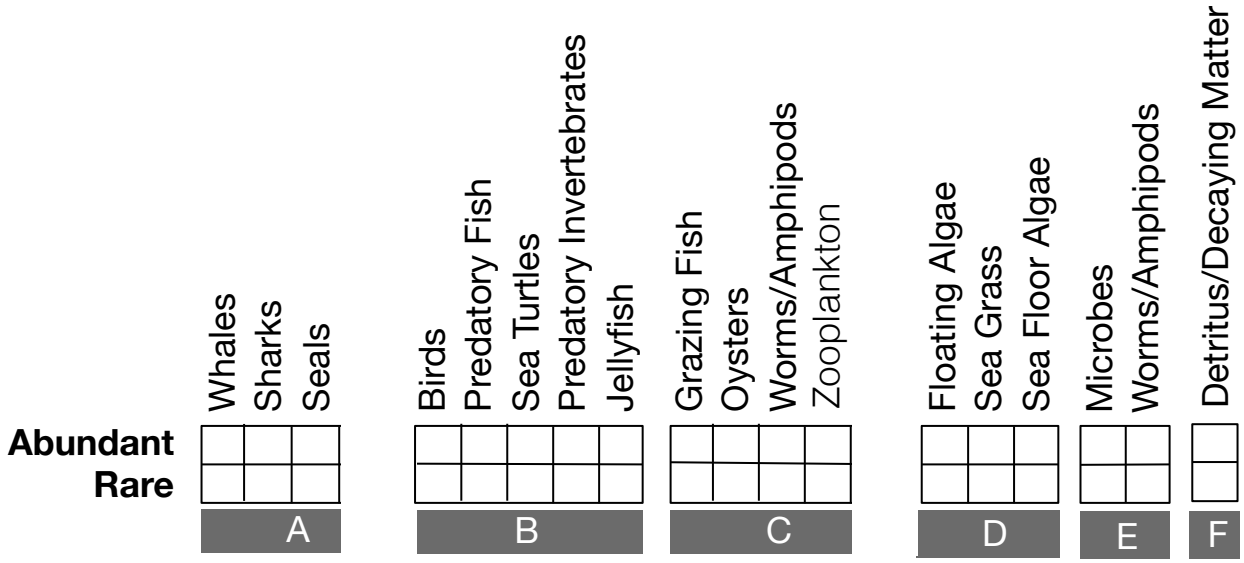
Name_____ Class: _____ Date: _____

Worksheet 2: Questions for Chesapeake Bay Food Web After Large-Scale Fishing

1. Now examine the food web *after* humans became part of the Chesapeake Bay ecosystem through fishing. Complete the same chart that you completed for the previous food web, and color or check which species groups are now rare or abundant.



2. Are more organisms rare or abundant after large-scale fishing? Which organisms are abundant?

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3. Are these the same organisms that were abundant in the pre-human food web?

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4. What happened to the top predators? Were they more or less affected than other trophic groups?

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5. List how many species groups depend on each of the species groups listed at the top of this table. Count the number of strong and weak connections (arrows going to or from a species group) to complete the table below:

Connection	Sea Floor Plants	Predatory Fish	Grazing Fish	Floating Algae
Strong: →	Strong:	Strong:	Strong:	Strong:
Weak: ⇢	Weak:	Weak:	Weak:	Weak:
Total:	Total:	Total:	Total:	Total:

6. In general, do these species groups have more connections or less after fishing?

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7. How does the strength of the interactions compare between this food web and the one before fishing?

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8. What does it mean for the ecosystem when most of the interactions are weak?

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9. Redraw the food web including only the abundant species? What do you notice? (Note: some species may not have any connections at all)

10. How is this food web similar/different to the food web without people?

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11. Why do you think jellyfish are now abundant?

12. Why are there fewer predatory fish if there are fewer whales, sharks & seals?

13. Which producers are now more common in this ecosystem, the floating algae or the sea floor algae and seagrass?

14. From what you know about the relationship between high levels of nutrients and algae growth, why have the floating algae increased?

15. What happened to the sea floor algae and plants? If fewer organisms are eating them, shouldn't their numbers have increased? Why are they rare now? Hint: Like all plants, what do the sea floor algae and plants need to grow? How do more floating algae limit this important resource that sea floor algae and plants need? Explain.

16. How does this food web connect to the present-day problem of high nutrient levels in the water? (Hint: Oysters filter the nutrients, microbes and floating algae from the water.) Use the food web to explain what happened to their numbers and why.

17. Based on your answer to question seventeen make a hypothesis for how catching oysters affects floating algae levels?

18. What type of data would you need to collect in order to test your hypothesis? Hint: You would need to compare historic and present day data on two elements of the ocean. What are those elements?