

Boston Harbor Kayak Patrol

March 5, 2022

How did we get so lucky? A sunny, beautiful, glassy day in early March?! Thank you, Matthew, for coordinating such a fun paddle.

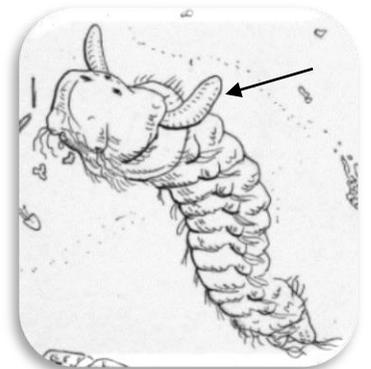
☺ And thank you, Shriya, Jo, Logan, and Liz for joining us to share stories, observe the largest copepod EVER, discover new species

(I'm sure we discovered at least 2!), and learn about plankton. I spent some time trying to figure out what jellyfish we had the pleasure of encountering and was surprised to learn about "Tiny Red Sausage Jellies," or *Euphysa flamma* and *Euphysa japonica* that are found from Alaska to California and most common during the spring. I recall the tentacles being different, however, but perhaps a possibility?



Also, I've often said that when I went into Oceanography, I thought I would study large cute macrofauna (sea otters!), but was disappointed that professors only talked about plankton! Boy was I naive. Plankton are "where it's at!" and the first time I saw a baby polychaete larvae, I had the same feeling one has looking at a puppy, or baby sea otter. ☺ They are adorable. Yesterday, when I took the samples back to the lab, the Boston Harbor Marina sample was full of polychaetes! I'm not sure why we didn't see them

while looking under the field scopes. I noticed something about them that I've never noticed before. WHAT are those insanely cute flying "ears" coming off the front end of the polychaete!!!???? I love the drawing that I found on-line by an Evergreen student. It reminds me of Falcor, the Luck Dragon in The NeverEnding Story. According to my Kozloff Invertebrates book and the Google world, they might be sensory palps, but please correct me if I'm wrong! I made a short video https://youtu.be/eTrH_7dmRbA of two swimming marvels (and barnacles) – the first has an impressive pair of palps!

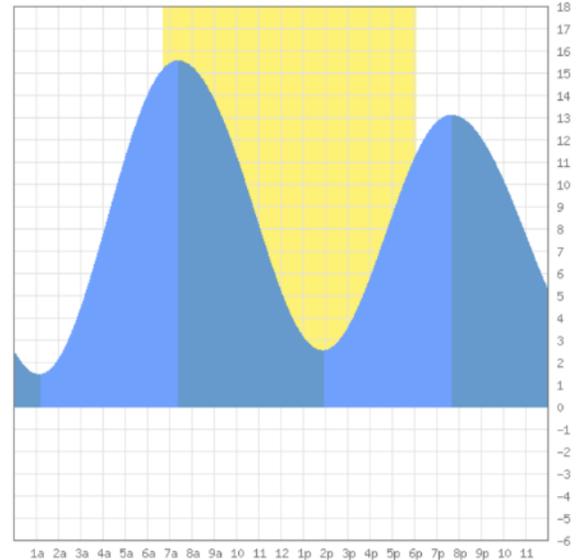


<https://sites.evergreen.edu/vms/polychaete-larvae-eg/>

When Matthew and I hosted our first kayak paddle back in August, the water throughout Budd Inlet was obviously a lot warmer (18°C vs 8°C) and lower Budd (by Port Plaza) was experiencing a late summer drop in dissolved oxygen (3 mg/l) and pH (7.4). It's great to see water quality looking nice n' healthy with oxygen levels back up to 8-9 mg/l and the pH in the high 7s and even 8 (Open Water station). The phytoplankton were definitely responding to the combination of plentiful nutrients and sunshine. Chain forming diatoms like *Chaetoceros*, *Skeletonema*, *Detonula*, and *Thalassiosira* were certainly blooming and the dinoflagellates,

while still present, were taking a back seat for the time being. Zooplankton were plentiful with so many diatoms to munch on! Similar to August, the zooplankton numbers seem to be highest at Boston Harbor Marina! I suppose this makes sense with so many adult invertebrates (barnacles, mussels, polychaetes, etc.) calling the dock home. Maybe “the apple doesn’t fall far from the tree” applies to the dynamic marine environment, too?

As far as harmful algal bloom species, I observed *Dinophysis* (24 cells/L) and *Pseudo-nitzschia* (72 cells/L), but at very low concentrations. I entered all data into the [SoundToxins](#) database and sent an email to Alexis Fischer to help them decide when to re-deploy their Imaging FlowCytobot.



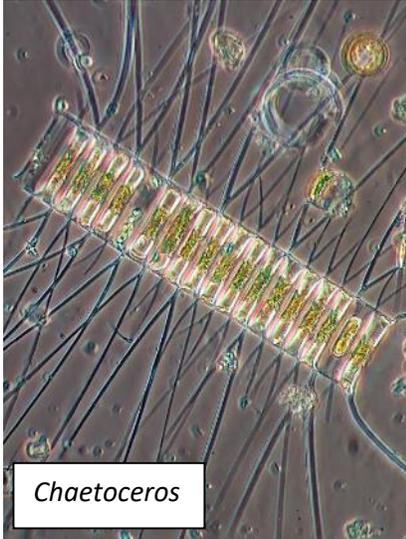
Budd Inlet Tide:

<https://www.tides.net/washington/344/>

Water Quality Data:

Sample Time	8:50	10:45	11:20	12:00	
Tidal Height (ft)	+15	+9	+6	+4	
Temperature (°C)	Port Plaza	BHM	Zangle Cove	Open	August Range
Surface	8.2	8.4	8.5	8.4	16-18C
1.5m	8.5	8.3	8.4	8.4	
3m	8.5	8.4	shallow	8.4	
Salinity (ppt)	Port Plaza	BHM	Zangle Cove	Open	August Range
Surface	17.1	26.2	26.53	25.88	24-29 ppt
1.5m	24.76	26.7	26.96	26.03	
3m	25.84	26.83	shallow	26.05	
Dissolved Oxygen (mg/l)	Port Plaza	BHM	Zangle Cove	Open	August Range
Surface	9.51	8.78	8.86	9.15	3 (PP) - 14 (BHM)
1.5m	8.97	8.81	8.99	9.06	
3m	8.82	9.08	shallow	9.01	
pH	Port Plaza	BHM	Zangle Cove	Open	August Range
Surface	7.69	7.88	7.95	8.02	7.4 (PP) - 8.7 (BHM)
1.5m	7.83	7.89	7.98	8.00	
3m	7.87	7.91	shallow	8.01	
Water Clarity	Port Plaza	BHM	Zangle Cove	Open	August Range
Secchi (m)	2.4	hit bottom,3	hit bottom, 4	5	2-4m

All plankton (including the polychaetes from the video) were returned to their aquatic homes by 4:00 PM – an adventurous day for them, I’m sure! 😊 Thanks again for joining us on DERT’s 2nd Plankton Kayak Patrol! Hope to see you on future paddles! Aimee (aimee@pacshell.org)



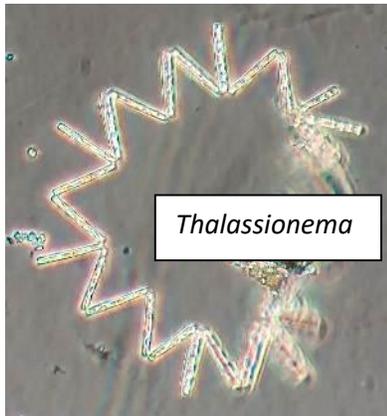
Chaetoceros



Chaetoceros



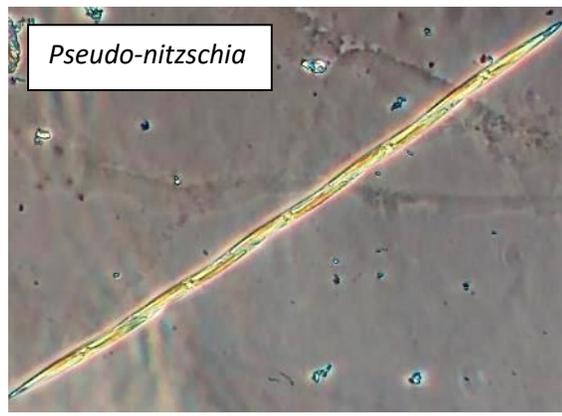
Ditylum



Thalassionema



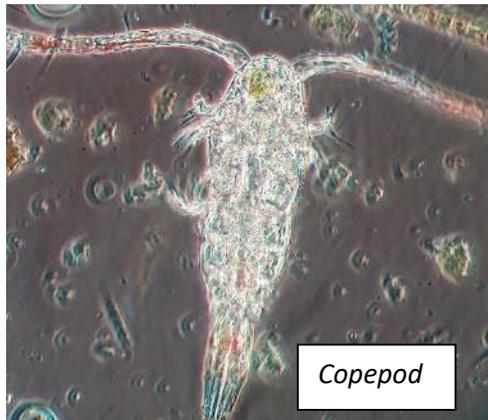
Thalassiosira



Pseudo-nitzschia



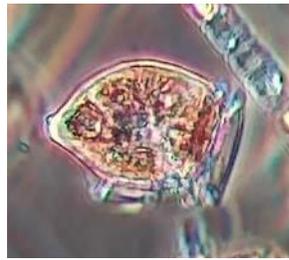
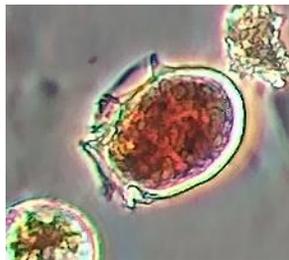
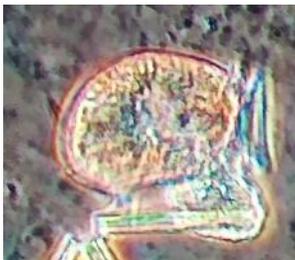
Barnacle



Copepod



Polychaete



Dinophysis Species:
D. fortii (left),
D. acuminata (middle),
D. norvegica (right)