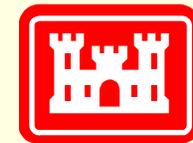


Welcome

**Recreational Enhancements
on the Lehigh River
Public Information Workshop
16 February 2006
Split Rock Lodge**

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 requests 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 2005 Release Plan Performance**
- **Water Quality Issues/Study**
- **2006 Release Plan**

Francis E. Walter Dam

Completion Date: 1961

Single Purpose, Flood
Control Dam

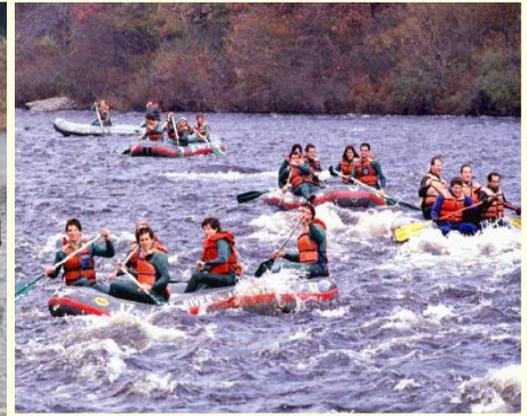
Recreation was defined as
Authorized Project
Purpose in 1988

Access road across top of
dam was completed in
Spring 2005



Recreation

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





2005 Flow Management Plan Review

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*

*Original number of days was changed from 30 to 22 in response to feedback received at the 2005 Public Meeting

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

Working Together: Partnership in Action

- Public meeting held in February 2005
- Received about 300 responses within weeks after meeting
- Compiled list of over 400 stakeholders
- Almost 100 pages of comments received on the Flow Management web site
- Improved communication via email
 - Including press releases, notifications, announcements
- Incorporated comments into 2006 Plan

Working Together: Partnership in Action

- State and local officials working to secure financial support for a boat ramp and water quality monitoring
 - State officials were unable to secure funds for a boat ramp in 2005. Efforts will continue in 2006.
 - Bear Creek Township has submitted application for boat ramp funding.
 - State agencies have partnered with the Lehigh Coldwater Fisheries Alliance and the Wildlands Conservancy to support Water Quality Monitoring and Modeling



Water Quality Study

Water Quality Data Collection

- Annual Water Quality Sampling Since 1975
- 2005 Water Quality Monitoring from April – September
 - Testing Locations
 - In-Lake Water Column
 - Upstream
 - Downstream
 - 21 Major Parameters Including:
 - Temperature
 - Dissolved Oxygen
 - pH
 - Conductivity

Water Quality Monitoring Results

- Limited useful information was gathered in 2005
 - 35 foot pool could not be maintained
 - Temperature stratification could not be established
 - 2005 data represents the reservoir operation and hydrologic conditions for that year only

- Historic Data indicate
 - Changes in water chemistry at higher pool levels
 - Downstream effects

- WQ Report 2005 is posted on the Corps' web site

Water Quality

- 2006 Water Quality Monitoring

- April – September

- Results continuously evaluated throughout season

- Water Quality and Flow Model

- Corps and the State are working to secure funds to develop a computer model

- Initial model would study flow and temperatures from the F. E. Walter Reservoir to Northampton, PA and would include Beltzville Reservoir

EA Review Period

- The public notice and *2006 Temporary Operations Plan, Francis E. Walter Dam And Reservoir Carbon And Luzerne Counties, Pennsylvania Draft Environmental Assessment* is available this evening at the Corps' table.
- The public comment period for the Environmental Assessment is 30 days from Friday February 17.



2006 Flow Management Plan

Changes to Flow Management Plan

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

- 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.
- To benefit downstream fisheries, the bypass system will be used until release temperature exceeds 68⁰
- Plan requires sufficient inflows to impound 65 feet of storage by the second weekend in May.
- Releases are dependent on hydrologic conditions

2006 Flow Management Plan

April

- Start storing no later than April 1
- Match inflow up to 1000 cfs on weekends while storing
- Minimum release while storing will be 250 cfs.

2006 Flow Management Plan

May – June

- Match inflow on non-whitewater weekends (up to 750 cfs if pool is below 1365)
- Limit pool fluctuations to elevations 1360-1365
 - Protect fish spawning areas in-lake
 - Conserve cold water for later in season
- Target minimum release is 250 cfs
- Maximum whitewater releases will be 1000 cfs in May, 750 cfs in June

2006 Flow Management Plan

July-October 1

- Use a set of rule curves to allocate storage from July 1 – October 1
- The minimum daily augmentation is 50 cfs above inflow (up to a total release of 250 cfs)
- Allocate storage based on a 1 to 6 ratio. For example, release 50 cfs above inflow daily and 300 cfs above inflow on scheduled whitewater weekends
- If inflow plus 300 cfs is not sufficient for a weekend whitewater release, the release will be modified
 - Sunday release will be modified or canceled before Saturday releases

2006 Flow Management Plan

July-October

- Amount of augmentation will be determined by rule curves based on date and storage
- The following rule curves will be used in the 2006 plan:

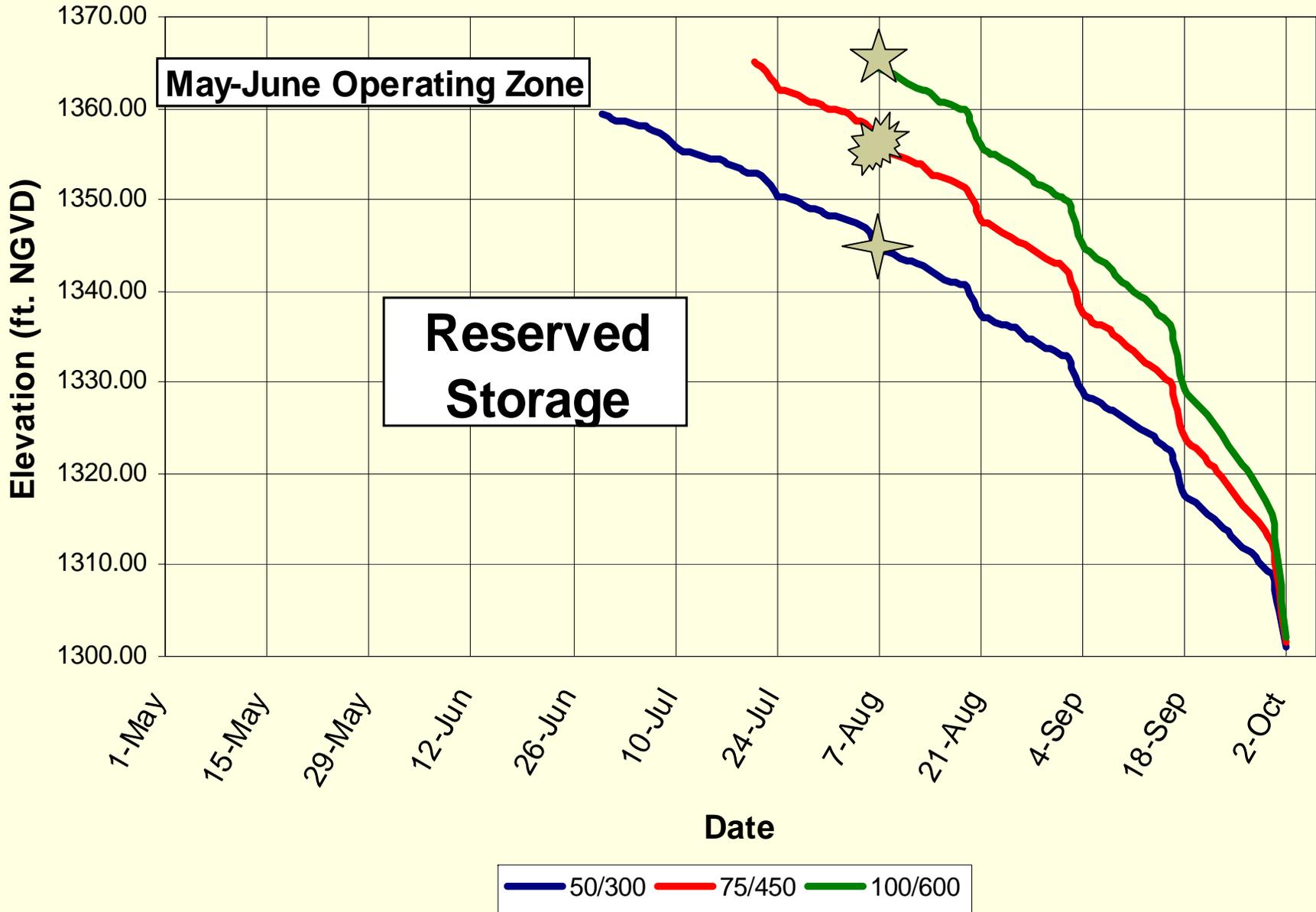
50/300 cfs	55/330 cfs	60/360 cfs
65/390 cfs	70/420 cfs	75/450 cfs
85/510 cfs	95/570 cfs	100/600 cfs
- The lowest augmentation of 50/300 cfs allows for a minimum 1-day event of 600 cfs above inflow for each scheduled weekend

2006 Flow Management Plan

July-October 1

- Maximum whitewater releases will be 750 cfs in July, August, and early September, 1000 cfs mid September to October 1

Augmentation Rule Curve Daily Elevations (2006 Season)



2006 Whitewater Release Schedule

May 13,14

May 27, 28

June 10,11

June 24, 25

July 8, 9

July 22, 23

August 5, 6

August 19, 20

September 2, 3

September 16, 17

September 30, October 1

Target and Maximum Reservoir Releases by Date

DATE	Target	Max
May 13, 14	750	1000
May 27, 28	750	1000
June 10, 11	750	750
June 24, 25	750	750
July 8, 9	750	750
July 22, 23	750	750
August 5, 6	750	750
August 19, 20	750	750
September 2, 3	750	750
September 16, 17	750	1000
September 30, October 1	750	1000

Allocation when storage is insufficient for full two-day release

Total CFS available for the weekend boating (including augmentation)	Saturday Release	Sunday Release
650	650	min
750	750	min
850	750	min
900	750	min
950	750	min
1000	750	500*
1050	750	600*
1100	750	700*
1150	650	500
1200	700	500
1250	750	500
1300	750	550
1350	750	600
1400	750	650
1450	750	700

* Indicates a 6-hour release

2006 Flow Management Plan

October

IF THERE IS SURPLUS STORAGE on October 2, the following drawdown plan will be followed:

- Minimum release for drawdown will be 144 cfs
- Target release for Columbus Day weekend (Saturday and Sunday) is 1200 cfs

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
ATTN: Merv Brokke
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107
- Email: Mervin.E.Brokke@usace.army.mil
- Whitewater release hotline 215.656.6931