General Oceanography **Name_____**
Geology 105
Expedition 3 – Declining Marine Fisheries
See Due Date in Greensheet

Expedition Objectives

- Learn about the conditions that resulted in the decline of many marine fish stocks over the past few decades

- Homework - postings in Expedition 3 Learning Group Discussion in Canvas, two multiple choice questions on the conditions that have resulted in the decline of many fish populations.

1. **In science, getting background information on previous research is very important, view "*Empty Nets*" video (6 minutes-long) from KRON-TV in San Francisco at:**

   http://youtu.be/MLjiUN3gvkc

   Greg Lyons provides a brief look at the situation in marine fish populations to 1998, now 15 years ago. I apologize for the poor visual quality of the video as it was produced in the early days of video on the WWW.

   List at least several factors that have resulted the decline of fisheries in the 1980's and 1990's

2. **Sometimes, old patterns are hard to break, even with compelling scientific evidence (for example, think CO2 and climate change). Fast forward a decade, since 1998, and view *Can the Ocean keep up with the Hunt?* (Watch only the first 8 minutes, so stop at 8:00) at:**

   http://youtu.be/oX4aFF6GtP4

   Focus on 90% of big fish are gone (over past 50 years), pirate fishing, bycatch, trawling damage to seafloor habitat, longliners and bycatch, and fishing fleet overcapacity

   On the next page, take notes if you wish on each items listed above:

3. **Marine fish have been an open resource for all, and consequently have suffered the Tragedy of the Commons, view this concept in three parts:**

   Part I - Tragedy of the Commons part I (2 minutes-long) at http://youtu.be/KZDjPnzoge0

   Part II - Tragedy of the Commons part II (2 minutes-long) at http://youtu.be/IVwk6VIxBXg

   Part II - Introduction to the Tragedy of the Commons ~~Fisheries Simulation Game~~ (watch only the first minute) at http://youtu.be/Dh4WvCZXO0s

   Now summarize your understanding of the tragedy of the commons as it applies to marine fish populations:

4. **Examine the situation along the east coast of the U.S., off New England back in 1998, more than 15 years ago (actually all the back to the late 1980's) in "*Codfish Dispute*" (5 minutes-long)** (December 15, 1998) – Morning Edition at:

   http://youtu.be/UY0cRlRvMKc

   Nancy Cohen reports on a dispute between New England fishermen and government regulators over codfish quotas. The government is trying to protect depleted cod fisheries... while the fishermen say the quotas make it difficult to earn a living.

5. **Once again, fast forward to 2013, listen to "*Fishermen Worry Cod Limits Could Put Them Out Of Business*" (4 minutes-long)** from National Public Radio at:

   http://www.npr.org/2013/01/31/170787387/fishermen-worry-cod-limits-could-put-them-out-of-business

   Jay Field reports that fishery managers in New England have approved big cuts in the commercial catch limit for cod. The regulators say the cuts are needed to save

the cod fishery from collapse — but fishermen say they will destroy their industry and many other businesses along with it.

6. **Come home to California in Rough Waters – PBS News Hour - Potential Solutions? (12 minute-long video) at:**

http://youtu.be/E_op8Df2tao

Transcript at: http://www.pbs.org/newshour/bb/business/jan-june01/fishing_06-13.html

What is the situation off Northern California in terms of the conditions that have led to this crisis, the role of technology, and a growing number of governmental regulations. The video will end by mentioning some of the potential causes of the decline, other than overfishing, and offer two solutions, one proposed by the fishing industry and one by scientists.

Are the problems of Eureka's fishermen unique?

How do you sum up the crisis in America's fishing industry in 2003?

How many species of fish were considered threatened by overfishing in America's coastal waters a decade ago?

How did government policies in the 1980's and 1990's factor into creating the environment for overfishing?

What is proposed as the main cause(s) of overfishing?

How did the government react to overfishing?

How does the fishing industry want to address the situation?

Should a large-scale, national boat-buyback program begin -- It's your tax dollars?

How does the environmental community want to address the situation?

How are scientists involved?

7. **Watch the TED talk, the <u>Ocean's Shifting the Baseline</u>, by Daniel Pauly (9 minutes-long) recorded in 2009 at:**

   http://www.ted.com/talks/daniel_pauly_the_ocean_s_shifting_baseline.html

   What are the lessons from the three stories presented by Pauly:

   What is meant by a shifting ecological baseline, especially in regards to marine fish?

   What is meant by fishing down the food web, especially in regards to marine fish?

   What is the value of a marine-protected area?

8. **Watch the TED talk, How we wrecked the ocean, by Jeremy Jackson (watch only the first 8 minutes) recorded in 2010 at:**

   http://www.ted.com/talks/jeremy_jackson.html

   What is the significance of the trophy fish story by Jackson?

How is industrial fishing accomplished?

What is the impact of bottom trawling?

Stop at 8:03 – we will view the rest of this video later in the course

9. **Check Canvas for any required reading assignments for this expedition that are posted online**

Homework assignment - Develop and post in your expedition learning group two multiple choice questions with answers (e.g. a, b, c, d, and e) on the factors that have contributed to the decline in many marine fish populations over the past three decades?

You will also be asked to peer review the posted questions of other students in your learning group