Case Study Worksheets

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SHOULD WE STAY OR SHOULD WE GO?

After reading the case study, watch the video and answer the following questions while watching.

1. According to the 2014 National Climate Assessment, how high could seas rise by 2060?

2. In Florida, 2.4 million people live within how many feet of the high tide line?

3. In the fall, many organizations hold events that coincide with what phenomenon? (Hint: In the video, FIU's School for Journalism & Mass Communication held one to help students understand climate change and sea level rise.)

4. What is one way that sea level rise is being monitored in Miami?

5. How does the CEO of Alta Systems, John Ciampa, describe the difference between King Tide and Sea Rise?

6. Virginia Wals, Ph.D. discusses what as being the real emergency on top of Sea Level Rise?

7. From the case study, describe how you felt after reading it and hearing Dr. Wanless' perspective.

8. Now that you have read the case study and watched the video, make a list of several questions for topics related to sea level rise that you want to know more about?

Name(s) _____ Period _____ Date _____

Assigned City _____

South Florida's Future Sea Level

As people who live in coastal areas learn more about rising sea levels, one of the first questions they may ask is, "How will my home and community be impacted by rising seas?" As a way to help communities, including private citizens and decision-makers, visualize what these changes will look like, NOAA has developed a tool called **Digital Coast: Sea Level Rise and Coastal Flooding Impacts Viewer**. This tool allows anyone to see a visualization of projected sea levels along the U.S. coasts.

For this activity, you will use the viewer to answer the following questions. Launch the **Digital Coast** application showing the city and surrounding area by clicking on the name of the city that you have been assigned: **Delray Beach**, **Hollywood**, **Miami Beach** or **Key West**. **NOTE:** MAKE SCREENSHOTS AS YOU GO THROUGH THE ACTIVITY THAT YOU CAN USE LATER FOR YOUR CLASS PRESENATION.

1. Notice the areas highlighted with bright green on the map. What does the legend indicate that these areas represent?

2. Where are the majority of these areas?

3. Move the slider on the left over one unit to 1 foot of sea level rise. How did this change the amount of surface area covered by bright green? Are any areas under water?

4. Continue to move the slider. At what height of sea level do the majority of bright green areas turn light or dark blue, indicating that these areas are underwater?

5. Describe the changes that occur when sea level is 6 feet higher than today.

6. Look at tide gauge under **Flooding Frequency** and click on the symbol for the Tide Gauge  near Key Biscayne. Hold the cursor over the bars in the figure to fill in the table below.

Sea Level Rise (SLR) (m) and Coastal Flooding

Coastal Flooding	Current	0.5 m SLR	1.0 m SLR
Events per year			
Days per year			

a. Why do you think there are more flooding events than days in the year when sea level is 0.5 meter higher?

b. Why do you think there are less flooding events with 1.0 meters of sea level rise than 0.5 meter of sea level rise?

c. Approximately what year will sea levels be 0.5 meter higher than today and how old would you be?

d. Consider your answers in the table and the previous question. How different might life be in South Florida with this level of flooding?

7. Provide some examples of ways that decision-makers and community leaders might use this tool in their communities.

Name(s) _____ Period _____ Date _____

COMMUNITY STAKEHOLDER GUIDED RESEARCH QUESTIONS: ROLE OF RESIDENT

You are a resident of south Florida. Decide whether you will represent a homeowner or a renter. Consider the effects of sea level rise on the things that are important to you as a resident. To answer the following questions, you will review the materials that you were already provided to you as well as examine the following articles.

RESOURCES TO CONSULT TO ANSWER THE FOLLOWING QUESTIONS:

Articles/Publications

- Treading Water, National Geographic, February 2015
- Why the City of Miami is Doomed to Drown, Rolling Stones, June 2013
- Miami Beach's battle to stem rising tides – Part 1, Miami Herald, October 2015
- Beyond the high tides, South Florida water is changing – Part 2, Miami Herald, October 2015
- Water, Water, Everywhere: Sea Level Rise in Miami
- Sea-Level Rise And Its Impact On Florida – WRI, 2012
- Sea-Level Rise And Its Impact On Miami-Dade County – WRI, 2015

Website

- U.S. Climate Resilience Toolkit

1. What are the Socio-Environmental problems caused by Sea Level Rise? Make a list of the problems that would impact your stakeholder group.

2. Using the science background, explain how sea level rise caused or exacerbated this problem.

3. What are the potential impacts from this problem for your Stakeholder Group? Explain.

Name(s) _____ Period _____ Date _____

COMMUNITY STAKEHOLDER GUIDED RESEARCH QUESTIONS: ROLE OF BUSINESS LEADER

You are a business leader in south Florida. Decide what type of business you are representing. Consider the effects of sea level rise on the things that are important to you as a business leader. To answer the following questions, you will review the materials that you were already provided to you as well as examine the following articles.

RESOURCES TO CONSULT TO ANSWER THE FOLLOWING QUESTIONS:

Articles/Publications

- Treading Water, National Geographic, February 2015
- Why the City of Miami is Doomed to Drown, Rolling Stones, June 2013
- Miami Beach's battle to stem rising tides – Part 1, Miami Herald, October 2015
- Beyond the high tides, South Florida water is changing – Part 2, Miami Herald, October 2015
- Water, Water, Everywhere: Sea Level Rise in Miami
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Name(s) _____ Period _____ Date _____

COMMUNITY STAKEHOLDER GUIDED RESEARCH QUESTIONS: ROLE OF WATER MANAGER

You are a water manager in south Florida. Consider the effects of sea level rise on the things that are important to you as a water manager. To answer the following questions, you will review the materials that you were already provided to you as well as examine the following articles. There is also a special document for you to review entitled Scientific Background for Water Managers in South Florida.

RESOURCES TO CONSULT TO ANSWER THE FOLLOWING QUESTIONS:

Articles/Publications

- Treading Water, National Geographic, February 2015
- Why the City of Miami is Doomed to Drown, Rolling Stones, June 2013
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Name(s) _____ Period _____ Date _____

Assigned City _____

Sea Level Rise: How Vulnerable Are We?

For this activity, we will again use NOAA's **Digital Coast: Sea Level Rise and Coastal Flooding Impacts Viewer**. This time you will analyze the data under the Vulnerability tab. This data was compiled by overlaying social and economic data on a map that depicts sea level rise. By doing this, a community can see the potential impact that sea level rise can have on vulnerable people and businesses.

The Social Vulnerability Index, which shows areas of high human vulnerability to hazards, is based on population attributes (e.g., age and poverty) and the built environment. By looking at the intersection of potential sea level rise and vulnerable Census tracts, one can get an idea of how vulnerable populations might be affected by sea level rise.

You will use the viewer to answer the following questions. Launch the **Digital Coast** application showing the city and surrounding area by clicking on the city name that you have been assigned: **Delray Beach**, **Hollywood**, **Miami Beach** or **Key West**. Make sure that you have clicked on the Vulnerability tab. **NOTE:** MAKE SCREENSHOTS AS YOU GO THROUGH THE ACTIVITY THAT YOU CAN USE LATER FOR YOUR CLASS PRESENATION.

1. Notice the areas highlighted with various shades of red on the map. What does the legend indicate that these areas represent?

2. Where are the majority of the areas that are lighter red?

3. Where are the majority of the areas that are darker red?

4. Does your city have more areas that are lighter red, medium red or darker red?

5. Why do you think that is? Use your city data information to help you with this response.

Name(s) _____ Period _____ Date _____

County/City _____

SHOULD WE STAY OR SHOULD WE GO? - FINAL COUNTY REPRESENTATIVES MEETING

Based on all of the information that you have gathered in your meetings with your county/city members and your stakeholder groups, answer the following questions.

1. Use the Unified Sea Level Rise Projection graph found on page 4 of the SCIENTIFIC BACKGROUND FOR CITIZENS CONCERNED ABOUT SEA LEVEL RISE IN SOUTH FLORIDA? What is the range of sea level rise projected for the year 2030? What is the range of sea level rise for 2060?

2. Consider some of the major changes that will occur in your county as sea level rises. How will sea level rise impact these things? Below is a list of possible considerations for your discussion. Record your findings below and on the back of this page:
    - Home and business property values and cost of insurance
    - Location of new development of homes and businesses
    - Rebuilding of homes and businesses in low-lying areas vs. higher elevation areas
    - Elevate homes and businesses in low-lying areas vs. relocation
    - Location services such as schools, businesses, hospitals, etc.
    - Elevation of major roadways and the impact of accessibility to services such as schools, businesses, hospitals, etc.
    - Water supply - well contamination, water restrictions,
    - Tourism
    - Business opportunities

Name _____ Period _____ Date _____

SHOULD WE STAY OR SHOULD WE GO?

MOCK CITY PLANNING MEETING FOR CITIZENS CONCERNED ABOUT SEA LEVEL RISE IN SOUTH FLORIDA

DIRECTIONS: You are a member of the city council and a group of concerned citizens is presenting their recommendations to help guide you with preparing an adaptation action plan for the city. As you listen to each group's presentation, score them on each of the categories below. Circle the appropriate score for each and then provide an overall all score by averaging the totals. Once you have a score, you will discuss your results with the rest of the class and determine if the group's recommendations will be pursued.

PRESENTATION SCORING GUIDE

COUNTY/CITY_____

CRITERIA	2	1	0
EVIDENCE	Group provided many types of evidence of what is happening in their county	Group provided some evidence of what is happening in their county	Group provided no evidence of what is happening in their county.
EXPLANATIONS	Group provided numerous very clear explanations of why this is specifically happening as a result of sea level rise.	Group provided few explanations or explanations were not well-explained of why this is specifically happening as a result of sea level rise	Group provided no explanations of why this is specifically happening as a result of sea level rise.
RECOMMENDATIONS	Group provided numerous recommendations with a supporting arguments	Group provided few recommendations with a supporting arguments	Group provided no recommendations with a supporting arguments
PARTICIPATION	All group members participated in the presentation	Most group members participated in the presentation	Only a couple of group members participated in the presentation
COLUMN TOTALS			
		TOTAL GROUP SCORE	
ADDITIONAL NOTES ABOUT THE GROUP:			

COUNTY/CITY_____

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