



Recreational Values and Campsites in the Colorado River Ecosystem

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- **Visitor Capacity**
- **Summary of Previous Work
1975 – 1996**
- **Recent Monitoring
1998 to 2005**
- **Conclusions / Discussion**
GCDAMP goals and objectives
Future Monitoring



Visitor Capacity

“..a prescribed number and type of people that an area will accommodate, given the desired natural / cultural resource conditions, visitor experiences, and management program.” (Hass, 2001)

Visitor Capacity is complex

- Ecological Components
- Physical Components
- Social Components



Legal Guidelines For Grand Canyon

- Resource Protection
- Quality Recreational Experience
- Undeveloped, Uncrowded,
Wilderness-Type Experience



How Do You Monitor ?

Monitoring Requires Quantifiable Parameters

- Preferred Metric is Campsite Area
measurable
significant change
- NOT Measuring # and Distribution of Campsites
- NOT Measuring Social Components
- Recreational Resource Monitoring Protocol Evaluation Panel (PEP) Recommendations Eagerly Anticipated

History of Campsite Monitoring

- **Weeden et al (1975), F. Yates Borden (1976)**

- Inventory from 1973 air photos and site visits

- # of camps and capacity estimates

- 336 campsites identified – no ledge camps

- human impacts, photographs, veg. mapping, mooring, bathing safety, pit toilet effects, fire rings, etc.

- **Brian and Thomas (1984)**

- Post 1983 high flow float by assessment

- # of camps and capacity estimates

- 438 camps identified

- Included ledge camps

- 77 camps not identified by Weeden

- Some camps identified by Weeden were not actually camps!

History of Campsite Monitoring (cont.)

Kearsley et al. (1991 to 1997)

Inventory and area measurements

Inventories: 226 campsites in 1991
 218 pre-1996 BHBF
 301 post-1996 BHBF

Area: 9% loss of campsite area from 1991 to 1994

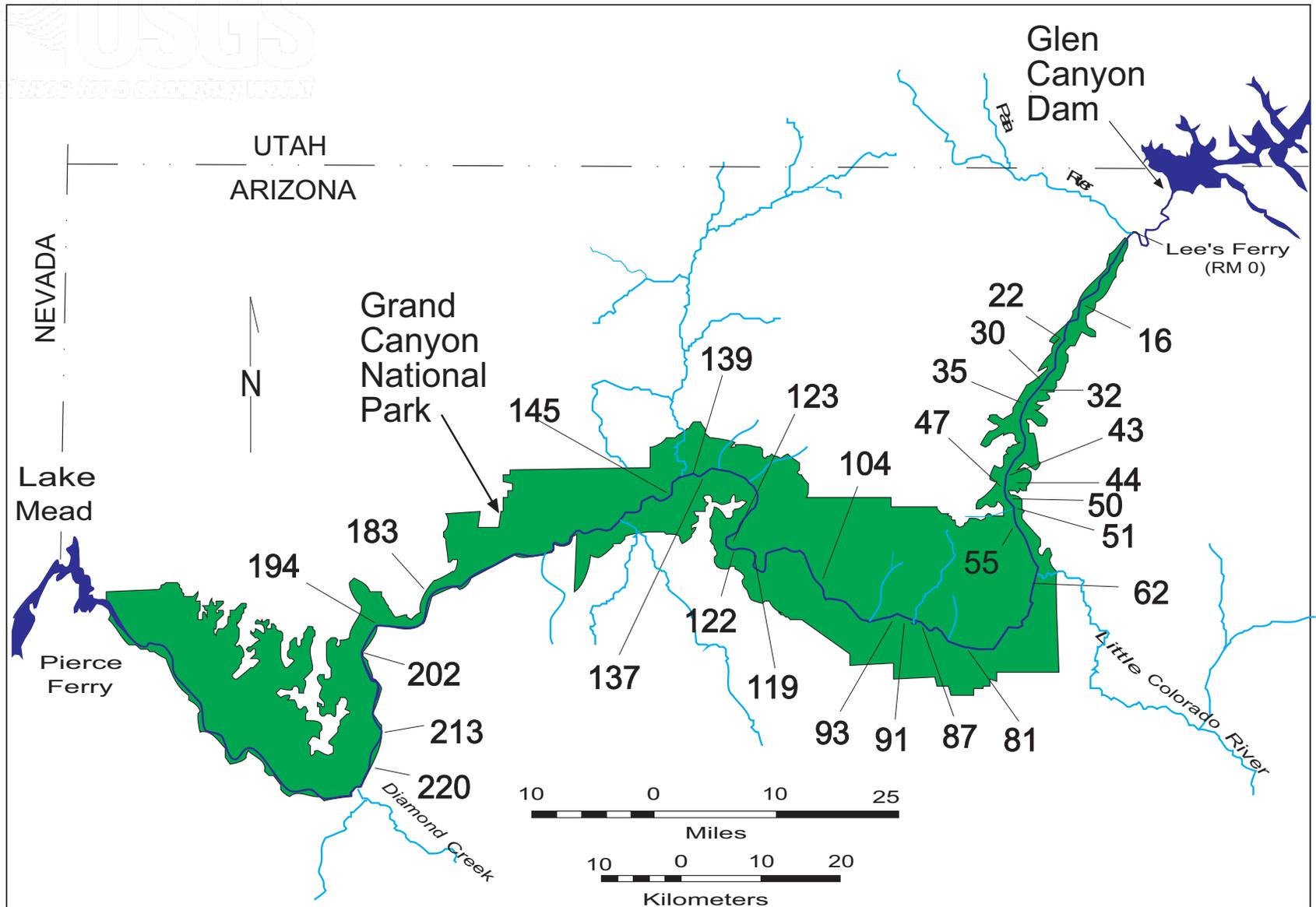
57% increase in camp area following the 1996 BHBF

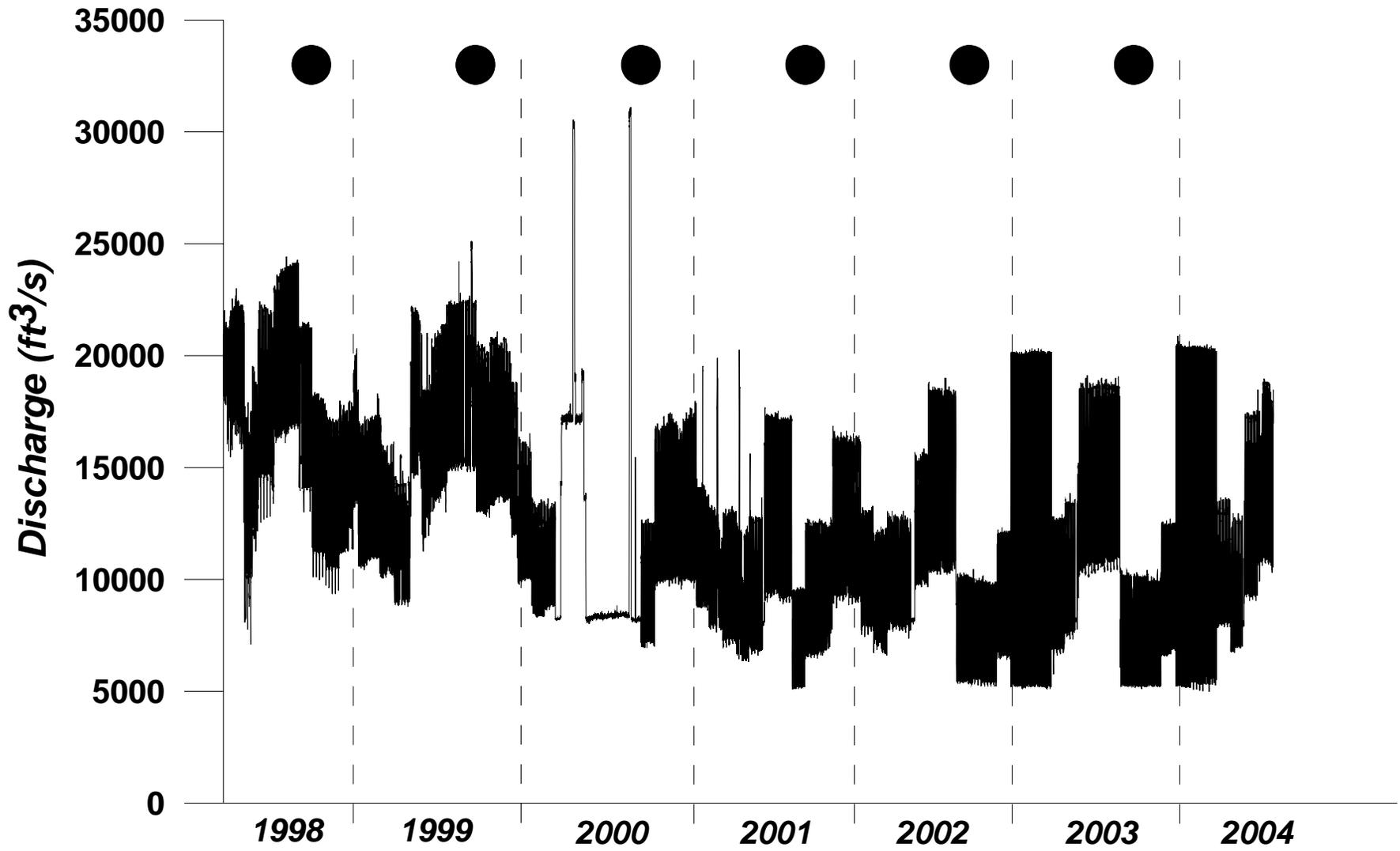
- **GCRG Adopt A Beach (1996 to present)**

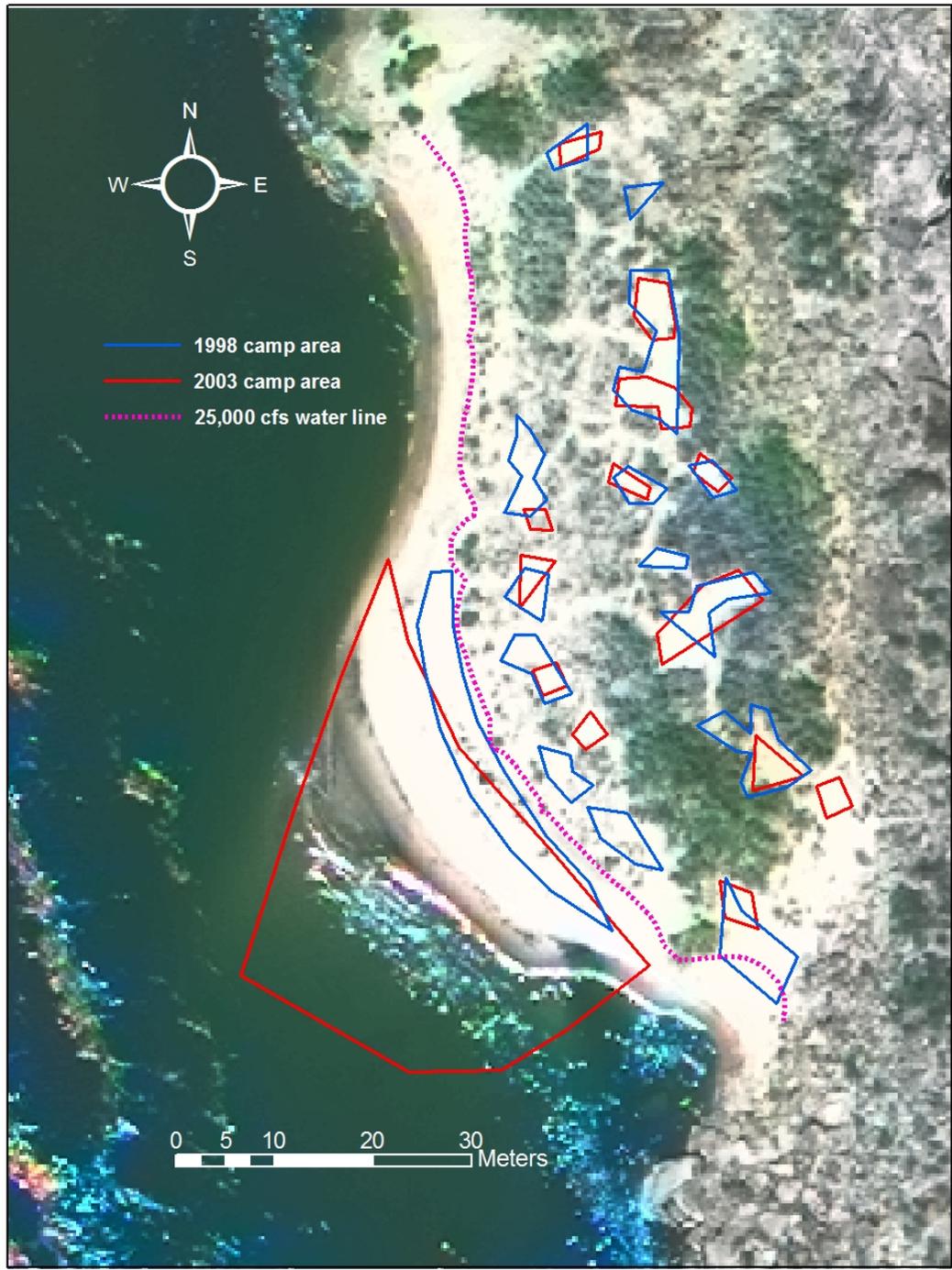
Recent Monitoring

Kaplinski et al. 1998 – 2005

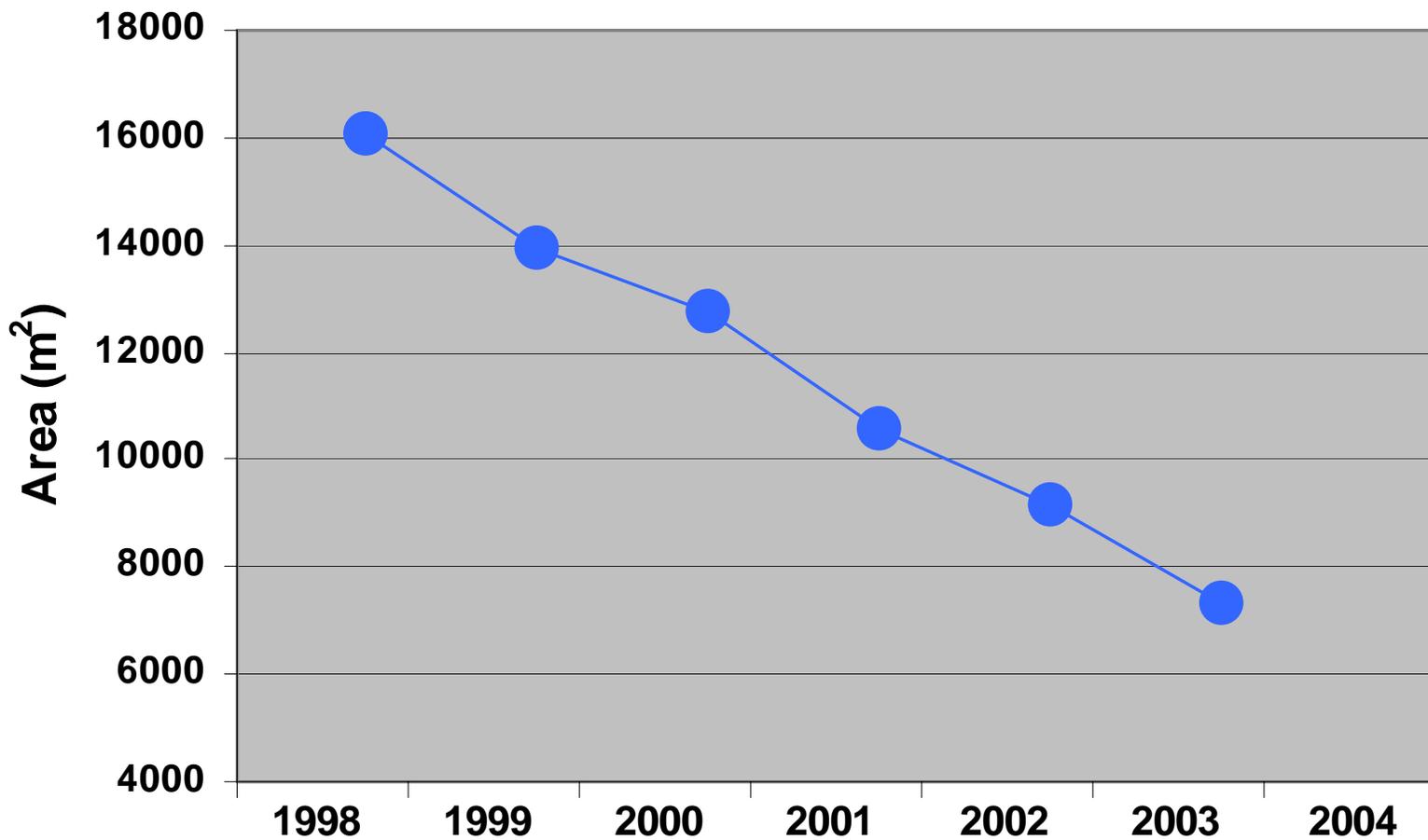
Detailed campsite area measurements at 31 long-term sand bar monitoring sites



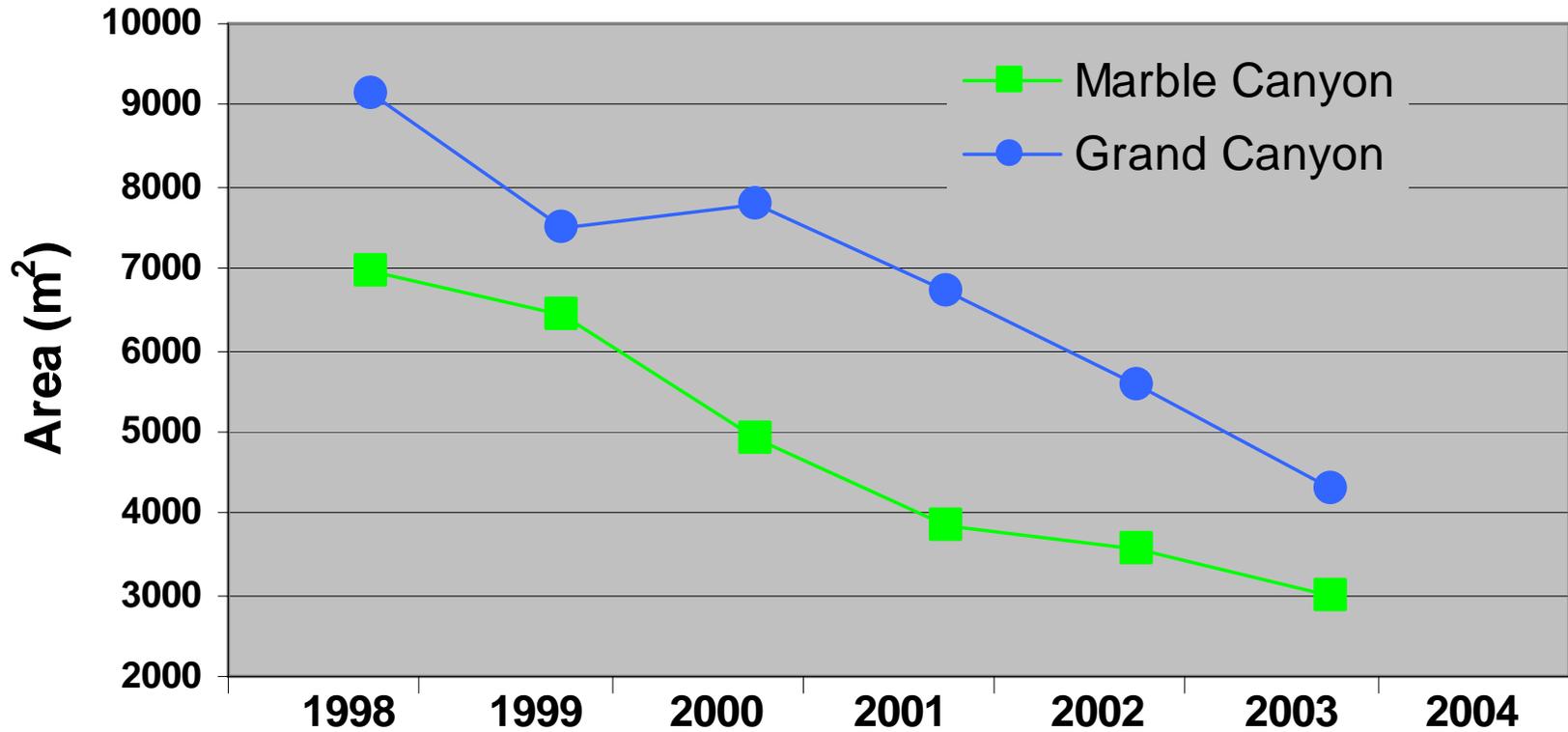




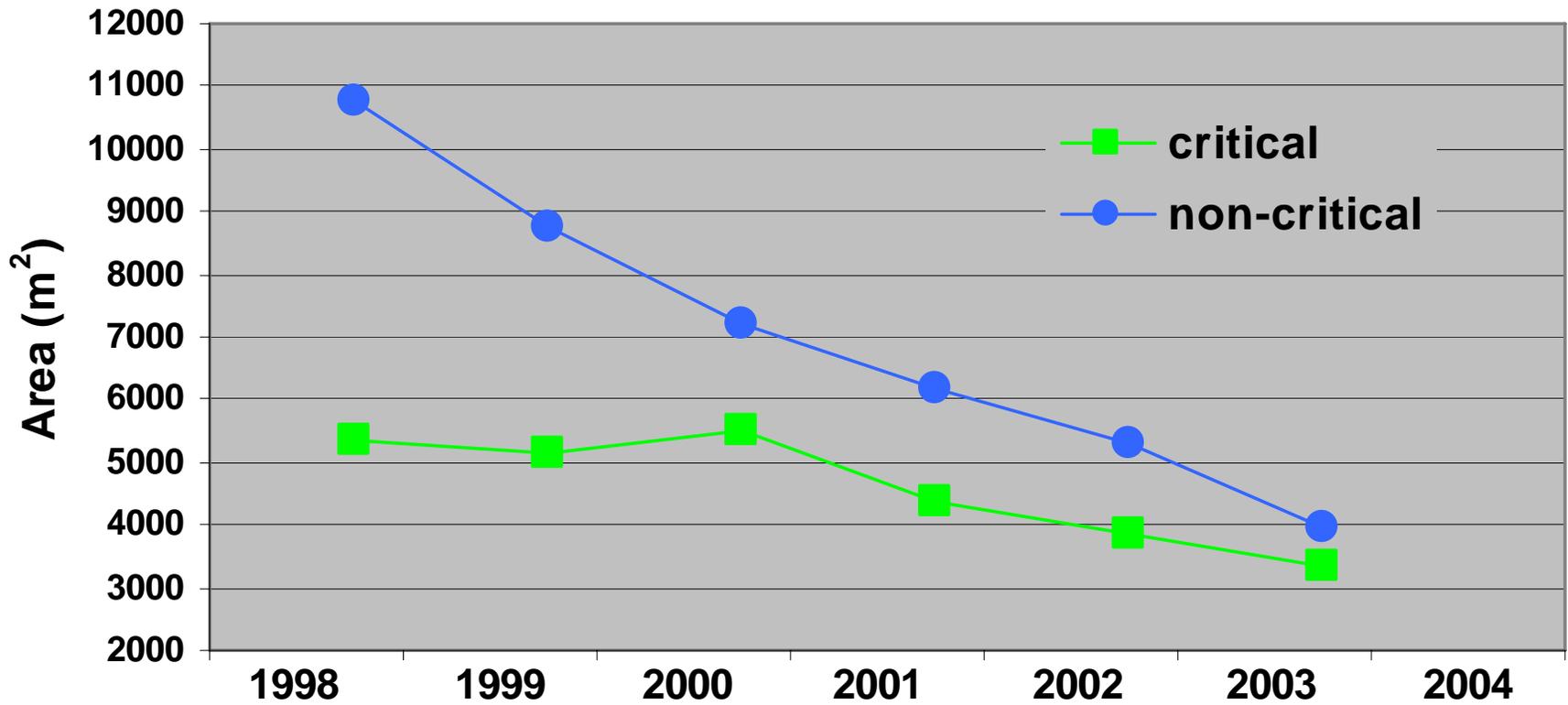
Total Campsite Area Above 25,000 ft³/s



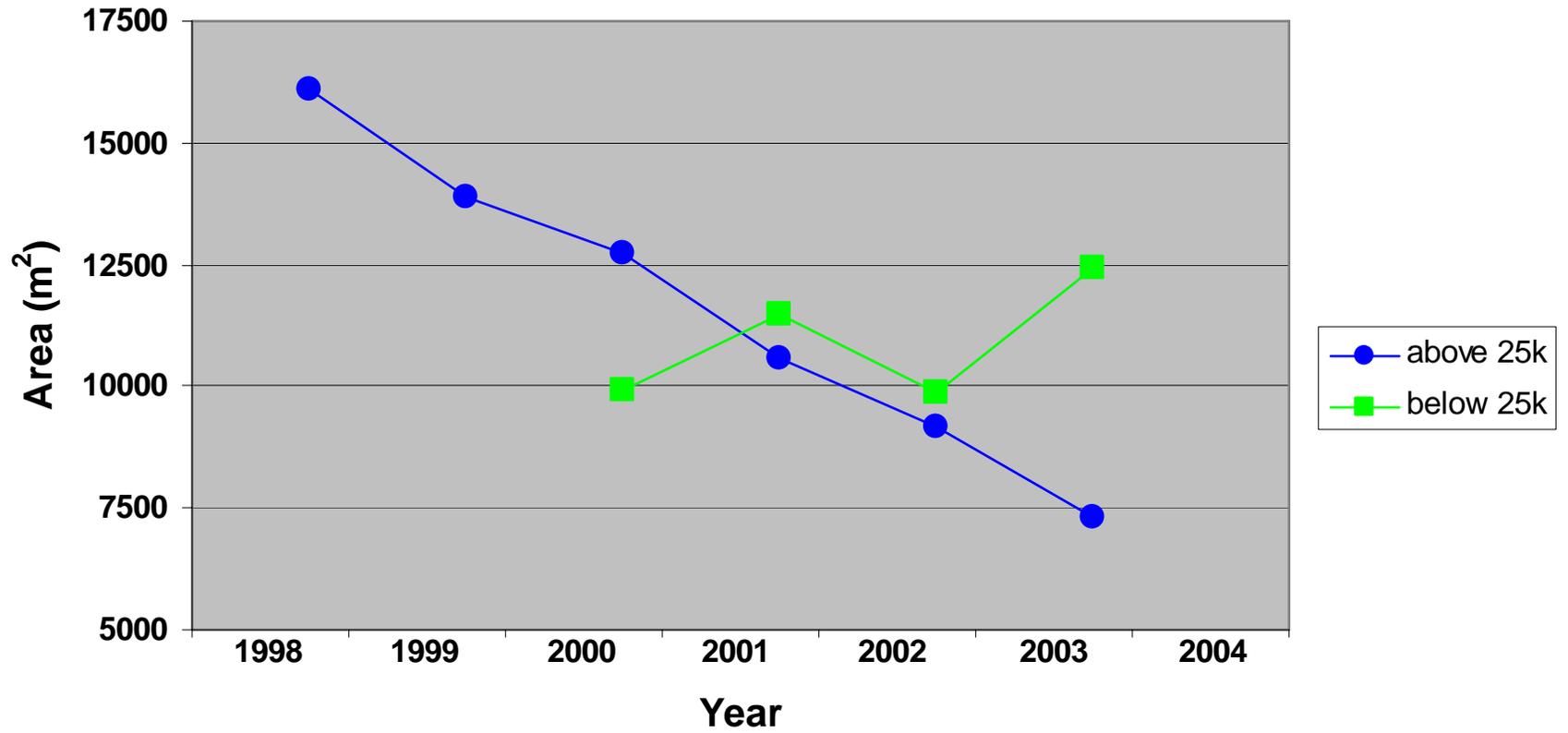
Total Campsite Area Above 25,000 ft³/s



Total Campsite Area Above 25,000 ft³/s



Total Campsite Area



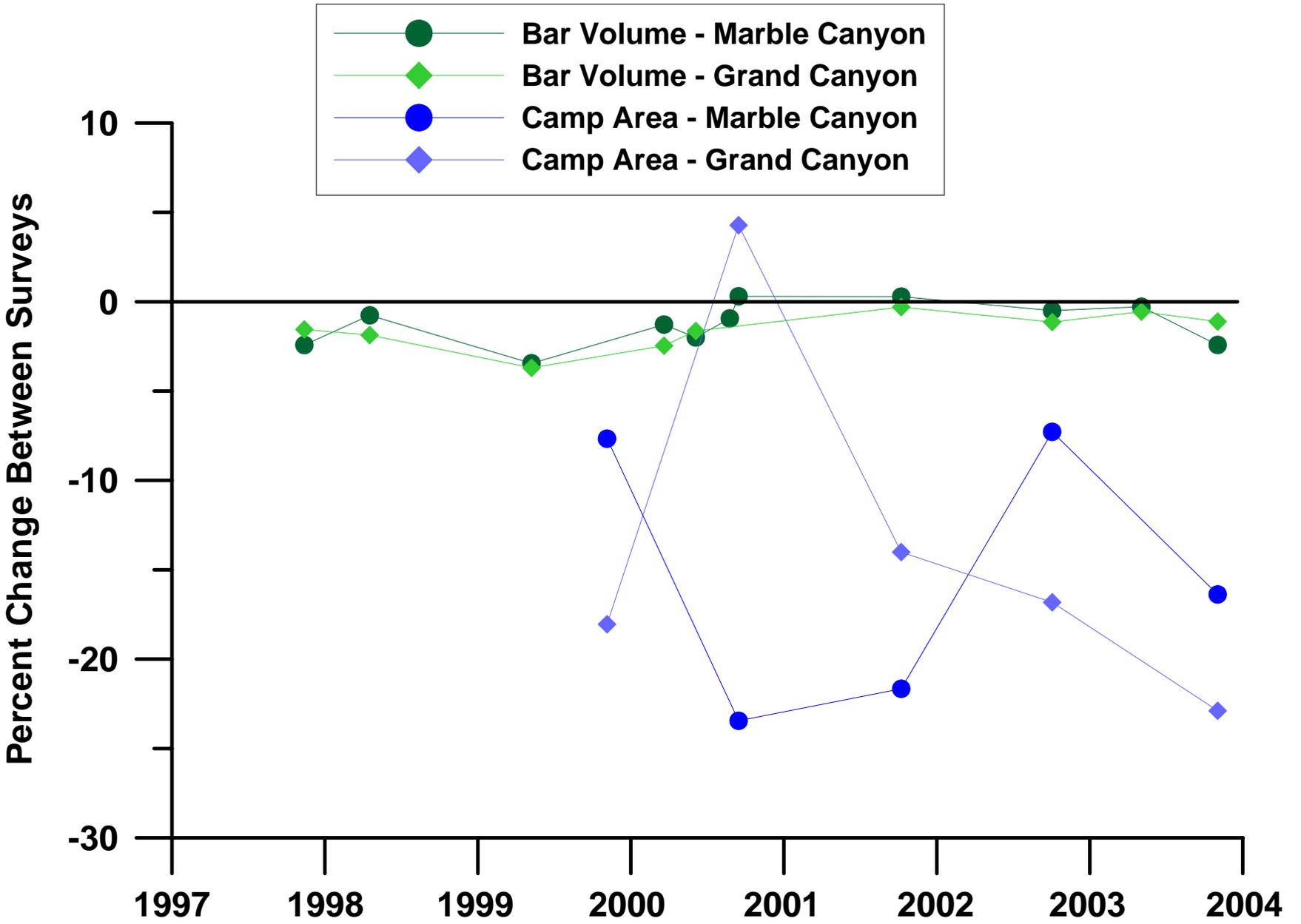


Discussion

Factors Contributing to Campsite Area Loss

- Sand Bar Erosion
- Vegetation Encroachment
- Surface Runoff
- Human-Induced Erosion
- Eolian Processes





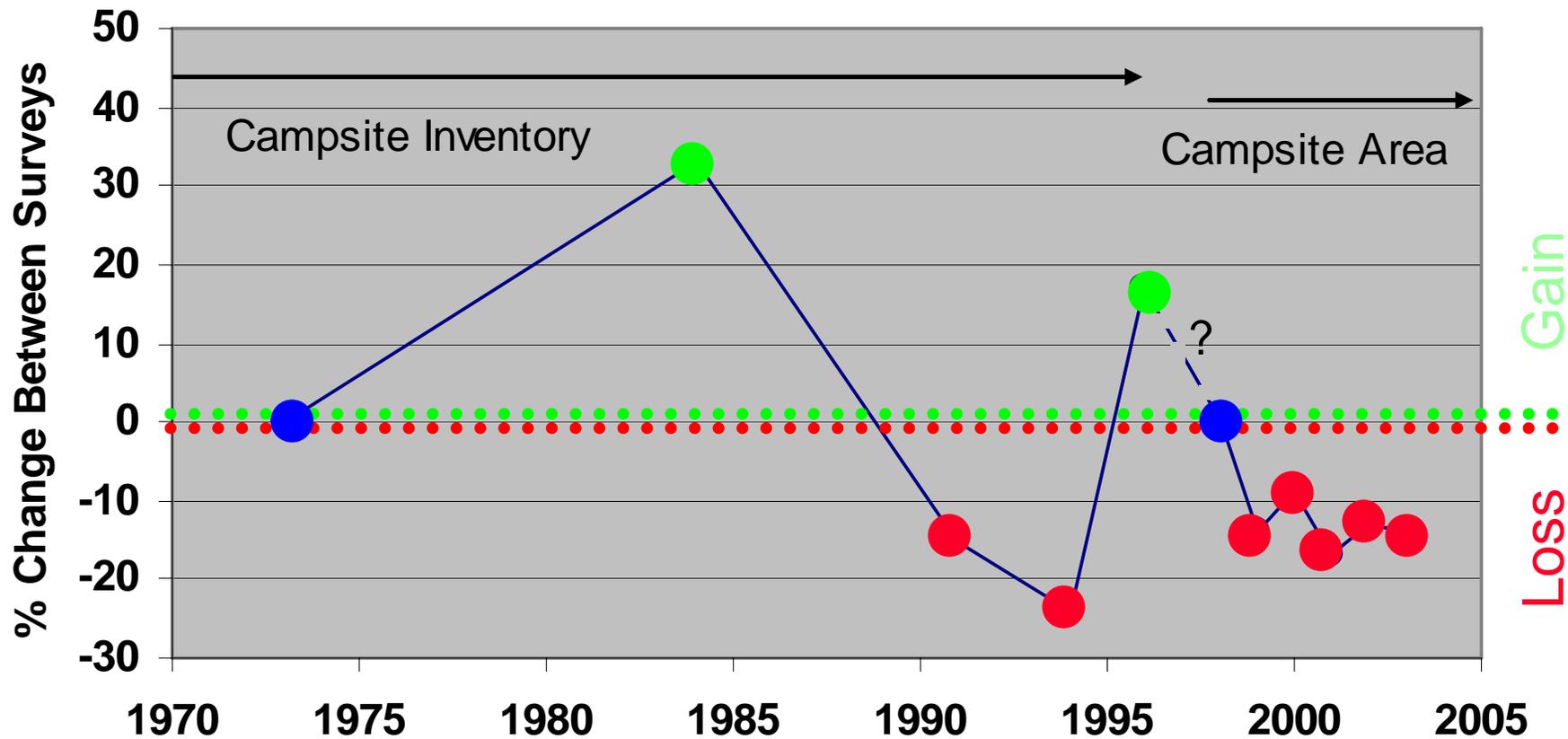
Vegetation Encroachment

- Documented by GCRG Adopt-A-Beach Program
As a Major Factor
- Effect on Visitor Capacity Not Straightforward
- Stewart et al. (2000) User Preference Survey
Some Veg is Preferred - Provides Shade,
Wind Protection, Privacy “Screens”
- NPS and Visitor “Gardening” Projects



Discussion/Conclusion

Periodic High Flow Events Above Power Plant Capacity Are Necessary To Rebuild Eroded Sand Bars and Maintain Campsite Area



Conclusions

- Limited Monitoring and Research Hinders the Evaluation of Glen Canyon Dam Adaptive Management Program (GCDAMP) Goals for Recreation
- Between 1998 and 2003, Dam Operations Did Not Meet the GCDAMP Goals For Recreational Resources

GCDAMP Recreational Resource Management Objective

9.3 – Increase the size, quality, and distribution of camping beaches in critical and non-critical reaches in the mainstem within the capacity of the Colorado River ecosystem to visitor impacts consistent with NPS and tribal river corridor management plans.

- **Between 1998 and 2003 Campsite
Area Decreased by 55%**

37% In Critical Reaches

63% In Non-Critical Reaches

GCDAMP Recreational Resource Management Objective

9.3 – Increase the size, quality, and distribution of camping beaches in critical and non-critical reaches in the mainstem within the capacity of the Colorado River ecosystem to visitor impacts consistent with NPS and tribal river corridor management plans.

However,

- **No Comprehensive Campsite Inventory**
- **No Campsite Quality Indicators Monitored**

GCDAMP Recreational Resource Management Objective

9.1 – Maintain or improve the quality and range of recreational opportunities in Glen and Grand Canyons within the capacity of the Colorado River ecosystem to absorb visitor impacts consistent with the NPS and tribal river corridor Management Plans.

9.4 – Maintain or enhance the wilderness experience in the Colorado River Ecosystem in consideration of existing management plans.

Less Area = More Crowding

Crowding MAY reduce

- **Quality of Experience**
- **Range of Opportunity**
- **Wilderness Experience**

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However,

**Conclusions Regarding Complex Social
Parameters Based Solely on Campsite Area
Measurements at a Limited Number of Sites are
Tenuous at Best**

Future Recreation Monitoring/Research

- **PEP panel Results and New NPS Management Plan**
- **Conduct a Comprehensive Inventory of All Campsites Within the CRE**
- **Future Research/Monitoring Aimed at Both Physical and Sociological Aspects of the Visitor Experience Needed in Order to Evaluate GCDAMP Goals**
- **Develop an Integrated Long-Term Monitoring Program for Measuring Campsite Area and Visitor Capacity Within the CRE**

Thanks!

Any Questions?

