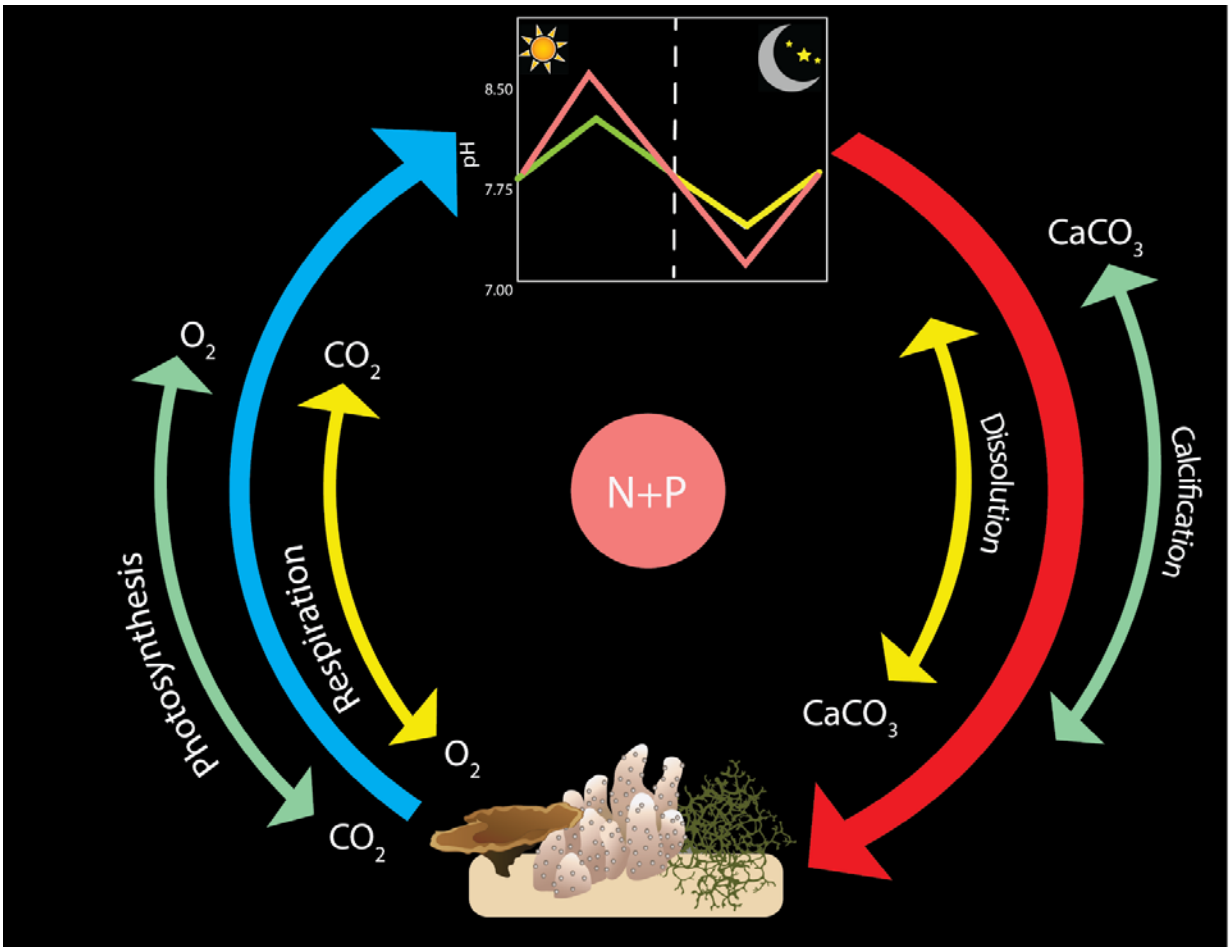


Fig 1: Illustrating feedbacks on reefs and what we predict would happen when you add nutrients…. Probably will make this a two panel figure with “typical” conditions on the left and nutrient addition conditions on the right (higher pH variable due to augmented PR cycle which impacts calcification and dissolution)

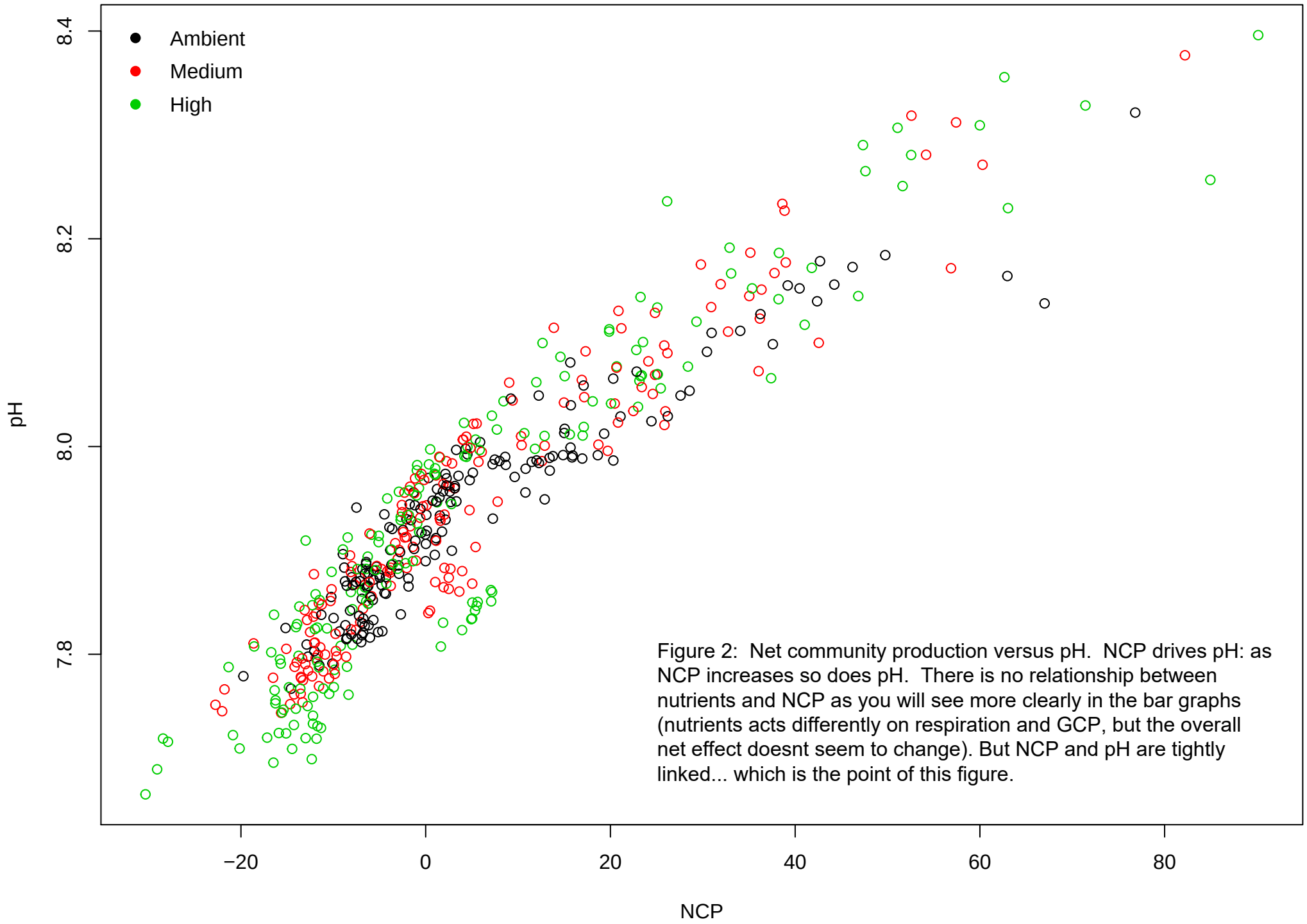


Figure 2: Net community production versus pH. NCP drives pH: as NCP increases so does pH. There is no relationship between nutrients and NCP as you will see more clearly in the bar graphs (nutrients acts differently on respiration and GCP, but the overall net effect doesnt seem to change). But NCP and pH are tightly linked... which is the point of this figure.

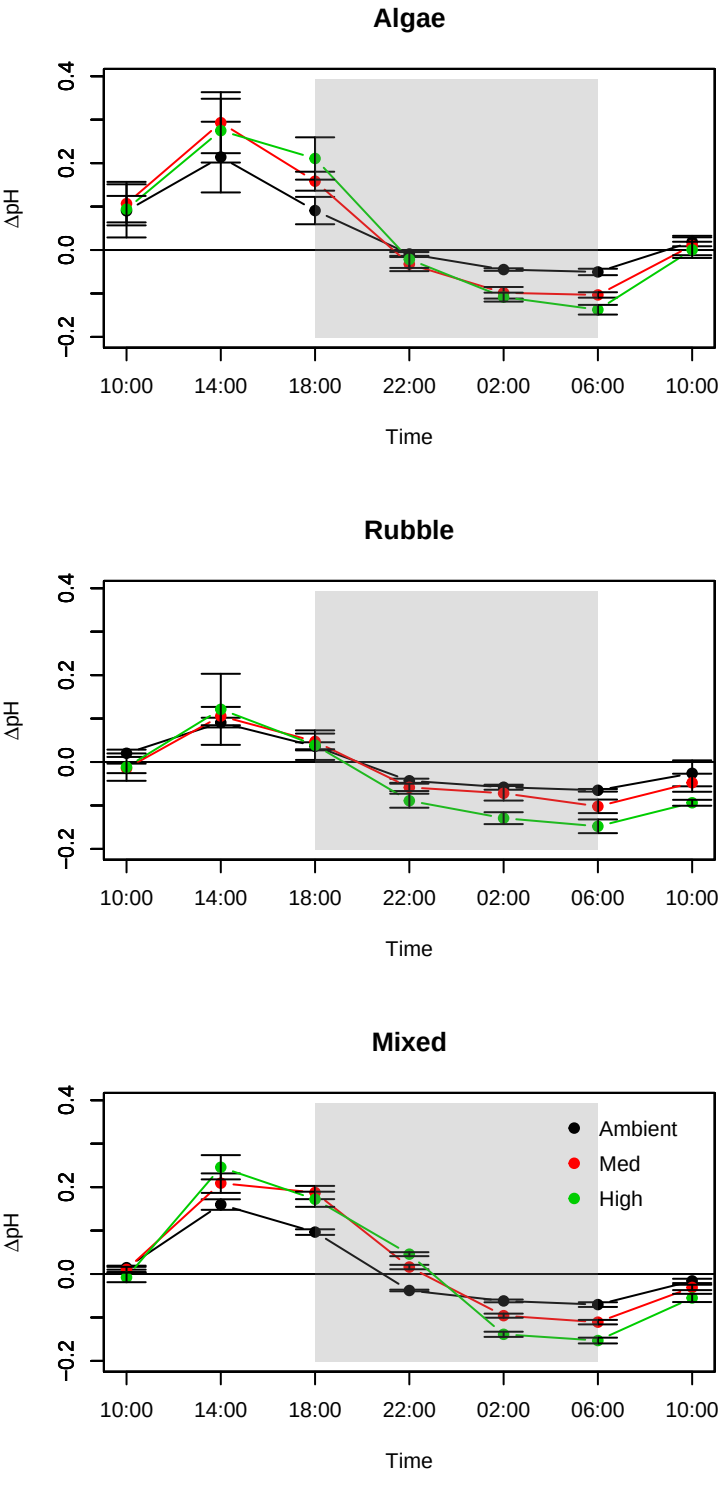


Figure 3: Two points: 1) Substrates change their pH environment (might add a 6th panel with just the ambient data across all substrates to make that easier to see) and 2) adding nutrients increases pH variability (both higher pH during the day--in most cases-- and lower pH at night always).

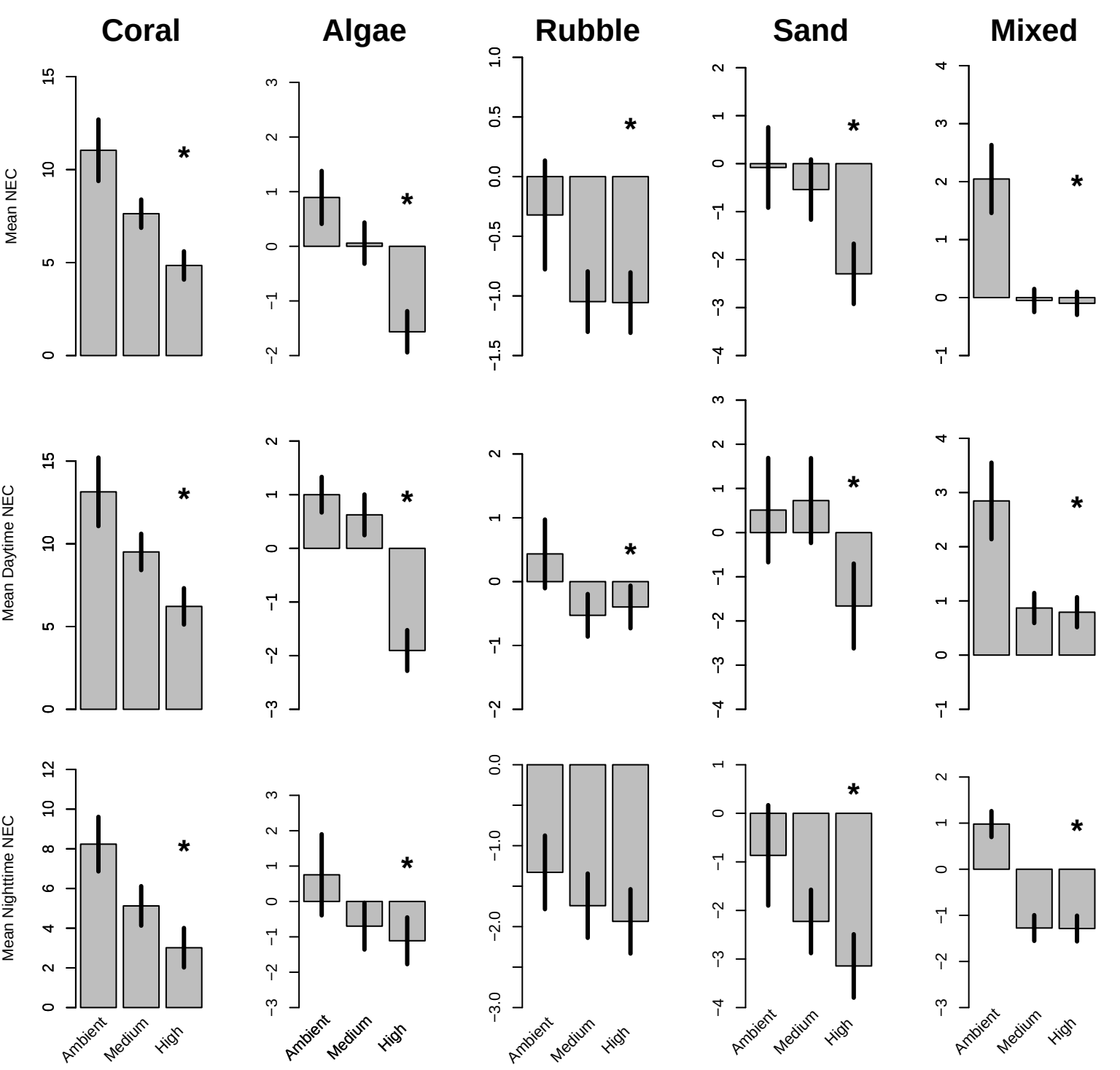


Figure 3: All the calcification rates. Stars are p<0.05 from a mixed effect model with orthogonal random effects for time and black tank. Ignore the SE bars for now... they aren't actually quite right.

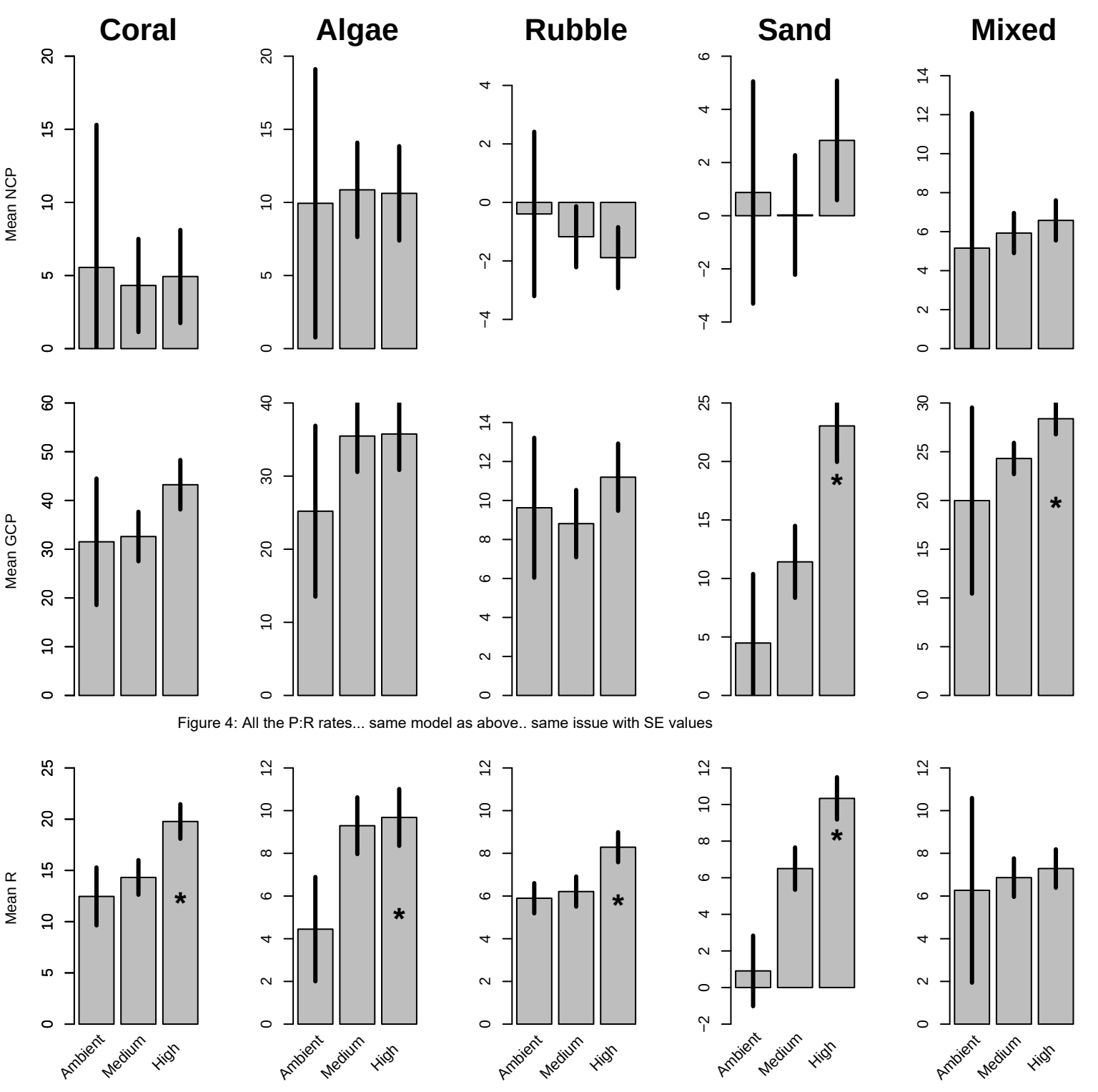
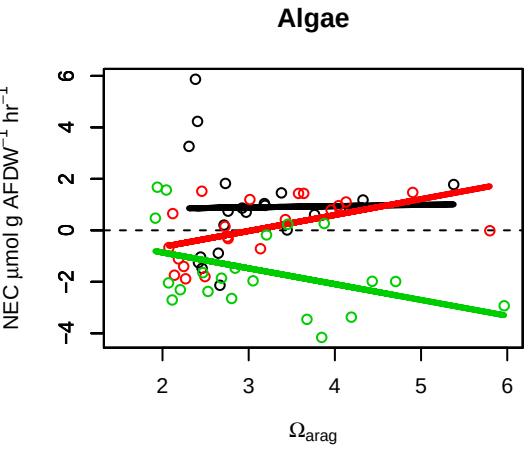
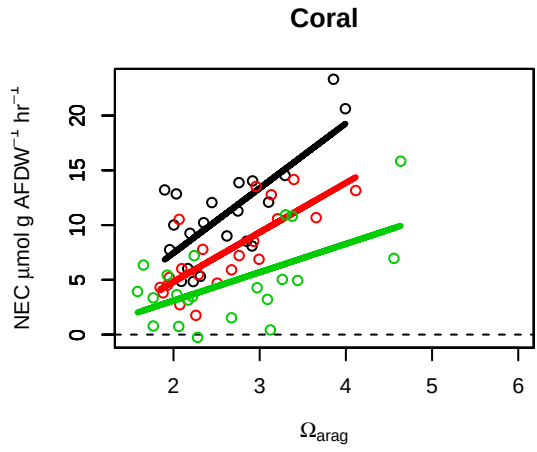
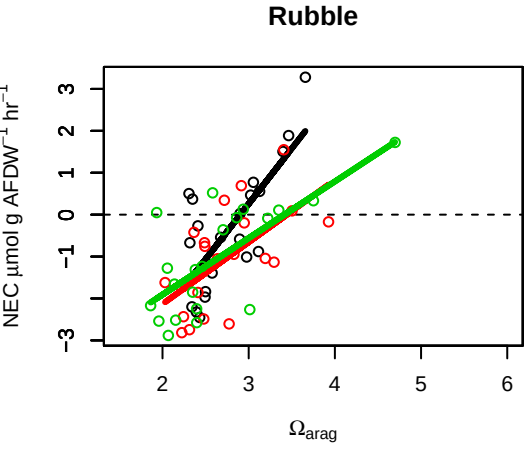
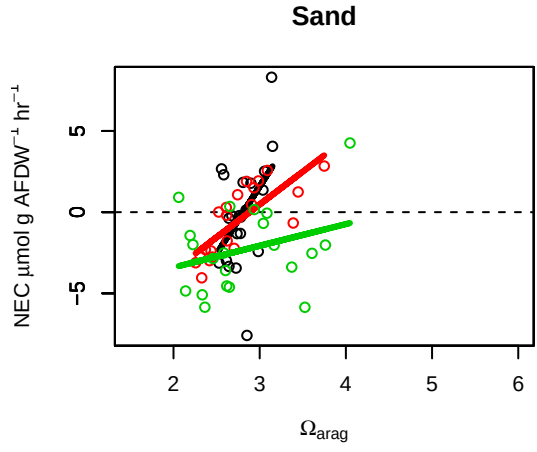


Figure 4: All the P:R rates... same model as above.. same issue with SE values









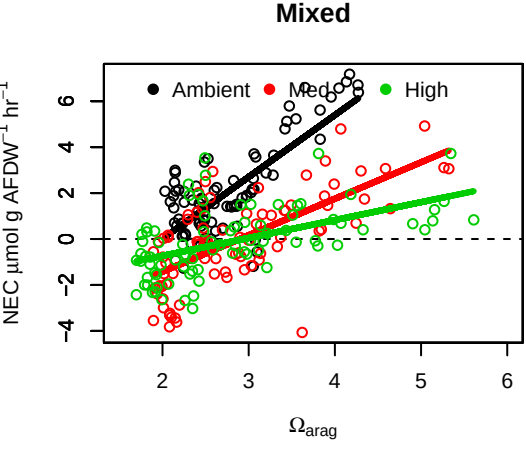


Figure 5: Net calcification versus aragonite sat state. Model is NEC ~ aragonite Saturation * Nutrient treatment with aquarium nested within black tank as random effects. All have models have a significant interaction (meaning different slopes for each nutrient treatment) except for the rubble. And in all cases the slopes become flatter with added nutrients meaning that the effect of aragonite saturation state on calcification becomes less important with added nutrients (take home of the paper). Nutrients causes a disassociation between calcification and shifting carbonate chemistry (probably because nutrients has a much stronger effect on reef org physiology?)