Adopt – A – Beach:
Long-Term Monitoring of Camping Beaches in Grand Canyon

Executive Summary of Monitoring Observations for Year 2010

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For the past fifteen 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.

For the time spanning the 2010 summer boating season, early April to early November, 40 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 40 beaches, 47.5% were classified as Unchanged for the time period, 10% had Improved through the summer and 42.5% were considered as Degraded by the end of the season. Of the Unchanged beaches, 12.5% are located in the Marble Canyon reach, 22.5% in the Upper Granite Gorge reach, another 12.5% are contained in the Muav Gorge reach. None are in the Lower Granite Gorge. Two and one-half percent of the Improved beaches, (one beach) is located in the Marble Canyon reach, another one is in the Upper Granite Gorge and two are in the Muav Gorge reach. Again, none are located in the Lower Granite Gorge. For the beaches classified as Degraded for this time period, 7.5% are from the Marble Canyon reach, 12.5% are found in the Upper Granite Gorge, 17.5% in the Muav Gorge reach and 5% are located in the Lower Granite Gorge reach. The primary factor sited as creating an Improved camp is an increase of sand on the beach front enlarging the beach and creating more favorable parking for boaters. This is attributed to deposition from river transported sediment or sand being moved downslope and forward to the beach front by multiple actions. While gully erosion from rain events late in the season are the most readily evident cause of Degradation, other primary factors sited include cutbanks associated with river fluctuation, vegetation encroachment and impacts from people.

A comparison between the late 2009 and early April 2010 beach conditions was conducted to evaluate possible changes over the winter. Of the 37 beaches considered in this portion of the analysis, 59.5% of the beaches remained unchanged through the winter, 2.7% or one beach, had Improved and 37.8% were classified as Degraded. Of the Unchanged beaches, 16.2% are situated in Marble Canyon, 24.3% in the Upper Granite Gorge and 18.9% are located in the Muav Gorge. The single beach classified as Improved for this time period is the upstream most study beach in Marble Canyon reach and may have benefited from an increase in sediment inflow from the Paria tributary in late January or early February. Degraded beaches were dispersed, with 5.4% located in the Marble Canyon reach, 13.5% in the Upper Granite Gorge and another 18.9% located in the Muav Gorge. None of the beaches from the Lower Granite Gorge were considered in this part of the analysis due to a lack of photographs. Beach front erosion and

recession, commonly associated with higher dam releases, were the predominant cause for a Degraded classification, with rain and human impacts sited as secondary factors.

Since 1996, a primary concern of researchers has been the longevity of conditions for those beaches which were considered as Improved by the High Flow Experiment (HFE) conducted in March 2008. Forty-three of the Adopt-A-Beach camps photographed in 2010 were available for comparison to the late season photographs acquired in 2007. Of these, 46.5% were considered to be about the Same condition now as in 2007, 32.6% were classified as remaining Improved since the HFE and 20.9% have Degraded beyond their pre-2008 condition. When divided into their respective reaches, 16.3% of the Unchanged beaches are located in Marble Canyon, 11.6% are in the Upper Granite Gorge and 18.6% are in the Muav Gorge reach. None of the Unchanged camps were located in the Lower Granite Gorge. Those beaches considered Degraded are distributed as 4.7% in Marble Canyon, 2.3% or one beach, are located in the Upper Granite Gorge and 14% are found in the Muav Gorge. Again, there are no Degraded beaches located in the Lower Granite Gorge. For beaches classified as having Improved since the HFE event, 4.7% are located in Marble Canyon, 20.9% in the Upper Granite Gorge, a single beach or 2.3%, is in the Muav Gorge and another 4.7% are located in the Lower Granite Gorge. For those beaches rated as Improved when compared to the 2007 images, most had a greater camping area available at the end of 2010, while the most common cause sited for increased Degradation was sand removal at the beach front by river erosion, followed by erosion from rain events. It is important to note that a few of the beaches 'reversed' in classification through the intervening three years. That is, some of the camps now considered as Improved when compared to the 2007 images were initially regarded as being less desirable following the 2008 HFE. This is predominantly a factor of those beach fronts found to be very steep or rocky immediately following the HFE having graded to a lower angle and extended forward in the subsequent years.

Grand Canyon River Guides, Inc. would like to thank all of the adopters for volunteering the time to pull over and photograph their beaches and for their valuable observations and written comments. It takes time and effort to do this, and the dedication shown by guides has literally kept this program alive for ten plus years. The result is the most comprehensive collection of repeat photographs of critical camping beaches in the Grand Canyon. An added benefit is the public outreach fostered by the volunteers' actions. By taking time to include guests as active participants and by answering their questions, volunteers can further explain how our resource in Grand Canyon is enhanced, degraded or maintained by the influence of man and technology.

Special thanks to Lynn Hamilton for exhaustive work in support of this project; and Sam Jansen and Jerry Cox for their continued hard work representing recreational river running interests within the Glen Canyon Dam Adaptive Management Program.

Thanks also to our Adopt-a-Beach contributors over the years: the Grand Canyon Monitoring and Research Center; the Grand Canyon Conservation Fund, a non-profit grant making public charity established and managed by the commercial river outfitters in Grand Canyon; the Public Outreach Ad Hoc Committee of the Adaptive Management Program; and, finally, individual GCRG members who believe that the Adopt-A-Beach project is worthy of their support.