**Adopt – A – Beach:**

**Long-Term Monitoring of Camping Beaches in Grand Canyon**

***Summary of Monitoring Observations for Year 2019***

By Paul Lauck¹

**Abstract**

 For the past twenty-four years, volunteer photographers for the Adopt-A-Beach repeat photography program have been monitoring beaches along the Colorado River through Grand Canyon. Comparative examination of photos gathered through the year, often accompanied by on-the-spot observations contributed by the volunteers, reveal any changes in conditions pertaining to the desirability of the beach as a camp for rafting parties. Factors which contribute to changes that may have an effect on the camp, 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. Beginning at River Mile 11.3, as measured downstream from the United States Geological Survey gaging station at Lees Ferry, AZ (USGS, 2013), 44 separate beaches distributed along 239 miles of river are in the study. The resulting evaluations are divided into seasonal change (November through March and April through October), and are additionally examined per their distribution in each of the four separate geomorphic reaches. The conclusions are presented as observational, monitoring data only.

 Photographic data sufficient for a comparison of beach evolution from late season 2018 to early April 2019 was conducted on 32 of the 44 study beaches. As a consequence of the High Flow Experiment (HFE) conducted in November 2018, 23 (52%) of the beaches had Improved compared to their condition in late summer 2018. Four (17%) of those beaches are located in the Marble Canyon reach, 10 (44%) in the Upper Granite Gorge reach, and 9 (39%) are in the Muav Gorge reach. Six (26%) of the beaches were evaluated as Unchanged since late summer 2018, with 2 (33%) located in the Marble Canyon reach, 1 (17%) in the Upper Granite Gorge reach and 3 (50%) being in the Muav Gorge reach. Of the 3 (13%) beaches classified as Degraded for this period, all three (100%) are located in the Marble Canyon reach. Two of these beaches showed significant sand deposition, usually related to camp Improvement, but by April 2019 the riverside of these beaches consisted of shear cutbanks, making parking and access to the camps difficult. There are 3 of the 44 study beaches located in the Lower Granite Gorge reach, none of which had photos acquired late enough in 2018 to be evaluated for this seasonal study.

 For the time spanning the 2019 summer boating season, early April to late October, 22 of the 44 study beaches in the program had photographs and photographer comment sheets spanning a sufficient period of time to be evaluated. None of the three beaches located in the Lower Granite Gorge reach qualified for evaluation in 2019. Of the 22 beaches, 4 (18%) were classified as Improved for the 2019 season, 1 (25%) is located in the Marble Canyon reach and the remaining 3 (75%) are all in the Muav Gorge reach. Four (18%) of the beaches remained Unchanged through the season, split between the Upper Granite Gorge and Muav Gorge reaches, with 2 (50%) in each. A total of 14 (64%) beaches were seen to have Degraded through the summer. Three (21%) from the Marble Canyon reach, 6 (43%) located in the Upper Granite Gorge and the last 5 (36%) are in the Muav Gorge reach.

 Regardless of events occurring during the Summer, a beach will receive a classification based on its condition on the final date of evaluation for that season. The primary factor cited for camps classified as Degraded was beach recession due to the fluctuating flow releases from Glen Canyon Dam, a common occurrence immediately following a High Flow Experiment. Other factors attributed to Degradation included Wind Scour, Rain and Vegetation Encroachment. Human impacts, both intentional and unintentional, were the primary cause of camp Improvement.

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

 **Keywords: repeat photography; river sandbar erosion; river sandbar restoration**