

Operational differences
between two
reservoir releases programs:
“rev 1” vs. “FFMP”

September 26, 2007

overview

1. NYC drought rule curves
2. NYC diversion
3. NJ diversion
4. excess release quantity (ERQ)
5. NYC reservoirs conservation releases
6. tailwaters habitat protection
7. thermal protection bank
8. salt front repulsion
9. spill-mitigation releases
10. impacts to public water-supply systems

1 - NYC drought rule curves

Rev 1

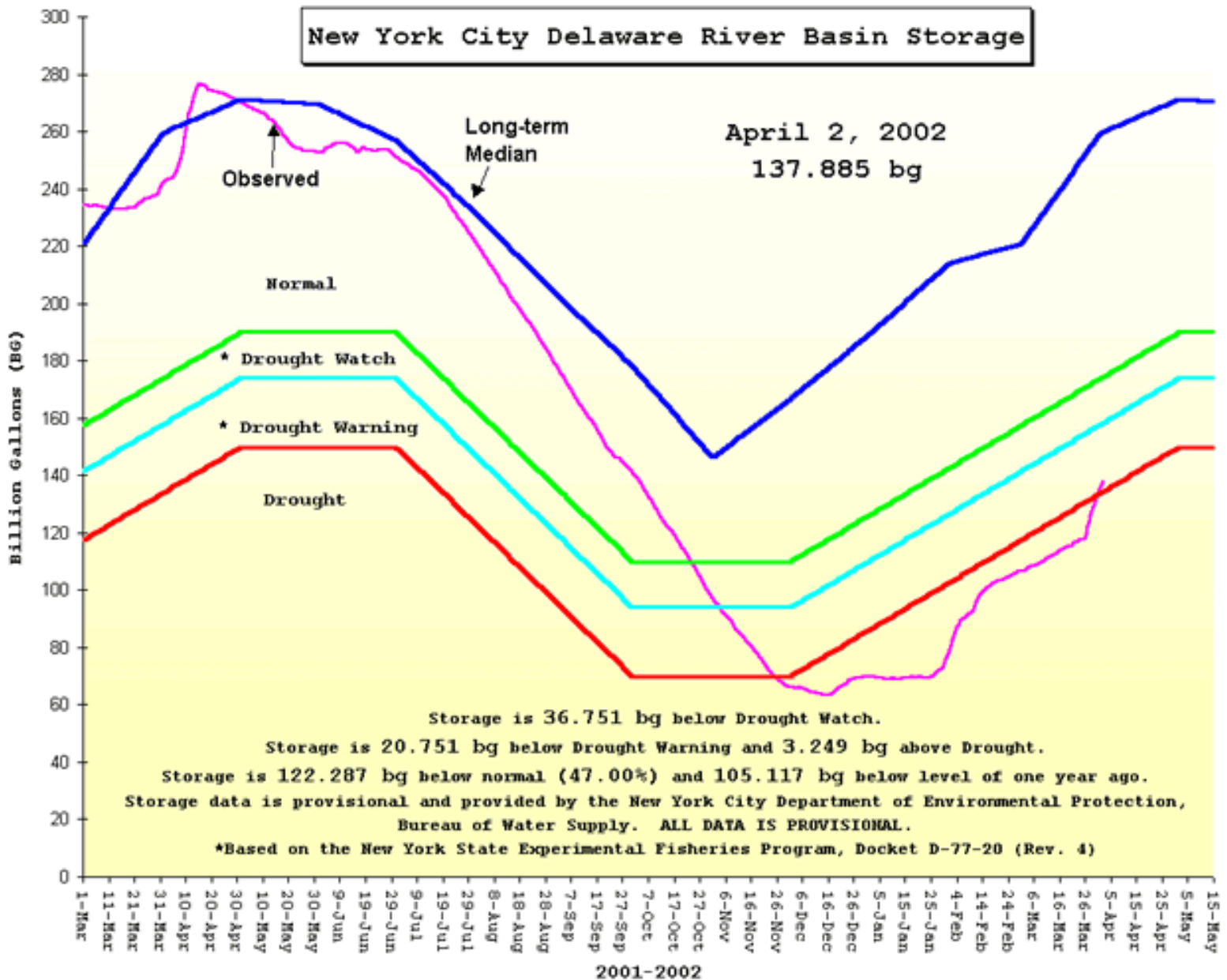
- has original 1983 curves
- the three curves are separated by 20 BG each

FFMP

- the top and bottom curves are unchanged
- Warning zone is split into Watch and Warning zones; the curve between them is raised 4 BG



New York City Delaware River Basin Storage



2 - NYC diversion

Rev 1

- max diversion (during normal ops) is 800 mgd

FFMP

- max diversion (during normal ops) varies between 765 mgd and 800 mgd
- actual value is determined by NYC by June 1 of each year

3 - NJ diversion (D&R canal)

Rev 1

- normal: 100 mgd
- watch: 85 mgd
- warning: 70 mgd
- drought: 65 mgd

FFMP

- normal: 100 mgd
- watch: 100 mgd
- warning: 85 mgd
- drought: 85 mgd

4 - excess release quantity (ERQ) from NYC reservoirs

Rev 1

- 11,400 cfs-days may be released (during normal conditions) for either Montague or Trenton

FFMP

- 15,468 cfs-days may be released (during normal conditions) for either Montague or Trenton

5 - NYC reservoirs conservation releases

Rev 1

- summer normal: 325-70-45 cfs (C-P-N);
- summer basic: 23-19-15 cfs (C-P-N);
- winter basic is 1/3 of summer basic

FFMP

- summer normal: 260-140-100 cfs (C-P-N);
- summer basic: 120-80-55 cfs (C-P-N);
- winter basic is about 1/2 of summer basic

NOTE: the triplets labeled (C-P-N) refer to Cannonsville, Pepacton and Neversink

6 - tailwaters habitat protection

Rev 1

- only basic protection provided
- preferential protection given to West Branch Delaware River (during summer)

FFMP

- enhanced protection provided
- higher releases in each season and all drought conditions
- all three tailwater streams are protected

7 - thermal protection bank

Rev 1

- 6,000 cfs-days available May-Oct only during normal conditions
- released as needed and under NYSDEC direction

FFMP

- none

8 - salt front repulsion

Rev 1

- releases (from NYC reservoirs) designed to meet the (vernier) Montague flow target
- releases (from lower-basin reservoirs) designed to meet the (vernier) Trenton flow target
- only during drought

FFMP

- releases (from lower-basin reservoirs) designed to meet the (vernier) Trenton flow target
- only during drought

9 - spill-mitigation releases

Rev 1

- none

FFMP

- large reservoir releases provided September-January if storage in each reservoir exceeds 95% of usable; also during August (ramping in) and February (ramping out)

10 – impacts to public water-supply systems

Rev 1

- about 5,500 days total (all three conditions)
- about 2,500 days in “drought” condition

FFMP

- about 5,500 days total (all three conditions)
- about 2,300 days in “drought” condition

notes:

1. impacts measured only through the number of days in each drought condition
2. model simulations covered 26,572 days

questions ?