

Assawompset Pond Complex (APC) Update – One Year Later

April 11, 2011

Original Tasks:

- To update the Standard Operational Procedures (SOPs) for the dams at the Nemasket River headwaters at Assawompset Pond and the Wareham Street dam in Middleborough.
- To evaluate the flow in the Nemasket River and seek funding opportunities for its enhancement.
- Improve communications between all involved parties and stakeholders.

Formation of Two Working Subcommittees:

- Pond Level and Dam Management
- Nemasket River Flow & Analysis

Pond Level & Dam Committee Members:

- James Ricci & Charles Kennedy, New Bedford Water Department
- Cathal O'Brien & William Schwartz – Taunton Water Department
- Andrew Bagas & Ruth Geoffroy, Town of Middleborough
- Nancy Yeatts & Richard Turner, Town of Lakeville
- Fred Underhill, Town of Rochester
- Steve Hurley & Richard Turner, Mass Department of Fish & Game
- Dr. Neil Fennessey, UMASS-Dartmouth
- David Cavanaugh, Middleborough-Lakeville Herring Commission
- Paul Bourgeois, Jack Healey & Lisa Pacheco, Town of Freetown
- David Johnston, Jonathan Hobill, Pamela Truesdale, Mass-DEP

Nemasket River Subcommittee Members:

- Patricia Cassaday, Town of Middleborough
- Andrew Bagas, Town of Middleborough
- Laurell Farinon, Town of Rochester
- Nancy Yeatts, Town of Lakeville
- Richard Turner, Town of Lakeville
- Linda Grubb, Town of Lakeville
- Christopher Peck, Town of Lakeville
- David Cavanaugh, Middleborough-Lakeville Herring Commission
- Jack Healey, Freetown
- Pamela Truesdale, Jonathan Hobill, MassDEP

Pond Level and Dam Management Subcommittee Work

- Work completed on long term trend analysis data of pond levels
- It was a lot of data!! 1985-2010 = 25 years x 365 days x 2 = 18,250 data points analyzed, plus more recent analysis through mid-March, 2011.
- Used existing data to develop interim dam SOPs and interim pond elevations.
- Seek funding for long-term hydrologic model of the APC & Nemasket River.

Important Pond Elevations:

- July, 2009: **54.66-55.11** (NGVD 88)
- Building Code Base Flood Elevation: **55.0** (NGVD 88)
- April, 2010 Peak Flood Elevation: **57.3** (NGVD 88)
- April 6, 2011 level: **53.82** (NGVD 88)
- **52.05** (NGVD 88) Elevation where water no longer flows through fish ladder at dam – see following slide

Low Water at Assawompset Dam



OCT. 19, 1993
POND LEVEL 51.03



OCT. 19, 1993
POND LEVEL 51.03"

What We've Learned:

- Main control structure at Assawompset (the dam) is highly porous and is minimally effective at controlling the pond level.
- The Nemasket River cannot be relied upon for a rapid decrease in pond elevation. It appears there are flow conveyance issues, i.e. sedimentation & excessive aquatic plant growth.
- The Nemasket River experiences surcharging from its watershed.
- At various times, the observed pond elevations between Long Pond and Assawompset can be up to 1 foot higher in Long Pond.
- During release periods, the elevations of the Nemasket River and Assawompset pond are virtually the same – see next slide

Nemasket River (left) Assawompset Pond (right) at the dam



Proposed New Cooperative Agreement

- For December, January, February to approximately mid-March, a target elevation of **53.0'** is desired.
- Mid-March to early June : target elevation would increase from **53.0 to 54.0'**
- Early June, July, August into September, the target level will gradually drop from **54.0 to 53.5'**
- For October and November, target levels would decrease from **53.5' to 53.0'**

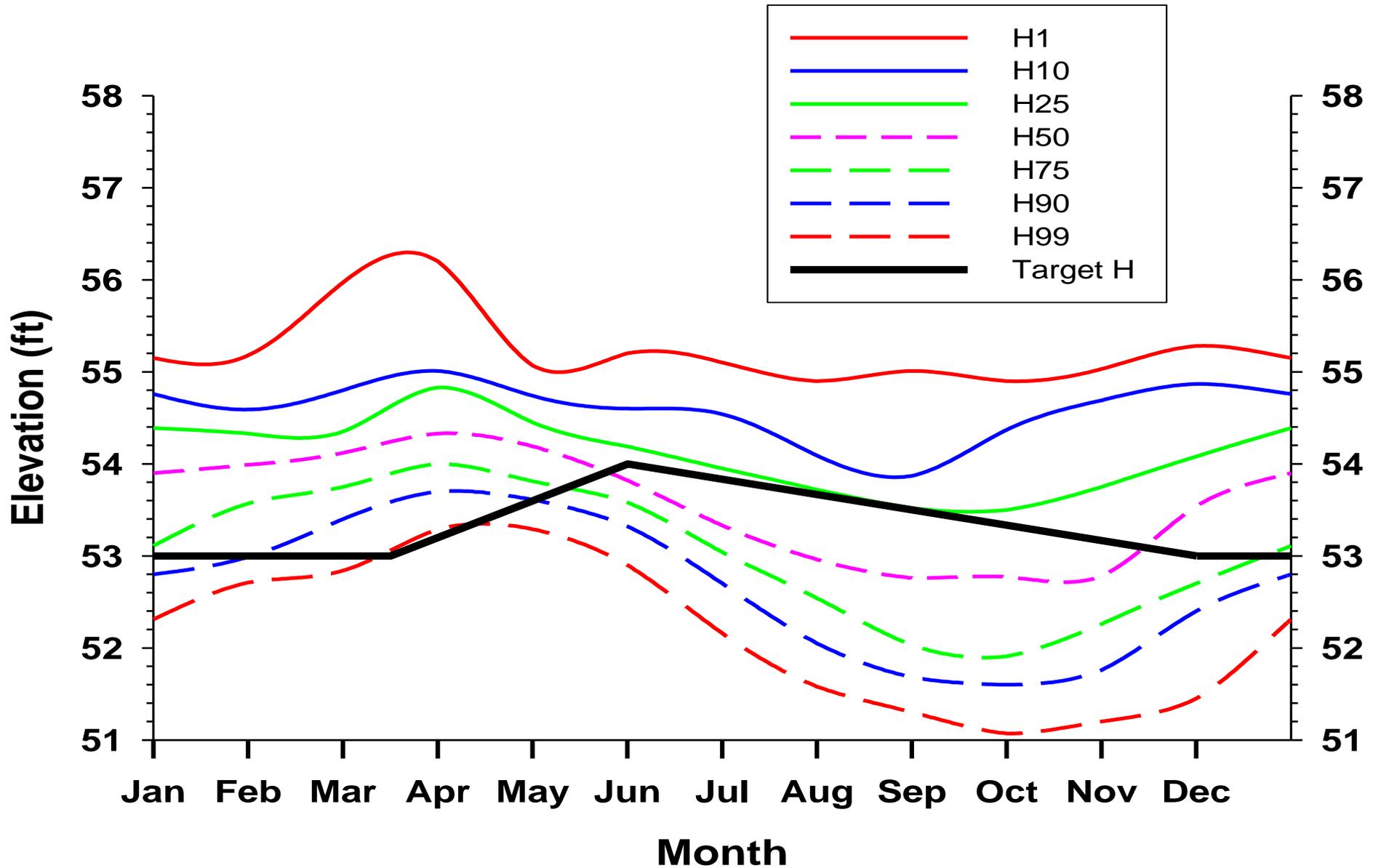
Considerations Taken into Development of Interim Levels

- Seasonal needs of the water suppliers & communities
- Adequate groundwater to supply Middleborough's well
- Adequate flow and storage to provide for anadromous fish passages up and down the Nemasket seasonally
- Adequate storage capacity to prevent or minimize damage from precipitation events
- Minimize winter ice damage to personal property
- Adequate capacity for recreational uses

Interim Levels, Con't.

- In making recommendations on the interim pond levels, balancing the numerous needs of the APC waters was made using the best professional judgment of the subcommittee members.
- Future observations and the development of a science-based hydrological model of the APC and the Nemasket River will produce a more permanent management policy.

Interim Assawompset Pond Complex Target Lake Management Levels



Proposed Cooperative Agreement, Continued:

- Stakeholders: Cities of New Bedford, & Taunton, Towns of Middleborough, Freetown, Lakeville and Rochester.
- The Cities will share weather, dam adjustments and pond data with all parties on a regular basis.
- Stakeholders will meet a minimum of 4 times/year to review the previous 3 months operations.
- Target level will be adjusted, as necessary, after review and discussions among stakeholders.

Other Factors to Consider in the “target” elevations:

- It is important to understand that the dam on Assawompset Pond was not designed to control the water level in the entire complex.
- Best efforts will be made to reach and maintain target elevations.
- Being able to do so is dependent on:
 - Precipitation
 - Ability to convey water down the Nemasket
 - Groundwater infiltration

APC Dam Operations Tracking Sheet Information

- Date of recording
- Pond levels in both Assawompset & Long Ponds
- Board height (in dam spillways)
- Pond/river differential
- Ground water and precipitation
- Target level of pond
- Notes

Wareham Street Dam & Fish Ladder Tracking Information

- Date of recording
- Track bascule dam elevation
- Track river elevation
- Any actions taken

Websites for Pond levels:

- Lakeville: <http://www.lakevillema.org>
- Freetown:
<http://www.freetownma.gov>
- Middleborough:
[http://www.middleborough.com.](http://www.middleborough.com)

USGS Groundwater levels

- Website for Lakeville Hospital ground water well readings:

<http://groundwaterwatch.usgs.gov/AWLSites.asp?S=415228070554601&ncd=crn>

Next Steps:

- Comment period on proposed target pond levels
- Comments due by May 13, 2011
- Please respond in writing to

MassDEP – SERO
20 Riverside Drive
Lakeville, MA 02347

Attn: David Johnston, Regional Director

- Organization of a volunteer survey of the Nemasket River this spring-summer, 2011, is underway.
- Seek funding for long-term hydrologic model of the APC & Nemasket River.