

Welcome

Recreational Enhancements
on the Lehigh River

Public Information Workshop

31 January 2008

Cooperating Agencies



**US Army Corps
of Engineers
Philadelphia District**

Delaware River Basin Commission

Pennsylvania Fish & Boat Commission

**Pennsylvania Department of Conservation
and Natural Resources**

US Army Corps of Engineers

Delaware River Basin Commission



- DRBC is responsible for meeting Trenton flow objective and coordinates with the Corps of Engineers.
- DRBC has requested emergency storage in F.E. Walter during drought emergencies.
- DRBC supports a release program which improves recreation opportunities while preserving flood storage potential.

Pennsylvania Fish & Boat Commission



- To protect, conserve and enhance fish and other aquatic life
- To promote fishing and boating

Bureau of State Parks



- To provide opportunities for enjoying healthful outdoor recreation and to serve as outdoor classrooms for environmental education
- To place priority on the conservation of the natural, scenic, aesthetic and historic values of our parks
- To carry out our stewardship responsibilities in a way that protects the natural outdoor experience for the enjoyment of current and future generations

Agenda

- F.E. Walter Project Overview
- Review Performance of 2005, 2006 and 2007 Release Plans
- 2008 Release Plan

Francis E. Walter Dam

Completion Date: 1961
Single Purpose, Flood
Control Dam

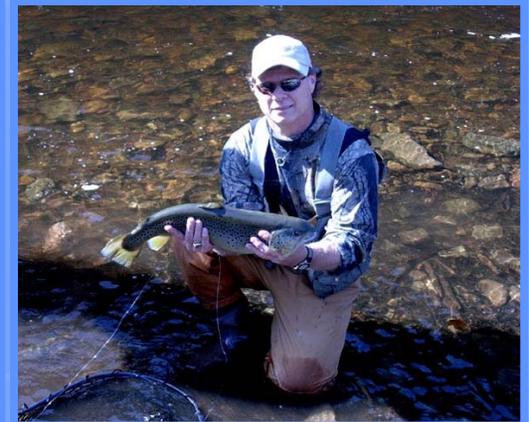
Recreation was defined
as Authorized Project
Purpose in 1988

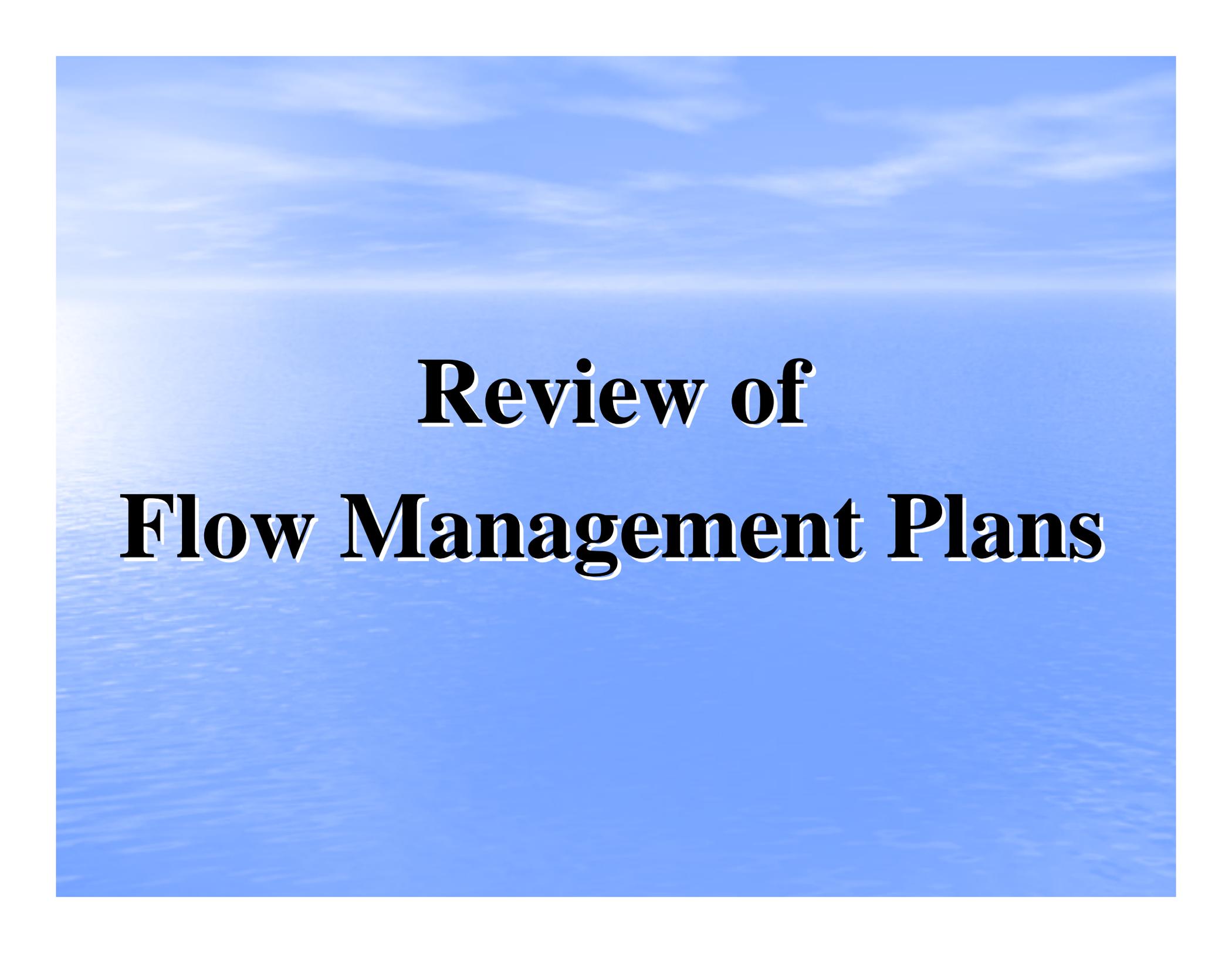
Access road across top of
dam was completed in
Spring 2005



Water Based Recreation

- Whitewater Boating
 - Kayaking
 - Rafting
 - Canoeing
- In-Lake Boating
- Fishing
 - In-lake
 - Downstream





Review of Flow Management Plans

2005 Flow Management Plan

- Pool elevation: 1335
 - 35 feet and 1.8 billion gallons above normal pool
- Limit pool fluctuation between 1330 and 1335 in May and June
- Target whitewater releases of 750-1000 cfs
- Target daily release of 250 cfs
- Storage subject to evacuation for flood control

2005 Flow Management Plan

Number of Whitewater Days

	<u>2005 Scheduled Release Days</u>	<u>2005 Actual Release Days</u>
May	4	3
June	4	3
July	4	4
August	4	0
September	4	0
October	2	0*

*Scheduled Release for October 1-2 was canceled. However, hydrologic conditions allowed for releases on October 8-9, 15-16 and 22-23.

Changes to 2005 Flow Management Plan for 2006

The following components were incorporated into the 2006 Plan

- Store earlier
- Maintain higher pool level
- Conserve water when possible
- Allocate storage throughout recreation season
- Possibility of October releases during drawdown

2006 Flow Management Plan

- Pool elevation 1365 Feet NGVD
 - 65 feet and 5.3 billion gallons above normal pool
 - 30 feet and 3.5 billion gallons above 2005 plan
- Whitewater releases from 1 a.m. to 1 p.m.
- Whitewater releases are scheduled every other weekend starting with the second weekend in May and ending October 1.
- All storage is subject to evacuation for flood control or other emergencies. Evacuation of storage due to impending hurricanes or tropical storms may result in cancellation of scheduled events.

2006 Flow Management Plan Performance

- 22 scheduled days of Whitewater releases
- All scheduled releases accomplished
- Sufficient storage remained at end of season for additional releases. 7-8 Oct and 14-15 Oct

2007 Flow Management Plan

- Minor modifications to 2006 plan
- Pool elevation 1365 Feet NGVD
 - 65 feet and 5.3 billion gallons above normal pool
 - 30 feet and 3.5 billion gallons above 2005 plan
- Whitewater releases from 1 a.m. to 1 p.m.
- Whitewater releases are scheduled every other weekend starting with the second weekend in May and ending September 30.
- All storage is subject to evacuation for flood control or other emergencies. Evacuation of storage due to impending hurricanes or tropical storms may result in cancellation of scheduled events.

2007 Flow Management Plan Performance

- 22 events scheduled
- 3 Sunday releases cancelled
(10, 24 June, and 22 July)
- Additional releases on 13/14 October due
to hydrologic availability

The background of the slide is a photograph of a bright blue sky with wispy white clouds above a calm blue body of water. The text is centered in the middle of the image.

2008 Flow Management Plan

The Francis E. Walter Flow Management Plan 2008 Planned Whitewater Release Dates

May 10 *

May 24, 25

June 7, 8

June 21, 22

July 5, 6

July 19, 20

August 2, 3

August 16, 17

August 30, 31

September 13, 14 **

September 27, 28 **

October 10, 11, 12 **

* No release planned for 11 May (Mother's Day)

** If sufficient storage is available. 10 October is last added increment.

2008 Flow Management Plan

- Pool elevation 1370 Feet NGVD
 - 70 feet and 6.21 billion gallons above normal pool
 - 5 feet and 0.91 billion gallons above 2007 plan
- Whitewater releases from 1 a.m. to 1 p.m.
- Whitewater releases are planned every other weekend starting with the second weekend in May and ending 12 October.
- All storage is subject to evacuation for flood control or other emergencies. Evacuation of storage due to impending hurricanes or tropical storms may result in cancellation of scheduled events.

2008 Flow Management Plan

- As in the 2007 plan, release decisions will be made by Wednesday afternoon
 - Notifications posted to the Corps web site, White Water Release Hotline, email distribution list, and press releases will be issued when deviating significantly from the plan.
- Due to operational difficulties, the bypass system will be unavailable for the 2008 recreation season
- Plan requires sufficient inflows to impound 70 feet of storage by the second weekend in May.
- Releases are dependent on hydrologic conditions

2008 Flow Management Plan

April

- Start storing no later than April 1
 - Match inflow up to 1000 cfs on weekends while storing. Weekends of 12, 13 and 19, 20 April releases limited to 400 cfs for trout season.
 - Minimum release while storing will be 250 cfs.
- * If Hydrologic conditions indicate that reaching 1370 by mid May is in jeopardy, weekend releases may be reduced to 750 cfs, and weekday releases to 225 cfs

2008 Flow Management Plan

May – June

- Match inflow on non-whitewater weekends (up to 400 cfs if pool is below 1370)
- Limit pool fluctuations to elevations 1370-1365
 - Protect fish spawning areas in-lake
 - Conserve cooler water for later in season
- Target minimum release is 200 cfs in May, 200-250 cfs in June
- Target whitewater releases will be 800 cfs in May, 750 cfs in June. If insufficient water available, releases adjusted according to tables.

Note: Changes made to conserve water in the May-June period to help insure recreation releases while still maintaining 5ft pool limit.

Release Rate Priorities - May

Saturday		Sunday		Volume Required (DSF)
Rate (CFS)	Duration (DSF)	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

Release Rate Priorities - June

Saturday		Sunday		Volume Required (DSF)
Rate (CFS)	Duration (DSF)	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

2008 Flow Management Plan

July-August

- Utilizing storage between elevation 1365 and 1300
- Reserve sufficient storage for fisheries enhancement.
- The daily augmentation will be 50 cfs above inflow (up to a total release of 250 cfs)
- Allocate remaining storage for scheduled whitewater weekends to be used as needed for up coming whitewater events
- Target whitewater releases will be between 750 cfs and 1000 cfs depending on hydrologic conditions

2008 Flow Management Plan

September

- Storage volume between elevation 1365 and 1300, while providing for the 50 cfs fisheries augmentation, are sufficient to support only the planned whitewater releases for July and August
- September whitewater releases can only occur if precipitation occurs during the recreation season to allow accumulation of additional water

2008 Flow Management Plan

September

- Any additional storage that becomes available will be allocated for fisheries and incrementally add additional whitewater events in September according to table.
- Updates will be posted on Corps of Engineers webpage as additional recreation releases can be accommodated.

Release Rate Priorities - September

Saturday

Sunday

Rate (CFS)	Duration (DSF)	Rate (CFS)	Duration (HRS)	Volume Required (DSF)
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
900	12	900	12	900
1000	12	1000	12	1000

Maximum release rate will be set at inflow plus 750 cfs up to 1000 cfs

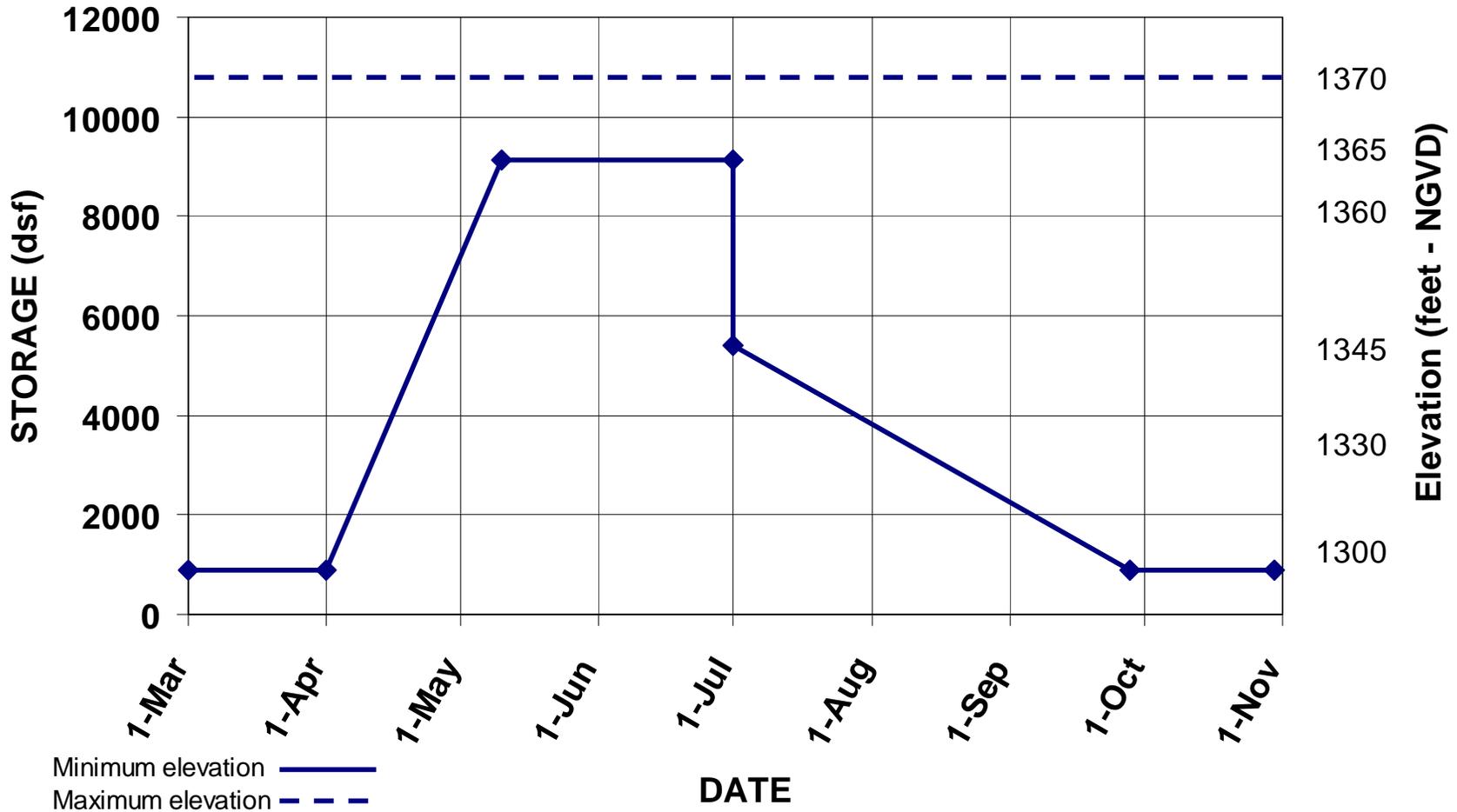
2008 Flow Management Plan

October

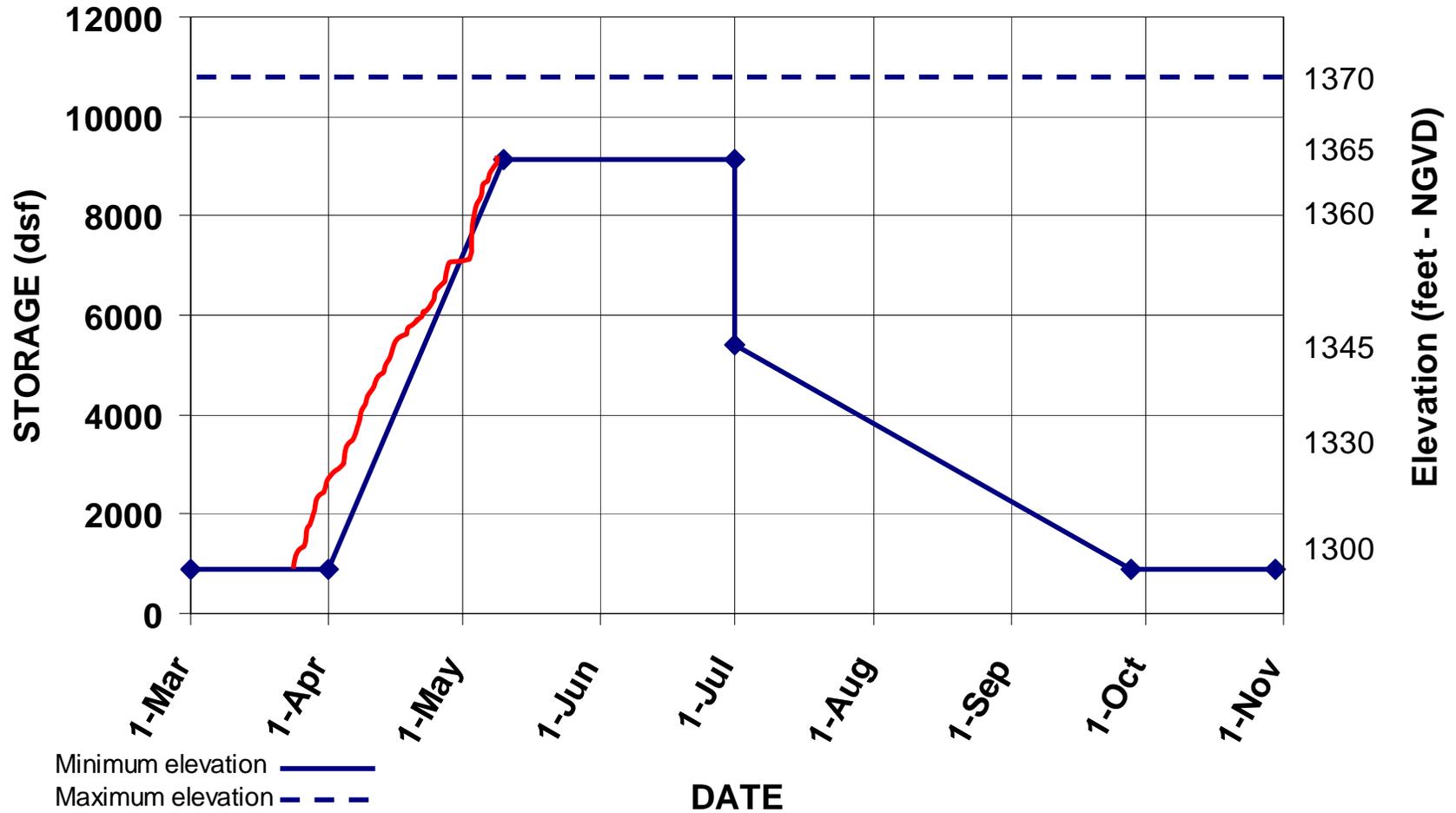
IF there is surplus storage in October, the following drawdown priorities will be followed:

1. Minimum release for drawdown will be 144 cfs
2. Additional recreation release for October 11 & 12 up to 1200 cfs
3. Limit releases on weekends of 4,5, 18,19, and 25,26 October to 400 cfs.
4. Add weekday release up to 4000 cfs on October 10.
(last added increment)

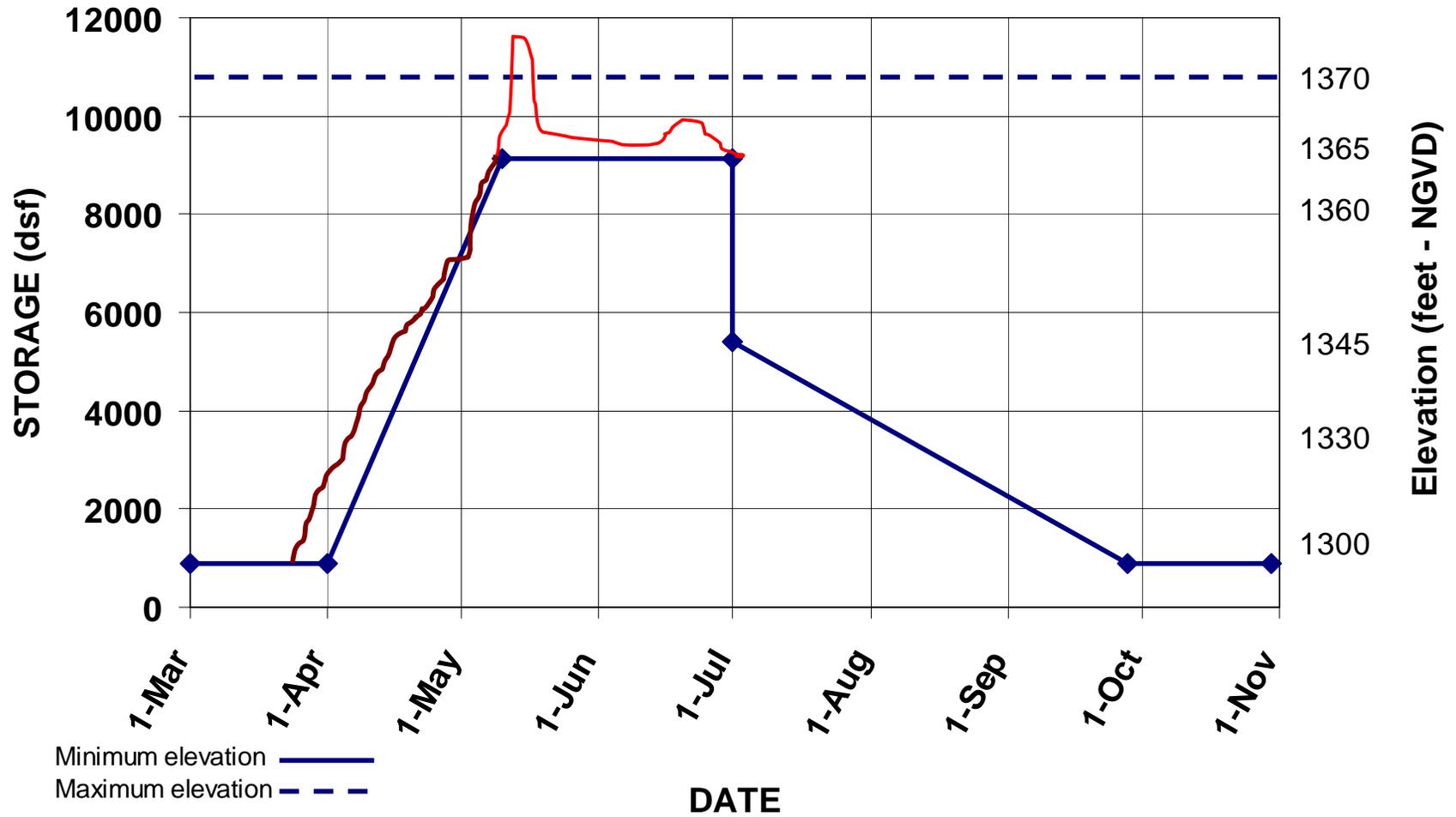
F.E. Walter Recreational Rule Curve 2008



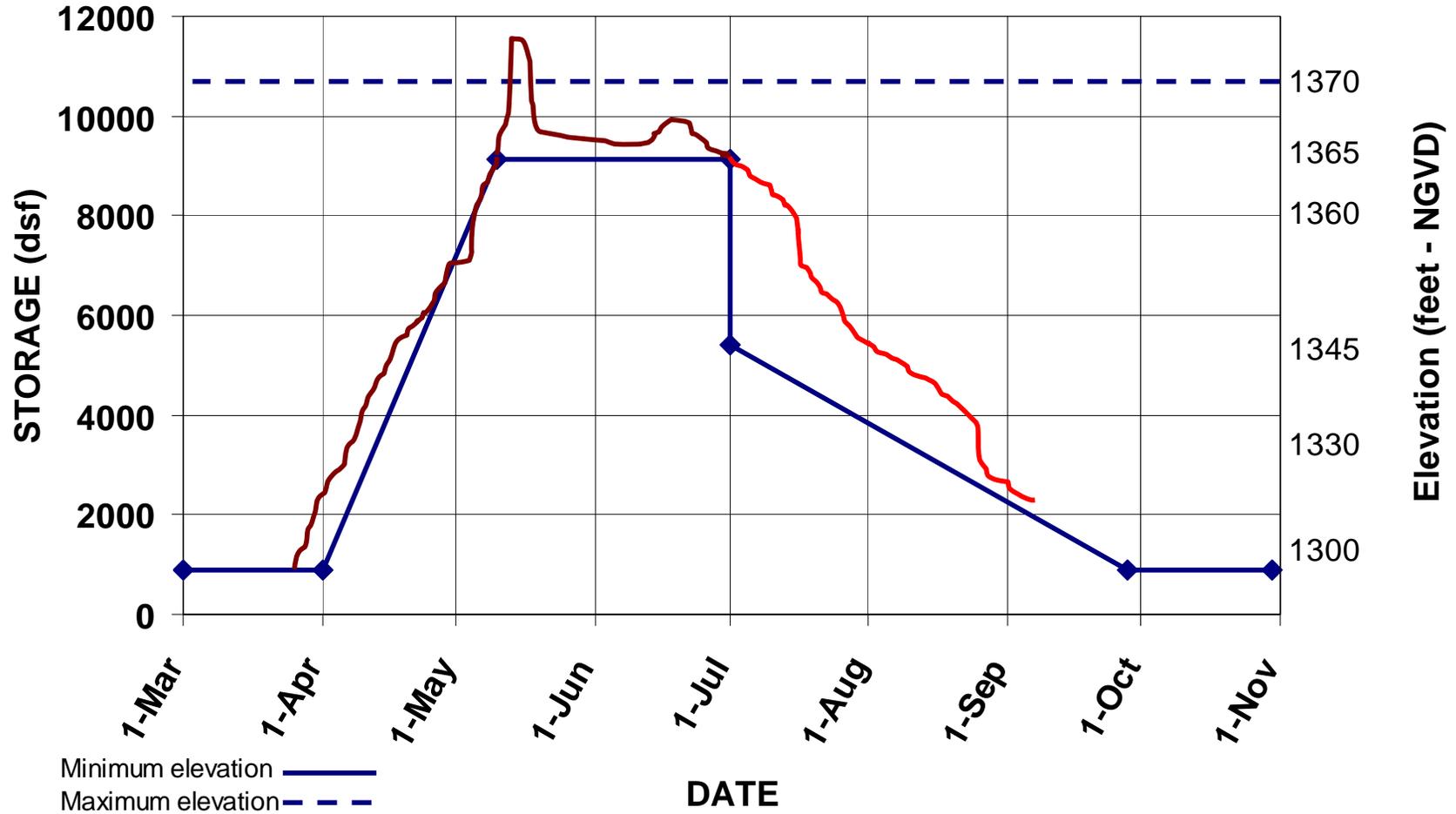
F.E. Walter Recreational Rule Curve 2008



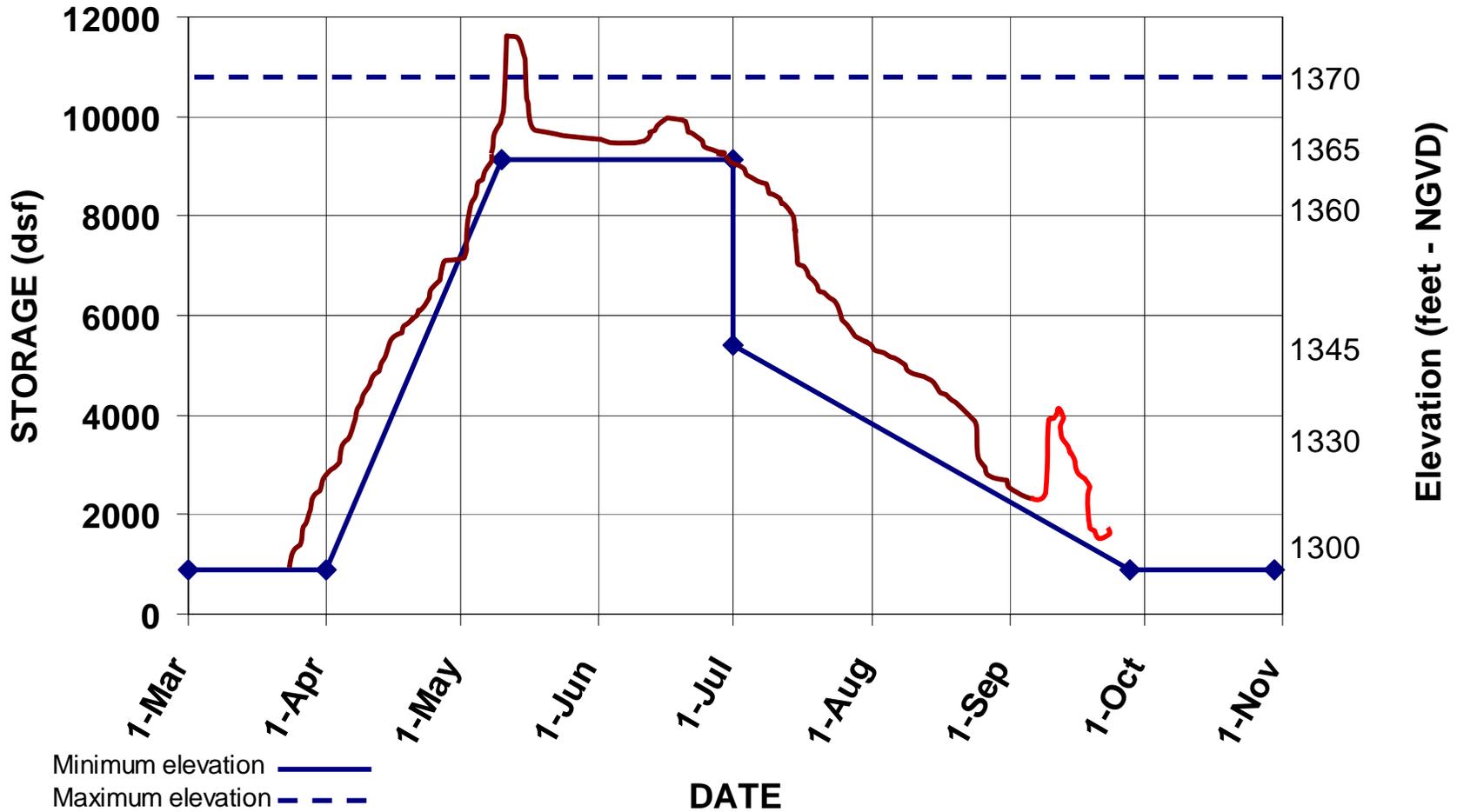
F.E. Walter Recreational Rule Curve 2008



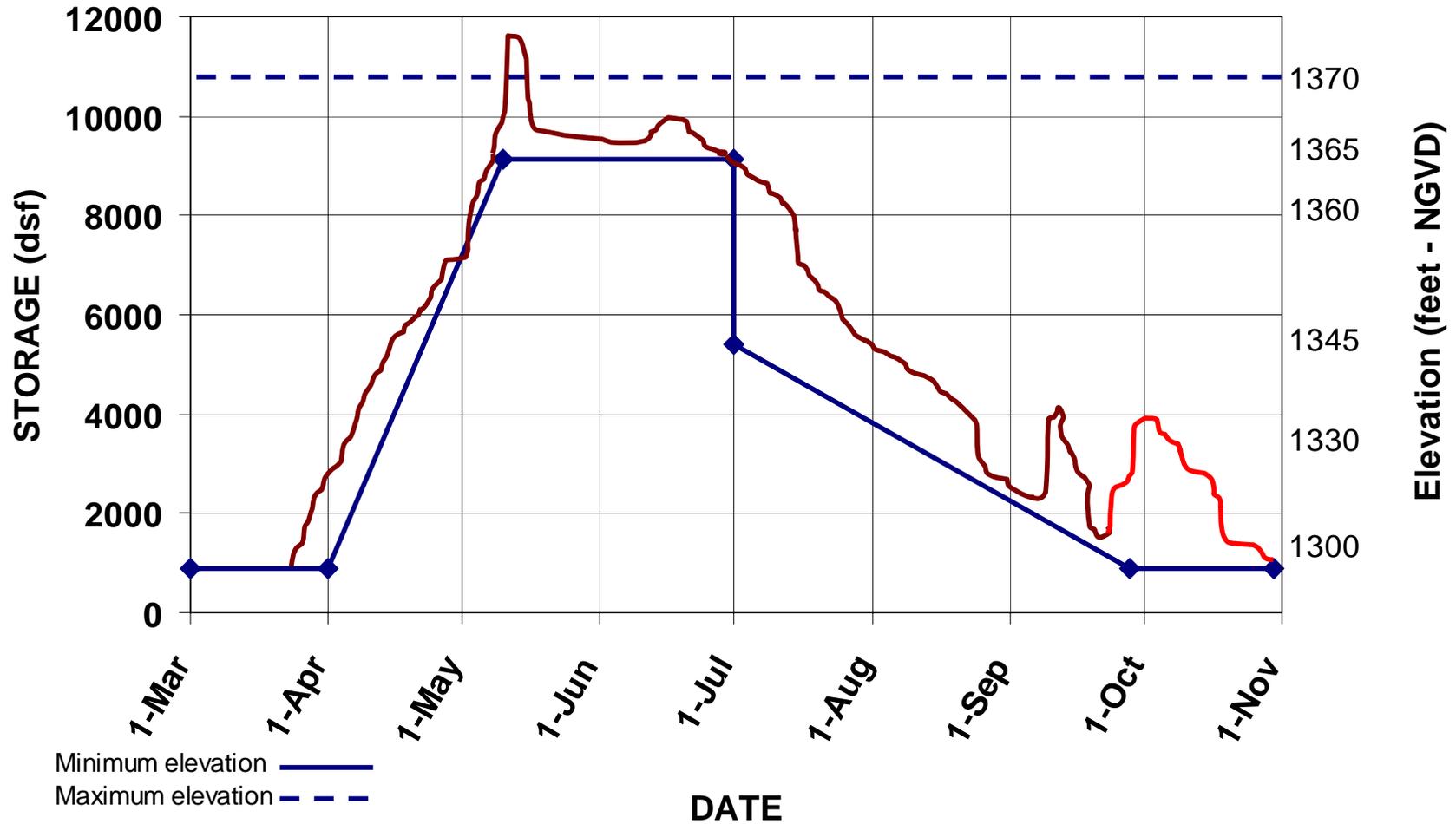
F.E. Walter Recreational Rule Curve 2008



F.E. Walter Recreational Rule Curve 2008



F.E. Walter Recreational Rule Curve 2008



Working Together: Partnership in Action

- Public meetings held in February 2005, February 2006, and January 2007
- Received hundreds of responses after each meeting
- Compiled list of over 400 stakeholders
- Many comments received on the Flow Management web site
- Improved communication: Including press releases, notifications, announcements, emails, and web page updates
- Cooperating Agencies evaluated plan performance, and incorporated comments into subsequent Recreation Plan development

Working Together: Partnership in Action

- Corps of Engineers made a small turn around on Rt. 940 side of lower road to ease launch difficulties. Completed summer 2007
- State agencies have partnered with the Lehigh Coldwater Fisheries Alliance and the Wildlands Conservancy to support Water Quality Monitoring and Modeling. Modeling efforts currently underway

Public Involvement

- Visit our web site for updated information and to submit your input:
www.nap.usace.army.mil/Projects/FEWalter/index.htm
- Public comments may also be submitted to:
U. S. Army Corps of Engineers
Philadelphia District
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107

Khaalid.H.Walls@usace.army.mil
- For most up to date information on Recreation plan go to:
www.nap.usace.army.mil/watercontrol/resreg.htm