Name: ____________________________________ Date: __________________

For up to 5 points, do the extra credit assignment entitled “Playing God in a Tide Pool.” To complete this assignment, check out the article “Playing God in a Tide Pool” from the front desk of the Biology Learning Center. You will need to leave an ID or your keys as “collateral.” This assignment must be completed in the Biology Learning Center. When you have completed the assignment, turn in your worksheets and initial and date the Assignment Check-in Sheet at the front desk in the Biology Learning Center. Your instructor will grade them and return them in a few days.

This assignment must be turned in before or on the Last Day For Extra Credit. Please check your syllabus or ask at the front desk for this date.

Answer the following questions by referring to both the article and your textbook. Your Step 2 activity ("Ecobeaker: Keystone Predator") will also be helpful.

1. Review: What is a keystone predator? [Use your textbook and/or the Ecobeaker Keystone Predator lab to help you answer this question.]

2. This article talks about experiments that research scientist Robert Paine conducted. Several species of intertidal organisms feature prominently in his research. Fill out the table on the next page for each of the species listed. Check out the captions to the pictures in the article for some hints. Use the following terms to help you with the last two rows:
   - feeding strategy: producer, suspension feeder, deposit feeder, or predator
   - locomotion style: sessile or mobile
3. Describe the setting where Robert Paine’s experiments took place. (What part of the marine realm? What ocean?)

4. What broad question was Robert Paine trying to answer with his experiments that removed the top predator from his test plots?

5. Relate James Estes’ work with sea otters, sea urchins, and kelp to Robert Paine’s predator removal studies with *Pisaster* by comparing an ecosystem with sea otters to an ecosystem without sea otters.
6. Which organisms are the keystone species in Robert Paine’s studies? Which organisms are the keystone species in James Estes’ studies?


8. What happens to ecological diversity in ecosystems where the keystone predator has been removed (as part of an experiment or due to extinction)?

9. What are the implications of Robert Paine’s work for ecological conservation today?