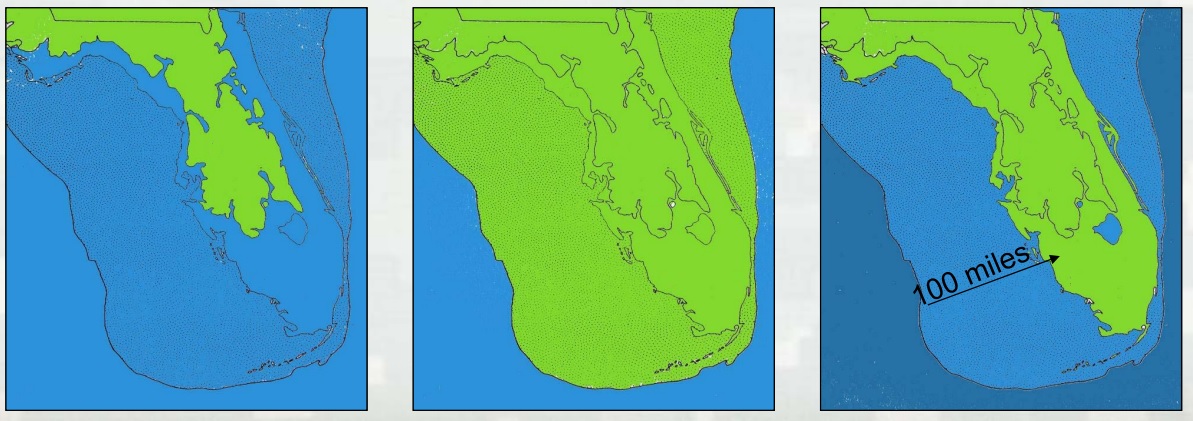
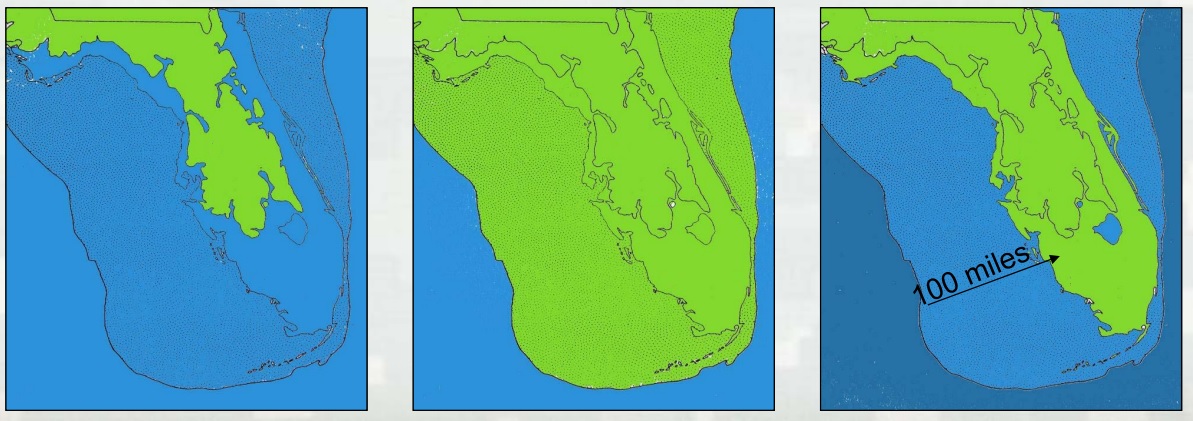
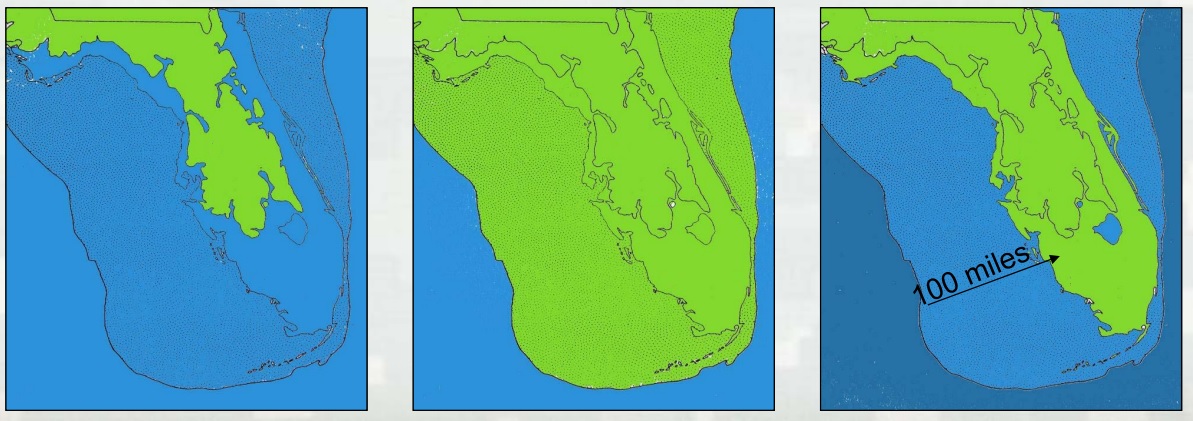
Name(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**How Does Sea Level in the Past Compare to Sea Level in the Present and Future?**

**Exploration 3: Florida and Sea Level Rise**

***Exploration 3A – Florida’s Past Sea Level***

How has sea level changed historically in Florida? Florida’s peninsula-shape makes it one of the most recognizable states. However, tens to hundreds of thousands of years ago, it would be difficult to recognize the state of Florida as it looks today. What do you think Florida looked like during the last interglacial period (approximately 120,000 years ago) or during the last glacial period (approximately 18,000 years ago)?



**A**

**B**

**C**

**Florida During the Past Interglacial, Glacial, and Present.** *Image Source: Wanless*

The figure represents Florida over three different periods in our geologic history. Look at each map and answer the following questions.

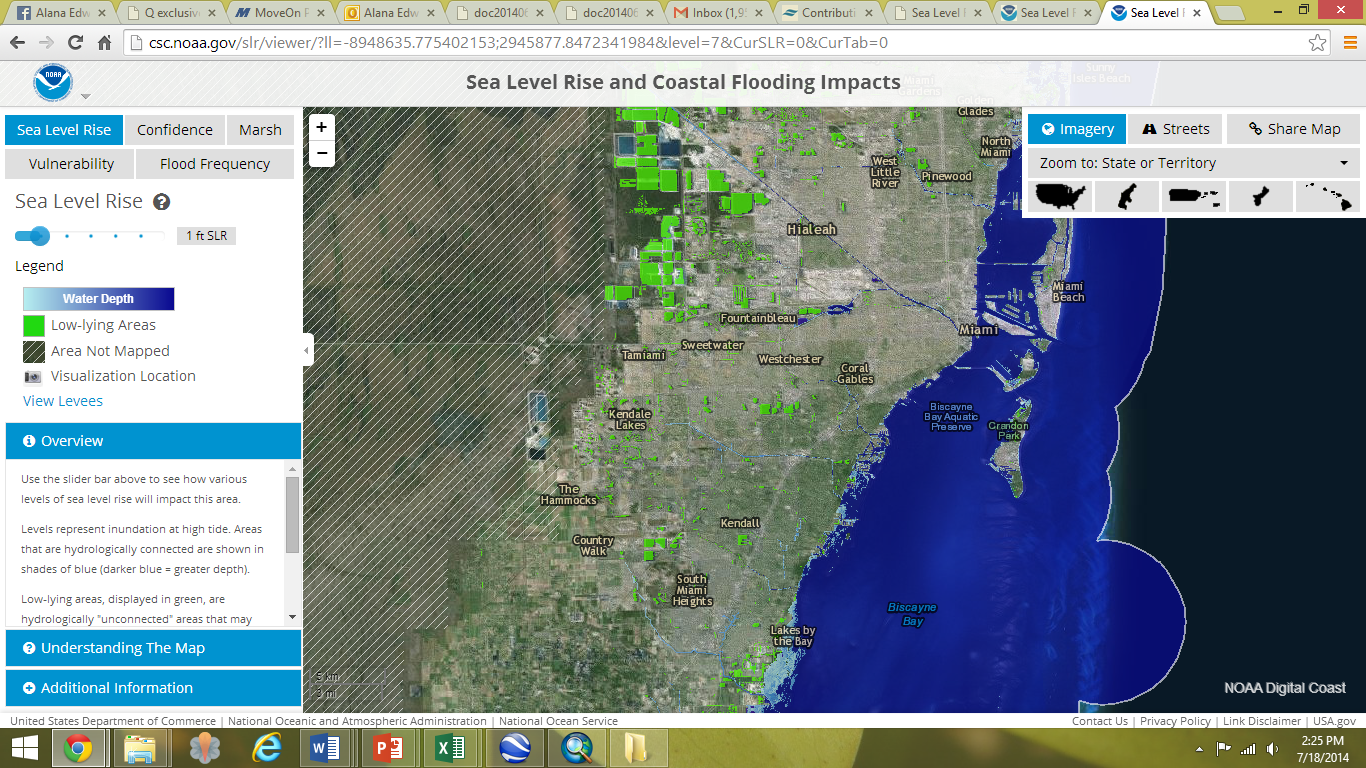
1. Which map above represents what Florida may have looked like during a glacial maximum?
2. Which map above represents what Florida may have looked like during an interglacial period?

***Exploration 3B – 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 these changes will look like, NOAA has developed a tool called [**Digital Coast: Sea Level Rise and Coastal Flooding Impacts Viewer**](http://coast.noaa.gov/digitalcoast/tools/slr/). 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.

1. Launch the **Digital Coast** application showing the [**Miami**](http://go.usa.gov/wz2z) area in Florida.
   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?



* 1. 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?
  2. 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?

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

1. Look at tide gauge under **Flooding Frequency** and click on the symbol for the Tide Gaugehttp://coast.noaa.gov/slr/viewer/img/tide_off.png near [**Key Biscayne**](http://go.usa.gov/wzTF). 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** |  |  |  |

1. Why do you think there are more flooding events than days in the year when sea level is 0.5 meter higher?
2. 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?
3. Refer to the figure in Exploration 2. Approximately what year will sea levels be 0.5 meter higher than today and how old would you be?
4. Consider your answers in the table and the previous question. How different might life be in South Florida with this level of flooding?
5. Provide some examples of ways that decision-makers and community leaders might use this tool in their communities.