

Archaeological Sites and Cultural Resources			
Definition	Number	Performance Metric	Notes
Maintain the integrity of potentially affected NRHP-eligible or listed historic properties in place, where possible, with preservation methods employed on a site-specific basis.	1	Integrity	
	2	Topographic Change at a Sample of Cultural Sites	
	3	Change in Vulnerability to Loss of Integrity	

Natural Processes			
Definition	Number	Performance Metric	Notes
Restore, to the extent practicable, ecological patterns and processes within their range of natural variability, including the natural abundance, diversity, and genetic and ecological integrity of the plant and animal species native to those ecosystems.	4	Deviation from Natural Flow Metric	
	5	*Winter Baseflow	
	6	*Snowmelt	
	7	*Monsoon	
	8	Sub-daily Flow Fluctuation Metric	
	9	Springtime Gross Primary Productivity in Marble and Grand Canyon	
* These metrics should be considered submetrics of the "Deviation from Natural Flow Metric"			

Humpback Chub			
Definition	Number	Performance Metric	Notes
Meet humpback chub recovery goals, including maintaining a self-sustaining population, spawning habitat, and aggregations in the Colorado River and its tributaries below the Glen Canyon Dam.	11	Current Tier of Humpback Chub in the LCR Aggregation as Described in the 2016 LTEMP Biological Opinion	
	12	Grand Canyon-wide Abundance Of Adult Humpback Chub	
	13	Proportion of the Grand Canyon Ecosystem with Evidence of all 3 Life Stages of Humpback Chub	

Hydropower and Energy			
Definition	Number	Performance Metric	Notes
Maintain or increase Glen Canyon Dam electric energy generation, load following capability, and ramp rate capability, and minimize emissions and costs to the greatest extent practicable, consistent with improvement and long-term sustainability of downstream resources.	14	Metric Description to be determined later.	

Other Native Fishes			
Definition	Number	Performance Metric	Notes
Maintain self-sustaining native fish species populations and their habitats in their natural ranges on the Colorado River and its tributaries	15	Proportion of the Grand Canyon ecosystem with evidence of all three life history stages of bluehead sucker (juvenile [1-year lag], subadult, adult).	
	16	Proportion of the Grand Canyon ecosystem with evidence of all three life history stages of flannelmouth sucker (juvenile [1-year lag], subadult, adult).	
	17	Proportion of the Grand Canyon ecosystem with evidence of all three life history stages of razorback sucker (juvenile [1-year lag], subadult, adult).	
	18	Proportion of the Grand Canyon ecosystem with evidence of speckled dace (any life stage).	
	19	Proportion of the Grand Canyon ecosystem with evidence of extirpated species (bonytail chub, roundtail chub, Colorado pikeminnow; any life stage).	

Recreational Experience			
Definition	Number	Performance Metric	Notes
Maintain and improve the quality of recreational experiences for the users of the Colorado River ecosystem. Recreation includes, but is not limited to, flatwater and whitewater boating, river corridor camping, and angling in Glen Canyon.	20	Economic Value of Recreational Experience	

Sediment			
Definition	Number	Performance Metric	Notes
Increase and retain fine sediment volume, area, and distribution in the Glen, Marble, and Grand Canyon reaches above the elevation of the average base flow for ecological, cultural, and recreational purposes.	21	Sand Supply by River Segment (the Sand Bank Account)	
	22	Normalized Sandbar Volume	
	23	Mean Sandbar Response to High-Flow Experiments	
	24	*Silt and Clay Retention by River Segment	
* This metric was categorized as a means metric but will be included as a monitoring metric.			

Tribal Resources			
Definition	Number	Performance Metric	Notes
Maintain the diverse values and resources of traditionally associated Tribes along the Colorado River corridor through Glen, Marble, and Grand Canyons.	25	Metric Description to be determined later.	



Rainbow Trout Fishery			
Definition	Number	Performance Metric	Notes
Achieve a healthy high-quality recreational rainbow trout fishery in GCNRA and reduce or eliminate downstream trout migration consistent with NPS fish management and ESA compliance.	26	Rainbow Trout Angler Catch Rate	
	27	Rainbow Trout Abundance in Glen Canyon (age 1+)	

Nonnative Invasive Species			
Definition	Number	Performance Metric	Notes
Minimize or reduce the presence and expansion of aquatic nonnative invasive species	28	Average number of low-risk species present per habitat segment in the Grand Canyon ecosystem.	
	29	Average number of medium-risk species present per habitat segment in the Grand Canyon ecosystem.	
	30	Average number of high-risk species present per habitat segment in the Grand Canyon ecosystem.	
	31	Average number of very high-risk species present per habitat segment in the Grand Canyon ecosystem.	
	32	Average number of low risk species with evidence of recent recruitment per habitat segment in the Grand Canyon ecosystem.	
	33	Average number of medium risk species with evidence of recent recruitment per habitat segment in the Grand Canyon ecosystem.	
	34	Average number of high risk species with evidence of recent recruitment per habitat segment in the Grand Canyon ecosystem.	
	35	Average number of very high risk species with evidence of recent recruitment per habitat segment in the Grand Canyon ecosystem.	

Riparian Vegetation			
Definition	Number	Performance Metric	Notes
Maintain native vegetation and wildlife habitat, in various stages of maturity, such that they are diverse, healthy, productive, self-sustaining, and ecologically appropriate.	36	Total Plant Cover	
	37	Proportion Native Species Cover	
	38	Native Plant Richness	