

## **March 2007 CRMP Mitigation and Rehabilitation Trip**

An essential part of the Colorado River Management Plan Research, Monitoring and Mitigation Program is cyclic rehabilitation and site restoration of river corridor camp and attraction sites. The second mitigation trip took place in March 2007 and focused on rehabilitation of the Soap Creek, South Canyon, Nankoweap Point, Lava/Chuar, Tanner, Hance and Lava Falls areas. Site work was conducted by a mix of field personnel from the trails, river, archeology, vegetation, and recreation programs. Trip goals included preservation of archeological sites, reduction of old high water zone terrace erosion, rehabilitation of overgrown and eroded campsite areas, delineation of site trails and documentation of work projects to monitor rehabilitation technique effectiveness.

At each location the first step involved developing a site specific work plan. For example, the Soap Creek area was divided into four zones. Each zone was assigned a small work crew led by a trails specialist and that crew was tasked with specific goals. On-the-ground work involved removing overgrown brush from primary trails, rehabilitating unnecessary social trails, and constructing erosion prevention features on needed trails. A process called vertical mulching was used to rehabilitate excessive trails. It begins with a timely process of collecting duff and seed, and scouring nearby washes for dead vegetation. The dead vegetation is then planted upright on the former trail and the duff is dispersed on the ground. Seed is then added to the area and when possible, live plants such as prickly pear cactus, are added. Trail work took place on primary trails subject to erosion and involved using rocks or driftwood to construct checks. In highly eroded areas sand was hauled from the shoreline to the trail and used as fill. Strict standards were attached to each of these processes to insure that material collection and trail construction minimized site impact.

In addition to the on-the-ground work, a thorough documentation process meant to determine the effectiveness of the site rehabilitation was incorporated into the project at each site. Pre- and post-work photos were taken in each work zone for the purpose of both short-term and long-term comparison. Crew leaders were tasked with keeping track of the number of trails rehabilitated and the number of vertical mulch stems planted, amount and type of seed dispersed, gallons of duff added, and number and types of plants planted. These records were then applied to aerial photos to provide a specific spatial reference. In the future these detailed records will help determine the effectiveness of different rehabilitation techniques and measure success at different locations.

The trip's overall work plan focused on the upper half of the river between Lees Ferry and Phantom Ranch. Some of the most prominent work projects included rehabilitating numerous trails at Soap Creek and Nankoweap Point Camps. At South Canyon crews filled in erosional trenches caused by rainstorms last October and delineated trails leading to the popular archeological sites. At

Lava/Chuar two old high water zone campsites were naturalized and excessive brush along the trail to the creek bed was trimmed. Erosion prevention features were installed at archeological sites near the Tanner area and the river left scout trail at Hance was rehabbed. When the trip reached Phantom Ranch, most of the work crews departed leaving the river rangers and boat operators to move swiftly downstream and complete projects such as the removal and installation of the backcountry toilet at Deer Creek, maintenance of the Tapeats Creek toilet, and minor brush removal at locales such as the river right scout at Lava.

The opportunity to conduct river specific rehabilitation work is a positive outcome of the Colorado River Management Plan. Site rehabilitation helps reduce ecological impact and improves site aesthetics. However, this type of work will have only short-term benefits without the support of river users. Unfortunately, some of the work completed during the November 2006 and March 2007 trips appears to have already been damaged by river users removing vertical mulch for either site clearing or firewood. River runners can help by sticking to established trails and by leaving vertical mulch in place. It is critical that firewood gathering be limited to driftwood piles- often best found upstream of camp. In November, the mitigation team will be back on the water conducting work at new sties and monitoring the effectiveness of previous work. The hope is that previously treated sites will still be in good shape so that we can focus efforts at new areas in need of rehabilitation.