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

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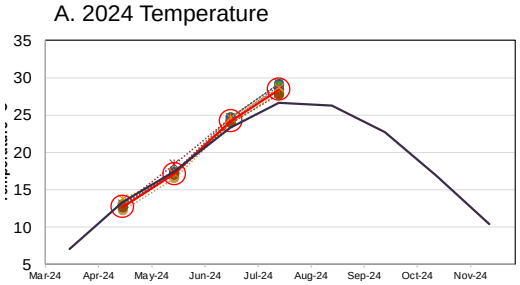
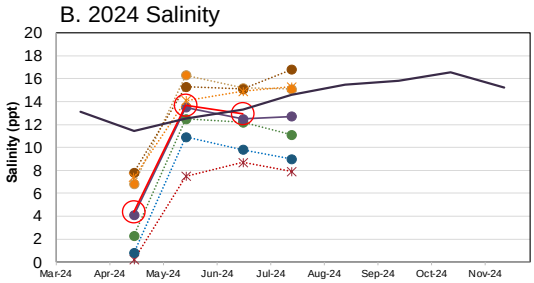
Oyster samples were collected on July 15 for our regular monthly monitoring program.

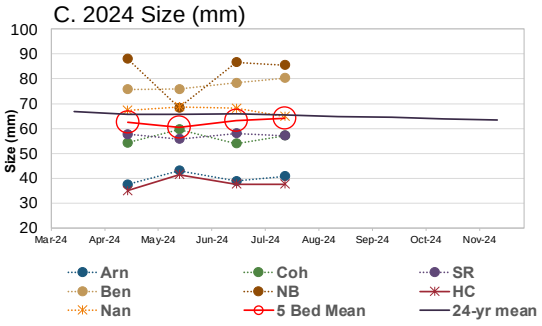
Bottom water temperature is tracking the long-term seasonal cycle and averaged 28.4°C (80°F). Most oysters sampled appeared to be in the process of spawning.

Salinity remained steady from a low average in April of only 4.4 to a more normal average of 13.0 with a range of 8.0 at Hope Creek to 16.8 at New Beds. 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 of oysters sampled was near the long-term mean, increasing in size from upbay to downbay.



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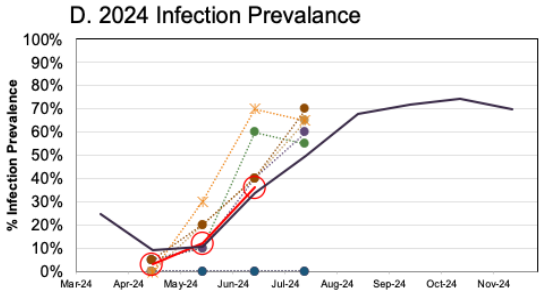
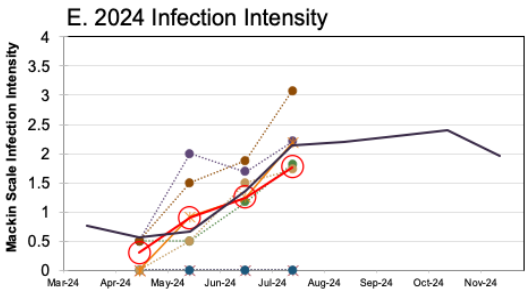
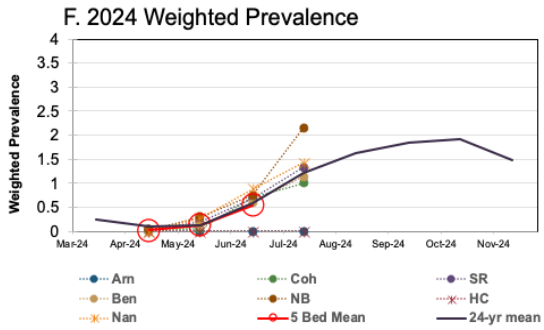
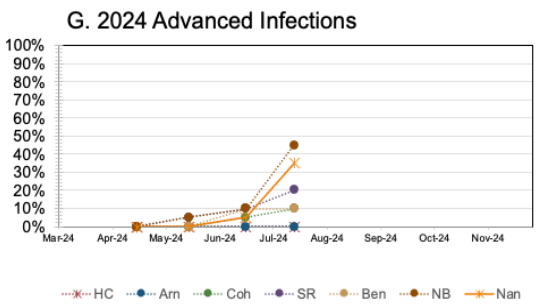
Dermo disease continued its seasonal increase but remains relatively light with higher prevalences and intensities occurring down bay. We have added in an additional graph to this month's report showing how many oysters in each sample have heavy dermo infections rated at a 3.0 Mackin Rating or above. Longterm data is not shown in this graph.

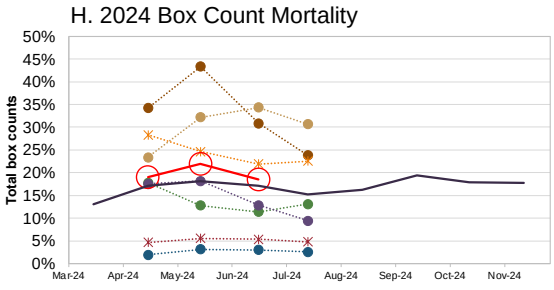


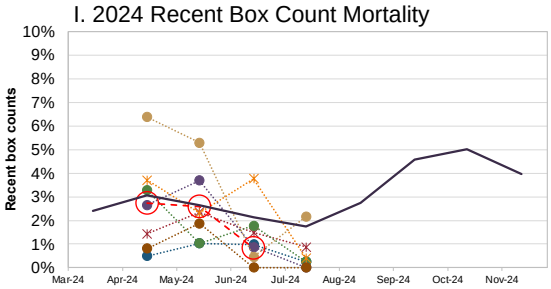



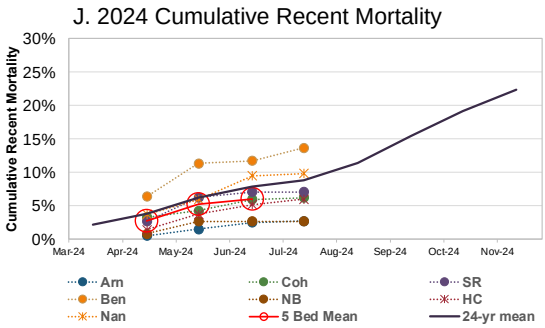




Total box counts decreased or remained steady in July on all beds. Recent box counts were very light across all beds.



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Shellplanting and intermediate transplant sites were sampled on July 22.

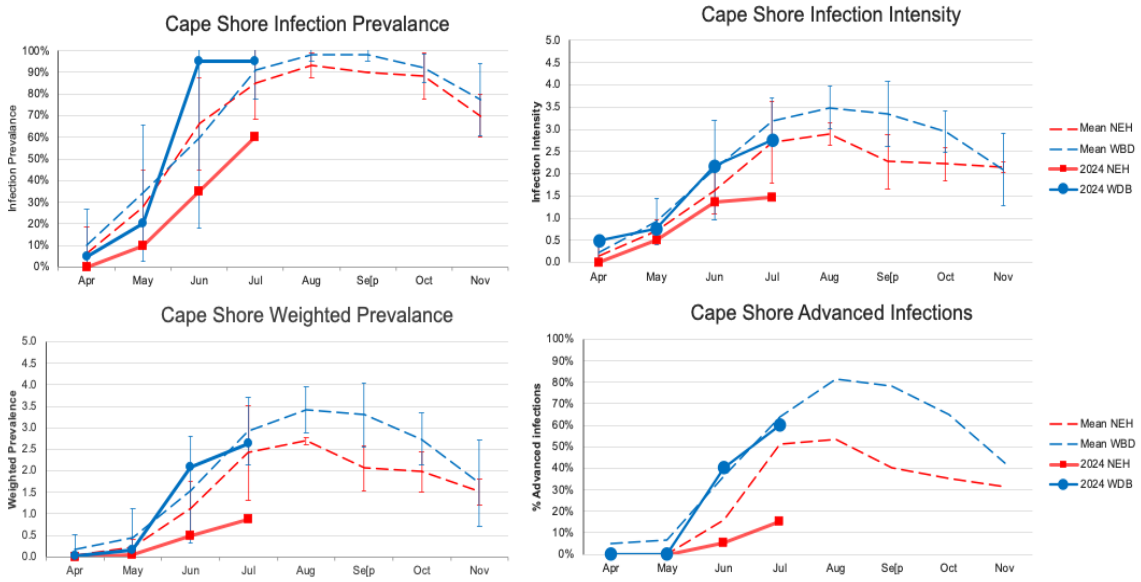
The 2022 shellplant sites on Nantuxent and Shell Rock site now average 44mm (1.7 inches). Average box counts for the Shell Rock site were 6% with no new boxes noted. No dermo disease was detected in these samples. The Nantuxent site has been difficult to obtain good samples from, so data are limited on that site.

The 2023 shellplant sites (Bennies, Shell Rock and Ship John) averaged 31 mm (1 inch) across all beds. Cumulative mortality is highest on Bennies (46%) with lots of evidence of drill damage, but relatively low on the other two shellplants (8% and 7%, respectively).

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 was light to moderate across all sites.

We have been systematically monitoring disease at the Cape Shore since 2018. 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. 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