Study Questions for Michaels & Silver (1988)

What is the primary goal of this paper (what were they trying to demonstrate)?

Why are the authors concerned about using a steady-state model?

They deliberately excluded higher trophic level consumers—why do they think this is OK for their study (i.e. why no fish, whales, etc?) or do you think it should have been included?

What is a thaliacean grazer, and why do we care?

This is considered a classic paper, but it would be relatively difficult to actually test the predicted trophic linkages using standard oceanographic methods (why?). It's now 20 years later, and we have some new methods and all of the old methods available for biological oceanographers; f you were asked to quantify the role of generalist grazers to test the model presented in this paper, how would you go about doing it?

Study Questions for the VERTIGO paper

What is the "Twilight Zone"?

What is the "Martin Curve"? Based on the description, what would it look like if you drew it? Why can't we apply the same curve everywhere?

The authors estimate (based on the Laws paper, which is listed as optional reading on the class website) that changes in the Martin Curve could result in differences of more than 3 Pg C yr-1 flux. Is that a lot?

Part of the reason this is in *Science* is because the authors link the Behrenfeld et al. paper (that you read for class) with their results to extrapolate to a future ocean. Based on the Behrenfeld et al. paper, and the conclusions from this paper, describe what the oceans might be like in a few hundred years. What implications would this have for humans?