Grand Canyon

National Park Service
U.S. Department of the Interior

Grand Canyon National Park

November 2012 High-Flow Experiment

On November 18, 2012, the Department of the Interior will begin increasing the release of water from Glen Canyon Dam for a high-flow experimental release (HFE) of approximately 42,000 cubic feet per second (cfs) for 24 hours. The goal of the high-flow experiment is to move sand stored in the river channel and redeposit it to rebuild eroded sandbars and beaches in Grand Canyon National Park. This release follows the science-based Protocol for High-Flow Experimental Releases from Glen Canyon Dam established in May 2012 and is a component of the Department's compliance with the Grand Canyon Protection Act of 1992. The Grand Canyon Protection Act mandates that Glen Canyon Dam be operated in a manner that protects, mitigates adverse impacts to, and improves the values for which Grand Canyon National Park was established.

Flow Regimes

Since 1996, releases from Glen Canyon Dam have generally ranged from 8,000 to 25,000 cfs. The increase in flow to approximately 42,000 cfs will change conditions on the Colorado River. Research shows that some normally difficult rapids decrease in their technical difficulty, whereas other rapids become more technically challenging at higher flows. There are inherent risks associated with recreational activities along the Colorado River corridor through Grand Canyon at all times. Additional caution should be taken during the high-flow.

At the start of the high-flow release on Sunday, November 18, the flow will increase from 9,000 cfs by 1,500 cfs per hour for 22 hours until it reaches the peak release flow of approximately 42,000 cfs. The peak release will be held for 24 hours. Flows will decrease at a rate of 200 cfs per hour to 31,300 cfs and continue at 1,000 and 1,500 cfs per hour until a base release of 9,000 cfs is reached. The total duration of the experiment will be approximately five days.

Increasing flows will reach downstream locations at different times. Flows will arrive at Phantom Ranch (River Mile 87) about 16 hours after release from Glen Canyon Dam and at Pearce Ferry (River Mile 279) almost 48 hours after release. Specific information about flow levels will be posted at Lees Ferry, Phantom Ranch, and the Backcountry Information Center.

Flow Information

HFE Hydrograph Events	River Locations						
	Glen Canyon Dam	Lees Ferry RM0	Little Colorado River RM061	Phantom Ranch RM087	National Canyon RM166	Diamond Creek RM225	Pearce Ferry RM279
HFE - Start	11/18/12 11:00 PM	11/19/12 1:00 AM	11/19/12 1:00 PM	11/19/12 6:00 PM	11/20/12 10:00 AM	11/20/12 8:00 PM	11/21/12 6:00 AM
HFE Peak - Begin (42,000 cfs)	11/19/12 9:00 PM	11/20/12 12:00 AM	11/20/12 9:00 AM	11/20/12 1:00 PM	11/21/12 12:00 AM	11/21/12 9:00 AM	11/21/12 5:00 PM
HFE Peak - End (42,000 cfs)	11/20/12 10:00 PM	11/21/12 12:00 AM	11/21/12 8:00 AM	11/21/12 11:00 AM	11/21/12 9:00 PM	11/22/12 5:00 AM	11/22/12 12:00 PM
HFE - End	11/23/12 8:00 PM	11/24/12 12:00 AM	11/24/12 2:00 PM	11/24/12 8:00 PM	11/25/12 2:00 PM	11/26/12 3:00 AM	11/26/12 3:00 PM

Camp on Durable Surfaces

Because the river will be carrying a greater volume of water than usual, the high-flow experiment will change the size and availability of campsites along the Colorado River. Most campsites will be smaller, and some particularly low lying campsites may not be usable. The Grand Canyon Monitoring and Research Center has maps of campsites showing modeled shorelines at 45,000 cfs at http://www.gcmrc.gov/gis/silvermap1.aspx.

The area available for camping will be smaller at most sites, and river users and backpackers may have to set up tents closer to one another than they would during typical flows. It is especially important to follow Leave No Trace principles and travel and camp on durable surfaces during this high-flow experiment. Durable surfaces include bare sand above the high-flow line, sites where people have previously camped, and established trails.

River users setting up camp during peak flow on bare sand during the 2008 HFE

Camps should not be established in the pre-dam old high-water zone, which is marked by mesquite, catclaw acacia, and netleaf hackberry on rounded sandy slopes or higher sand terraces. The old high-water zone is especially fragile because it no longer receives moisture, sand, or nutrients from natural annual floods that reached over 100,000 cfs and is not replenished by experimental high flows. Damage to root systems from soil compaction and erosion and to biological soil crusts by camping or social trails may be irreversible due to the extremely fragile nature of the old high-water zone.

River users and backpackers are encouraged to communicate with each other and with river rangers about available campsites in order to protect the canyon's resources and to ensure a quality experience for everyone in the river corridor during the high flow and for those who follow.

Information

www.usbr.gov/uc/rm/gcdHFE/2012/index.html
www.usbr.gov/uc/water/crsp/cs/gcd.html
www.gcmrc.gov