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To: Delaware Bay Shellfisheries Council and NJ DEP Bureau of Shellfisheries
From: Iris Burt
Date: July 2, 2024
Re: Delaware Bay Seed Bed Monitoring

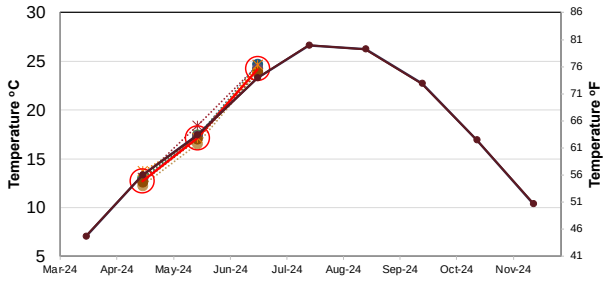
Oyster samples were collected on June 17 for our regular monthly monitoring program.

Bottom water temperature is tracking the long-term seasonal cycle and averaged 24.2°C (74°F). Most oysters sampled appeared to be very ripe or just beginning to spawn.

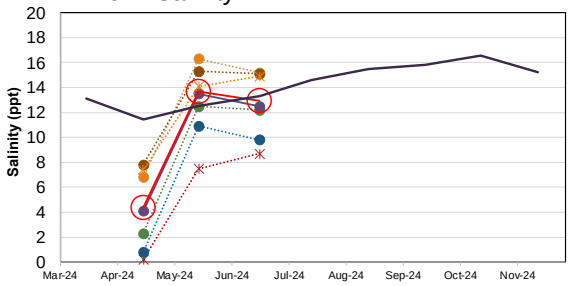
Salinity increased from a low average in April of only 4.4 to a more normal average of 13.0 with a range of 8.7 at Hope Creek to 15.2 at Bennies. This increase corresponds to a substantial decrease in Delaware River flow which is typical in the long-term record (see USGS graph below).

The overall average size was near the long-term mean, increasing in size from upbay to downbay.

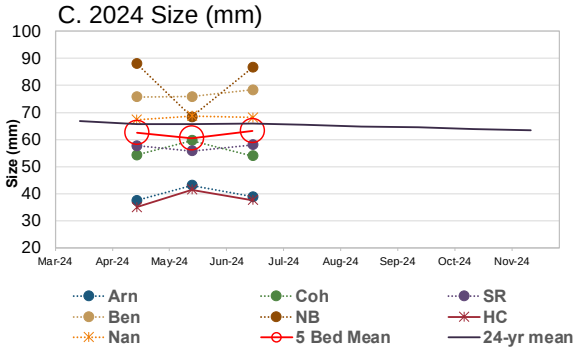
A. 2024 Temperature



B. 2024 Salinity



C. 2024 Size (mm)



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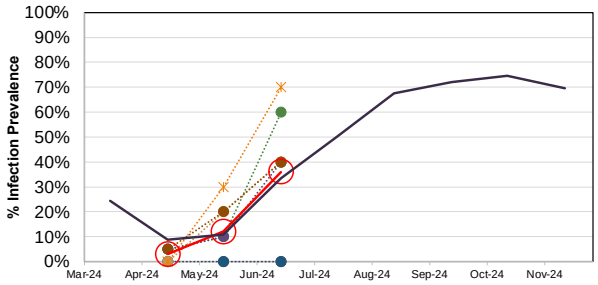
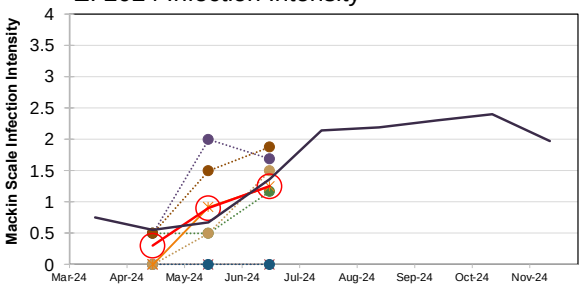
Dermo disease continued its seasonal increase but remains relatively light with higher prevalences and intensities occurring down bay.

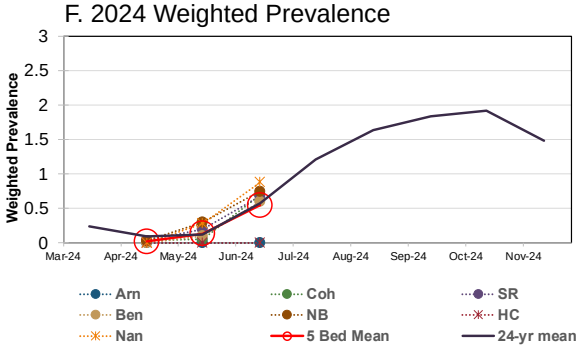
D. 2024 Infection Prevalance



E. 2024 Infection Intensity



F. 2024 Weighted Prevalence



Total box counts decreased or remained steady in June on all beds. Recent box counts were very light across all beds. Overall, total box counts continue to run above average while new and cumulative box counts are running slightly below average. Rather than any mortality event, these data suggest that boxes are being released as the beds loosen up from winter.

Shellplanting and intermediate transplant sites were sampled on June 25.

The 2022 shellplant sites on Nantuxent and Shell Rock site now average 38mm (1.5 inches). Average box counts for the Shell Rock site were 8% with few boxes noted. The Nantuxent site has been difficult to obtain good samples from, so data are limited on that site.

The 2023 shellplant sites (Bennies, Shell Rock and Ship John) averaged 24 mm (1 inch), 19 mm (3/4 inch) and 13 mm (1/2 inch), respectively. Cumulative mortality is increasing rapidly on Bennies (45%) with lots of evidence of drill damage, but relatively low on the other two shellplants (8% and 7%, respectively).

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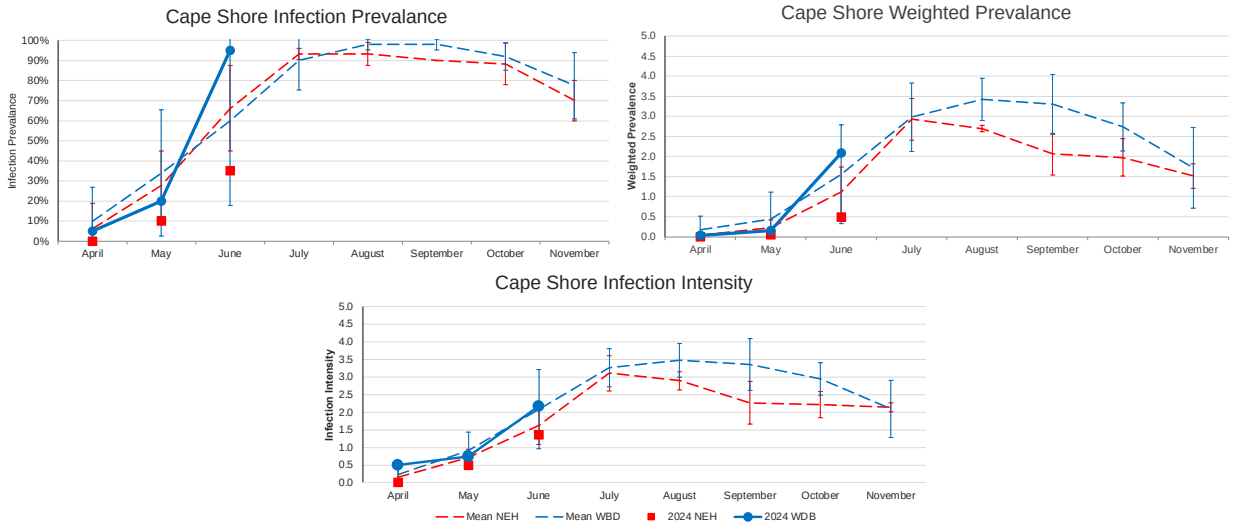
On the 2023 and 2024 transplant sites, total box counts remained steady or decreased similar to the regular monthly monitoring sites. New box counts were very light across all sites.

Dermo disease analysis was not performed on any transplant or shellplant site in the month of June, but testing will resume monthly beginning in July.

Cape Shore Sampling

We have been systematically monitoring disease at the Cape Shore since 2018. This monitoring is distinct from the seed beds because lines are kept together by cohort or size class, protected in bags, grown intertidally, and subject to much higher salinities. Direct comparison with wild samples from the seed beds are not valid, hence, these data are presented separately. These data are from the Rutgers Cape Shore Laboratory farm where we can standardize stock, ploidy level, husbandry methods, etc. The intent is to provide a general understanding of disease pressure from year to year at the Cape Shore. In 2018 we began monitoring the wild Delaware Bay control line (WDB). In 2021 we monitored the NEH production line. In 2022 we began monitoring both the NEH production line (seed being distributed for commercial production) and the wild Delaware Bay control line (WDB). Both lines are sampled at two years of age during their second full year of production.

In this relatively short time series, the prevalence of dermo disease has been virtually equivalent in the WDB and NEH lines. However, in the past month, the WDB line has become more heavily infected than the NEH line.



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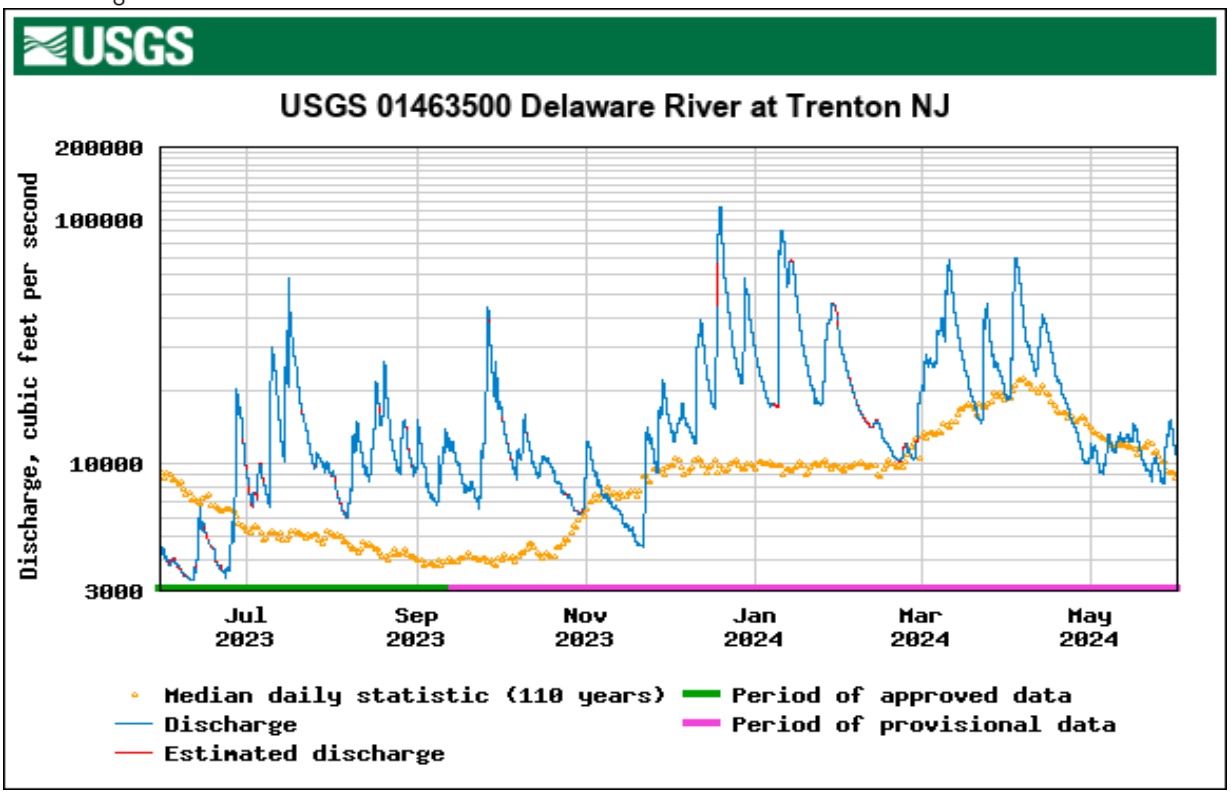

Delaware River discharge measured at Trenton, NJ USGS monitoring station 01463500. Blue line represents daily discharge for the past year relative to the 1913-2023 median values shown as a dotted yellow line.

Data source: https://waterdata.usgs.gov/monitoring-location/01463500/#parameterCode=00060&period=P365D&compare=true