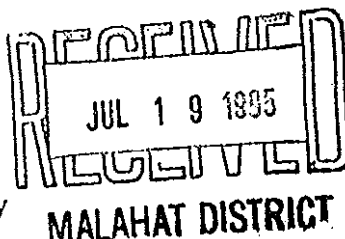


Don McLaren
B.C. Parks
Malahat District
2930 TransCanada Highway
Victoria, BC V9B 5T9



July 6, 1995

Re: Permit #2603

Don --

Sorry for the delay in getting this 'report' to you, but with the timing of our trip (the last week of the class) I was unable to get students to do the data entry and analysis, and have gotten it done only slowly!

The trip was great -- 5 straight days on Vancouver Island without a drop of rain, which must be a record! The students loved Botany Beach, as always, and I must admit I loved driving on the big smooth road -- it removes one source of anxiety about the trip for us.

We located all of our permanent sampling sites (pools and quadrats) and the students censused them. Attached is a sampling of the data; now that we have 4 years' worth of data, it starts to become worth making some graphs to look at trends through time (or lack thereof). Overall, I think it is safe to say that we have not yet seen negative people-impacts on the organisms we are quantifying. We certainly see high year-to-year variation, but this is normal; I do extensive sampling of this sort on the Olympic Peninsula, and see this level of variation even in very remote spots. The Pool data (Figs. 1-6) illustrate this variation, some of which is probably real change from year to year, and some of which is undoubtedly due to the students' difficulty in either identifying (e.g., the Limpets in Figure 2) or counting (e.g. the mussels in Figure 1) the organisms. I am encouraged that even the mussels and the urchins in these relatively accessible pools seem to be fairly stable. I am also encouraged by our *Postelsia* (sea palm) count (bottom, Figure 3); despite the difficulties of counting something this numerous, our numbers have stayed remarkably constant over the 3 years that we have used this technique. This population appears to be quite stable, which is encouraging given that people undoubtedly wander over to it, and we know that it is edible.

The quadrat data (Figs. 7-10) have error bars indicating the variance among quadrats; many of the organisms are very patchy, with some quadrats having many and others few. None of the common species that we have graphed show clear declines with time. The 'black cucumbers' illustrated in Figure 8 are difficult to see (they hide among the mussels) and probably just were not observed in all years. *Littorina* (periwinkle) abundances on these open surfaces vary a lot depending on the sun and the waves, so I think it is unlikely that the changes graphed represent important ones. The algae (Figs. 9 and 10) seem quite stable.

Next year, with one more year's data to add, we will try some graphs of changes of organisms per individual quadrat to help us sort out small-scale patterns.

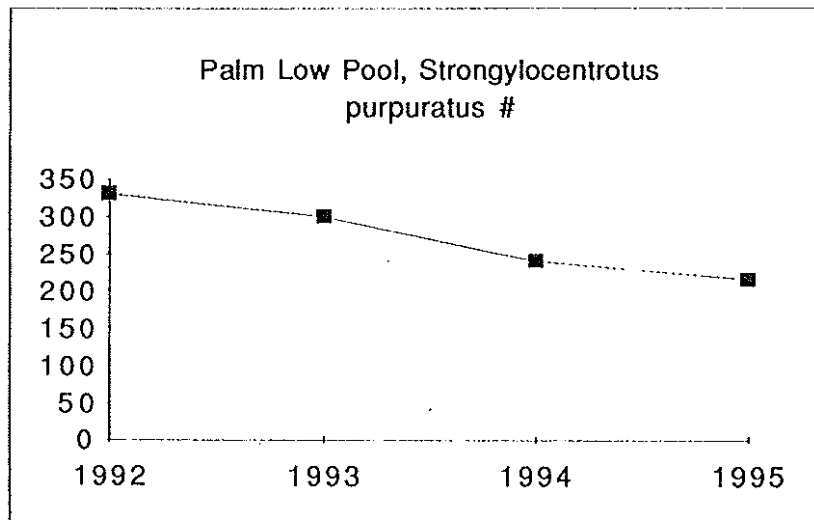
I would not presume to say that our data show that people are having no impacts on the Park resources. Unfortunately, some of the species most likely to be impacted are those that are hardest to count; starfish, rare and colorful organisms, gooseneck barnacles (not common in our transects), or low intertidal gumboot and leather chitons (we have no low transects). I hope that your funding remains

adequate to keep a ranger on site for busy times, since that seems to be the only good way to keep people from collecting or damaging the organisms. We will certainly continue to monitor these plots (we replaced the putty marker dots on some of the quadrats this spring) and keep you up to date on what we find.

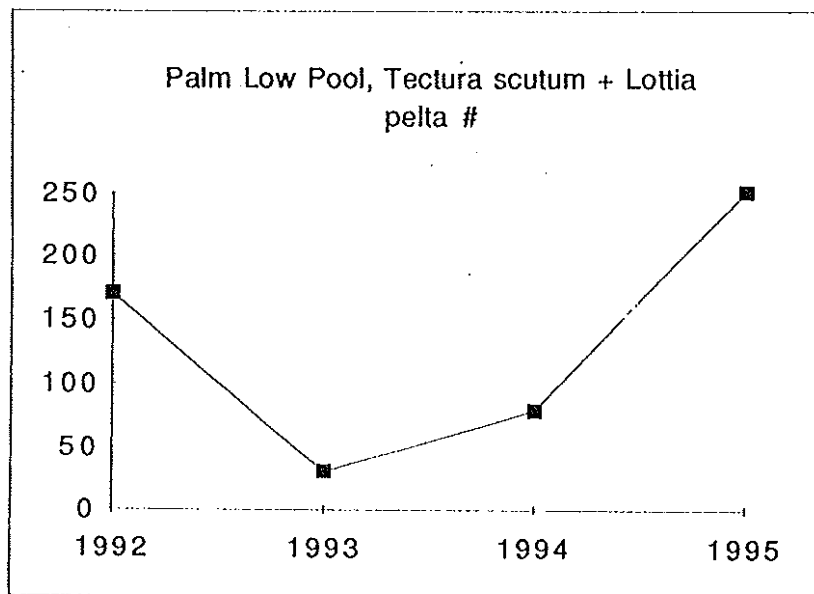
Sincerely,

A handwritten signature in cursive script, appearing to read "Megan".

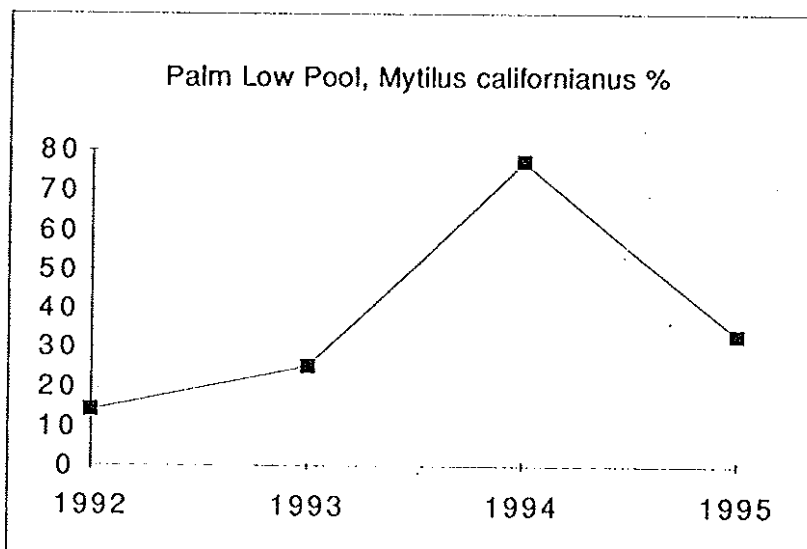
Dr. Megan Dethier
University of Washington, Friday Harbor Labs
620 University Road
Friday Harbor, WA. 98250 USA



Purple urchins



Limpets



Mussels

Fig. 1