups per day while weekend use averages 15 groups.

Analysis:

1. Biologists believe there is a linear relationship between use and stream biotic index—so it is most likely the limiting factor.
2. This suggests that capacity is about 10-15% higher than current use.

Monitor and adjust capacity estimate as needed



Process of Deriving Grazing Capacity

From Range Management texts by Stoddart, Smith and Box (1975) and by Holechek, Pieper and Herbel (1989)

1. Set management objectives (often to sustain forage production).
2. Identify indicators and standards (e.g. a certain range condition).
3. Use research and experience to conservatively estimate animal numbers.
4. Monitor indicators.
5. Adjust animal numbers and/or management practices to meet standards.

