



Modeling Tools for Management: Recreation in Glen and Grand Canyons

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U. S. Department of Interior
U.S. Geological Survey

Photo Credit: Bureau of Reclamation

Introduction



Photo Credit: Bureau of Reclamation

Trout Fishery and Recreational Experience

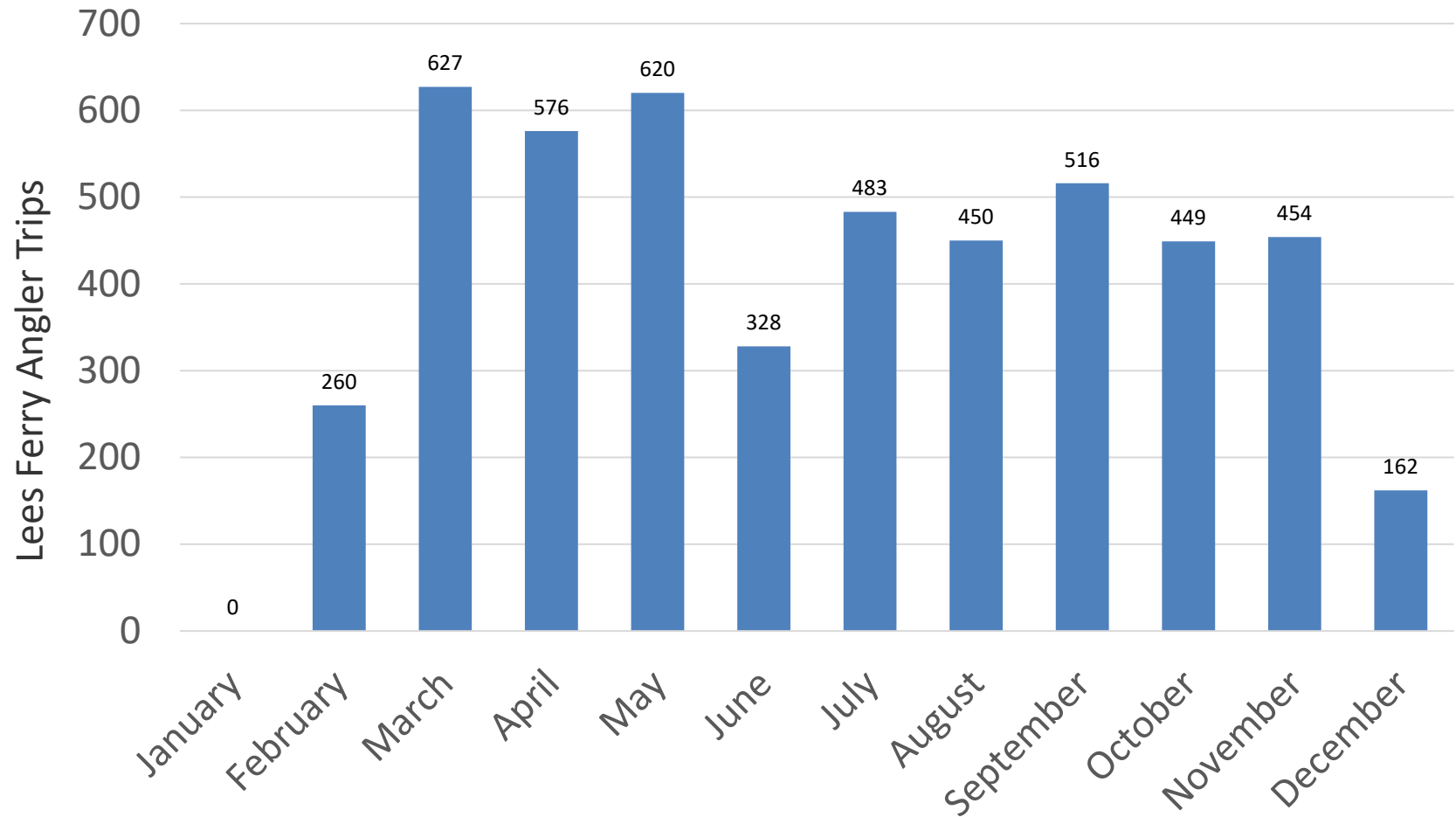
- **Resource Goal:** Achieve a healthy high-quality recreational trout fishery in Glen Canyon National Recreation Area...
- **Resource Goal:** Maintain and improve the quality of recreational experiences for the users of the Colorado River ecosystem.

Measures of Recreational Experience

- Performance metrics
 - Recreation, visitor use, and experience as related to fishing, boating, and camping activities in the Colorado River...
- Impact topics
 - Socioeconomics, including recreational use values, ..., employment and income, ...



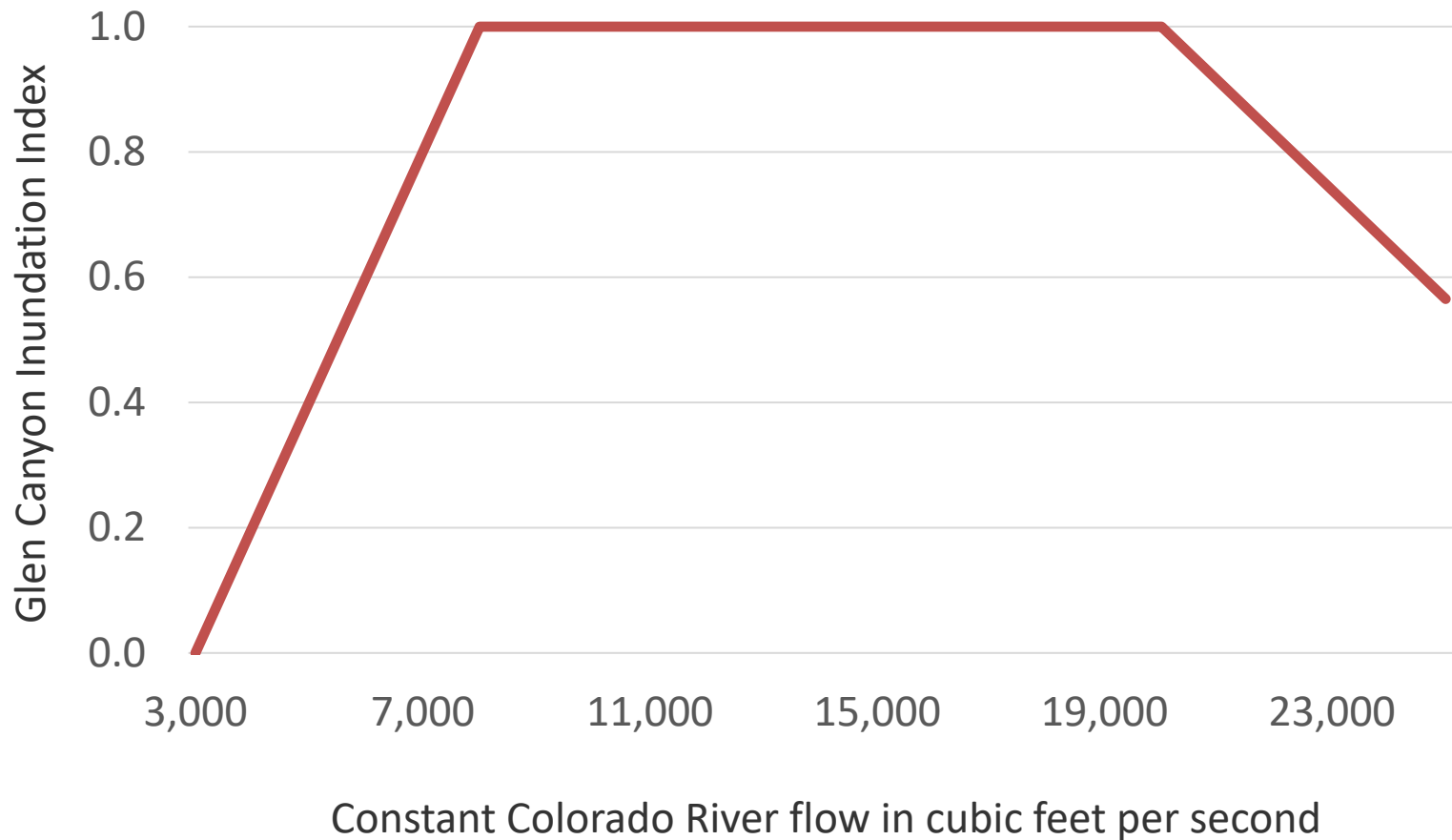
Glen Canyon Angler Participation



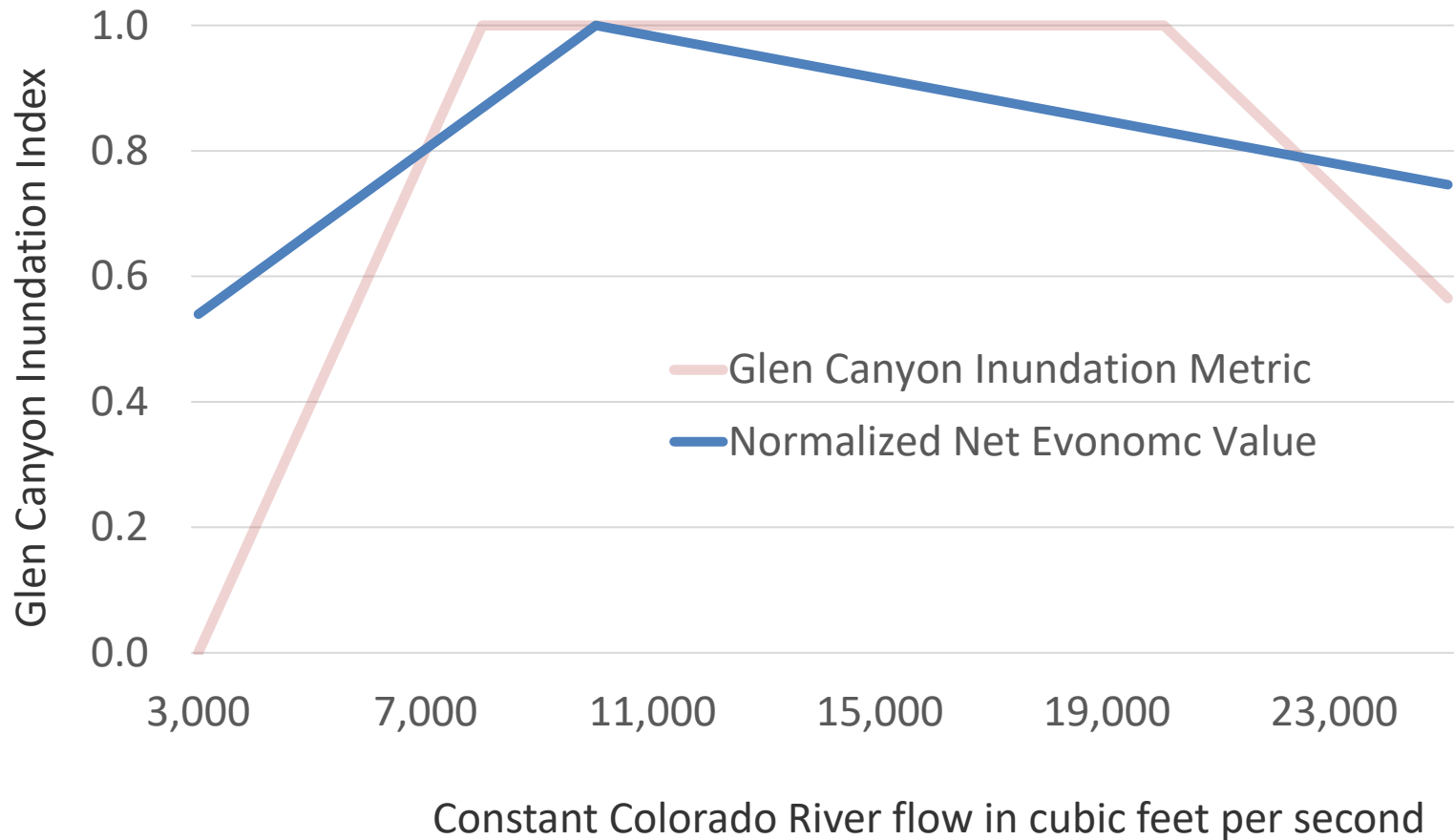
Glen Canyon Performance Metrics

- **Glen Canyon Rafting Metric:** Estimates the number of visitors unable to participate in day rafting in Glen Canyon due to high flows.
- **Catch Rate Index** (number/hr). For age 2+ fish.
- **Number of Trout >16 in.** Total length.
- **Glen Canyon Inundation Metric:** Accounts for flows that impact recreational sites and recreational uses within the Glen Canyon reach.

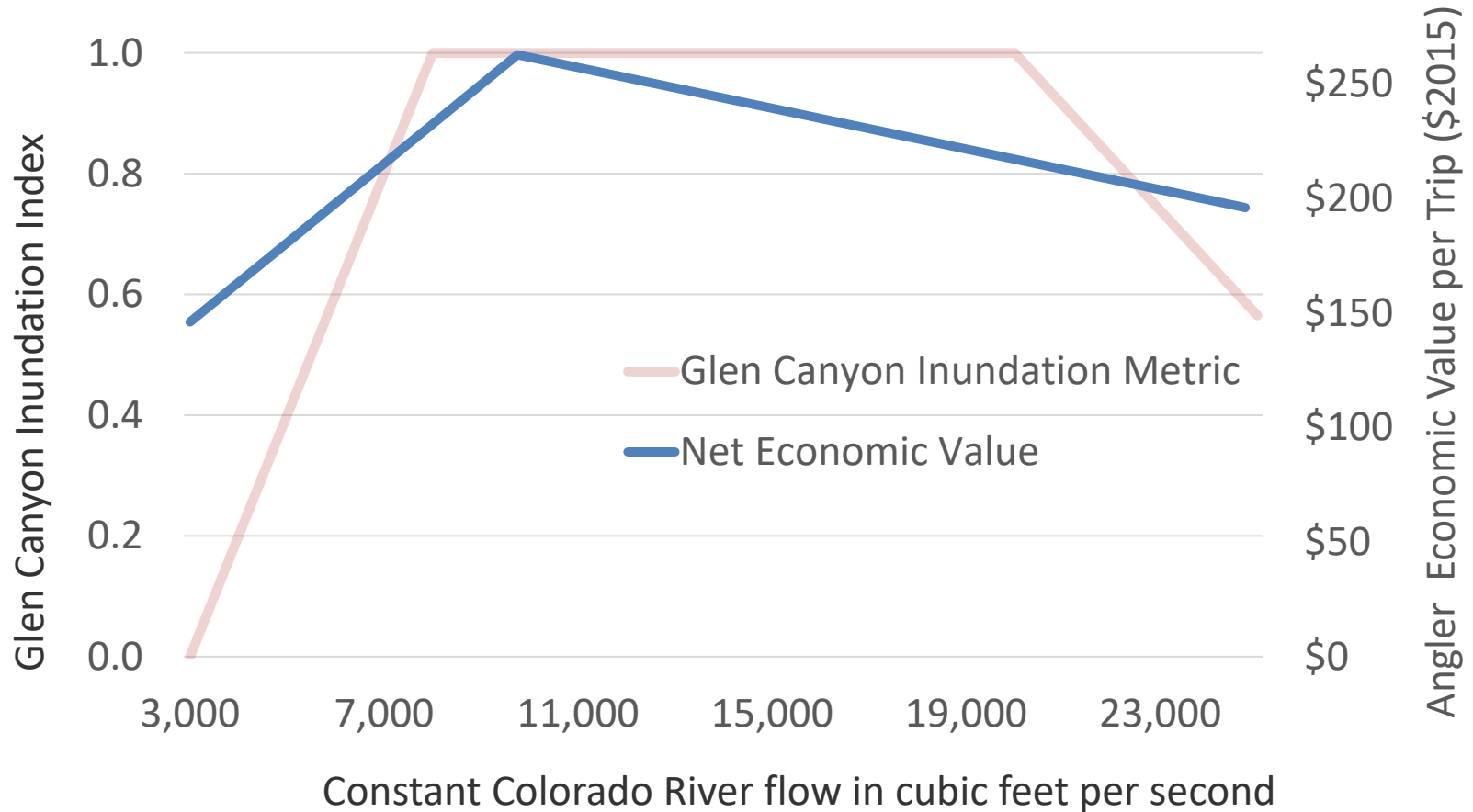
Glen Canyon Inundation Metric (1)



Glen Canyon Inundation Metric (2)



Glen Canyon Inundation Metric (3)



Glen Canyon Angler Preferences

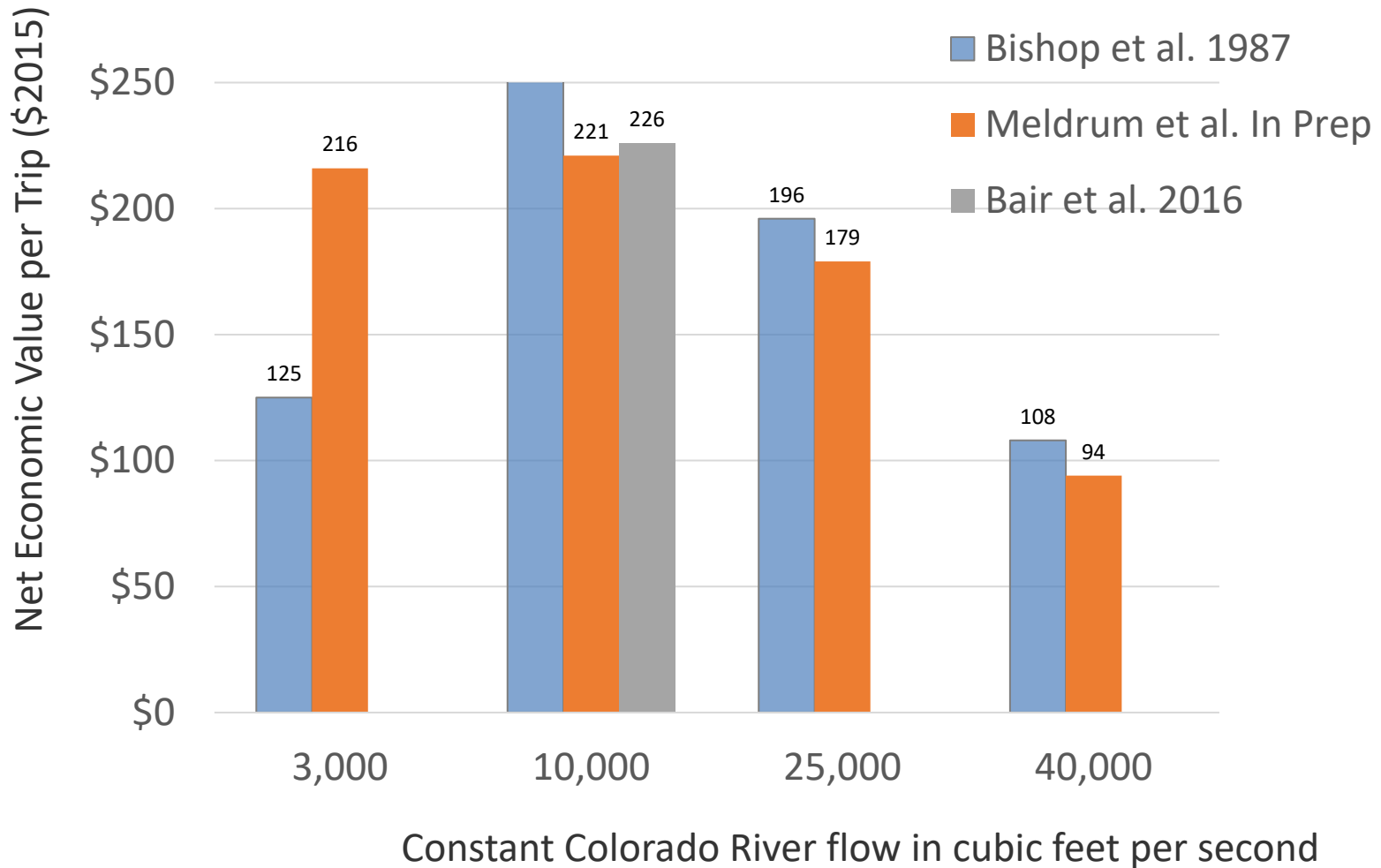
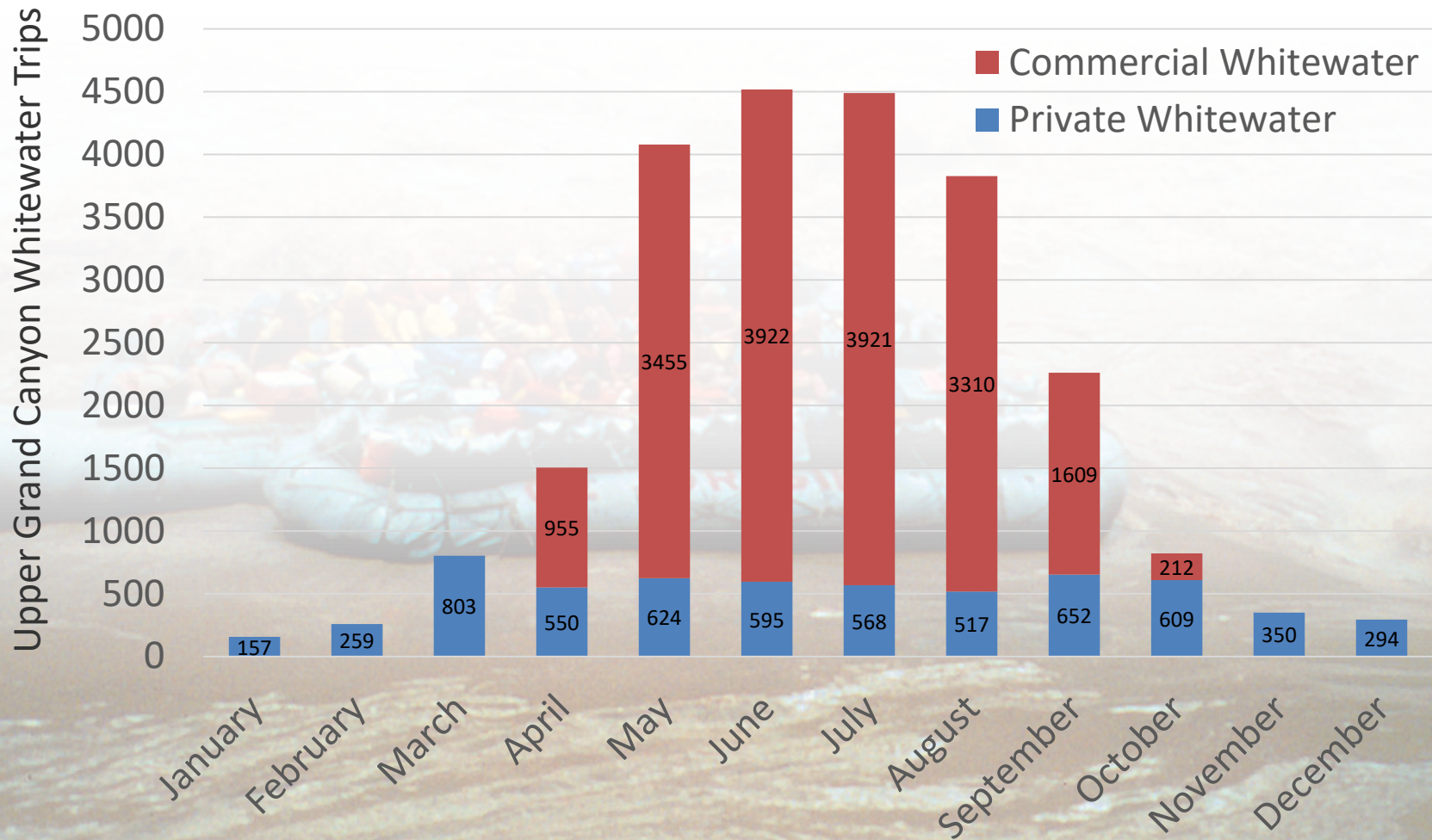




Photo Credit: Bureau of Reclamation

Upper Grand Canyon Whitewater



Grand Canyon Performance Metrics (1)

- **Camping Area Index:** Accounts for optimal campsite area building and maintenance flows and sediment load.
- **Navigational Risk Index:** Measure of navigation difficulty based on the number of days during which the daily minimum flow was less than 8,000 cfs.
- **Fluctuation Index:** Measures the degree to which combinations of flows and fluctuations are within a range identified as preferable by experienced boat guides.
- **Time Off River Index:** Relates the level of flows to visitors being able to spend time ashore visiting attractions.

Grand Canyon Performance Metrics (2)

