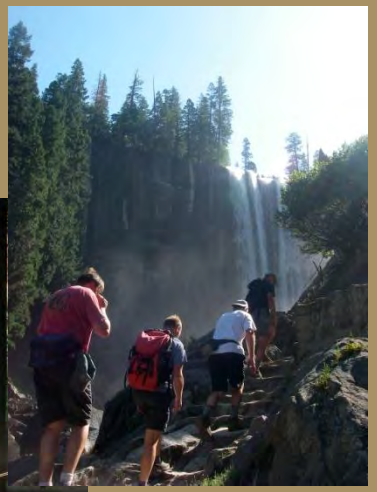
RECREATION ORVS

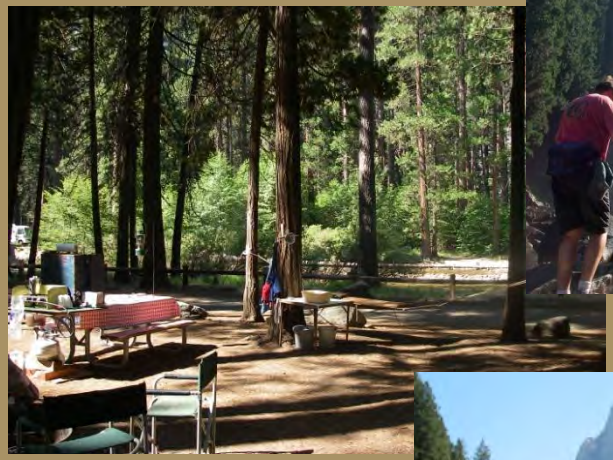
Protecting and Enhancing River Values
Public Workshop
Yosemite Valley
August 2, 2012

Recreational ORV

WILDERNESS ABOVE NEVADA FALL

- Hiking
- Backpacking
- Swimming





YOSEMITE VALLEY:

- Viewing Scenery
- Swimming
- Hiking
- Camping
- Paddling
- Picnicking
- River Interpretation and Education

Recreational ORV

1. **RECREATION ACTIVITY PARTICIPATION**

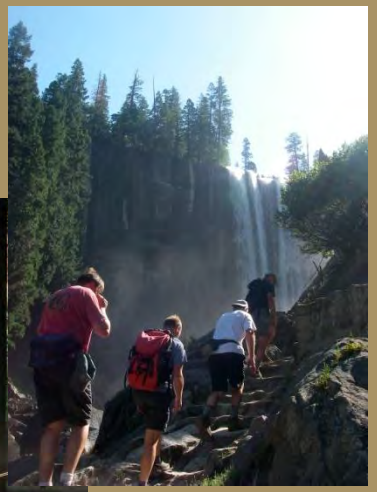
2. **SETTING ATTRIBUTES**

3. **RECREATIONAL EXPERIENCE QUALITY**

Recreational ORV

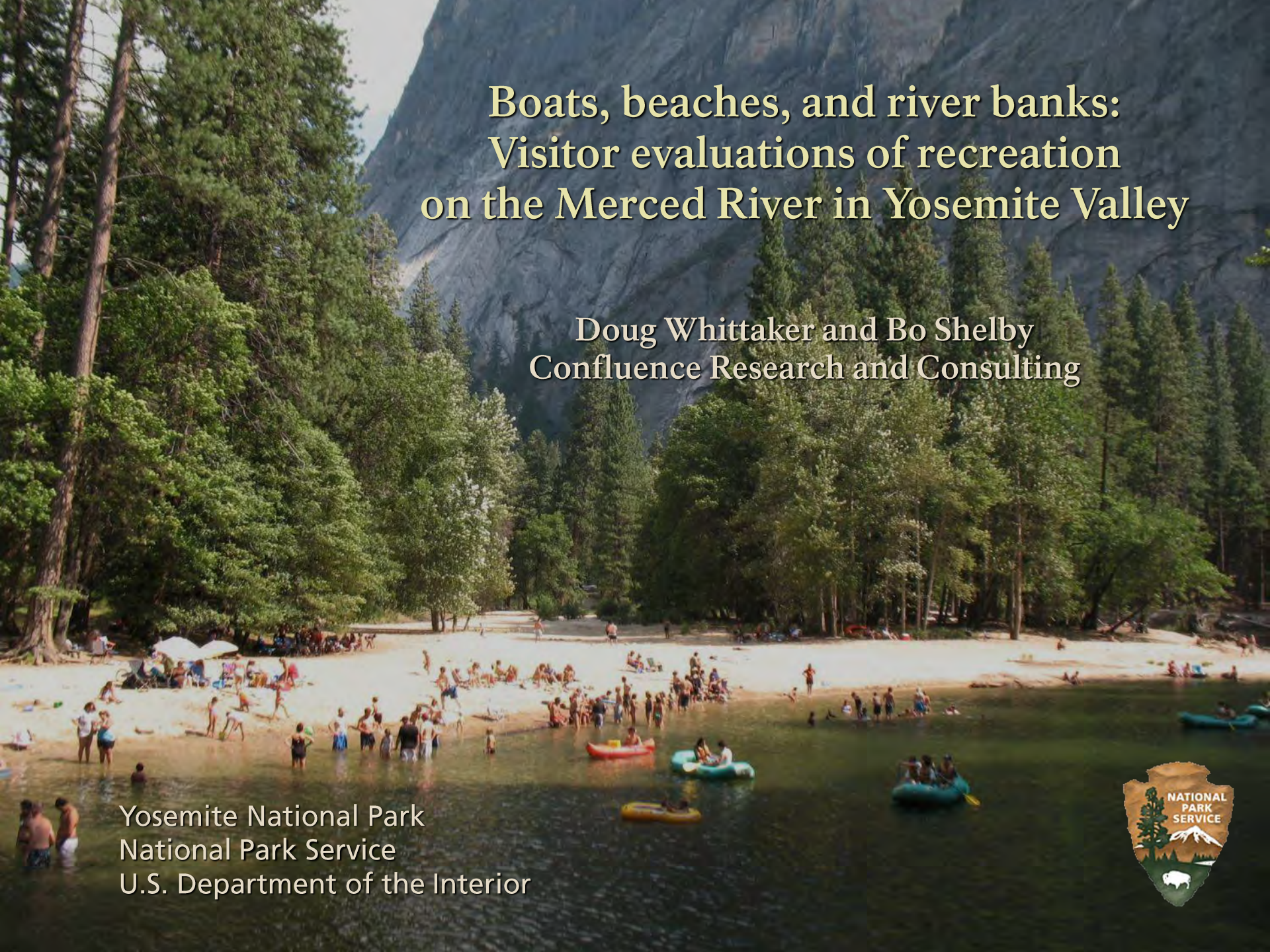
WILDERNESS ABOVE NEVADA FALL:

- Pristine setting
- Solitude



YOSEMITE VALLEY:

- Natural setting
- Social interaction



Boats, beaches, and river banks: Visitor evaluations of recreation on the Merced River in Yosemite Valley

Doug Whittaker and Bo Shelby
Confluence Research and Consulting

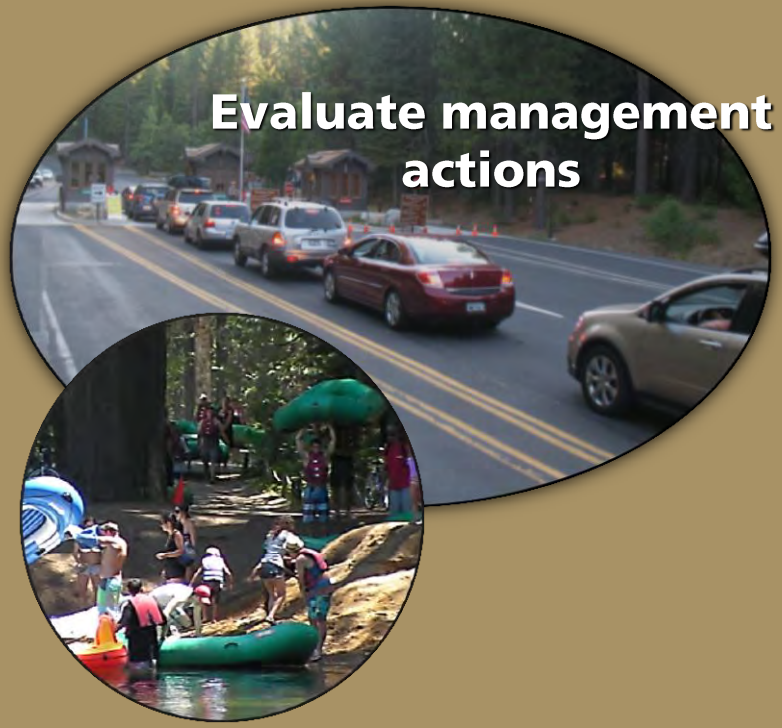
Yosemite National Park
National Park Service
U.S. Department of the Interior

Study Objectives

Describe river users

Measure perceived crowding

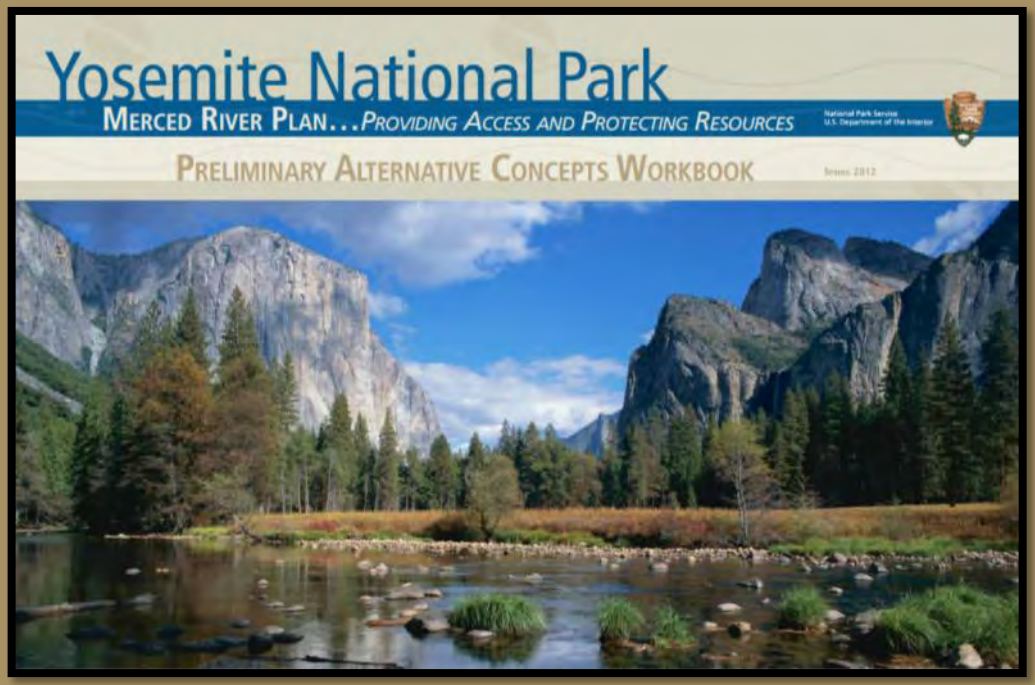
Evaluate boat and shore densities
Compare with current use levels



Evaluate management actions

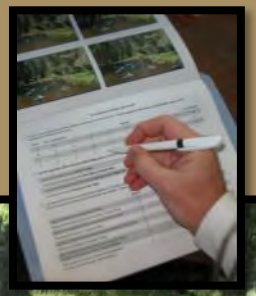
Integrate with Merced River planning

- **Recreation OR values**
- **Indicators / standards → capacities**
- **Support / oppose management actions**



Methods

- On-site survey (n=806, 92% response rate)
- Roving & stratified sampling
- Coordinated NPS use counts




River users
and their trips

User characteristics

- **Family-sized groups**
  - Average 5.3 people
- **Mostly Californians**
  - 72% California
  - 15% other states
  - 13% outside USA
- **Years of experience**
  - Average 13

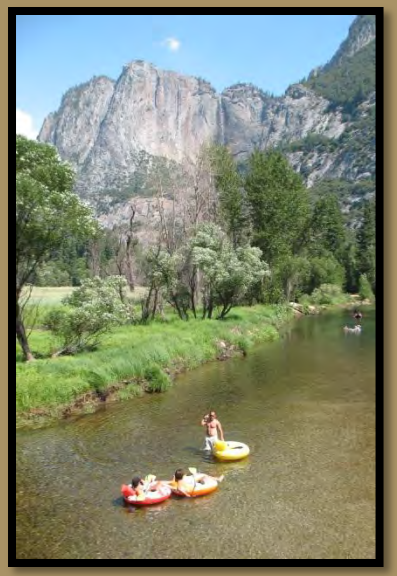
Overnight vs. day use

43% Out-of-Valley visitors

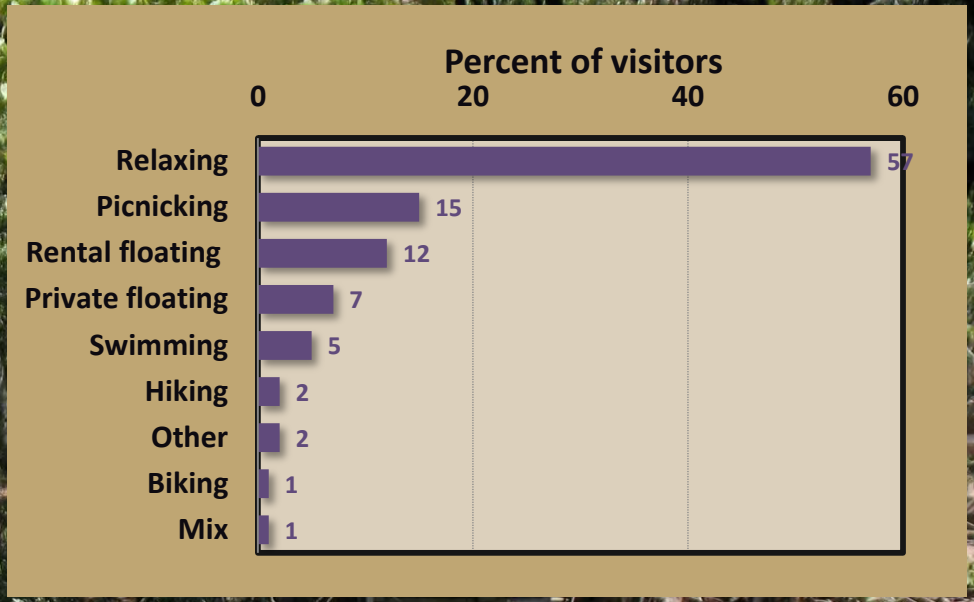
57% Valley overnighters

Trip characteristics

- **In Valley: 4 days per trip**
- **On river: 3 hours 18 minutes**



Primary activity



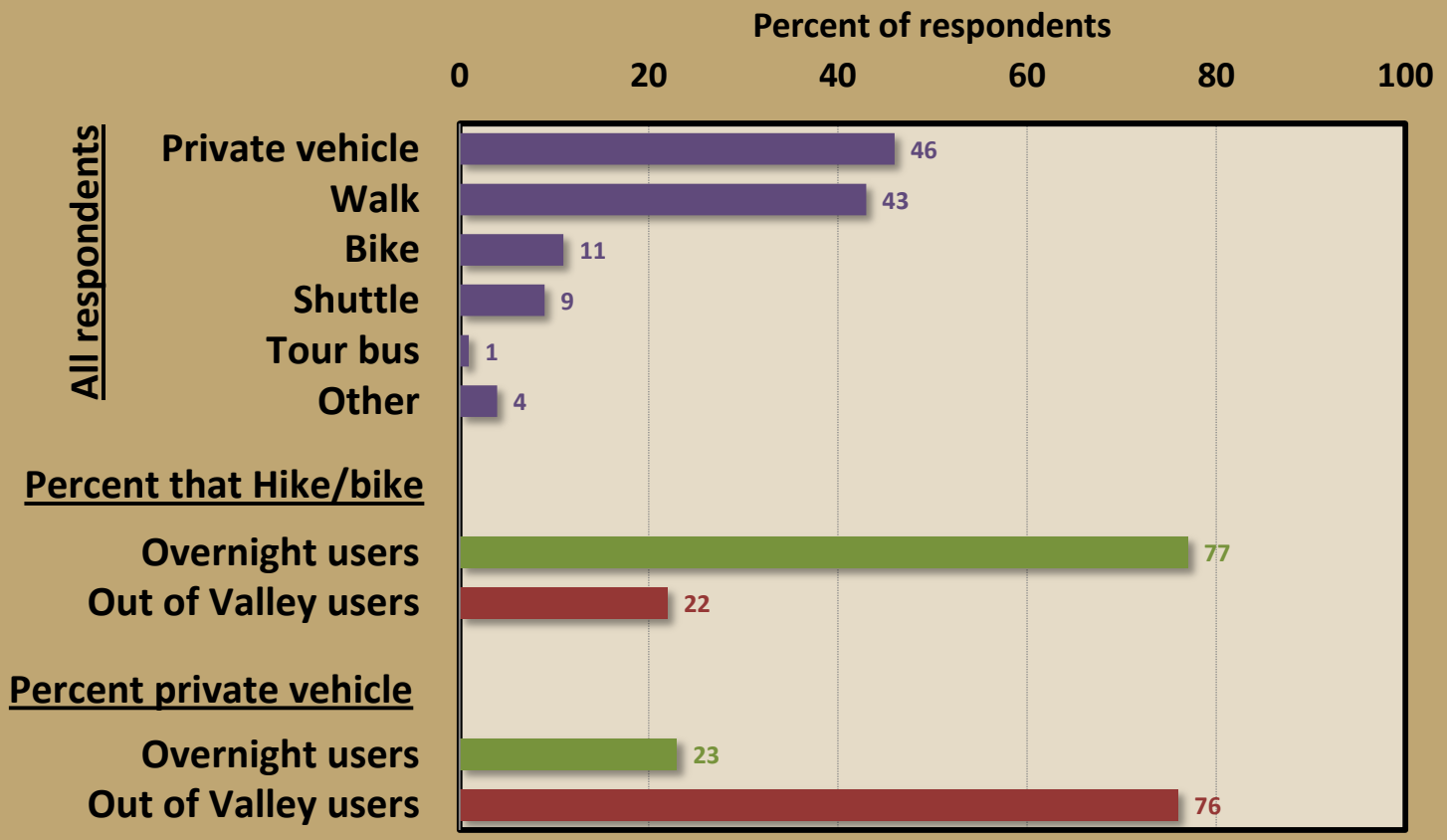
Boating characteristics

Boat counts: 60% rentals, 40% private boats

Rental groups: fewer rafts/group, more people per raft

Private groups: more boats per group; less people per boat

How do visitors get to the river?




Perceived crowding

Perceived crowding

How crowded did you feel today?

Not at all crowded		Slightly crowded		Moderately Crowded			Extremely crowded	
1	2	3	4	5	6	7	8	9

Crowding research

Hundreds of studies

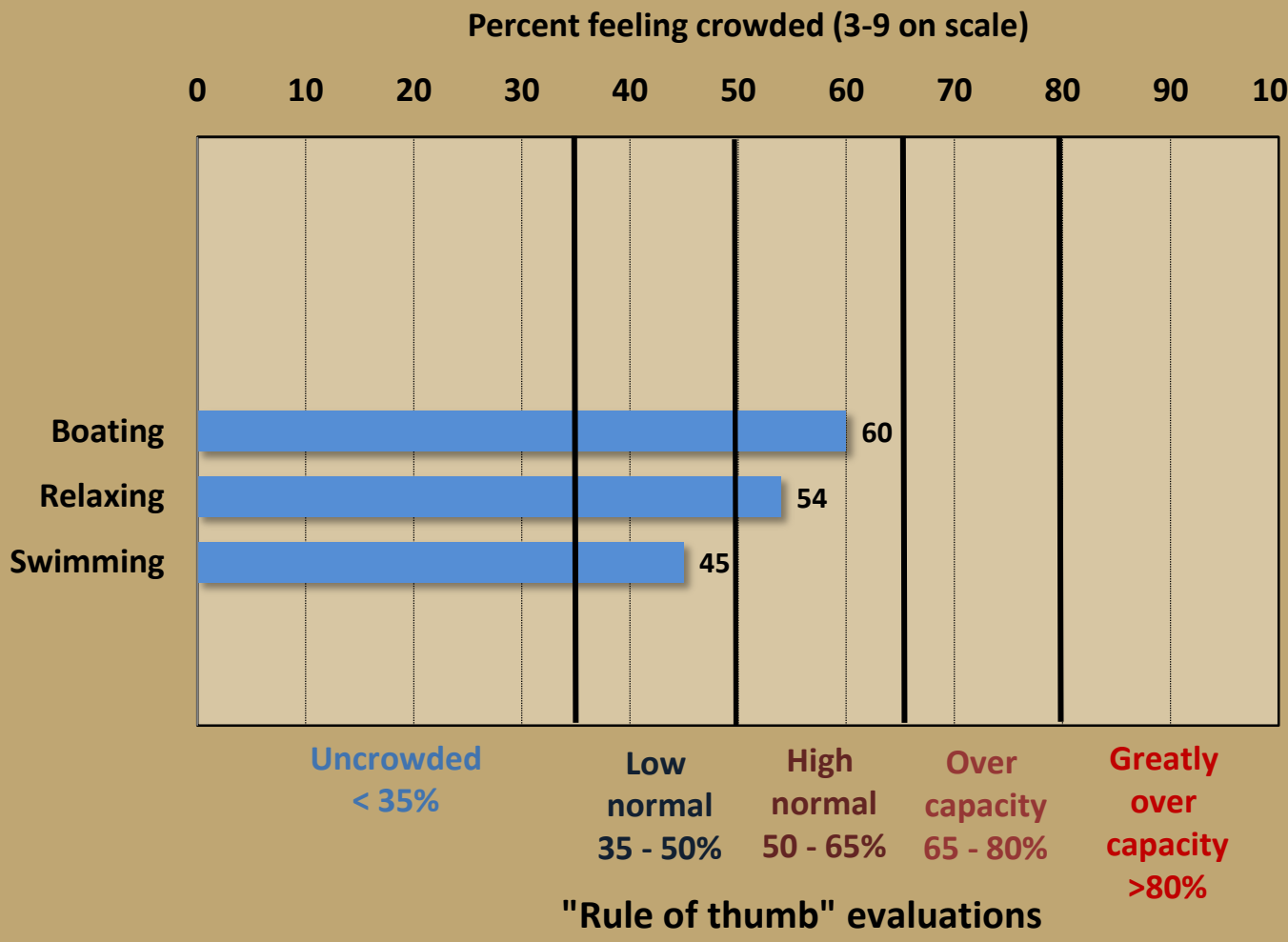
Meta-analyses across resources

Capacity "rule of thumb" categories

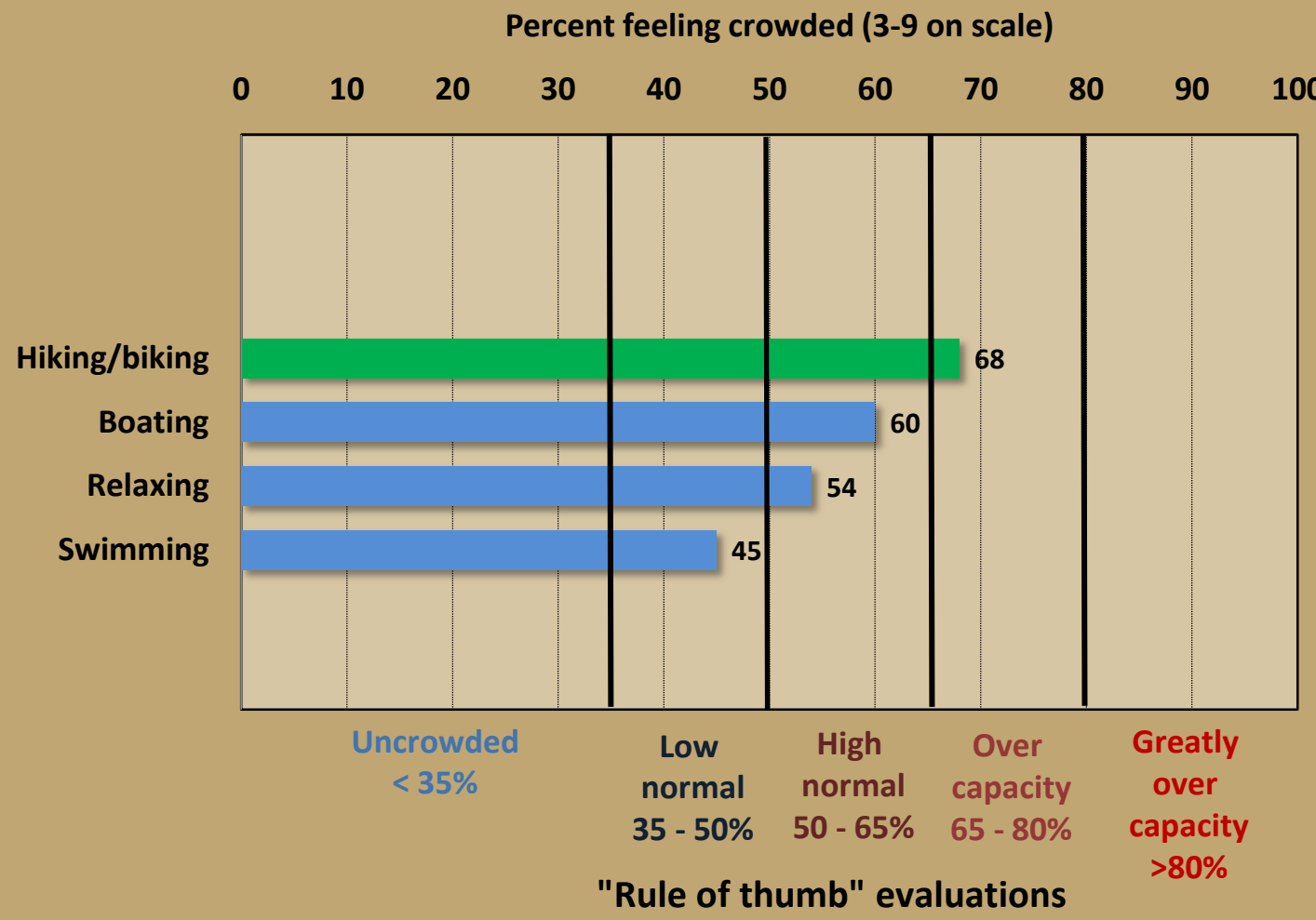
Crowding/capacity “rules of thumb”

0 to 35	Uncrowded	Unique low density?
35 to 50	Low normal	Low density opportunities?
50 to 65	High normal	Monitor to anticipate
65 to 80	Over capacity	Studies, mgmt. likely needed
80 to 100	Greatly over capacity	Manage for high density

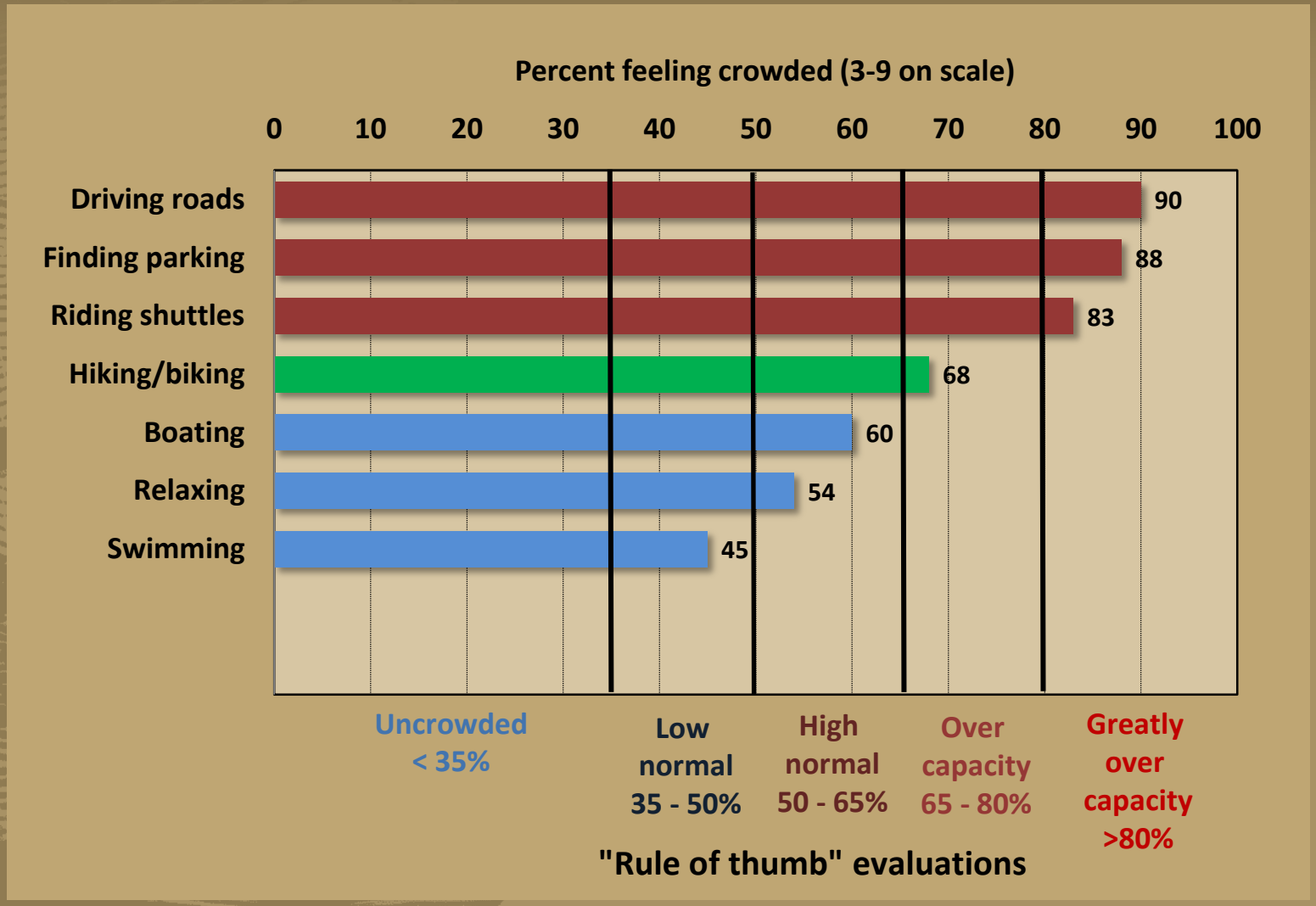
Percent feeling crowded – during different activities



Percent feeling crowded – during different activities



Percent feeling crowded – during different activities



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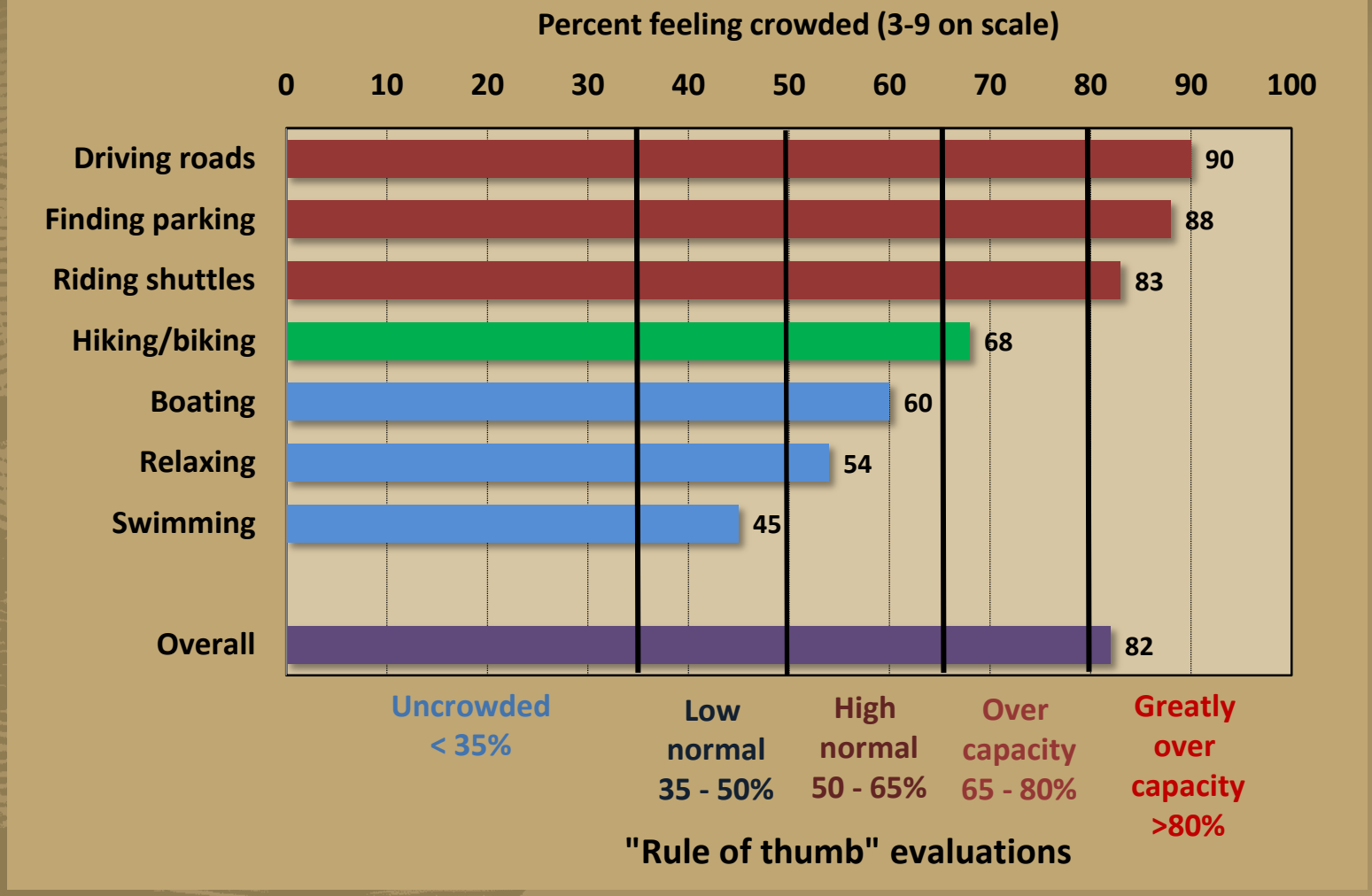


Compared to other resources

% Feeling Crowded	Resource	Population/Comments
Greatly over capacity: Should be managed for high densities;		
100	Deschutes River, Or	Boaters on weekends
100	Kenai River, Ak	Upper river bank anglers on high use days
95	Nantahala River, NC	Canoers about other users
94	Brooks River, Katmai NP, Ak	Bear viewers at mouth of river (September)
92	Alcatraz Island NP, Ca	Prison cell house
92	Kenai River, Ak	Lower river powerboaters on high use days
90	Merced Rver	River users about driving roads / parking in Valley
85	Arches National Park, Ut	Mountain bikers on Slick Rock trail
83	Columbia Icefield, Banff-Jasper NP	Snocoach tourists
83	Merced Rver	River users about riding shuttles in Valley
82	Merced Rver	All river users on Merced River in Yosemite Valley
81	Bridalveil Falls (1999)	Falls visitors at base of falls
Over capacity: Studies and management likely needed to preserve quality		
80	Vernal Falls (1998)	Falls visitors at base of falls and for entire Valley
76	Bridalveil Falls (1999)	Falls visitors for trail to falls
72	Grand Canyon, Az	Rafters
70	Mount McKinley, Denali NP, Ak	Climbers
69	Glacier Point, Yosemite NP (1999)	Point visitors for Glacier Point
69	Rocky Mountain NP, Co	Longs Peak hikers
68	Merced Rver	River users about hiking biking on trails in Valley

Compared to other resources

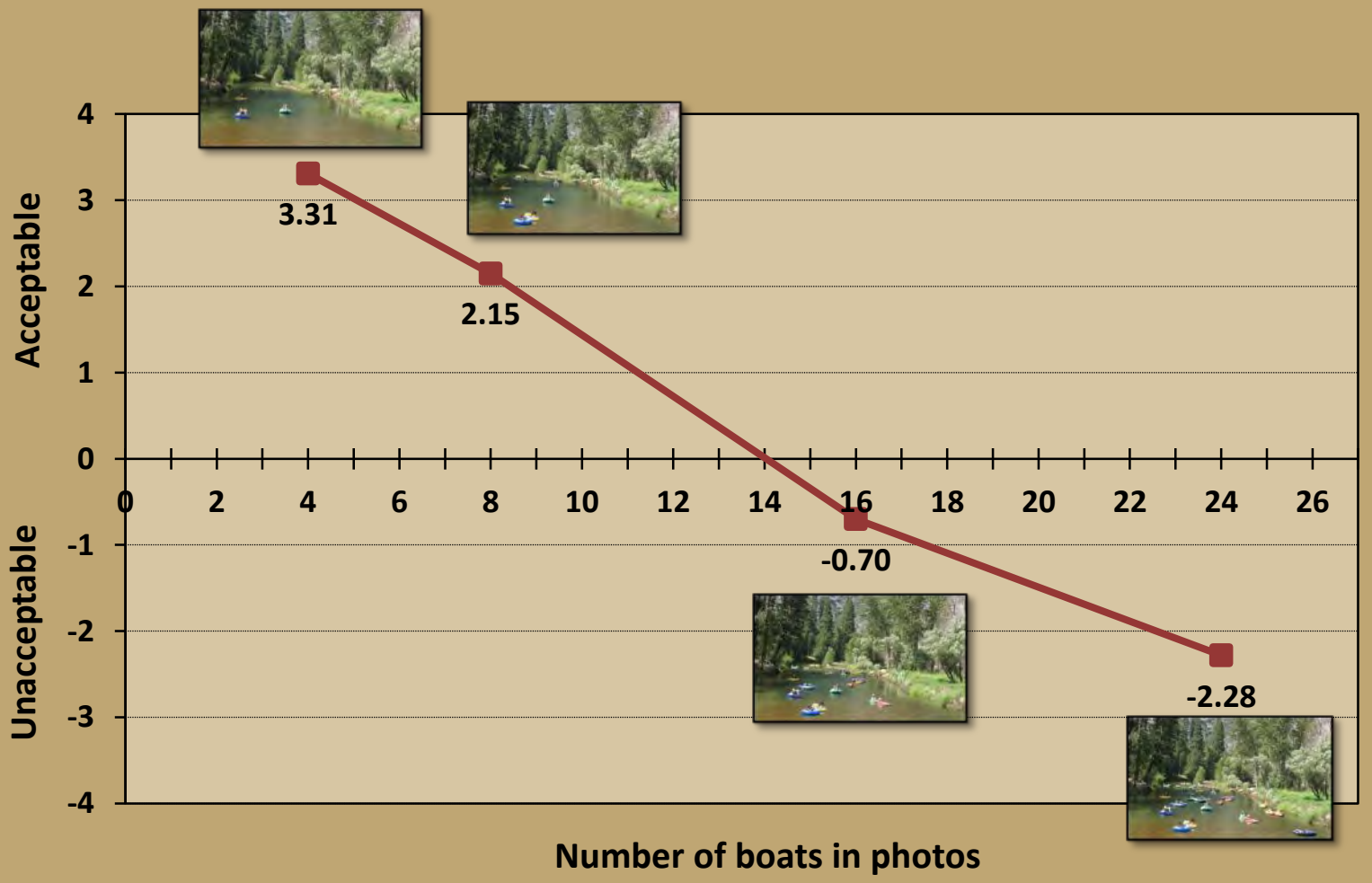
High Normal: Should be studied if use increases expected; anticipate problems		
63	Gulkana River, Ak	All users – Lower Main Stem
61	Yosemite Falls (1998)	Falls visitors on trail and at base of falls
60	Merced Rver	River users about boating on Merced River
58	Arches NP, Ut	Visitors to Delicate Arch
54	Merced Rver	River users about relaxing along Merced
53	Grand Canyon, Az	Rafters in winter
53	Snake River in Hells Canyon, Or/Id	Rafters
51	Yosemite NP frontcountry (2001)	Frontcountry users along trails
51	Upper Youghiogheny, Pa	Kayakers (daily scheduling and use limit)
Low Normal: Unlikely to be a problem; may offer unique low density experiences		
45	Merced Rver	River users about swimming in Merced River
45	Acadia NP, Me	Visitors on Carriage Roads
43	Brule River, Wi	Tubers
41	Kenai River, Ak	Lower river powerboaters during C&R
38	Klamath River, Ca	Floaters
36	Yosemite NP wilderness (2001)	Remote wilderness hikers
Uncrowded: no problem; may offer unique low-density experiences		
35	Upper Youghigheny, Pa	Rafters (daily scheduling / use limit system)
33	Gulkana River, Ak	All users – on low use Middle Fork
25	Delta River, Ak	Canoers and rafters
23	Yosemite NP transition (2001)	Wilderness transition users on trails
23	Kenai Fjords NP, Ak	Visitors to Exit Glacier
23	Acadia NP, Me	Isle au Haut hikers
21	Hawaii Volcanoes NP, Hi	Visitors at Thurston lava tube

Crowding summary


Evaluating boating use

Evaluating boating use (generic reach)

Acceptability of boat densities



Evaluations for different standards

Acceptability – crosses 0 or marginal line on -4 to +4 scale.

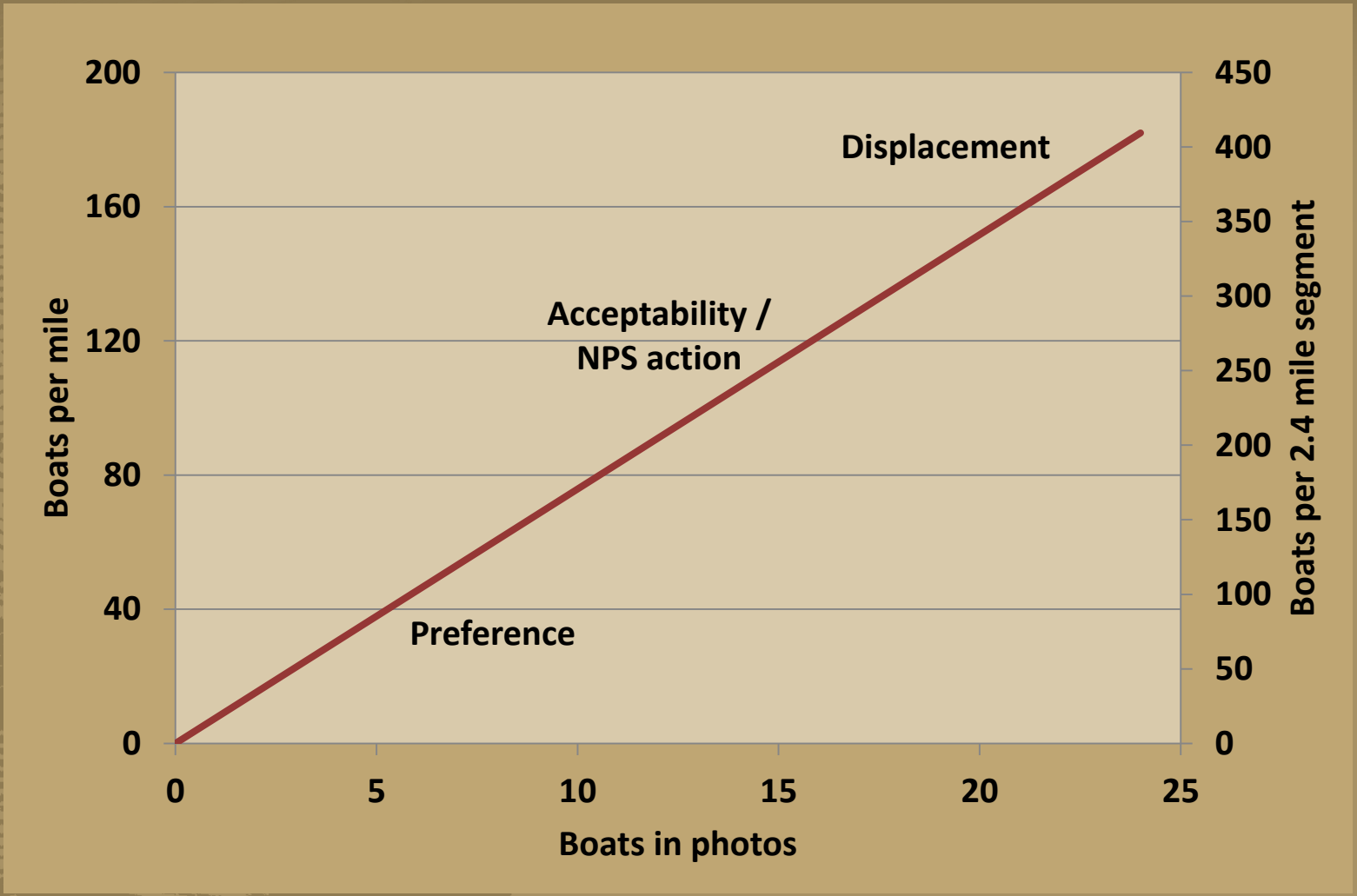
Preference – "level you prefer to see."

NPS action – "the highest level NPS should allow"

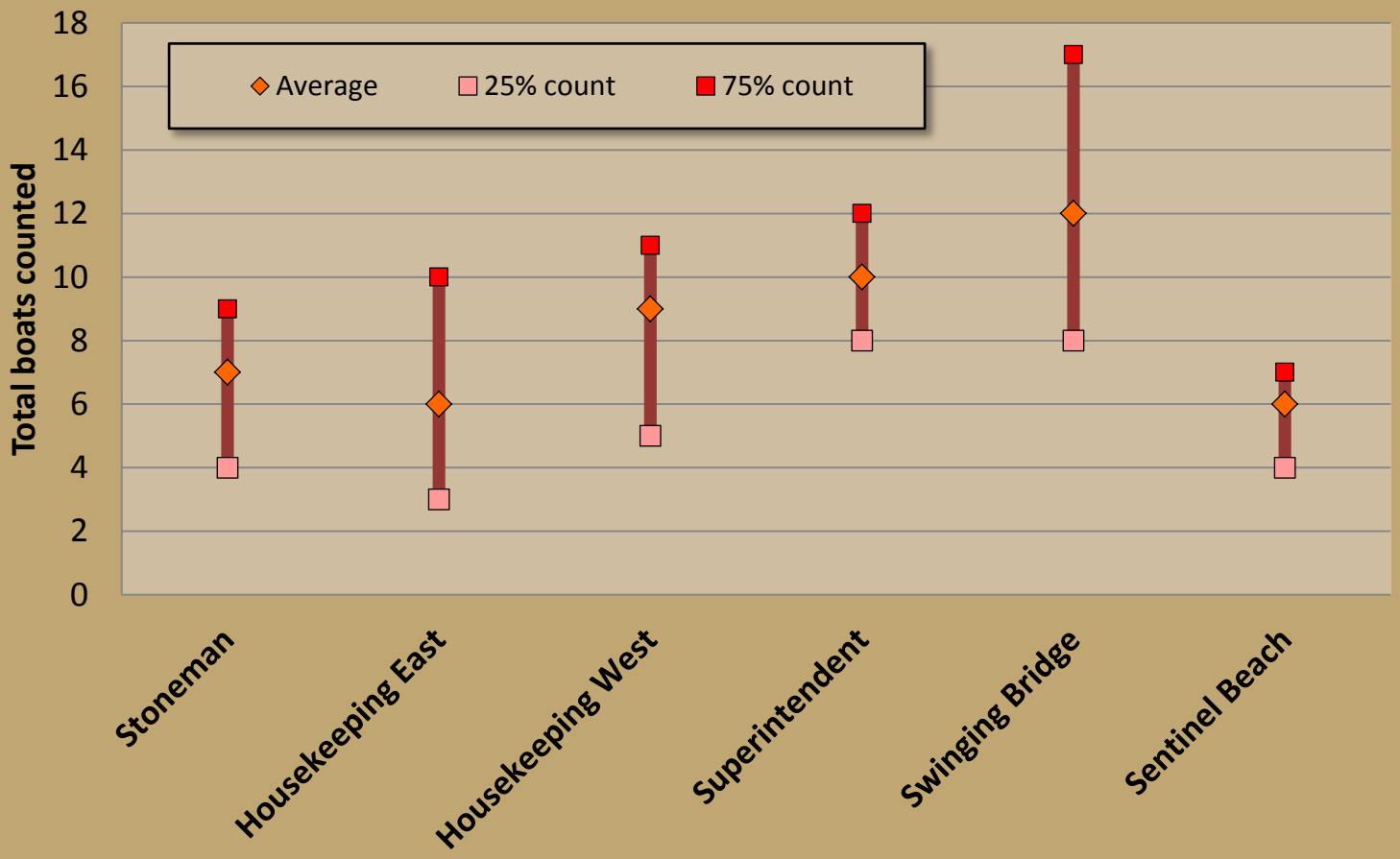
Displacement – "level that would cause you to no longer visit."



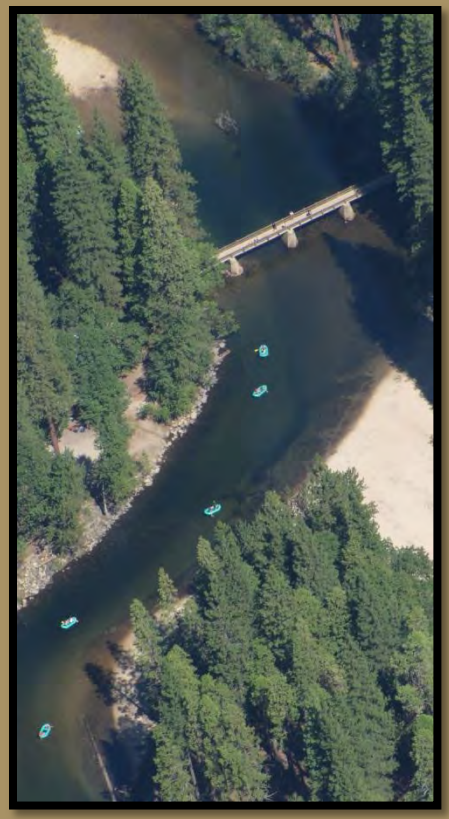

Photos and densities



Locational variation



Estimating peak use 2011

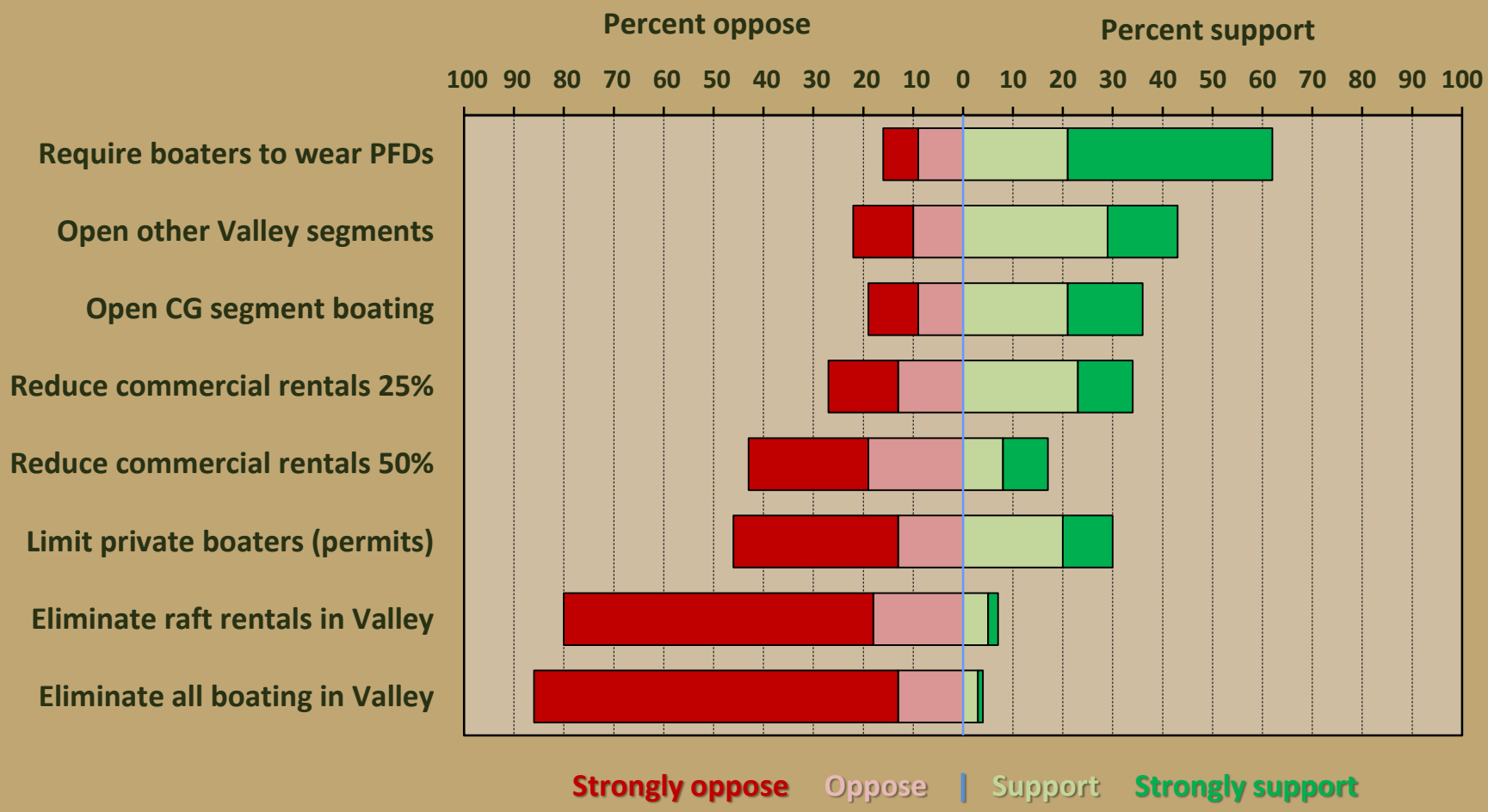


- **Peak daily**
  - Highest day – 209 rentals, 90% < 200
  - Peak estimate: 200 + 130 = 330 per day

- **Peak AOT**
  - <100 rentals
  - About 150 total boats
  - Peak density: 70 boats/mile; 10 boats/photo
  - Closer to “preference” than “”acceptabilty”

Managing boating

Support for boating actions

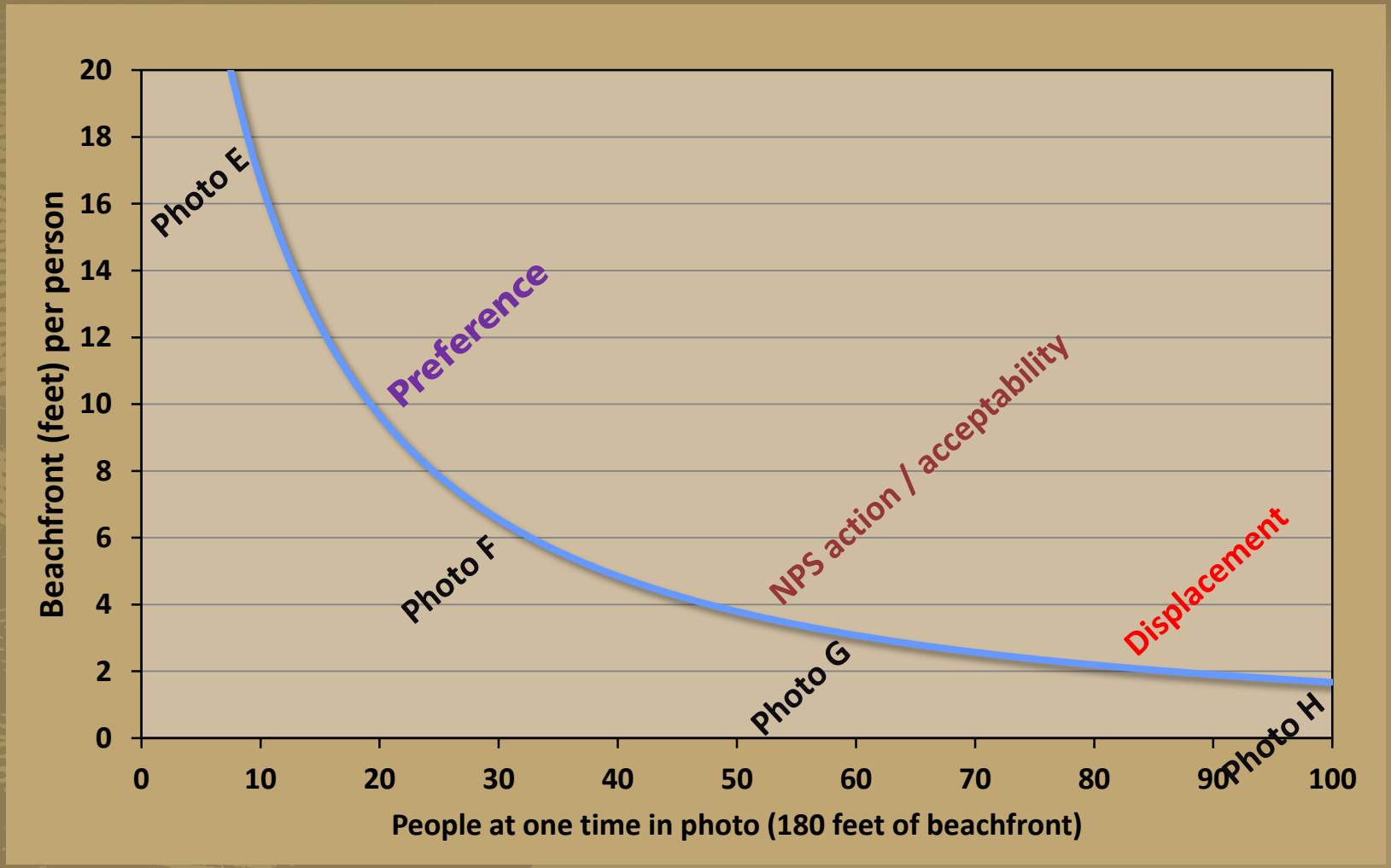



Evaluating shore use

Evaluating shore-use levels (generic beach front)

Evaluating shore-use levels

Photo PAOT vs. beachfront per person



Housekeeping East

Footbridge

Bridge beach

Main Beach
180 feet in photo
340 feet from trees to point

Rip rap area

Forest Beach

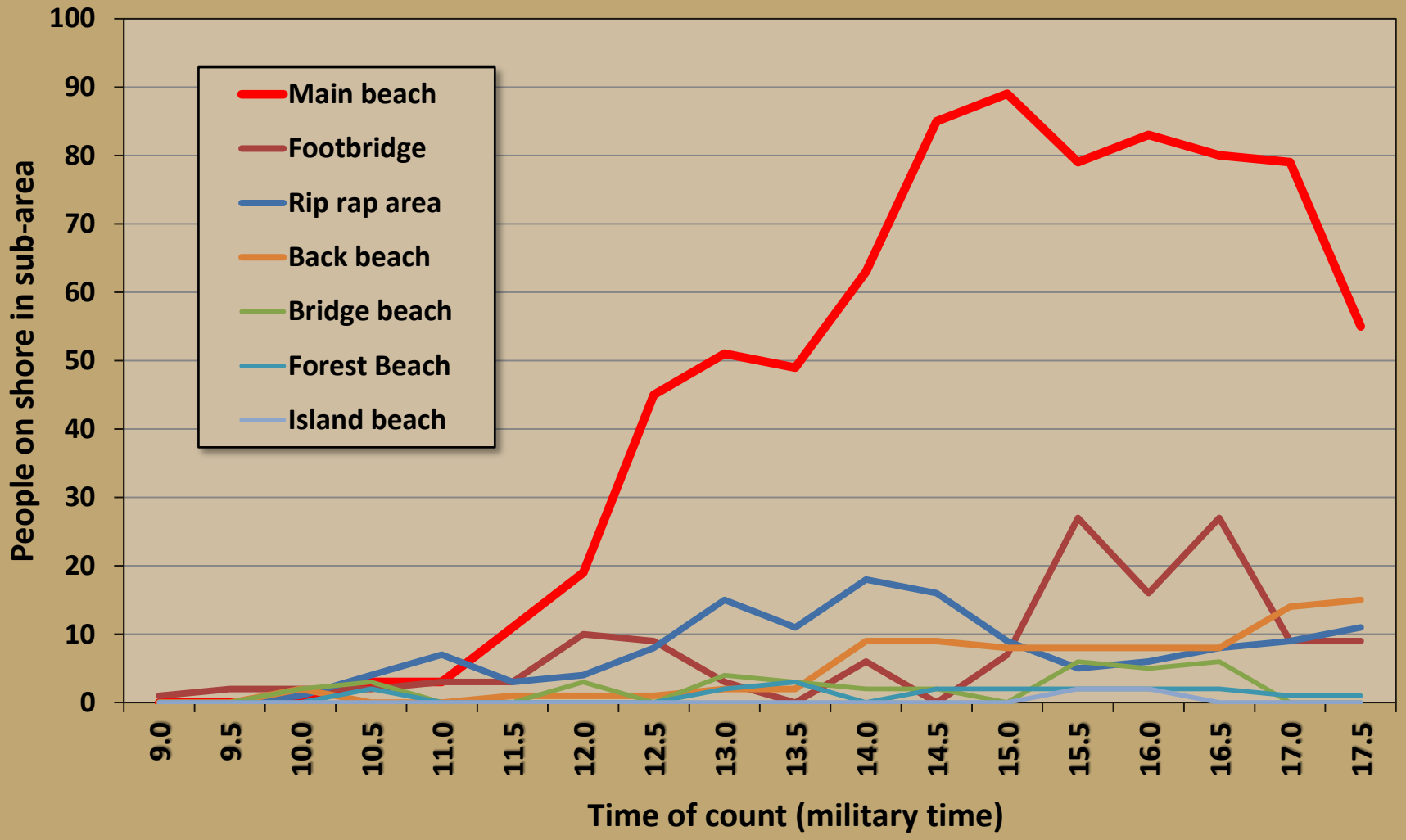
Back Beach

Island Beach
Dorm employee use

Image USDA Farm Service Agency
© 2012 Google

Within-day and location variation

Sunday July 3 – Full day count at Housekeeping East



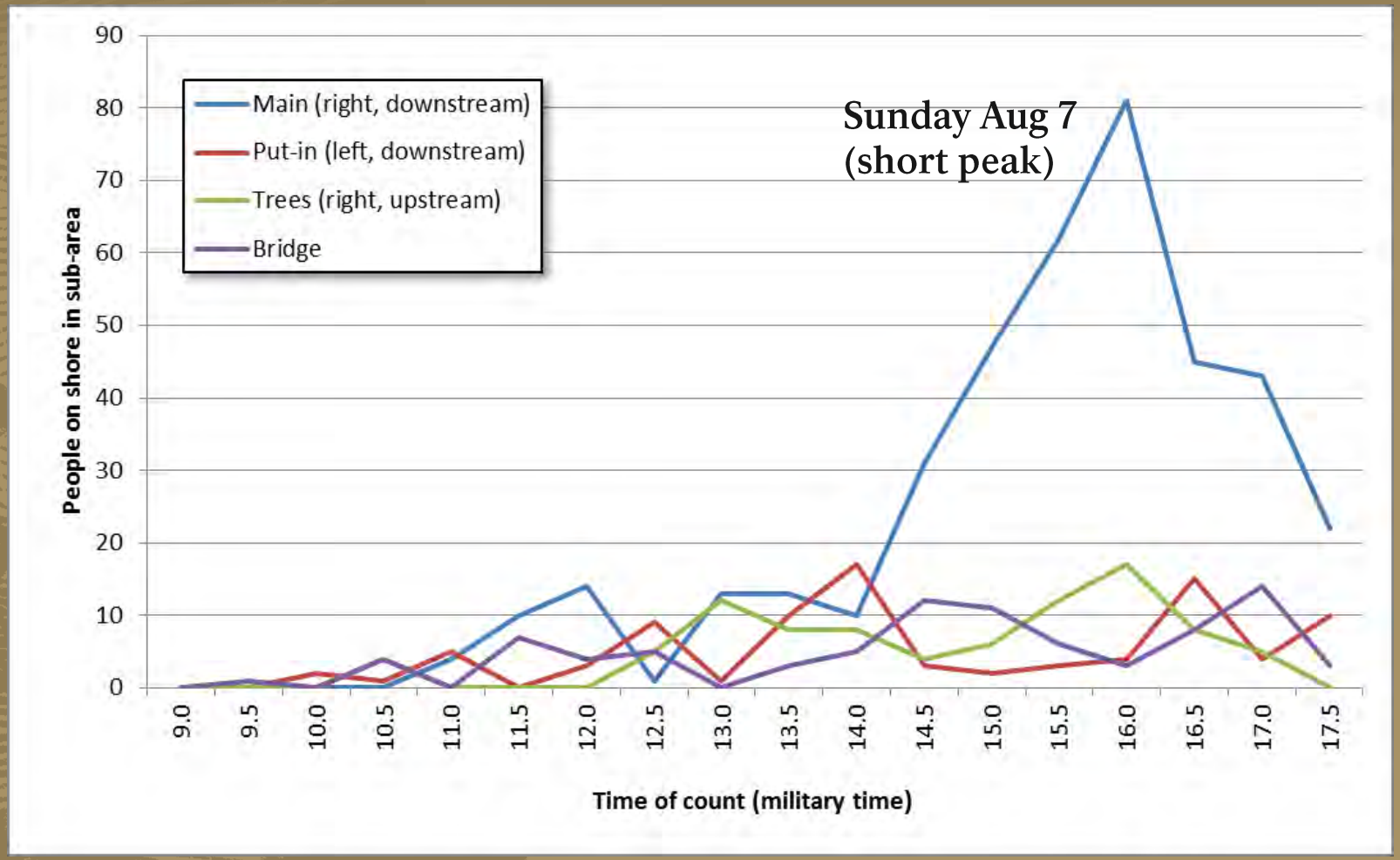
Stoneman Bridge

120 feet of beach (river right)

	12:30	5 pm
Average	5	14
Median	3	14
Maximum	18	44
Range	0 to 7	5 to 20

Note: ~81 people in this photo (from Aug 7, 3:43 pm)

Short high peak
Stoneman Bridge full day count

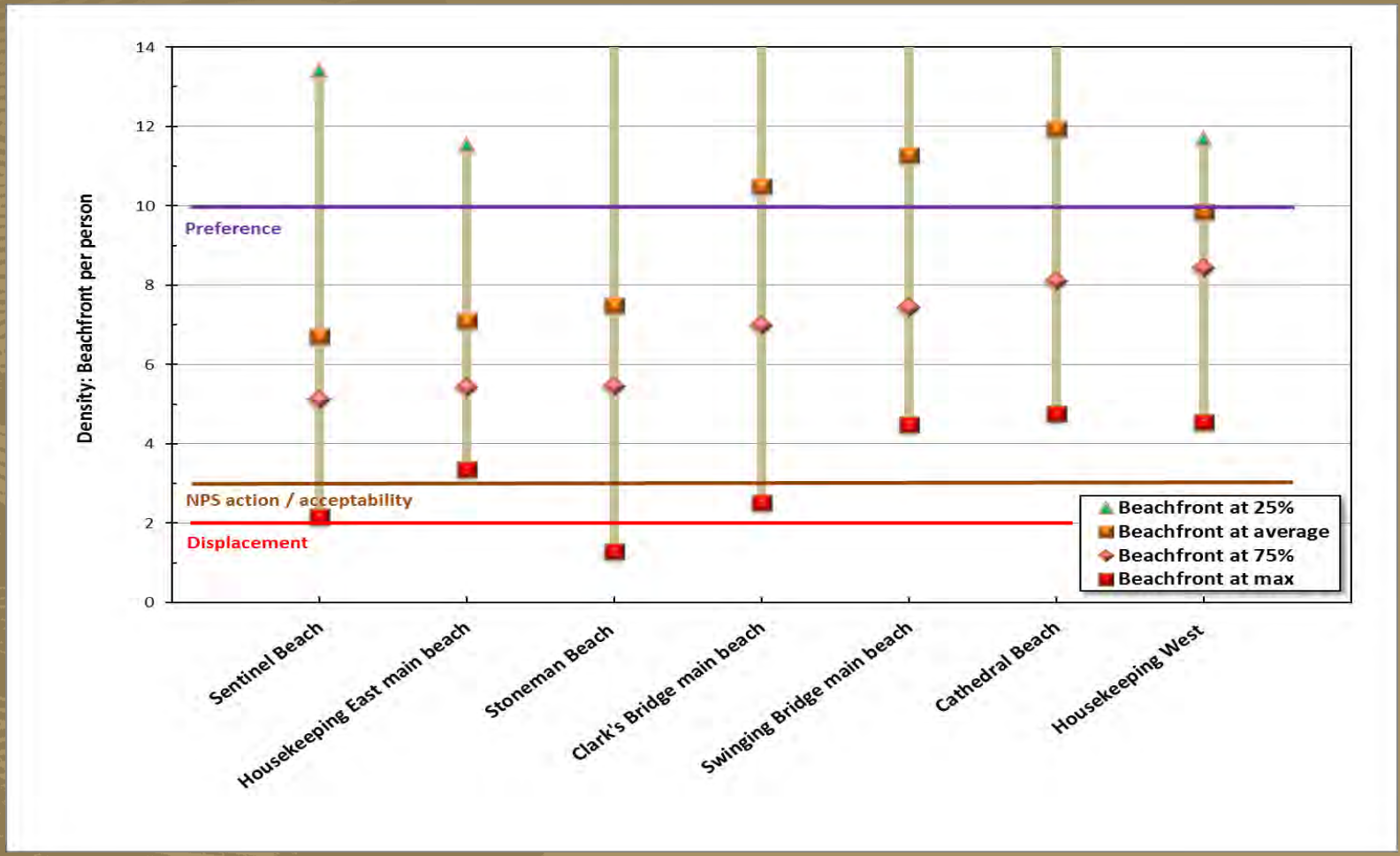


Swinging Bridge

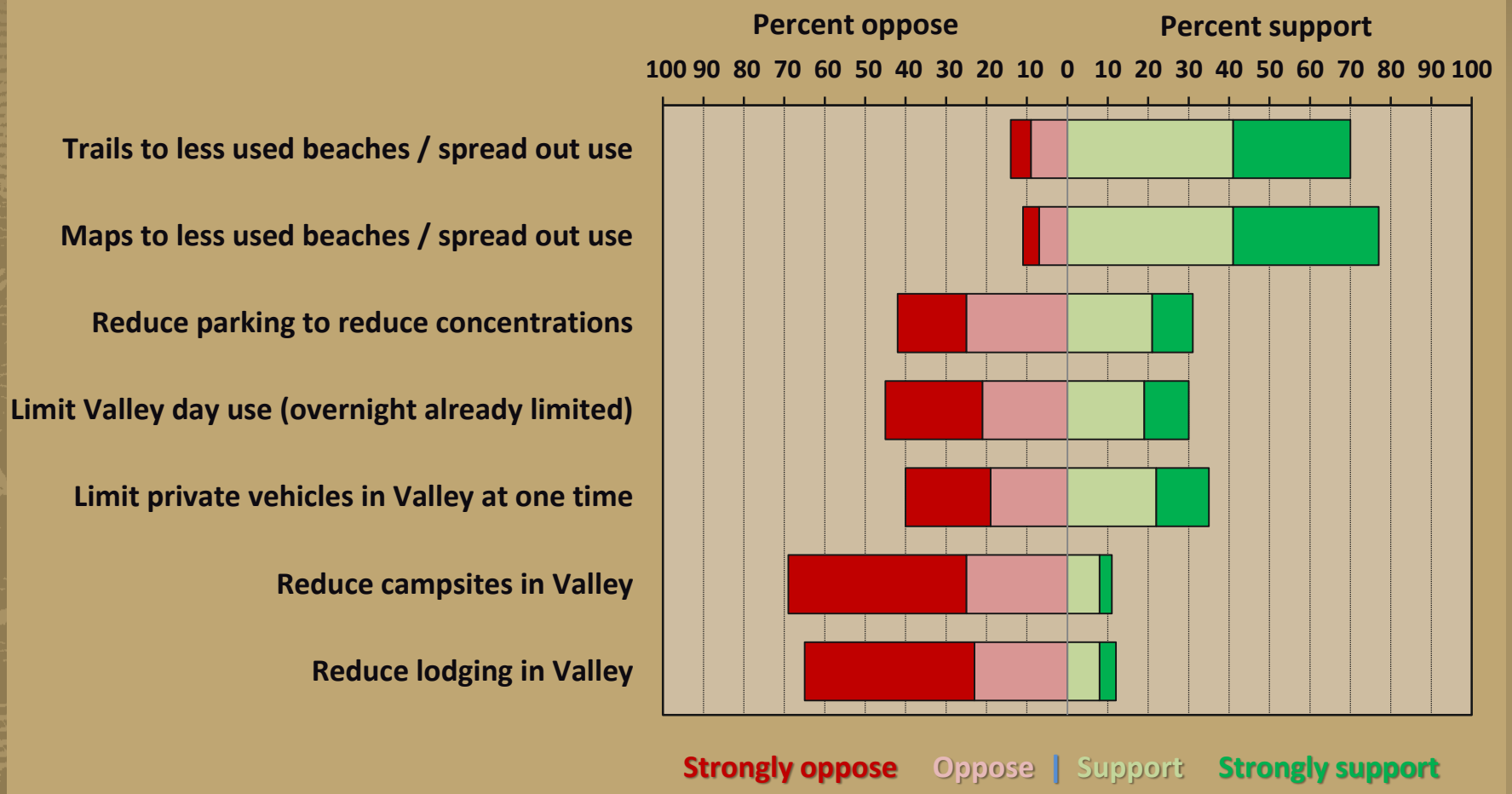
Highest use area on river

Beachfront / person estimates

Seven main beaches with median beachfront assumptions



Support for shore-use actions




Addressing
river bank conditions

Evaluating riparian impacts

. The “river bank” photo shows an area used by park visitors along the Merced. National Park Service scientists evaluate river banks from an ecological perspective, but we are interested in how visitors perceive them. Please rate the acceptability of this river bank from your perspective.

Very unacceptable				Marginal				Very acceptable
- 4	- 3	- 2	- 1	0	+ 1	+ 2	+ 3	+ 4

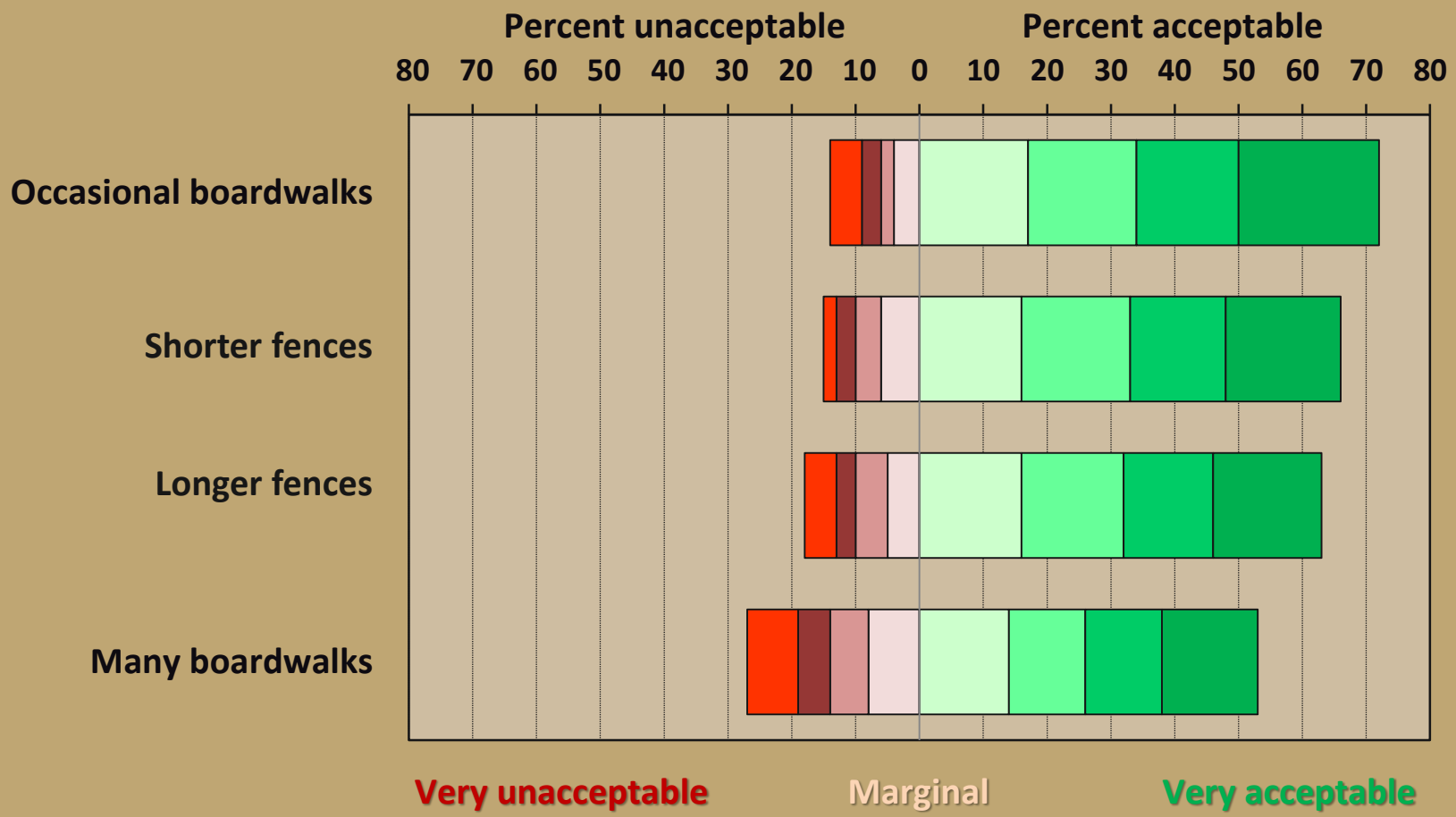
Evaluating riparian impacts

Evaluating fences and boardwalks

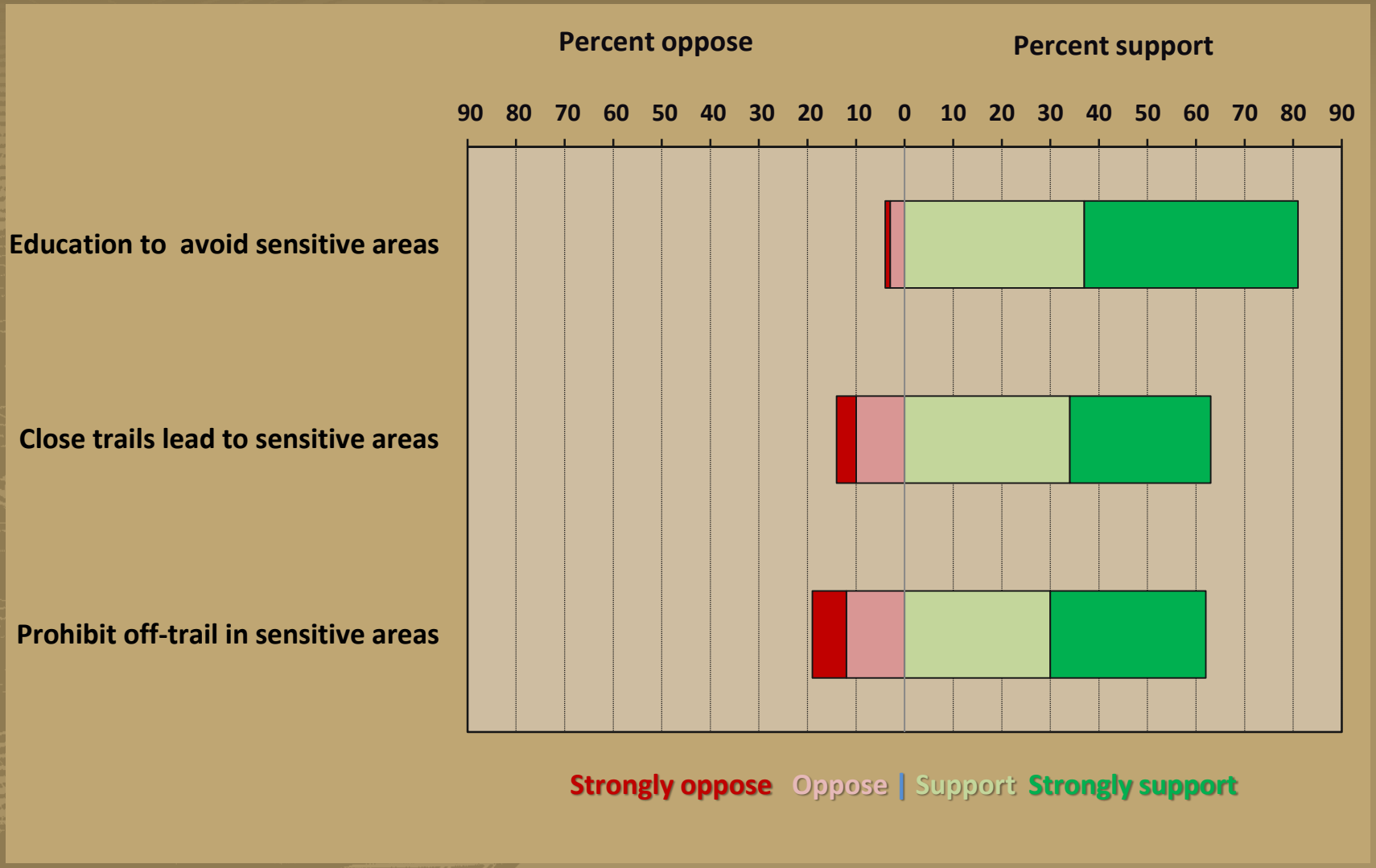
18. To reduce bank and meadow trampling along the river, the Park Service could close sensitive areas (see "split rail fencing" photo) and direct people toward areas that can withstand use (see "boardwalk and stairs" photo). However, these actions may decrease "naturalness," prevent access to some areas, or lead to congestion in other areas. Please rate the acceptability of the following actions.

	Very unacceptable				Marginal				Very acceptable
Longer split rail fences (over 200 feet) to protect ***large areas*** from trampling, with short openings for river access.	- 4	- 3	- 2	- 1	0	+ 1	+ 2	+ 3	+ 4
Shorter split rail fences (under 50 feet) to restore ***small sites*** with heavy trampling.	- 4	- 3	- 2	- 1	0	+ 1	+ 2	+ 3	+ 4
Occasional boardwalks and stairs through meadows and sensitive areas to provide access to areas like beaches.	- 4	- 3	- 2	- 1	0	+ 1	+ 2	+ 3	+ 4
Trail networks with ***many boardwalks & stairs*** directing use to less sensitive areas and discouraging off-trail use.	- 4	- 3	- 2	- 1	0	+ 1	+ 2	+ 3	+ 4

Evaluating fences and boardwalks



Managing use in sensitive areas



Discouraging use in sensitive areas

“Recreation habitat”

Location
Beach
Shade
Beachfront
Place to sit

LIGHT-PENETRATING WALKWAYS

Boardwalks That Save The Streambanks

Pioneer Plants: Important soil stabilizers

The boardwalks you see are specially designed "light-penetrating" walkways. The above-ground design ❶ prevents foot traffic from trampling vegetation and directs traffic away from sensitive areas. Plants can grow under the walkway because sunlight penetrates ❷ the fiberglass grating. Flourishing vegetation is necessary for healthy root systems ❸ that stabilize soils, reduce erosion and protect streambanks.

Please stay on the boardwalks and use river access points ❹ to enter the river. Avoid trampling the streambank by fishing in the river. Your cooperation will protect the vegetation that fish need for habitat and cover.

The Next Generation: More soil stabilizers

Organizing use through sensitive riparian areas

Questions and comments