

Fisheries Activity Key

*** For ease of use during class the Teacher Key pages are numbered the same as the Student Activity Book pages.

I. Introduction

Part of the job of the U.S. Government is to ensure that the rights of all the citizens of the United States are protected. The National Marine Fisheries Service's job is to make sure that people don't catch so many fish that there are not enough fish left to breed and replenish the fish population. If people catch too many fish now, there will not be enough for people to catch in the future. The National Marine Fisheries Service is in a real sense a guardian of the future.

Get Info Objectives

1. Explain what fisheries management is.
2. Explain why fisheries management is important.
3. Describe how fish populations are managed.

Gather Data Objectives

1. Determine the year that had the greatest and least fish landings (catches).
2. Describe the pattern of catches over a long period of time.
3. Determine the method of fishing that catches the most fish.

Application Objectives

1. Hypothesize the effects of better fishing methods on the long-term landing (number of fish caught).

2. Explain why the commercial fishing license system should be continued.
3. Develop a list of illegal activities that should be reported to the National Marine Fisheries Service.

Before doing anything else, add the NOAA Research "Fisheries" page to Bookmarks or Favorites on your browser.

- From the NOAA Research Fisheries main page, click "Get Info."

II. Get Info

A. Recreational Catch

- Click on the "Recreational Fisheries" site.
- Read the first two paragraphs and associated lists.

1. Why should the government be concerned with the number of fish people catch?

There are a lot of marine recreational anglers: _____

They take a lot of trips: _____

They catch and harvest a lot of fish: _____

They have a large economic impact on coastal areas, and areas where goods they use are made, and they often have a large impact on fish stocks. _____

- Click "Back" to return to the Fisheries "Get Info.1" web page.





B. Atlantic Cod Commercial Gear Type and Catch.

- Click on the "Gear Type" site.
- Scroll down to the "Species" box on the left side of the page. (NOT the "Species Locator" box in the middle of the page!)
- Delete the text in the box, and then type "COD, ATLANTIC" in the Species box.
- Scroll down to the "Year Range" boxes.
- Click on the "From" box and select 1990.
- Scroll down to "Gear Type."
- Gear Type should read, "ALL GEAR INDIVIDUALLY."
- Scroll down and click on "Submit Query."

1. What are the major types of equipment used to catch fish?

Purse seines, otter trawls, gill nets, fishing lines with hooks, combined
gears, pots, and traps

2. What are the three best types of equipment used to catch Atlantic Cod?

Otter trawls, gill nets, and long lines set with hooks

- Click "Back" once to return to the "Gear Type Search" web page.

C. Yellowfin Tuna Commercial Gear Type and Catch

- Scroll down to the "Species" box and type in "TUNA,YELLOWFIN."
- Scroll down and click on "Submit Query."





3. What type of equipment used caught the most yellowfin tuna in

- a. 1990? Long lines with hooks
- b. 1991? Long lines with hooks
- c. 1992? Long lines with hooks
- d. 1993? Combined gears
- e. 1994? Combined gears
- f. 1995? Combined gears
- g. 1996? Combined gears

- Click "Back" to return to the NOAA Research "Fisheries" main page, or choose "Fisheries" from your Bookmarks or Favorites.

- Click "Gather Data."

III. Gather Data

A. Atlantic Cod Commercial Landings (fish catch)

- Click on the "Commercial Landings" site.
- Scroll down to the "Species" box on the left side of the page.
- Delete the text in the box, then type "COD,ATLANTIC" in the box.
- Scroll down to the "Year Range" boxes.
- Click on the "From" box and select 1990.
- Leave the listed date in the "To" box.
- Scroll down to the "Time Frame" box.
- Click on the "Time Frame" box and select "ANNUAL."
- Scroll down and click "Submit Query."





1. What is the relationship between the number of fish caught in a year and the number caught the year before?

The number of fish caught decreases every year

2. How would you explain this relationship?

People are catching so many fish that there aren't enough fish left to lay eggs.



- Click "Back" twice to return to the Fisheries "Gather Data.1" web page.
- Click "Forward" at the bottom of the page.

B. Red Drum Commercial Landings (fish catch)



- Click on the "Annual Commercial Landings" site.
- Scroll down to the "Species" box.
- Replace the text in the box with "DRUM,RED."
- Scroll down to the "Year Range" box
- Click on the "From" box and select 1981.
- Scroll down and click "Submit Query."



1. What is the trend in the number of fish caught each year?

Fewer fish are caught each year.





2. Hypothesize why the catch might be so low after 1987.

Too many fish were caught, There weren't enough left to
breed.

- Click "Back" twice to return to the Fisheries "Gather Data.2" web page.
- Click "Forward" at the bottom of the page.

C. Commercial Regulations

- Click on the "Commercial Regulations" site.
- Read about "Spanish Mackerel" and answer the following questions.

1. Is a permit required to catch Spanish Mackerel? Yes

2. What is the minimum size Spanish Mackerel you can keep?

12 inches

3. What laws apply to "gill net" fishing for Mackerel?

It is illegal to use drift gill nets to catch Mackerel.

4. What time of year can you fish for Spanish Mackerel?

You can catch Mackerel at any time of year.





5. How much Spanish Mackerel can you catch in a year?

$$365 \frac{\text{days}}{\text{year}} \times 3500 \frac{\text{pounds}}{\text{day}} = 1,277,500 \frac{\text{pounds}}{\text{year}}$$



- Click "Back" to return to the Fisheries "Gather Data.2" web page.
- Click "Forward" at the bottom of the page.
- Click on the "Other Regulations" site.
- Scroll down to the "Big Changes for Mackerel" section.



6. What business must you have already been in to qualify for a commercial Mackerel permit?

In one of the three previous years, you had to make ten percent of your income from commercial fishing.



- Click "Back" to return to the Fisheries "Gather Data.3" web page.

D. Recreational Red Snapper Landings



- Click on the "Red Snapper" site.
- Scroll to the "Year Range" section.
- Click the "From" box, then select 1981.
- Scroll to the "State/Area" box and select "LOUISIANA."
- Scroll to the "Species" box.
- Click the "Species" box and select "RED SNAPPER."
- Scroll to the "Fishing Area" box and select "STATE WATERS."
- Scroll down the page and click "Submit Query."
- Scroll down to the bottom of the page that appears and again click "Submit the Query."





1. After a few years of catching large amounts of fish, what happens to the number of fish caught per year?

The number of fish caught drops after catching large amounts of fish

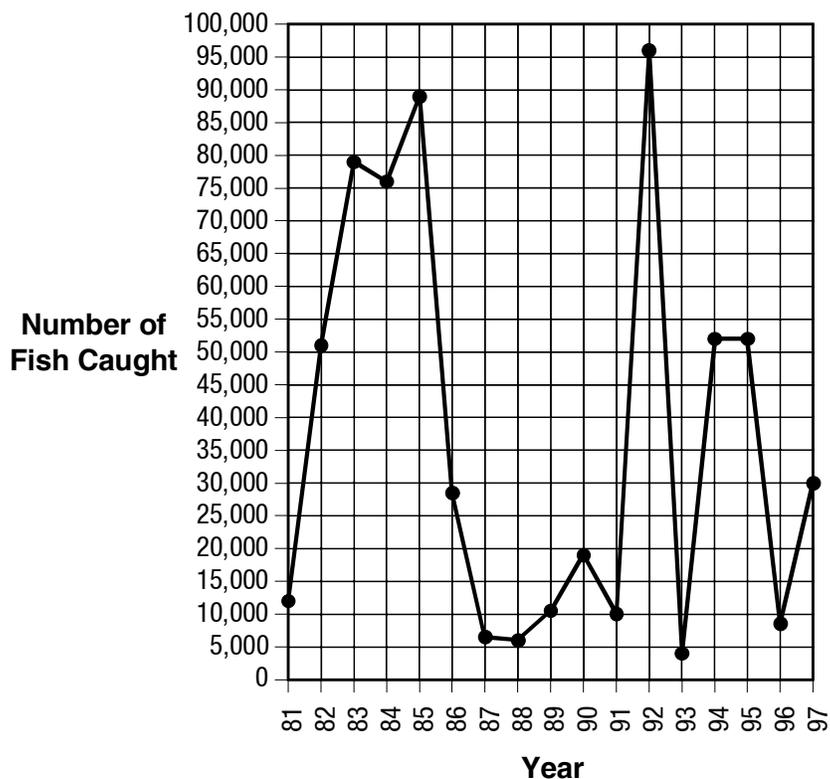


E. Graph the Recreational Red Snapper Catch



1. Graph the catch of RED SNAPPER in the STATE WATERS of LOUISIANA from 1981 to 1997.

- Plot the points of numbers of fish caught each year, and then draw a line connecting the points.





- Click "Back" to return to the NOAA Research "Fisheries" main page, or choose "Fisheries" from your Bookmarks or Favorites.
- Click "Application."

IV. Application

A. Effect of Fishing Methods Improvement

1. What would happen if fishing methods improved but there were no regulations on how many fish could be caught?

Answers should indicate a decrease in fish populations until the breeding stock is so low that there are not enough fish to fish commercially.

2. List any fishing methods or equipment that helps people know where fish are.

LORAN, maps, fish finders, sonar



B. Commercial (for profit) Fishing Problems

1. Why should the number of commercial fishing licenses be controlled?

Fish licenses should be controlled to make sure that there are enough fish to keep the fishermen in business in the future.

C. Recreational Fishing Problems

1. Why should you report the number of fish you catch?

The National Marine Fisheries Service needs all the information it can get to have an accurate idea of how well the fish population is doing.

2. How else can you help the National Marine Fisheries Service protect your natural resources?

Report any fish you catch. Follow all the fishing regulations institutes by the National Marine Fisheries Service. Teach your friends the regulations.

3. What types of illegal activities should you report to the National Marine Fisheries Service?

Answers will vary. Examples: Underreporting the number of fish caught;
using illegal gear to catch fish; and fishing out of season.

- Click "Back" to return to the NOAA Research "Fisheries" main page,
or choose "Fisheries" from your Bookmarks or Favorites.

V. Enrichment Activities

A. Interview

1. Interview commercial fishermen. Ask them about the type of training needed to fish for a living. Ask about problems they've encountered. Find out what the job is like - what good and bad points are there? See if they like their jobs. Ask them how many fish they catch per year and what might influence the catch besides limits imposed by the government.

B. Local Limits

1. Different areas allow different amounts of fish to be caught. Find out the catch limits in your area for your favorite types of fish.

C. Diet

1. For a week, list everything you eat that comes from the water.

D. Research Other Harvested Species Besides Fish

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1. Crabs
 2. Shrimp
 3. Clams
 4. Oysters
 5. Whales

E. Plan for the Future

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1. Develop a plan to conserve fish so they can always be harvested. What limits would you put on commercial fishers and recreational fishers?

F. Related Web Sites

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1. National Marine Fisheries Service Home Page
<http://www.nmfs.noaa.gov/>
 2. Fisheries Statistics and Economic Division
<http://www.st.nmfs.gov/st1/>
 3. Atlantic and Gulf Coast Local Fish Names
http://www.st.nmfs.noaa.gov/st1/recreational/Local_Fish_names.htm
 4. A Brief History of Ground Fishing
<http://www.noaa.gov/nmfs/groundfish/grndfsh1.html>
 5. NOAA Sustainable Fisheries Regional Projects
<http://www.noaa.gov/nmfs/sustain.html>
 6. Responsible Marine Wildlife Viewing
<http://www.nmfs.noaa.gov/pr/education/viewing.htm>