Adopt – A – Beach:
Long-Term Monitoring of Camping Beaches in Grand Canyon
Summary of Monitoring Observations for Year 2012

By Paul Lauck[1]

Abstract

For the past seventeen years, the Adopt-A-Beach repeat photography program has been monitoring beaches along the Colorado River through Grand Canyon. Through comparative examination of photo series and on-the-spot observations contributed by the volunteer photographers, campsite conditions are evaluated. Factors considered which contribute to changes, both positive and negative, include: fluctuating river flows, aeolian action, vegetation increase/decrease, human introduced change, rain associated erosion or other actions, natural or anthropomorphic, that may have an effect on the camp. The resulting evaluations are also segregated and examined dependent upon which of the four primary river reaches in which the beach resides. The conclusions are presented as observational, monitoring data only.

For the time spanning the 2012 summer boating season, early April to late October, 32 of the 44 study beaches in the program had photographs and photographer comment sheets spanning a sufficient period of time to be evaluated. Of these 32 beaches, 31% were classified as Unchanged for the time period, 16% had Improved through the summer and 53% were considered as Degraded by the end of the season. Of the Unchanged beaches, 31% are located in the Marble Canyon reach, 60% in the Upper Granite Gorge reach, another 9% are contained in the Muav Gorge reach and none are in the Lower Granite Gorge. Forty percent of the Improved beaches are located in the Marble Canyon reach, another 20% in the Upper Granite Gorge and 40% are found in the Muav Gorge reach. Neither of the two beaches included in the study this year and located in the Lower Granite Gorge was considered to have improved. For the beaches classified as Degraded for this time period, 29% are from the Marble Canyon reach,18% are found in the Upper Granite Gorge, 41% in the Muav Gorge reach and two, or 12% are located in the Lower Granite Gorge reach. The primary factor cited as creating an Improved camp is an increase of sand on the beach front enlarging the beach and creating more favorable parking for boaters. Some of this occurred during late season when tributary floods increased sediment in the mainstem, which was subsequently deposited on nearby beaches. The predominant cause of beach degradation this season was the erosion and incision of camps by rain runoff. This was noticed particularly in the Muav Gorge reach from storms occurring the last week of July and first two weeks of August. One camp, at Upper National Canyon, was completely denuded of vegetation and sand and covered by debris. The Lower National Canyon camp was also devastated from this event, but had a very different outcome.

The comparison of the beaches from late season 2011 and early 2012 was conducted on a total of 36 beaches. Of the 36 camps, 69% did not show enough change to warrant a

classification other than Same. Of these 25 beaches, 17% are located in the Marble Canyon reach, and 28% are found in the Upper Granite Gorge and 19% are in the Muav Gorge reach. There are two beaches, or 5%, in the Lower Granite Gorge. Only 14% of the beaches considered showed an Improvement in camping condition at the end of the winter. This accounted for 5 beaches, 4 in the Marble Canyon reach and 1 in the Muav Gorge. In general the camps improved due to sand deposition along the beach fronts and because previously steep, cutbank-associated parking areas slumped to decrease the slope and improve access. Seventeen percent of the camps evaluated were classified as having been degraded during the winter months. The camps were divided between two reaches, with 2 located in Upper Granite Gorge and 4 in the Muav Gorge. The universal factor cited as evidence for this classification was sand loss across the beach front, with the accompanying cutbanks and exposed rocks.

When the season ending 2012 beaches were compared to the beaches immediately following the March 2008 HFE event, 20% of the 25 qualifying camps were considered to be the essentially the Same, another 20% were classified as Improved and the remaining 60% were considered as Degraded. Those beaches which did not have significant change were distributed from River Mile 98.7 downstream with 3 in the Upper Granite Gorge, and one each in the Muav Gorge and the Lower Granite Gorge. Beaches which were classified as having Improved also totaled 5 and were distributed with 3 in the Marble Canyon reach, and one each in the Upper Granite Gorge and the Muav Gorge. The remaining Degraded beaches were found in all reaches, with 16% in the Marble Gorge, 32% in the Upper Granite Gorge, 47% in the Muav Gorge and one beach located in the Lower Granite Gorge. Sediment deposition contributed from local recent upstream flooding events was the predominant factor for a beach having Improved. For the Marble Canyon beaches, this would presumably have been from the Paria drainage. Sand removed by wind above the normal fluctuating flow limit, exposing rocks, and erosion from variable river flows across beach fronts, were both primary factors for a beach classification of Degraded. Rain erosion as a factor was not cited as often, but the resulting degradation was usually more pronounced.

[1] Grand Canyon River Guides, Inc., Flagstaff, Arizona (928) 773-1075