

## **Francis E. Walter Reservoir Recreation Operations Plan for 2017**

### **Introduction**

The plan for 2017 will incorporate some changes that were agreed upon by the U.S. Army Corps of Engineers, Pennsylvania Department of Conservation and Natural Resources, and the Pennsylvania Fish and Boat Commission based upon past program performance as well as input received through stakeholders. This year water is again being allocated to ensure white water releases from 1 July through 20 August and fisheries releases from 1 July through 8 September, while relying on seasonal precipitation and additional water accumulations to allow scheduling of releases for later in the season (late August through mid-October).

### Primary Objective

The primary objective of this plan is to maintain a pool level of at least elevation 1365 by 1 July while not exceeding elevation 1370 at any time for recreational purposes.

Planned dates (22) for fishing releases (target 400 cfs)\* are:

March: 4, 5, 11, 12, 18, 19, 25, 26

April: 1, 2, 8, 9, 15, 16, 22, 23, 29, 30

May: 6, 7, 14, 21

October: as provided by end of year release around the weekend of 7-8 October

\* Release will be set to match inflow with a target release up to 400 cfs. Inflow will not be augmented by use of storage to satisfy the 400 cfs target.

Planned fishing releases have a target release of inflow up to a maximum of 400 cfs. Planned fishing dates are dependent on available storage below elevation 1370 and forecasted hydrological conditions. Since they are primarily scheduled for the period when reservoir storage is being increased in an attempt to reach but not exceed elevation 1370, it may be necessary to release water in advance and/or after these dates in order to restrict flows to this range. These releases, before the official start of recreation season

(13 May), will be for the entire weekend (Friday afternoon until Monday morning). The Corps of Engineers in its sole discretion shall determine the releases necessary to satisfy this objective, taking into consideration potential impacts on attaining the target pool elevation of 1370 by midnight May 12th. Any cancelation will be announced the Wednesday prior to the planned fishing date.

Planned white water release dates (24) are listed below. All other dates during the recreation season, until the weekend of October 7-8 have a planned fisheries augmentation release of at least 50 cfs if sufficient water is available.

May: 13, 20, 27, 28

June: 10, 11, 24, 25

July: 8, 9, 22, 23, 29, 30

August: 5, 6, 12, 13, 19, 20, 26\*, 27\*

September: 2\*, 3\*

October: as provided by end of year releases around the weekend of 7-8 October

May and June releases are dependent on hydrologic conditions being sufficient to supply enough water for the release and maintain a pool elevation above 1365. Pool will not be lowered below 1365 in the May-June period for recreational purposes.

\* With the pool at 1365 on 1 July, storage is sufficient to support the planned white water recreation releases through 20 August and fisheries enhancement releases of up to 100 cfs through 21 July and up to 50 cfs through 8 September. After those dates additional water must be accumulated during the recreation season to make additional releases possible.

\*\*The 7-8 October weekend release is intended to provide a means of releasing any excess water that may have accumulated during the recreation season. This is the last added increment for the 2017 recreation plan. Fisheries releases through the season will be accommodated before the final weekend (7-8 October) release will be considered. This release is intended to release all excess water. Releases for the final weekend will be determined by the Corps of Engineers and are intended to make best available use of remaining water while making gate changes at 12 hr intervals (1am and 1pm) at a continually decreasing rate to avoid any undesirable flow fluctuations. Depending on the volume of water available, releases will start on either Friday, 6 October (4000 cfs max.) or Saturday, 7 October (2500 cfs max). Once started, releases will be reduced at 12 hr intervals by approximately 25% until such time as the pool is returned to elevation 1300

and releases are set to match inflow. The actual timing and amount of the releases will be determined by the Corps of Engineers and announced by Wednesday 4 October.

Total: 22 fishing releases and 24 white water release dates (excluding any releases made during final weekend of 7-8 October): 4 of which are dependent on additional water accumulation during the recreation season. Along with the 22 fishing release dates, fisheries enhancement releases are planned on all other days during the recreation season. All late season releases are dependent upon additional water becoming available during the year.

Details of planned operations are presented below.

### **Initial Filling:** Start to 13 May

For the 2017 season, the maximum storage level will remain at elevation 1370. On or before 1 April 2017 storage will be initiated at F. E. Walter Dam. The exact date that storage is initiated will be determined by the Corps of Engineers based on basin hydrologic conditions at the time and projected meteorological forecasts. Storage could start earlier if precipitation raises the pool above elevation 1300. During this period outflows will be limited to 250 cfs on weekdays. The fishing weekend release (target of 400cfs) could be eliminated and the weekday limit lowered to 225 cfs if hydrologic conditions were such that reaching the target elevation of 1370 by midnight 12 May 2017 was determined to be in jeopardy. The storage of any excess inflows will continue until the pool reaches the elevation of 1370. Once pool level reaches 1370, outflow will match inflow. The pool elevation of 1370 is expected to be reached no later than midnight Friday 12 May 2017, in time for the first planned white water release to begin on Saturday 13 May 2017 at 1 AM. If for any reason the target pool elevation of 1370 is not reached in time for the first white water release, the agencies will reconvene to determine the appropriate course of action.

Special operations will prevail for the first four weekends of trout season as planned fishing release dates listed above (same as other fishing release weekends). Releases will be up to a maximum of 400 cfs for these dates. Commercial boating from White Haven to Rockport will continue to be restricted by DCNR for the first two weekends of trout season.

The maximum allowable pool is elevation 1370 and therefore if the pool exceeds 1370, the planned flow restrictions will not be accommodated. Immediately prior to these weekends, the situation will be evaluated by the Corps and based on current hydrologic conditions; water may be released immediately prior to these dates to help insure the pool does not exceed the limit of 1370. The Corps will announce on the Corps webpage the Wednesday prior to these weekends if planned releases need to be cancelled.

Pool elevations above elevation 1370 at any time are considered undesirable encroachments into flood control storage and will normally be evacuated as quickly as possible in accordance with the Corps' F.E. Walter Reservoir Water Control Manual. The Corps of Engineers will be solely responsible for making regulation decisions. As in previous years, flood control objectives take priority and if necessary any of the water stored above elevation 1300 could be released if deemed necessary by the U.S. Army Corps of Engineers.

### **13 May- 30 June**

White water weekend events are planned to start on 13 May (Saturday only). As in previous years, all planned releases will be made for 12 hour periods from 1AM until 1 PM.

During this time period, two fishing release dates are planned on 14 May and 21 May, each only a single day. Releases will be set to match inflow up to a maximum release of 400 cfs. As discussed for the operations during the initial filling period, sufficient storage below a pool elevation of 1370 needs to exist to accommodate restricted outflows. Releases to create storage space for supporting planned fishing dates will not draw down the pool below elevation 1365.

A five foot pool elevation restriction will be enacted for this period. The pool elevation will be maintained between elevations 1365 and 1370 from 13 May through 30 June. The 5 foot pool limit is intended to help conserve cooler water for later in the season, and to help in-lake fish spawning. As noted before, a pool level above elevation 1370 is an undesirable encroachment into flood control storage which will normally be evacuated as quickly as possible at the sole discretion of the Corps of Engineers.

Once pool elevation of 1370 is reached, maximum weekday releases for fisheries enhancement for the period from 13 May thru 31 May will be 200 cfs and will be in the 200-250 cfs range in June. Weekend white water recreation releases and fishing releases during this period will be made as long as sufficient water exists above elevation 1365 with fishing releases set to match inflow (with a maximum release target of 400 cfs) and 800 cfs in May and 750 cfs in June for white water releases. If at any time the pool is projected to exceed 1370 during a planned white water weekend, adjustments in release rates (greater than stated target maximum) will be made at the sole discretion of the Corps of Engineers and appropriate announcements of changes will be made. Tables 1 and 2 provide priorities for determining the length and magnitude of white water recreation releases to be made in May and June if stored water is not sufficient to make full releases for the planned 12 hour periods. Releases on weekends in this time period, (3-4, and 17-18 June) when neither fishing nor white water releases are planned will be

200-250 cfs, which is the same as weekday fisheries releases. If the pool is at elevation 1365, releases will be set equal to inflow to maintain the 1365 elevation until 1 July. On Wednesday before scheduled releases, the situation will be evaluated to determine if sufficient water remains above elevation 1365 to maintain the fisheries releases and the remaining June white water releases (10-11 and 24-25 June). If it is determined that sufficient water does not remain, adjustments in operations for the remainder of June will be made to best utilize available water. Any cancellations or modifications of release plans will be posted on the Corps webpage.

### **Actions starting 1 July**

Starting in July, there will no longer be any specific flow targets or restrictions on pool level fluctuations, other than the 1370 maximum allowable pool elevation. In July, storage will be utilized for weekday and weekend fisheries enhancement releases of 100 cfs above inflow, up to a total of 300 cfs. On white water recreation weekends, for the 12 hour periods from 1AM until 1 PM on both Saturday and Sunday, releases will be set at inflow plus 600 cfs up to a maximum of 800 cfs in July and inflow plus 650 cfs up to 850 cfs for white water events through 20 August. For the other 12 hour periods of the white water weekends, the release will revert to the fisheries enhancement release. Fisheries enhancement releases will be 100 cfs plus inflow up to 300 cfs through 21 July and 50 cfs thereafter through 8 September. At the end of June with the pool at elevation 1365, there is sufficient water available to make the planned releases for white water weekends through 20 August and fisheries enhancements through 8 September.

### **Plan to utilize any additional storage**

The 2017 plan is similar to previous plans in that both fisheries enhancement and white water releases will utilize available water and rely on additional inflow during the recreation season to make late season releases possible. If at any time precipitation occurs to allow sufficient additional water to accumulate; planned recreational releases will be scheduled and announced. Incremental volumes of accumulated water have been allocated equitably among the white water, fishing and fisheries enhancement purposes. Additional weekend white water releases, fishing and fisheries enhancement releases will be added based on how much additional water is accumulated and at what point in the season this water becomes available. If at any time the pool is projected to exceed 1370 during a planned white water weekend, adjustments in release rates (greater than stated target maximum) will be made at the sole discretion of the Corps of Engineers and appropriate announcements of changes will be made.

The priority order for added augmentation increments is listed below. The total release for white water and fisheries will be 850 and 300 cfs respectively, unless otherwise noted.

1. When additional water is accumulated, add whitewater event on 26 August (650 cfs) and increase fisheries enhancement releases to 100 cfs for period 22-28 July.
2. Add the white water event for 27 August (650) and increase fisheries enhancement releases to 100 cfs for period 29 July-4 August.
3. Add whitewater event on 2 September (650 cfs) and increase fisheries enhancement releases to 100 cfs for period 5-11 August.
4. Add whitewater event on 3 September (650 cfs) and increase fisheries enhancement releases to 100 cfs for period 12-18 August.
5. Increase fisheries enhancement releases to 100 cfs for period 19 August through 8 September.
- 6a. Increase 26-27 August white water total release to 1200 cfs Saturday and 850 on Sunday.
- 6b. Increase 26-27 August white water total release to 1700 cfs Saturday and 1000 cfs on Sunday.
7. Add fisheries enhancement release of 50 cfs for period 9-22 September.
- 8a. Increase 2-3 September white water total release to 1200 cfs Saturday and 850 cfs on Sunday.
- 8b. Increase 2-3 September white water total release to 1700 cfs Saturday and 1000 cfs on Sunday.
9. Add fisheries enhancement release of 50 cfs for period 23 September through 6 October.
10. Storage in excess of above flow needs may be released over the period from Friday, 6 October through Monday, 9 October. This release will allow those interested in larger white water recreation releases to plan accordingly. The release rate will be based on the amount of water available. . Depending on the volume of water available, releases will start on either Friday, 6 October (4000 cfs max.) or Saturday, 7 October (2500 cfs max). Once started, releases will be reduced at 12 hr intervals by approximately 25% until such time as the pool is returned to elevation 1300 and releases are set to match inflow. Final scheduling and amount of this release will be determined by the Corps and posted by Wednesday, 4 October 2016.

Final release amounts and durations for white water events will be determined and posted on the Corps webpage the Wednesday prior to the event. If sufficient water is available, each scheduled white water event will be held at the full amount before subsequent planned white water events will be scheduled. Additional whitewater releases will not be scheduled unless water stored is sufficient to allow at least a 12 hour release of 600 cfs. As additional releases become possible due to accumulation of water, the additional increments of the recreation plan will be announced. Due to the fact that timing of the white water and fisheries portions of increments 1-4 are significantly offset, if water is

not available for the entire increment, that increment will be cancelled and excess water will be retained for subsequent increments. For increments 5 through 10, if sufficient water is not available for the entire increment, adjustments will be made by reducing the magnitude of white water releases or number of days fisheries releases will be made. Any additional adjustments deemed necessary will be made through interagency coordination and announced as necessary. Following this procedure may mean that incremental releases become scheduled or modified with little advance notice.

**Table 1: May Release Rate Priority**

Saturday		Sunday		Volume Required (DSF)
Rate (CFS)	Duration (HRS)	Rate (CFS)	Duration (HRS)	
600	12			300
650	12			325
700	12			350
700	12	500	6	475
750	12	550	6	512.5
800	12	600	6	550
800	12	700	6	575
800	12	600	12	700
800	12	700	12	750
800	12	800	12	800

Maximum release 800 cfs in May

**Table 2: June Release Rate Priority**

Saturday		Sunday		Volume Required (DSF)
Rate (CFS)	Duration (HRS)	Rate (CFS)	Duration (HRS)	
600	12			300
650	12			325
700	12			350
700	12	500	6	475
750	12	550	6	512.5
750	12	600	6	525
750	12	700	6	550
750	12	750	6	562.5
750	12	750	12	750

Maximum release 750 cfs in June