SILVER LAKE COMMISSION

June 26, 2019
5:30 PM at Dover City Hall
Caucus Room

AGENDA

1. Welcome/Call to order
2. Approval of March 2019 meeting minutes
3. Security Upgrades update
4. Coordination with Parks and Rec Committee as a Whole
5. Budget update- SL park master plan funding
6. Public Works Updates
7. Senator Bikeway
8. Mayor's Canoe/Kayak Event/Paddles, Sneakers and Treasures!
9. New Business
10. Next meeting date
11. Adjournment

Silver Lake Commission
March 13, 2019
5:30 PM, Conference Room
Dover City Hall

**** DRAFT ****

Members Present	Others In Attendance
Tricia Arndt	Carolyn Courtney, Parks & Recreation Staff
Zach Carter	Jason Lyon, Public Works Staff
Kirby Hudson	Andrew Howard, DNREC Staff
Marie Kozel	
Mike Lewis	

WELCOME & CALL TO ORDER: 5:30 P M

INTRODUCTIONS
The chair noted we have new people and started off with introductions.

AGENDA
The chair presented the agenda for acceptance. The motion was made and seconded for approval. The agenda passed without objection.

APPROVAL OF SEPTEMBER 2018 MINUTES
The chair presented the minutes for acceptance with one change, "Mr." Arndt to "Mrs.". The motion top accept the minutes was then accepted without objection.

The chair noted we have one vacancy to fill.

PUBLIC WORKS UPDATE
Mr. Lyon since the September meeting, there is now a Parks & Recreation maintenance crew. General park maintenance has now been shifted to this new parks crew. Number 2, the area's along the river's edge. We are making sure we treat this the proper way and not knock down vegetation that should be left alone. For clarification, Mr. Carter asked if the park maintenance crew would be mowing. Mr. Hudson, no they are going to work on athletic fields and "curb" appeal types of projects with assistance from Public Works. During periods of snow our crew will be pulled to assist with snow removal. He invited the group to visit Dover Park and see the improvements that have been done to date. The idea now is to keep it cleaned up and get the public to start coming back to this park. Number 3, fertilize, lime, etc. - looking the the budget and fertilizing with in-house staff. We will get on this project. Number 4, bottom of boat ramp problems have been addressed with filling in the whole and under the dock areas. Number 5, the Silver Lake Dam inspection noted overall the dam is in good condition without the need for immediate remedial actions.

The ponding on the sidewalk adjacent to the footbridge. We had provided proposals for imperious pavement that was not accepted by this commission so we looked at infrastructure (see attach). Our grounds division then went out cut the swale, trying to get the water to flow away from the sidewalk however due to the grading no matter which way we we tried to cut the swale ponding continued. The next options are presented here as Option 1 and 2. Two different alignments, we are going to raise the sidewalk up and the water can dissipate then off to the side. Just adding concrete is not going to work. The Master Plan for Silver Lake has been pushed out to FY21 at this time and then a few years to actually do anything. Mr. Lyons options are the most viable for correcting this problem. Mr. Carter motioned to accept Option 2, with a second the motion passed without objection.

Last item, the Silver Lake draw down went well in 2018, generally the same time every year. Ms. Courtney will send out notices around August and reminders as the date gets closer. Following the same schedule, approximately Oct. 7 – 18, 2019. Mr. Ridgeway ground supervisor will assist in opening/closing and monitoring the draw down effects.

The Public Works Update is attached.

BOLLARD REPLACEMENT
Mr. Hudson reported that Ducks Fencing has completed the bollard replacements. We had an ORPT grant 50/50 match. The project costs was $18,000, ORPT covered $9,000 and the city covered the balance of the fee.

DRAFT

MAYOR'S KAYAK/CANOE

Ms. Courtney shared a letter from Fran Riddle form the Bicycle and Pedestrian Subcommittee. We had a good turn-out for the 2018 event that was partnered with an open streets event. We are looking to do this again this year on Labor Day weekend. We are adding some walking loops and other fun activities. Ms. Riddle will be invited to our next meeting to share more details as they develop. The chair noted she liked the August idea, as October was very cold for the last one. Members were supportive of the event those that are in town were invited to attend.

NEW BUSINESS

Mr. Howard shared the preliminary results of the Mirror Lake testing. There was some improvement on the water quality. Resident fish showed improvement over all with PCBs. He will continue to share updates with us. *(Presentation attached)*

Mr. Howard is planning a wetlands clean up in May on the sand bar. All were invited.

NEXT MEETING DATE

June 12, September 11 and December 11 were chosen for the next meeting dates.

ADJOURNMENT

With no further business, the meeting adjourned at 6:10 PM.

DRAFT

Mayors Kayak/Canoe

Hello Friends!

The Dover Walking Treasure Hunt first conceived in 2018 is alive and well and going forward in 2019 as a partnership among the Bicycle and Pedestrian Subcommittee of the City of Dover, the City's Department of Parks and Recreation, Restoring Central Dover/Open Streets, First State Heritage Park, and the Biggs Museum. Mark your calendars now for Saturday, August 31, for canoeing and kayaking in Silver Lake and family-friendly walking along paths within the park and between the park and the Green – activities that will get folks out and about for good health and good fun as they discover natural and cultural "treasures" in the park and along the sidewalks and common spaces of Dover.

Want to know more about this event and how you can become involved as an individual or an organization? Just respond to this email and let us know you're interested, and we'll keep you in the loop. (Or let us know if your interests are elsewhere at this point and would like to be taken off this email list.)

You are also welcome you to join us at our next planning meeting Thursday, March 21, 4:00 – 5:00 at the Dover Public Library. And please feel free to forward this email or let us know directly of others who may be interested in helping.

We look forward to this collaborative event as we work together to enjoy and strengthen all that is healthy, interesting, and fun about Dover and its people.

Your Core Planning Group,

Maria Andaya
Carolyn Courtney
Chanda Jackson
Reggie Lynch
Louisa Phillips
Fran Riddle
Chazz Salkin
Susan Salkin
Sarah Zimmerman

Remediation & Restoration of Mirror Lake, Dover, Delaware



Battelle Conference on Remediation and Management of Contaminated Sediments
February 12 2019

Upal Ghosh, Eli Patmont – University of Maryland Baltimore County
John Cargill and Rick Greene – Delaware Department of Natural Resources and Environmental Control

Saint Jones Watershed

- ~90 mi² in central DE; drains to Del Bay; mainstem dammed at Silver Lake; 10 mi. non-tidal, 12 mi. tidal. Median Q = 21 cfs. Flat.
- Land use/cover: Forested wetlands in upper; urban/commercial in middle; tidal wetlands in lower. Ag throughout.
- Features: City of Dover (Capital); Dover Air Force Base
- Sources: Waste sites, current & past point source discharges, stormwater runoff, atmospheric deposition, contaminated sediments.







Mirror Lake



- Mirror Lake (~3.5 acres, 3' deep) is part of the Saint Jones watershed (empties to Delaware Bay).
- It's located at the gateway to historic Dover, DE. It's impacted by sedimentation, stormwater runoff, chemical contaminants, excess nutrients, invasive plant species and bacteria.

- Mirror Lake/St. Jones River COCs include PCBs, dioxins & furans, OC pesticides, mercury and PAHs.
  - *Fish consumption advisories have existed in this area of the St. Jones River since 1988*
  - *Lacked ecological diversity and functionality*
  - *Radiodated sediment cores collected downstream of Mirror Lake indicated conditions improving. However, model forecasts indicated decades for recovery.*
  - *In-place contaminated sediments controlled the recovery time.*
- DNREC, in cooperation with several partners, implemented the Mirror Lake Remediation & Restoration Project in the fall of 2013.



Project Goals & Remedial Approach

- Remediate the sediments in place to prevent contaminants from entering the food chain, allowing the fish advisory to be lifted or reduced in a matter of years, not decades. Activated carbon (SediMite™) was chosen as the preferred remedial alternative.

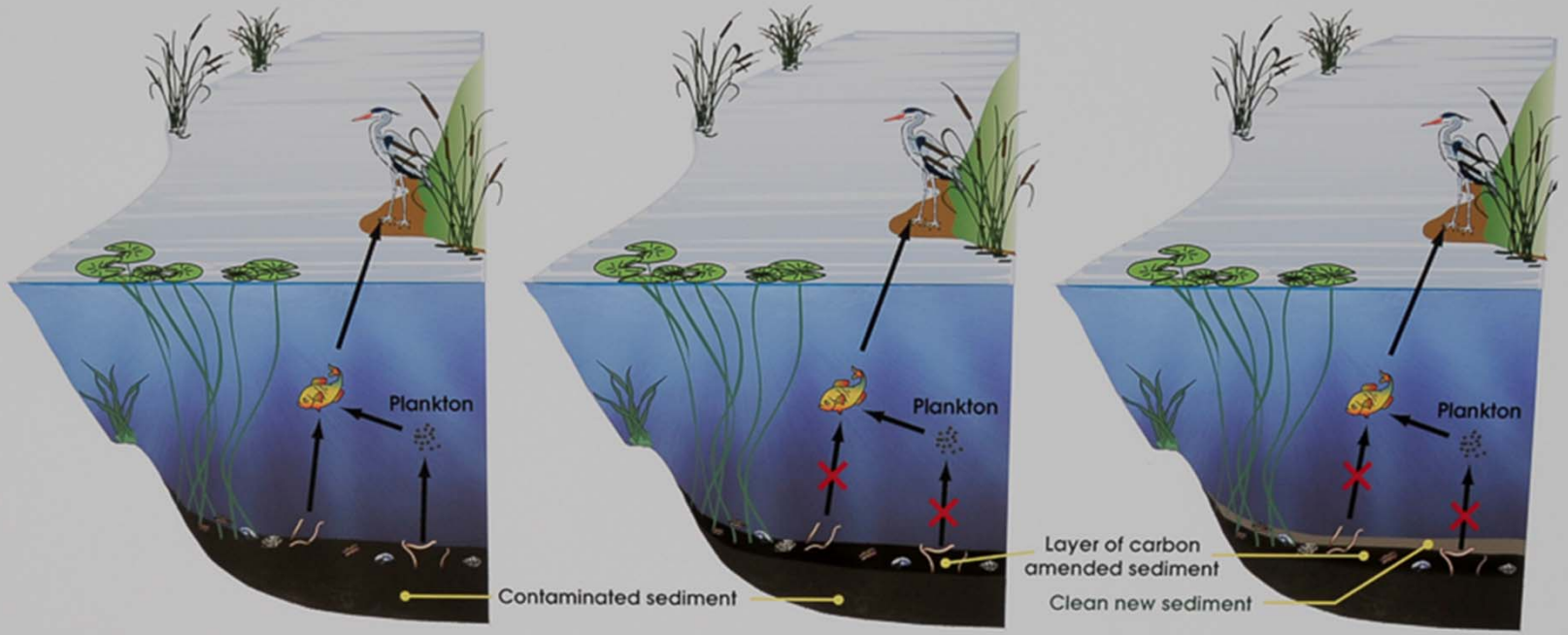


- Restore habitat and improve the visual appeal of the lake. Not discussed in this presentation.

Sediment Remediation at Mirror Lake

- SediMite™ is a pellet made up of activated carbon (binds contaminants), sand (aids sinking), and clay (temporarily holds the pellet together).
- 79 tons of SediMite™ were incorporated into 5 acres of lake bottom and downstream channel sediments over 10 days. Three main application methods were used.
- This was the largest application of SediMite™ in the U.S.
- This was the first State-led project of its kind in the nation.

How the Process Works:



Prior to Remediation
Old contaminants in sediment accumulate in fish and other organisms.

Remediation
A layer of activated carbon pellets holds contaminants tightly so they are no longer available to fish and other organisms.

After Remediation
In the long term (5+ years), the carbon layer is covered with clean new sediment.

Bioaccumulation → Application of AC → Reduced Bioaccumulation

SediMite™ Application Methods

Telebelt



Air Horn from Land



Air Horn from Boat



Air Horn at Low Tide



Cost

- Total = $0.94 million (includes planning, design, construction, and monitoring for 3+ years)
  - $0.68 million from State HSCA program
  - $124.6K (local legislators, transportation funds)
  - $73.8K Fed NPS grant for restoration activities
  - $63K DNREC to develop plans & specs
- Labor was largely volunteer and included:
  - 61 total volunteers from DNREC, Brightfields, AmeriCorps, Delaware Boot Camp, and the Interfaith Mission.
  - 551 hrs contributed from DNREC; 770 hrs from others.

Monitoring Included. . .

- Bulk Sediment
- Passive Samplers – Sediment Pore Water & Water Column
- High Vol Water (XAD2 and Filters)
- Sediment Bioaccumulation Study
- Fish Tissue
- Shallow Sediment Cores

Sediment Cores



Carbon in sediment during low tide



After 1 month

Bioturbators



After 1 month



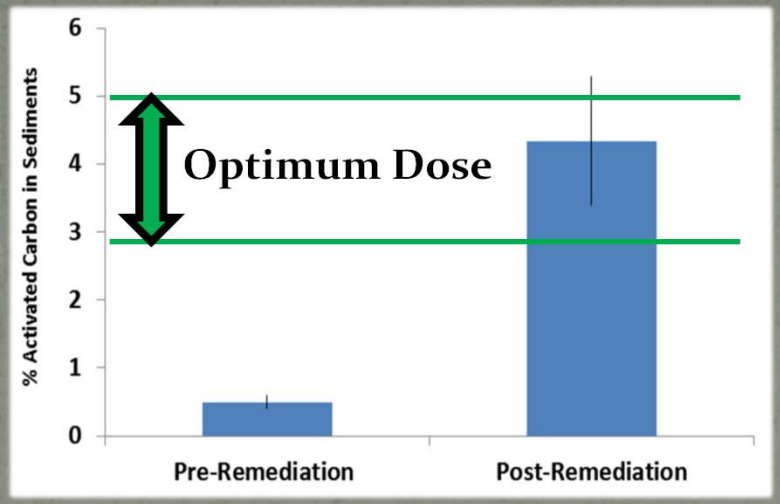
After 1 year

Monitoring Locations

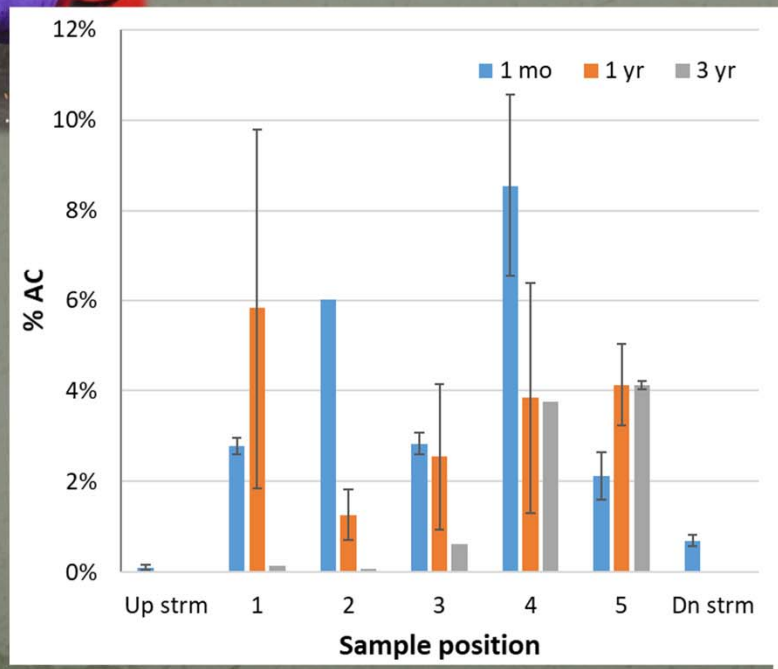


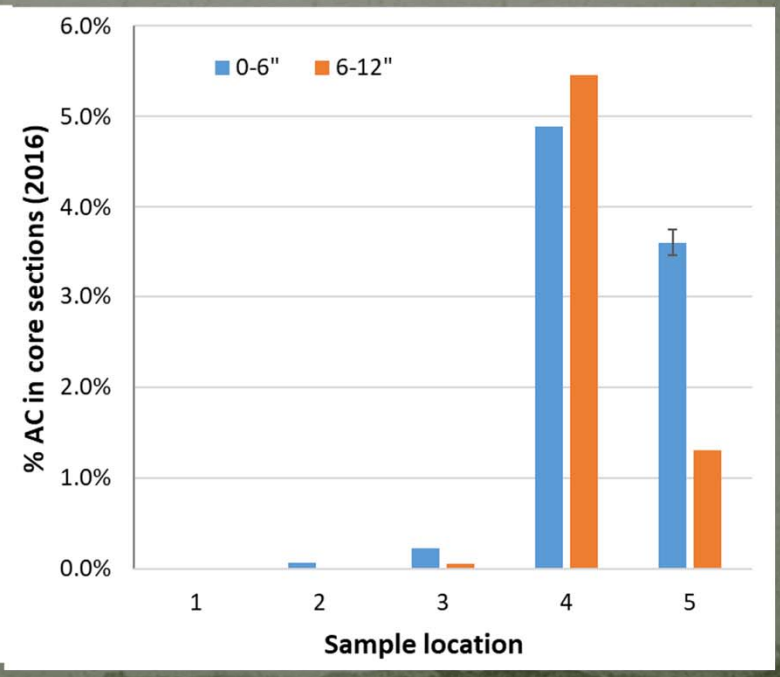
Activated Carbon in Sediments





- Optimum dose of 3 – 5% met
- Sediment/AC deposited into thicker layer in low flow region of lake





Passive Sampler (POM & PE) Deployment







Deploy for 30+ Days. Retrieve & extract contaminants from polymer. Results reflect longer-term avg. concentration of freely dissolved (bioavailable) contaminant.

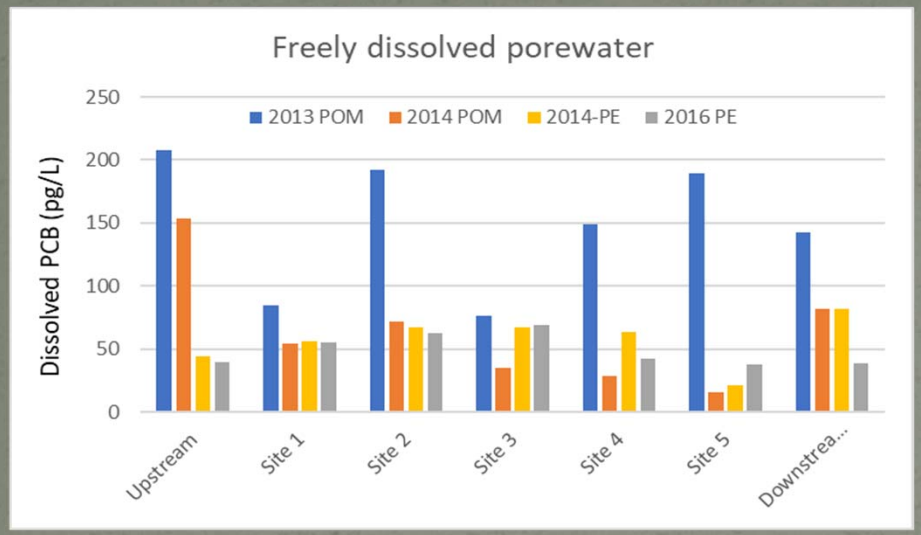
Passive Sampler Retrieval

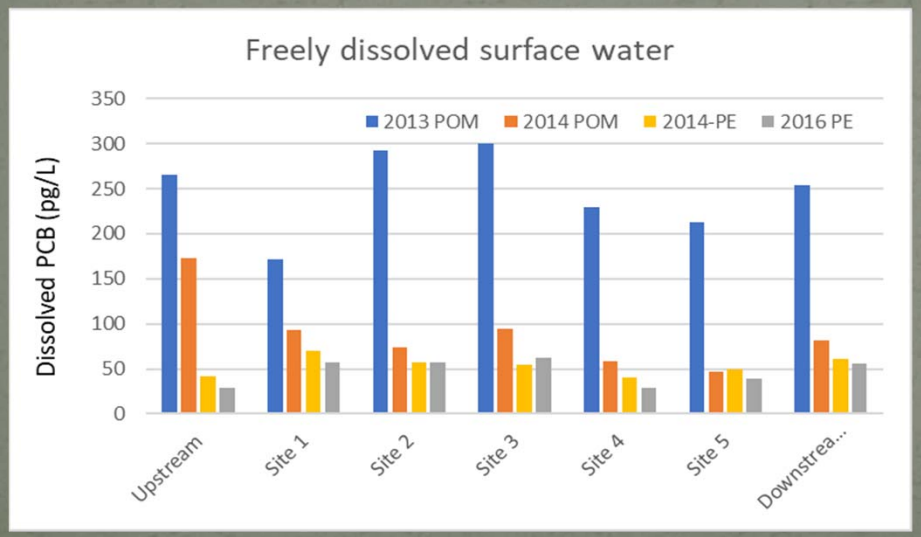






Mirror Lake PCB – Passive Samplers





- Freely dissolved PCB in the sediment pore water dropped ~ 61% over 3 years.
- Freely dissolved PCB in the water column dropped ~80% over the same period.
- Station-to-station variability explained by pond hydrogeomorphology
- Delaware & EPA human health water quality criterion = 64 pg/L

Fish Tissue Sampling


Largemouth Bass


Brown Bullhead


White Perch

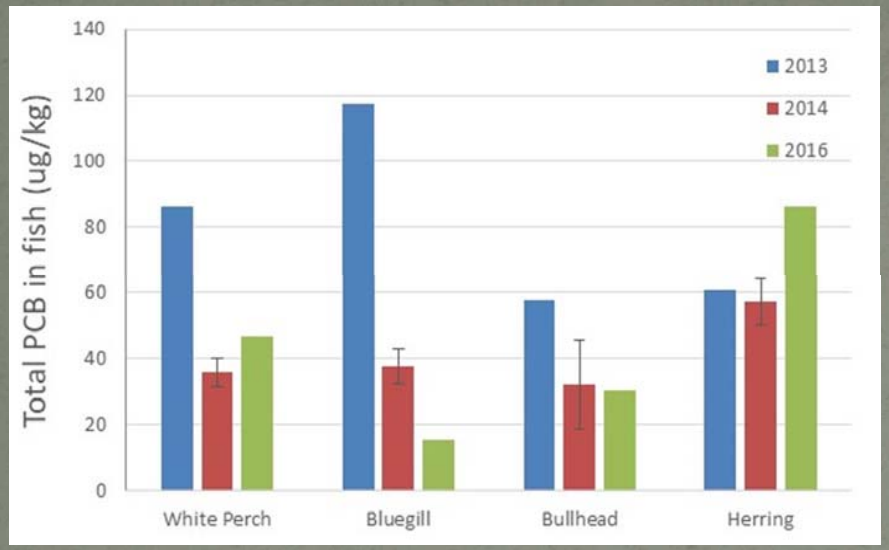

Bluegill

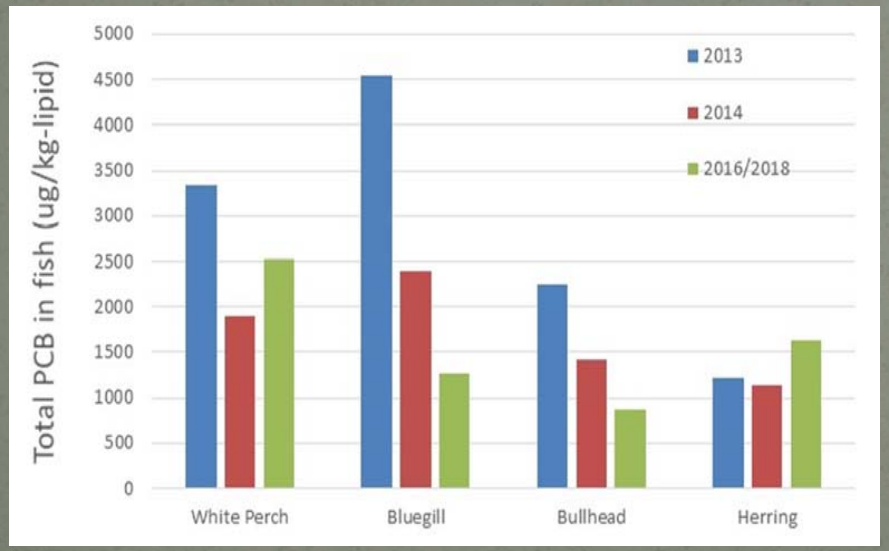

Golden Shiner




Blueback Herring

PCB in Fish Tissue





48% - 87% reduction in resident fish (brown bullhead and bluegill, respectively);

27% reduction in migratory white perch

43% increase in migratory blueback herring

Summary

- % reduction in porewater and water column dissolved phase PCB (61% and 80%, respectively) is very similar to % reduction in PCB in *resident* fish species (48% to 87%).
- % reduction was slightly less than anticipated (70% - 90%). This is likely due to residual transport of PCB into Mirror Lake from upstream and downstream (investigated by DNREC and UMBC/ currently negotiating remedy).
- Project was recognized locally, regionally and nationally for its innovative approach and demonstrated results.
- Monitoring will continue periodically to track long term performance.

Awards





- 2014: State of Delaware Governor's Team Excellence Award
- 2015: American Academy of Environmental Engineers & Scientists Honor Award
- 2016: Water Resources Association of the Delaware River Basin Government Award

Acknowledgements

Dr. Rick Greene, DNREC, Watershed Assessment Section
John G. Cargill, DNREC, Site Investigation & Restoration Section
Eli Patmont, AnchorQEA, formerly UMBC

- AmeriCorps
- Biohabitats
- Brightfields
- City of Dover
- Colonial Investment & Management Company
- Delaware National Estuarine Research Reserve
- Delaware Office of Management and Budget
- Delaware Representative Darryl Scott
- Delaware Senator Brian Bushweller
- DNREC Office of the Secretary
- DNREC Division of Fish & Wildlife
- DNREC Division of Parks & Recreation
- DNREC Division of Waste & Hazardous Substances
- DNREC Division of Water
- DNREC Division of Watershed Stewardship (esp. the Shoreline and Waterway Section)
- Energizer Personal Care
- Frazier's Restaurant
- Interfaith Mission
- Meadville Land Services, Inc.
- Pinelands Nursery, Inc.
- Portadam, Inc.
- Ransome Rents
- Sediment Solutions
- Silver Lake Commission
- Sussex County Conservation District
- Sussex County Correctional Boot Camp
- US Army Corps of Engineers
- VOLUNTEERS, VOLUNTEERS, VOLUNTEERS!
- Wistar Equipment, Inc.

Questions ?



On May 23, 2018, DWS staff and DWHS Director Marjorie Crofts, along with assistance from City of Dover staff, completed a supplemental clean-up and planting of the Mirror Lake wetland and adjacent buffer. The activities were organized by DWS staff after an April 30, 2018 meeting with Senator Bushweller, during which he expressed dissatisfaction with the overall appearance of the wetland. Approximately 25 participants removed invasive plant species, last year's senesced plant material, and trash. To enhance the appearance, an additional 120 flowering wetland plants were planted amongst the existing native plants. This effort will further increase the wetlands ability to improve water quality and provide valuable wildlife habitat. Staff discussed the potential need to make this cleanup and annual exercise based upon the location of the wetland at the gateway to historic downtown Dover. DWS staff plan to meet with City of Dover staff to formulize a maintenance agreement for the project, as well. Some photos from the clean-up are attached.





