Conflation of Calanus C1-C3 and Neocalanus C1-C3

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High abundances of Calanus CI-CIII were recorded in bongo samples collected during the 2019 and 2020 IYS expeditions. Calanus marshallae CIV-CVI were also recorded frequently from these samples which was notable because this species typically is restricted to the nearshore environment. Together, Calanus spp. abundance exceeded that of Neocalanus spp.

To confirm the ID of Calanus marshallae, I went into the sample collected at Pacific Legacy Station 15, collected at [Lat Long], which had a particularly high abundance of CVIF C. marshallae and was 30% Calanus by abundance. I sought out individuals that fit the general characteristics of C. marshallae CV or CVI (length, head shape, prosome:urosome ratio, number of urosomal segments, rough shape of the P5) for dissection. I dissected 3 CV individuals that met these criteria (I did not find any CVI). The inner margin of the bp1 segment of the P5 on all dissected individuals was smooth, whereas in Calanus it should be denticulate (that’s a defining feature of the genus and should be visible by CV). I believe that the individuals I dissected were Neocalanus flemingeri, which were not identified in 2019 and 2020 data and I had assumed were lumped with N. plumchrus. I next looked for smaller individuals that might be late stage C. pacificus, but I could not find any. By my eye, species composition in this sample was dominated by early Neocalanus and Metridia. That said, my experience is in estuaries so I am not an expert in identifying oceanic copepods. However, later comparison with identifications made from the Juday net samples confirmed that Neocalanus (either flemingeri or plumchrus) were being misidentified as C. marshallae and Calanus spp. C1-C3. I do not have access to the original count sheets so I cannot check to see whether this was caused by a data entry error.

For later copepodid stages (C4-C6), we corrected these identifications and abundances using the presence and relative abundances of these species recorded from concurrent Juday net samples. We chose not to apply a similar correction to early copepodid stages (C1-C3) of *Calanus* because they were not identified to species and thus also represented *Calanus pacificus*. Instead, Calanus C1-C3 and Neocalanus C1-C3 were combined into a single category, Neocalanus+Calanus C1-C3. To determine whether the contribution of Calanus spp. to Neocalanus+Calanus was small enough to be discounted, I calculated what the proportion of Neocalanus+Calanus C1-C3 that were Calanus spp. using the Juday net data from 2020. That proportion ranged from 0 to 0.67, with an average of 0.19. There was no strong pattern evident in how the proportion varied across the survey area, which would make it difficult to apply a correction (given that Juday and bongo stations aren’t perfectly paired).