UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Memorandum

DATE: May 24, 2022
SUBJ: 5/17/2022 inspection of Upper Harbor sediment caps, NBHSS
FROM: D. Dickerson, co-RPM
To: site file

DAVID DICKERSON Digitally signed by DAVID DICKERSON
Date: 2022.05.24 08:38:46 -04'00'

This memo documents the visual shoreline inspection of all Upper Harbor (UH) sediment caps, performed by D. Dickerson on 5/17/2022. The inspections took place between approximately one hour before and one hour after a -0.4 ft low tide at 3:07 pm that day (the lowest tide listed for May) since only the intertidal portions of the caps can be seen visually. Note that at this inspection two caps, 0-711 and L-114, were completely subtidal and thus could not be seen. At the Parcel 265 cap, only a very small portion of the cap could be seen (see Figure 16 below). It appears that the very strong southerly breeze that was blowing during the inspection prevented the river water from ebbing southward completely. Bathymetric surveys will be performed in fall 2022 to augment this visual feature inspection.

Figure 1 below shows the locations of the seven UH sediment caps installed in 2020. North to south, these caps are: 0-711, Crib, L-014, L-114, pilot CDF shoreline, Cogg-East and Cogg-West. Note that a small, stone-only eighth UH sediment cap, located between the pilot CDF shoreline cap and the Cogg-West cap, was installed in 2015 as part of the Parcel 265 intertidal remedial action. Not shown on Figure 1 is the Aerovox sediment cap (just to the north of the Figure 1 boundary) that was also inspected on 5/17/2022.

Figures 2 through 21 below are photos of these caps running north to south taken during this inspection.

Based on this inspection the UH sediment caps appear to be in good shape but with four action items required, in addition to the fall bathymetry:

1 - At one small (~3 sf) area at the **Crib cap**, small areas of the sand cap could be seen within the voids of the armor stone (Figures 6 and 7). Armor stone needs to be placed within this area (different than the area noted from the December 2021 inspection).

2 – Recommend that additional stone be added at the **Crib cap** during West Zone 2/3 operations to create a more uniform (less undulating) stone surface that will aid in visually detecting potential stone displacement moving forward (similar to repairs/smoothing being performed during this inspection at the L-014 cap).

3 – At the **L-014 cap**, the water level did not drop sufficiently to allow visual inspection of the seaward edge of the cap (again, likely due to the strong southerly wind). This seaward edge will have to be viewed again to determine if the cap repairs being performed during the inspection (and the next day) were successful in filling the potentially-damaged areas noted in the December 2021 inspection (Figures 9 and 10).

4 – At the **pilot CDF shoreline cap**, one small area (~3 sf) of the sand cap could be seen within the voids of the overlying armor stone (Figure 14). Armor stone needs to be placed within this area.

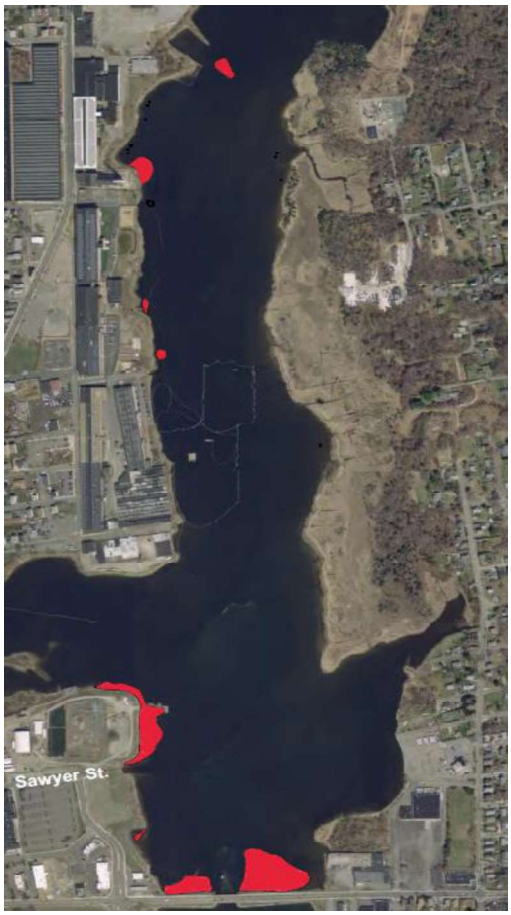

Figure 1:
← 0-711 cap

← Crib cap

← L-014 cap
← L-114 cap

← Pilot CDF shoreline cap

← Parcel 265 stone cap
← Cogg-W and Cogg-E caps

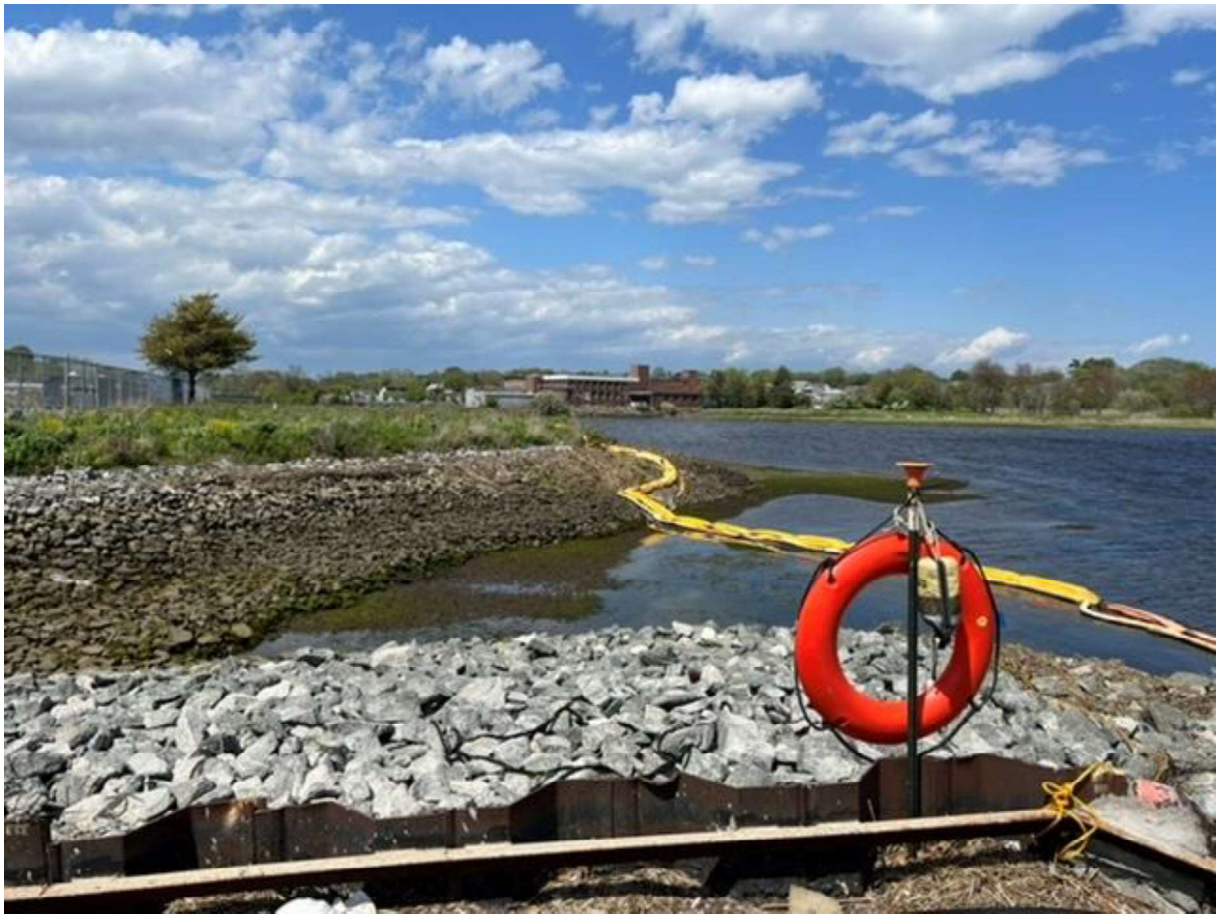

Figure 2: **Aerovox cap** looking north from the northeastern edge of the Aerovox site. The oil boom is from the ongoing Aerovox 21E work. Note that both the N and S drainage trenches remain plugged during the 2022 21E work.

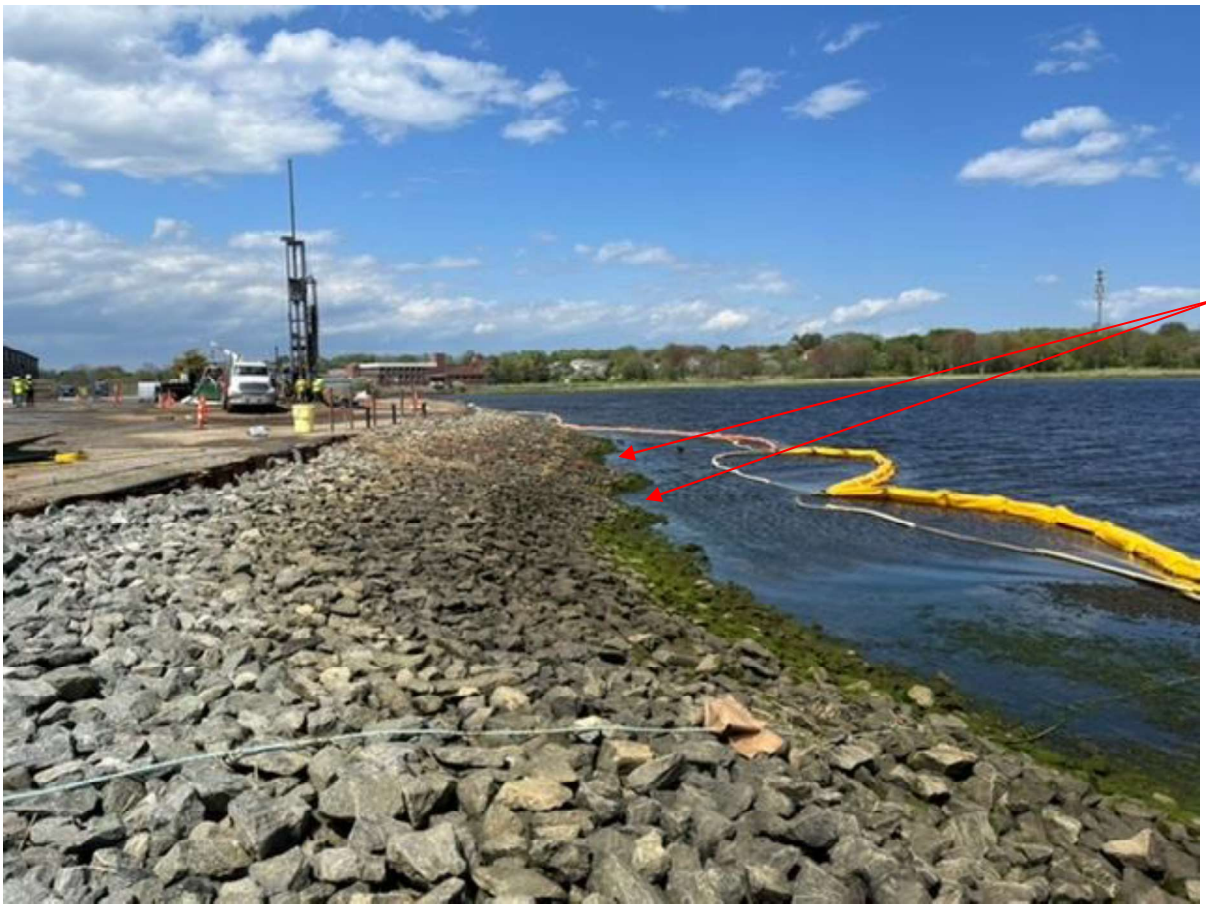

Figure 3: **Aerovox cap** looking north along the landward/western edge of the cap. Note the serrated pattern developing at the toe of slope.

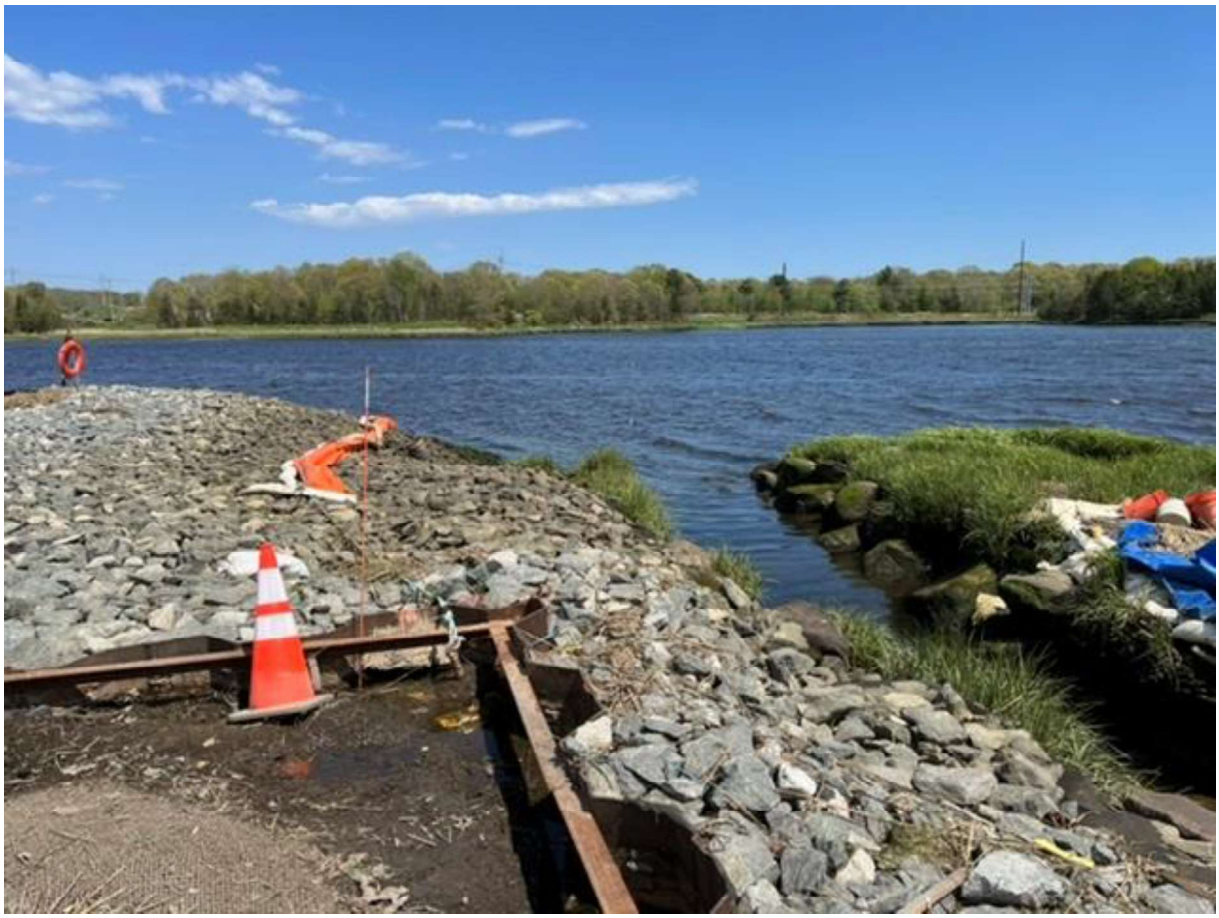

Figure 4: **Aerovox cap** looking east along the southern edge of the cap. City storm drain is on the right.

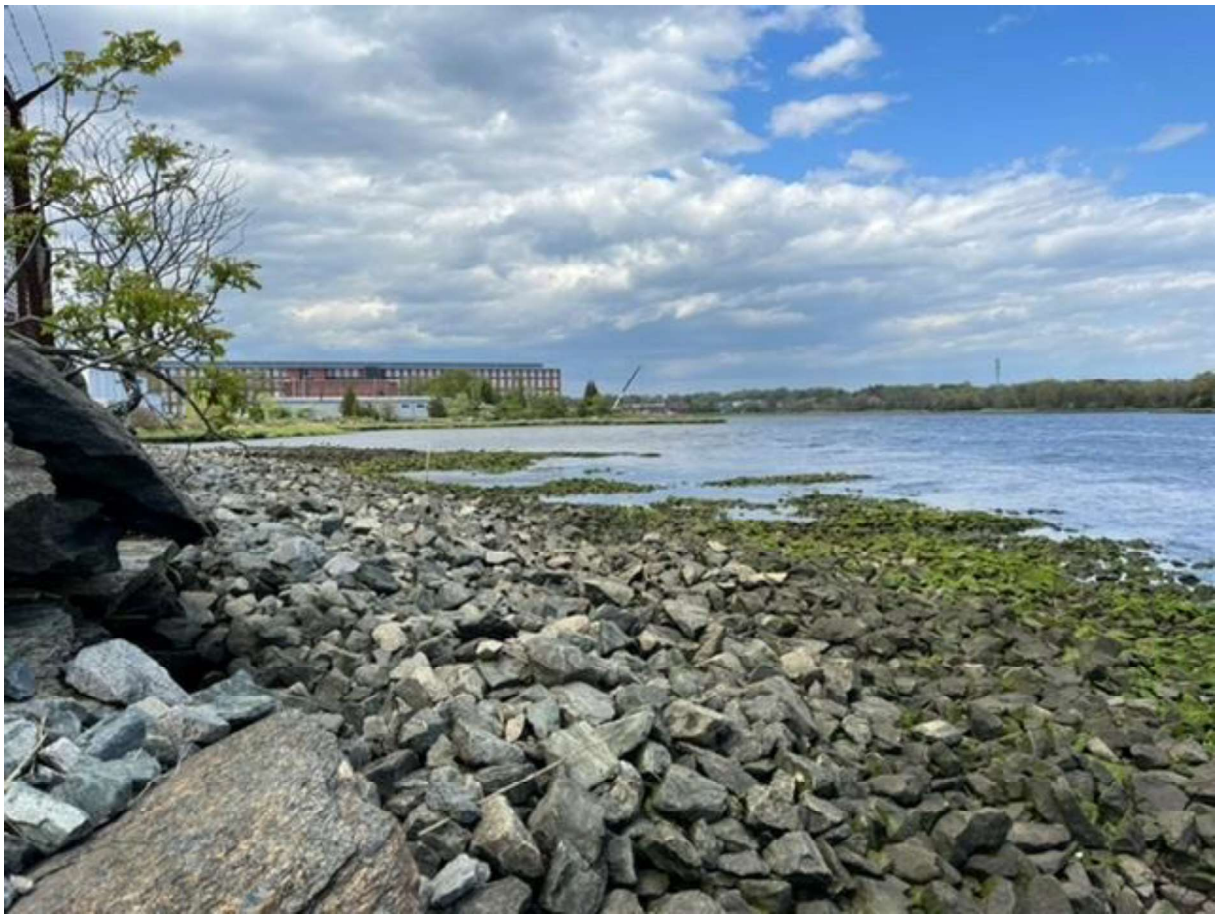

Figure 5: **Crib cap** looking north from the southern area of the cap.

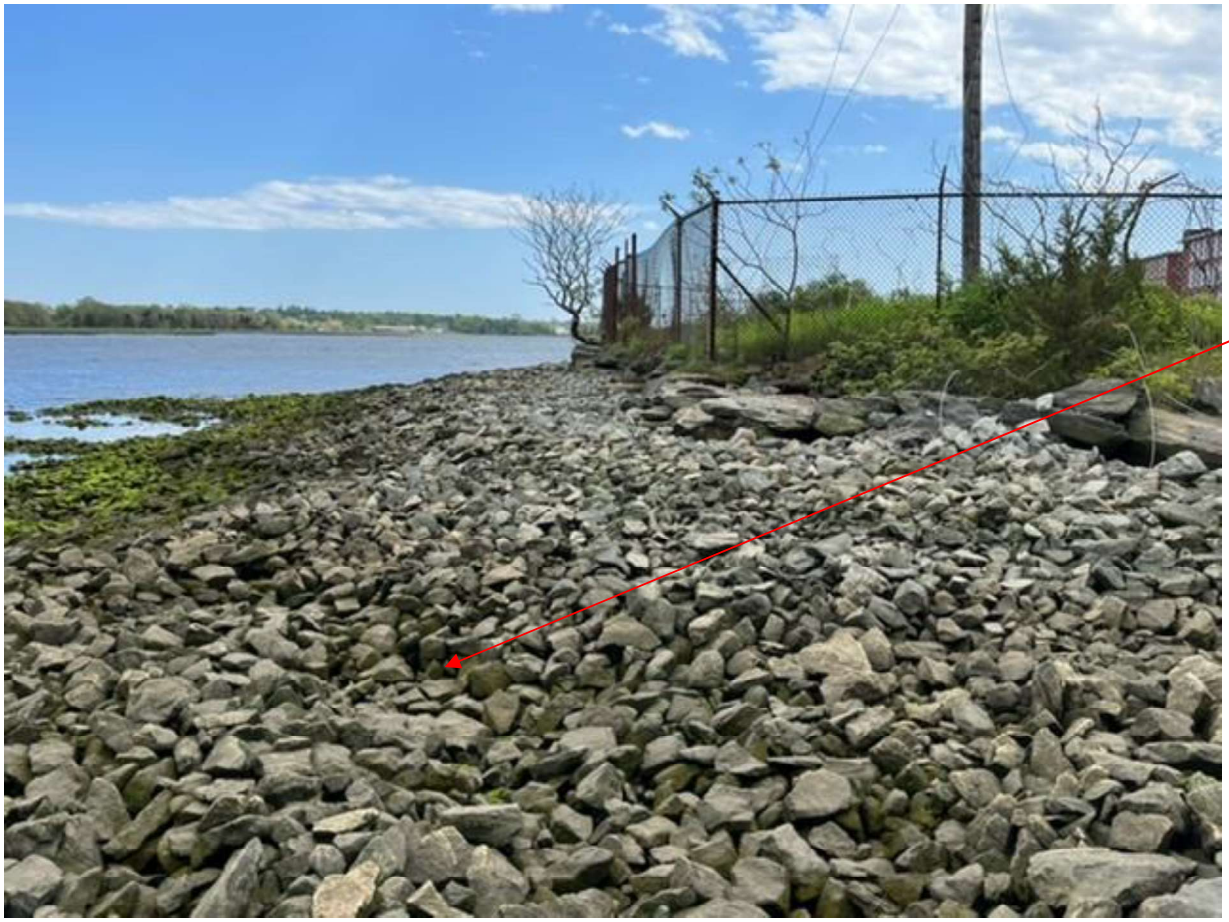

Figure 6: **Crib cap** looking south showing the small area needing addition of armor stone (see Figure 7 for closeup).

Figure 7: **Crib cap** showing the small areas of exposed sand needing addition of armor stone.

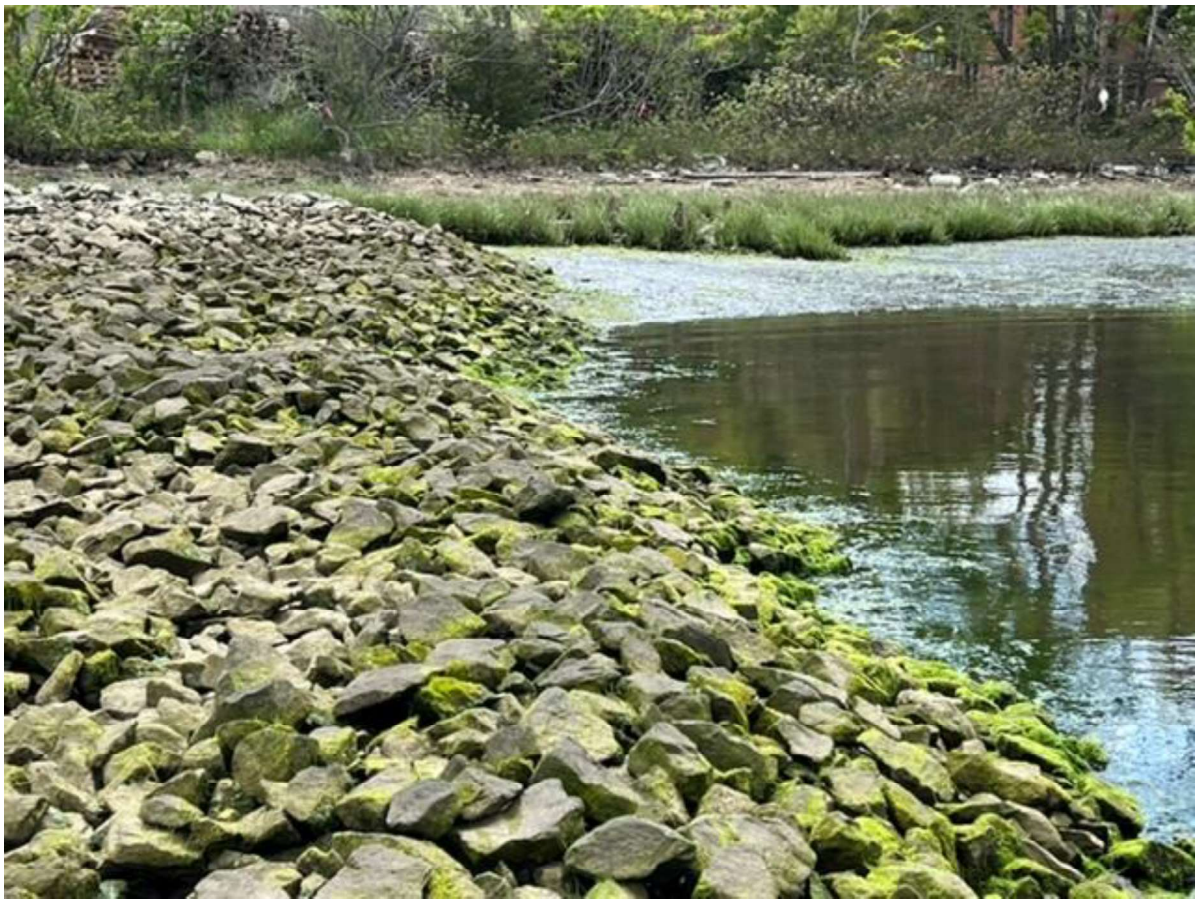

Figure 8: **Crib cap** looking west showing the northern E/W-trending edge of the cap.

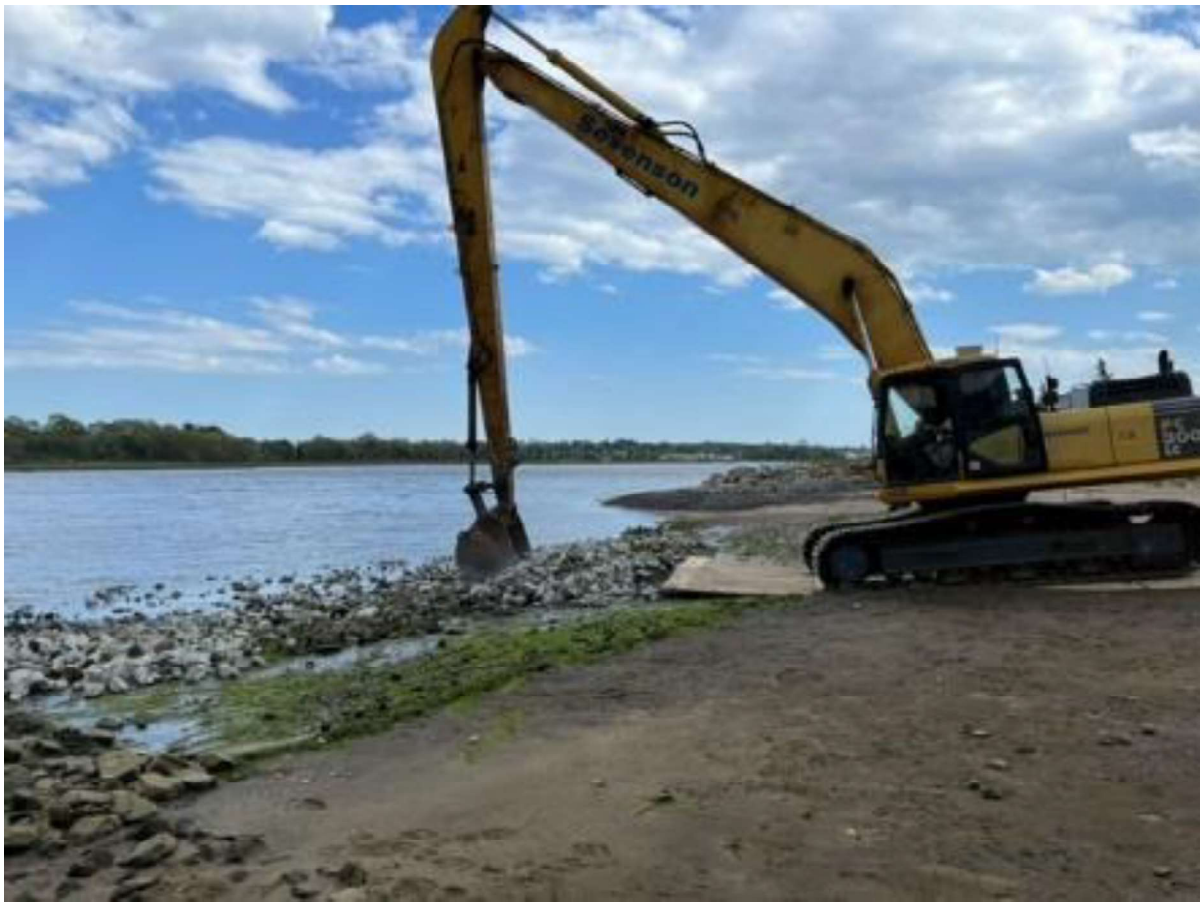

Figure 9: **L-014 cap** looking south. Additional armor stone being added by the WZ 4 intertidal crew to create a more uniform surface to aid in visual inspections moving forward.

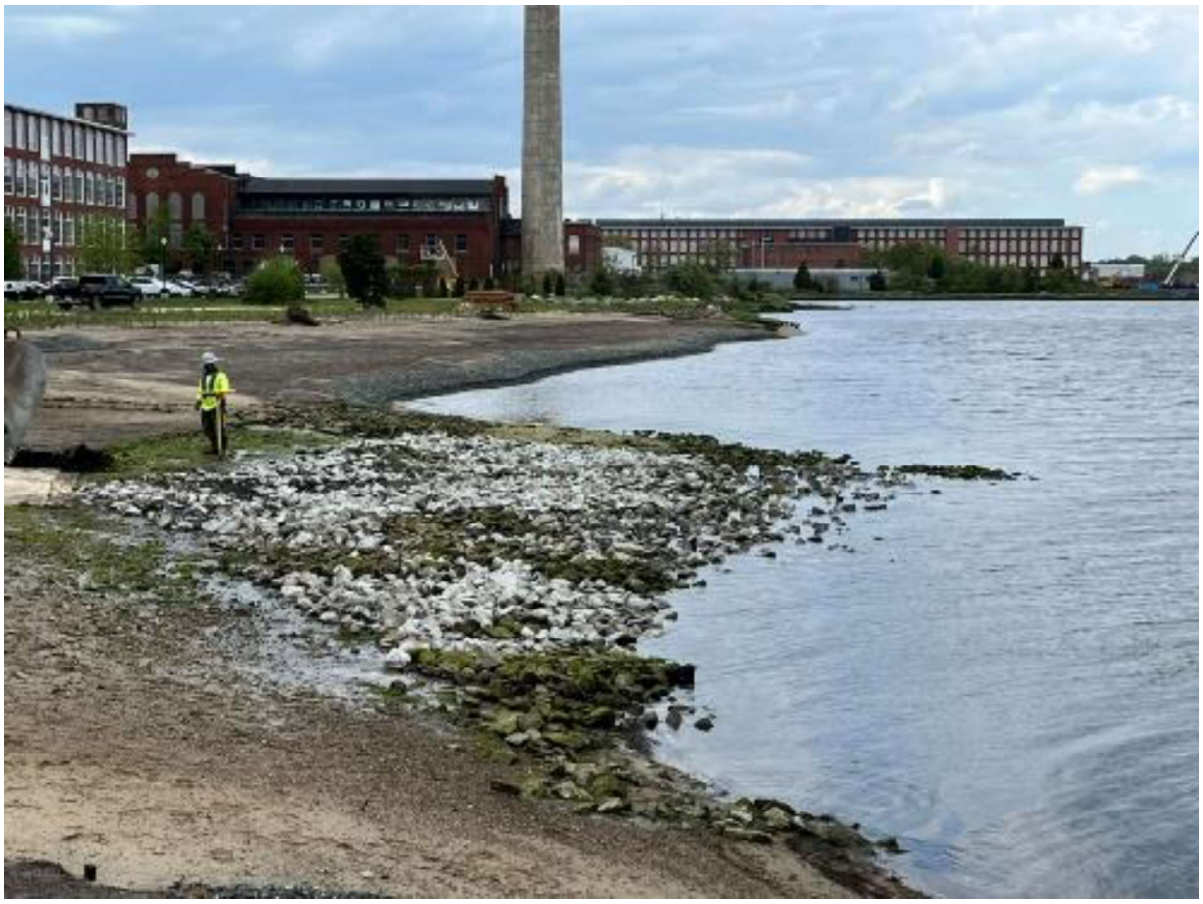

Figure 10: **L-014 cap** looking north. Additional armor stone being added by the WZ 4 intertidal crew.

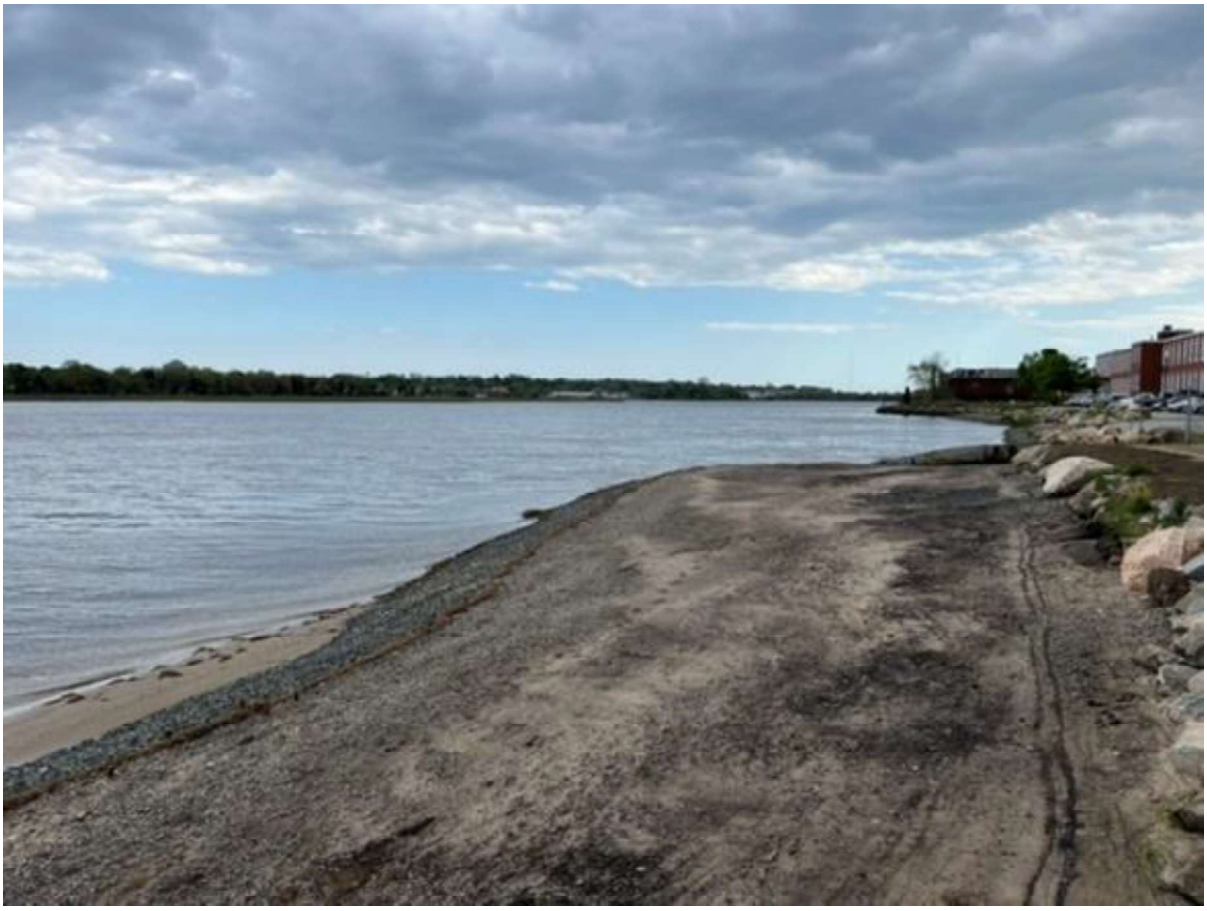

Figure 11: **L-114 cap** (fully submerged, not visible). This photo shows the recently repaired WZ4 intertidal area, ready for saltmarsh plantings. Note coir log and gravel wedge at the seaward face of the low marsh planting area.

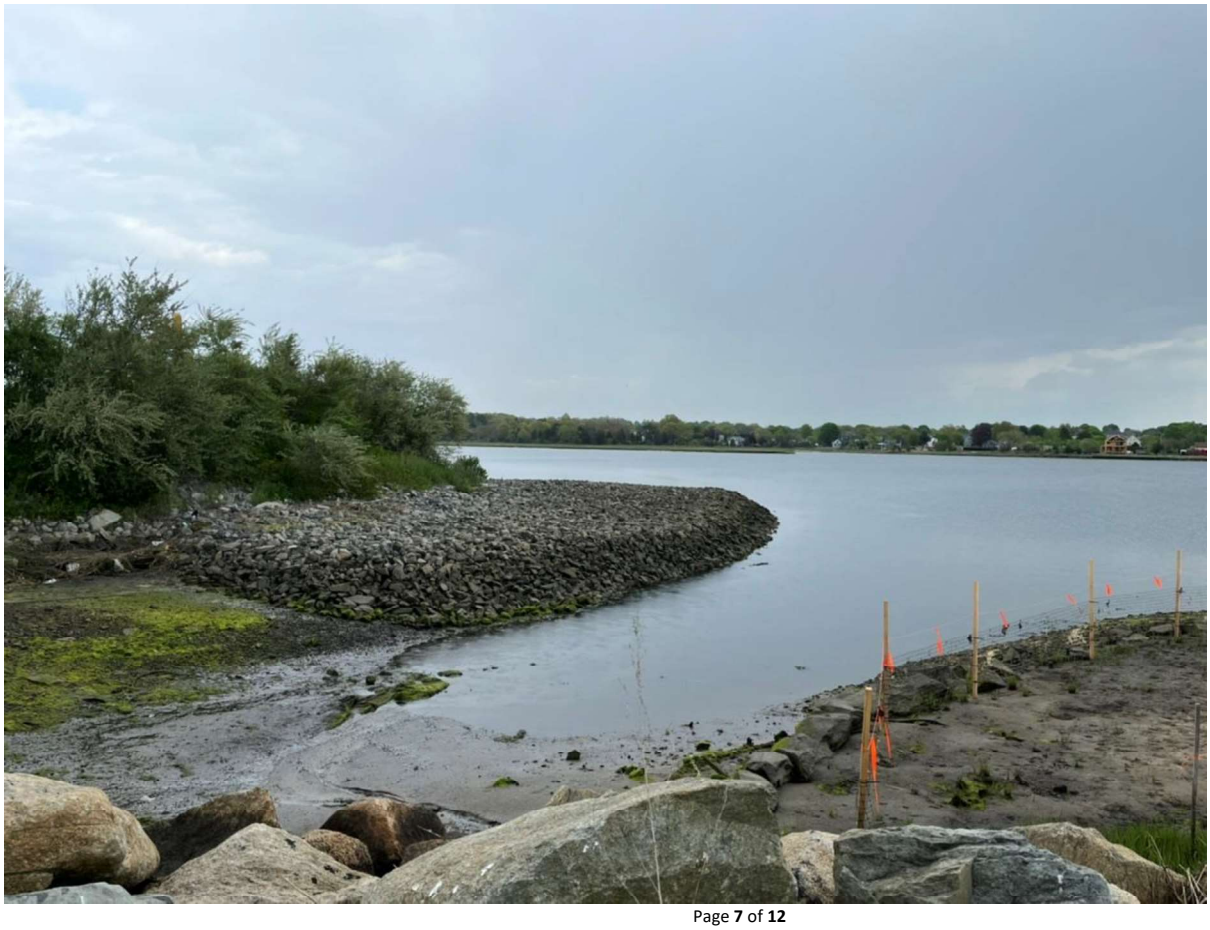

Figure 12: **Pilot CDF shoreline cap** looking northeast showing the southern edge of the cap.

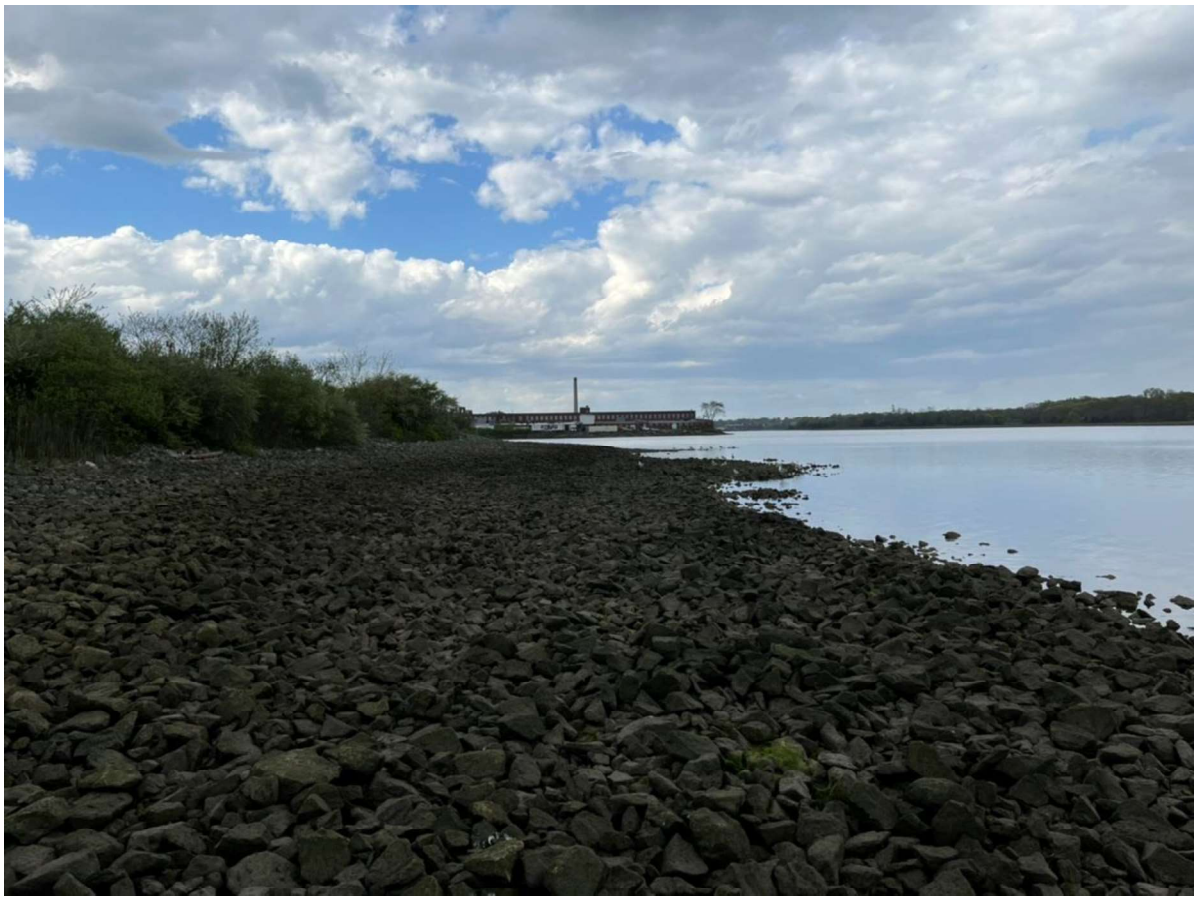

Figure 13: **Pilot CDF shoreline cap** looking north.

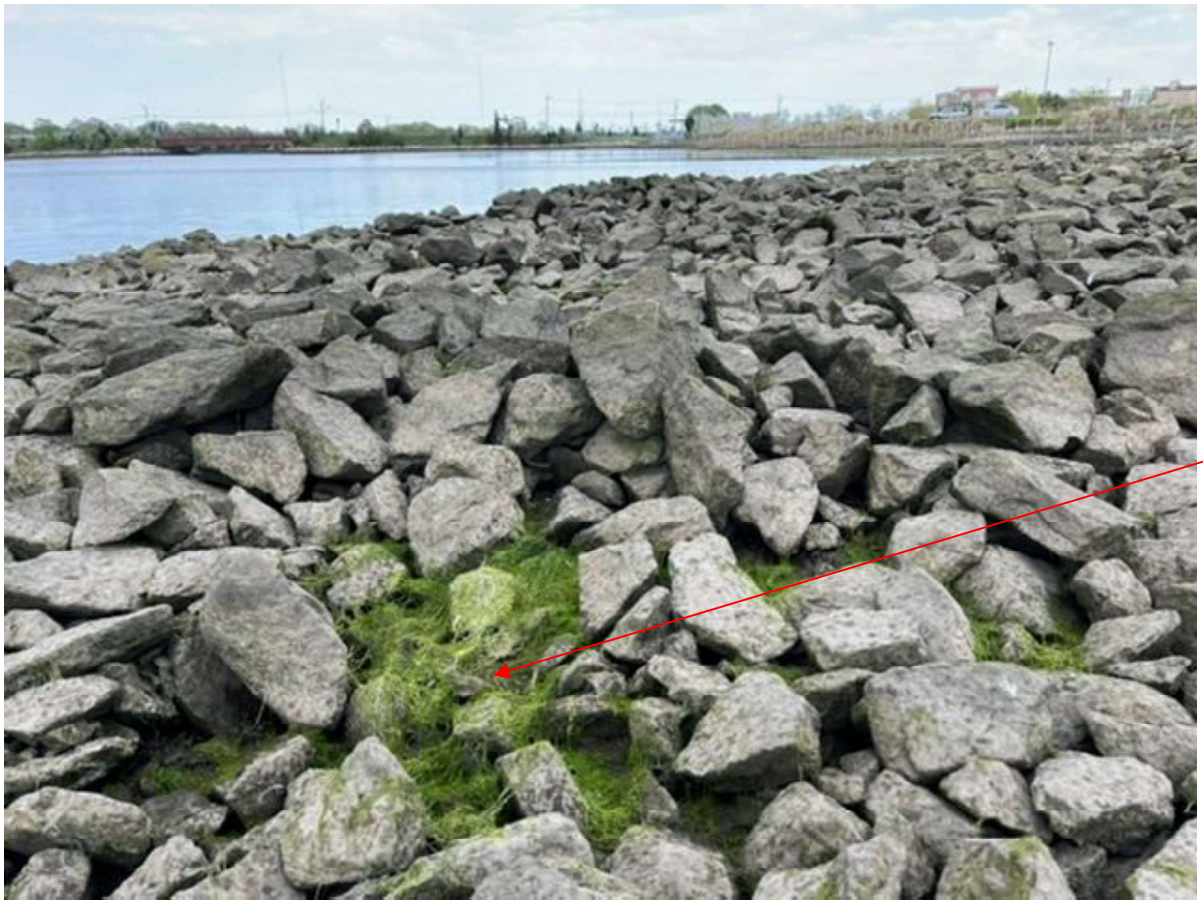

Figure 14: **Pilot CDF shoreline cap** looking south showing small area needing additional armor stone (area covered with green algae).

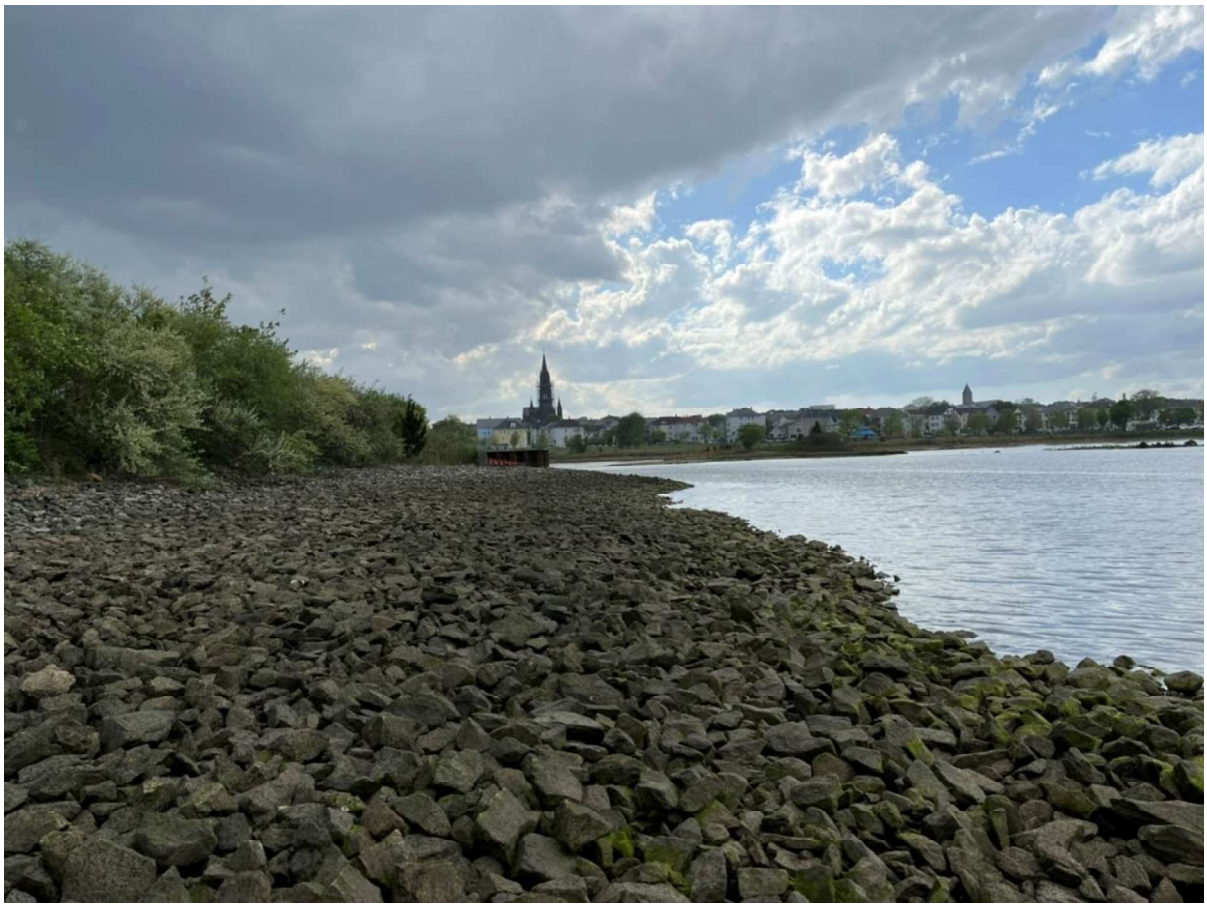

Figure 15: **Pilot CDF shoreline cap** looking west showing the northern E/W-trending portion of the cap.

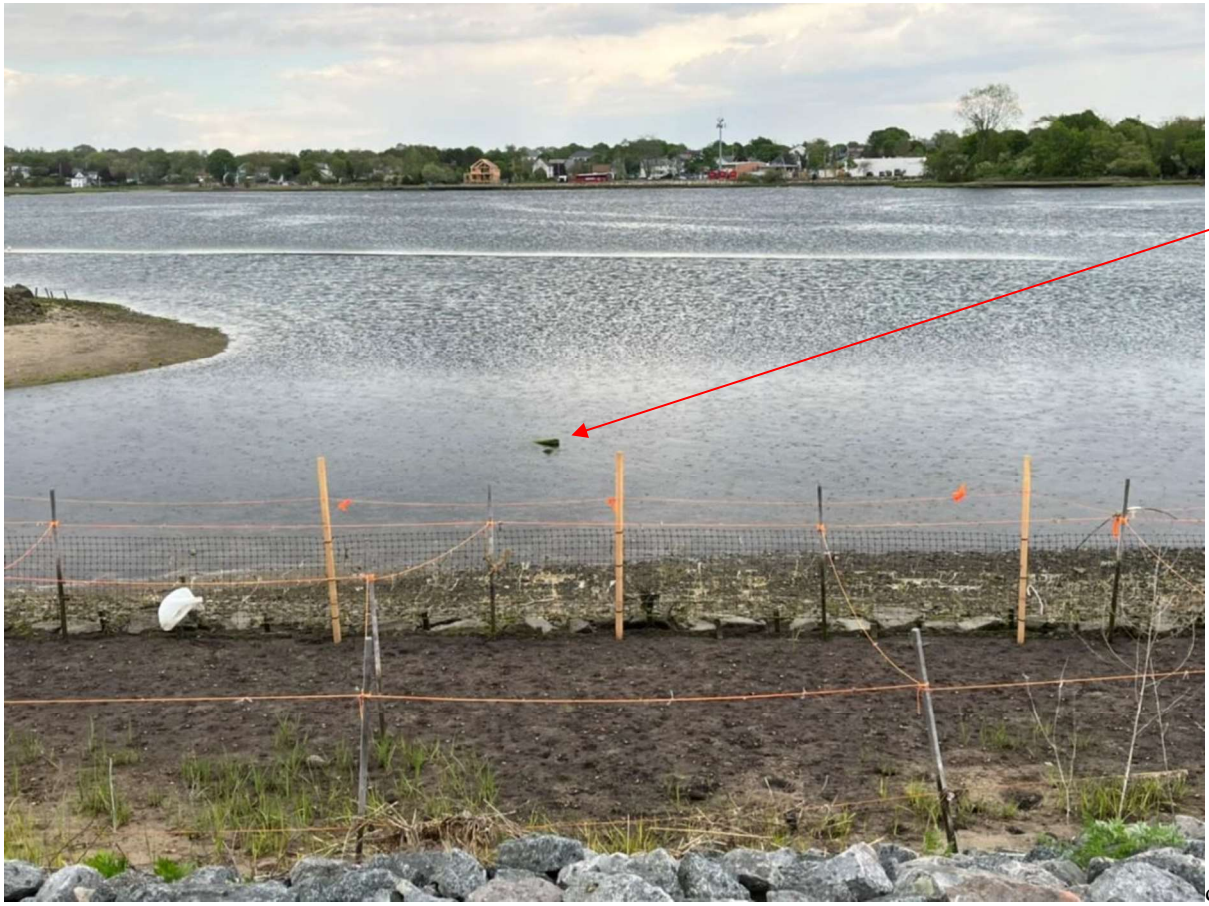

Figure 16: **Parcel 265 cap** looking east. Only the very top of the stone cap can be seen. The repaired parcel 265 herbivory fence can be seen in the foreground.

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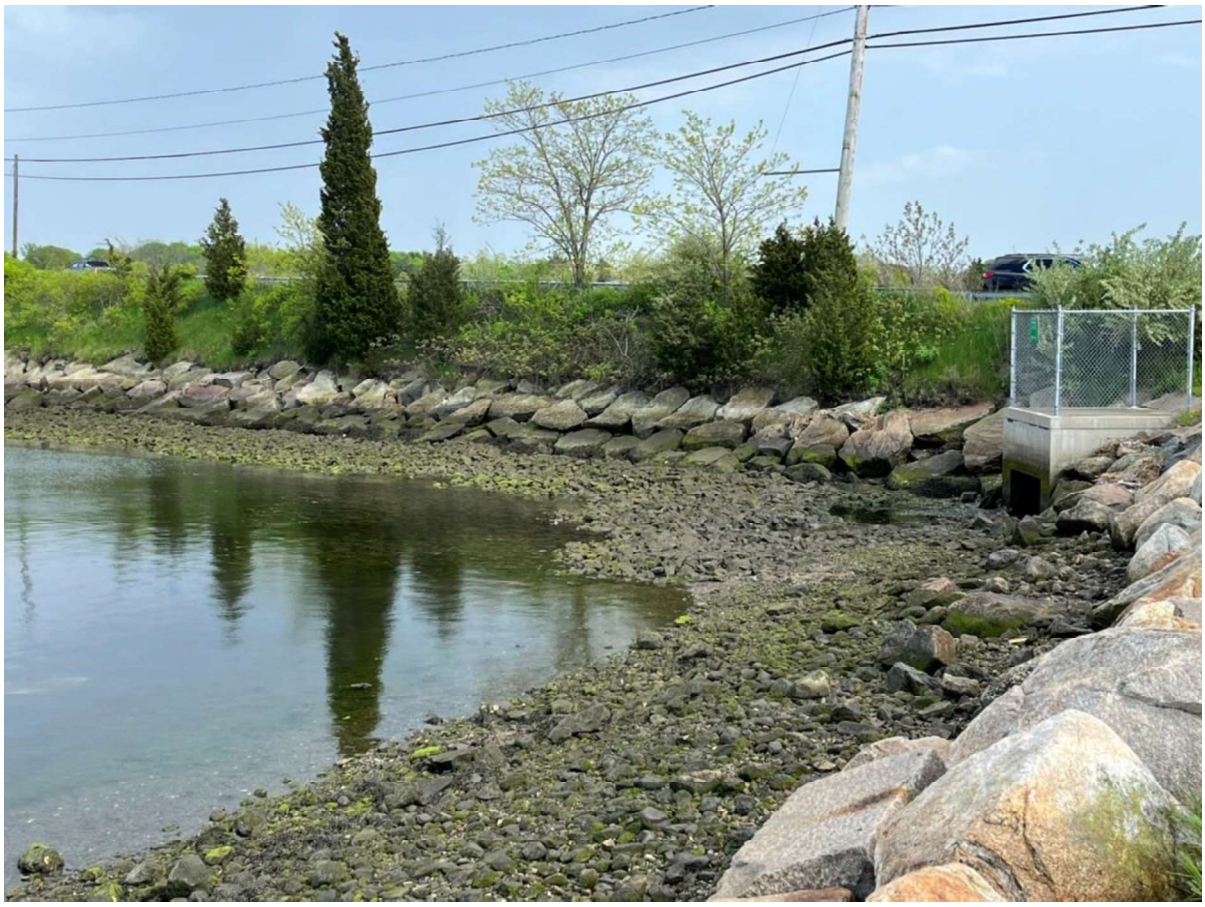

Figure 17: **Cogg-West cap** looking south showing the city storm drain.

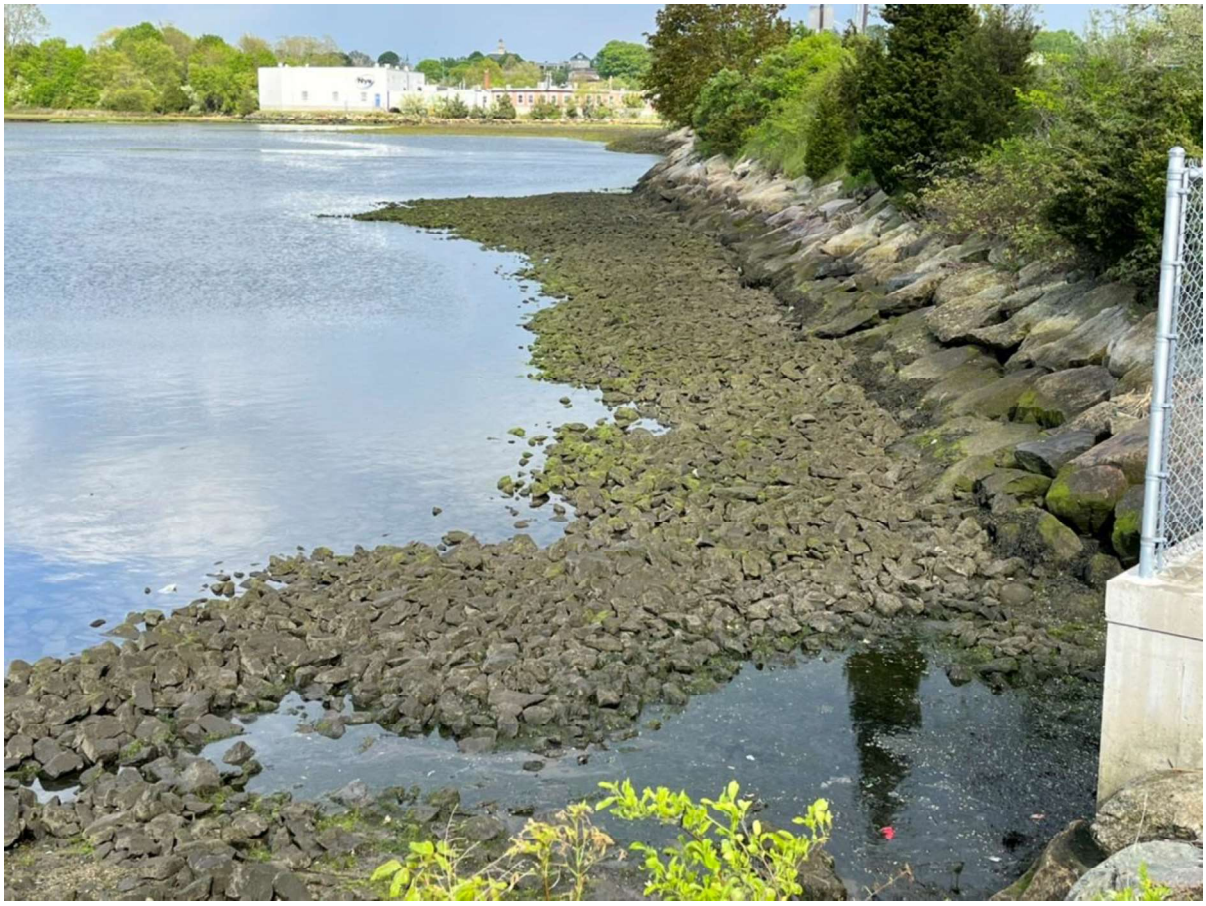

Figure 18: **Cogg-West cap** looking east showing the Coggeshall Street bridge embankment.

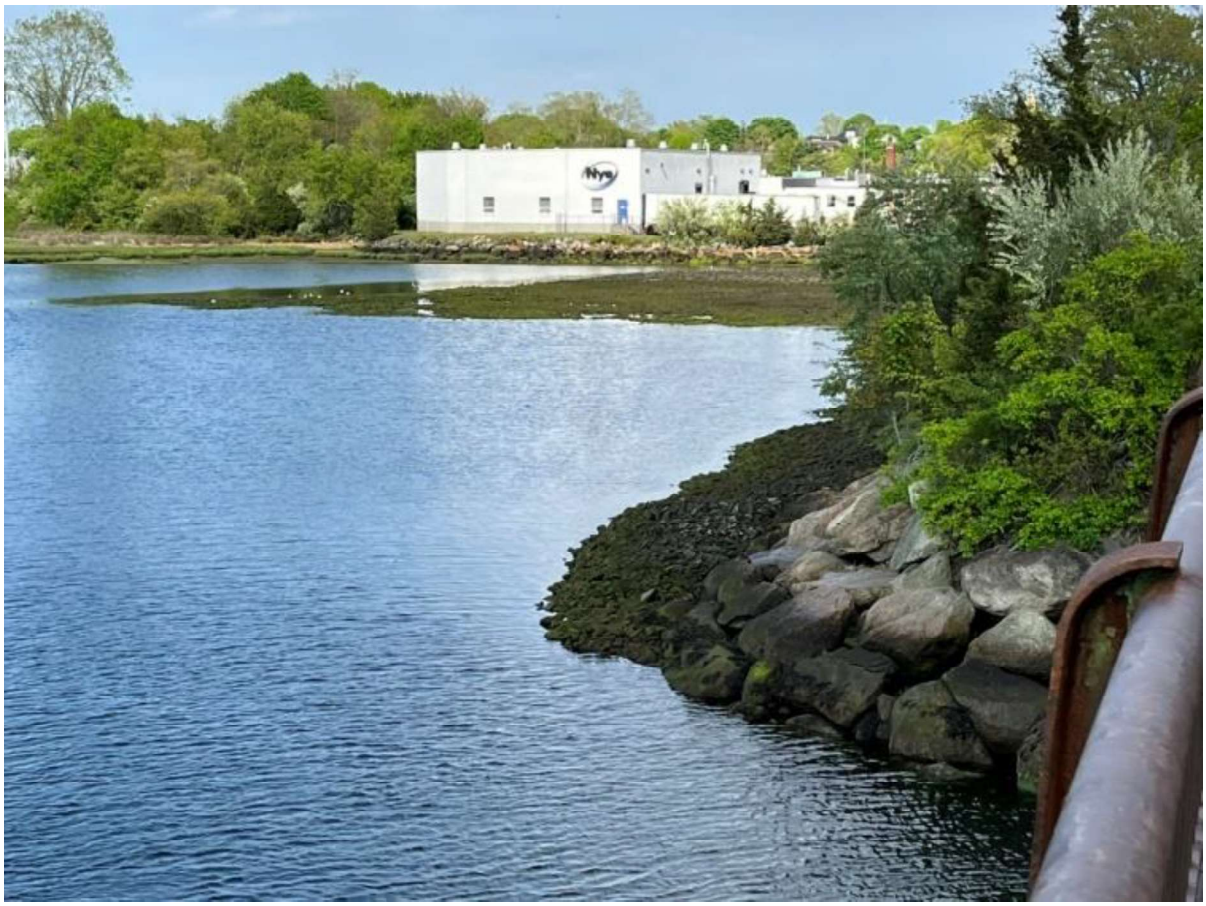

Figure 19: **Cogg-West cap** looking east showing the Coggeshall Street bridge opening.

Figure 20: **Cogg-West cap** looking north. Note the great blue heron at the cap edge.

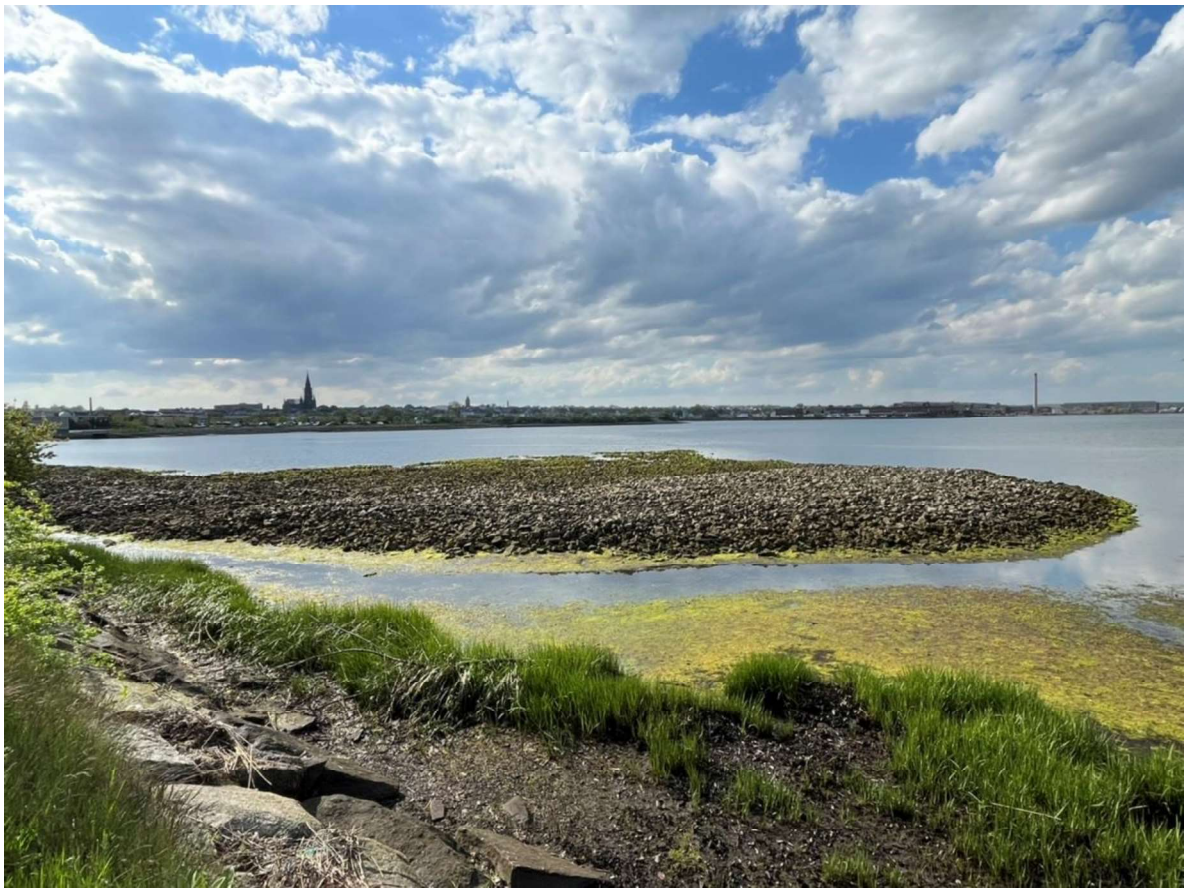

Figure 21: **Cogg-West cap** looking northwest. Note the *Ulva* seaweed, typically a sign of nutrient/ nitrogen enrichment.