Using Google Earth to Estimate Shoreline Erosion History

MISSISSIPPI STATE UNIVERSITY
EXTENSION

COASTAL CONSERVATION & RESTORATION

Sea Grant
Mississippi-Alabama

Introduction

When evaluating a shoreline for possible implementation of a living shoreline project, one of the most important site characteristics to assess is the erosion history of the site. An easy and free way to do this is to use Google Earth and Microsoft PowerPoint.

Using these tools, you should be able to quickly determine if a site has been experiencing erosion or if it is relatively stable. You may also be able to determine the cause of erosion at a site using this activity alone or in combination with property owner interviews.

This guide serves as a step-by-step tutorial to help anyone to be able to do shoreline erosion assessments using this common software. However, this is a rough evaluation of erosion at a site. It should not be used to measure exact erosion rates or amount of land lost.

How is this exercise helpful for living shoreline decisions?

Erosion history can indicate:
- **Suitability for living shoreline implementation**
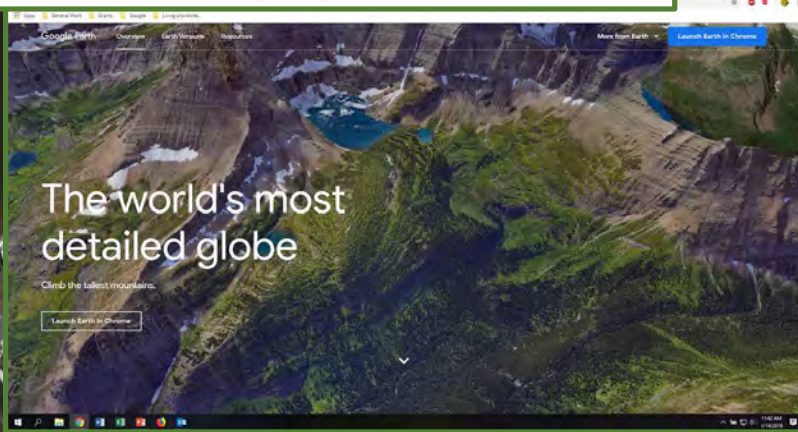- **The need for wave-breaking structures**

Programs Needed

Google Earth

P

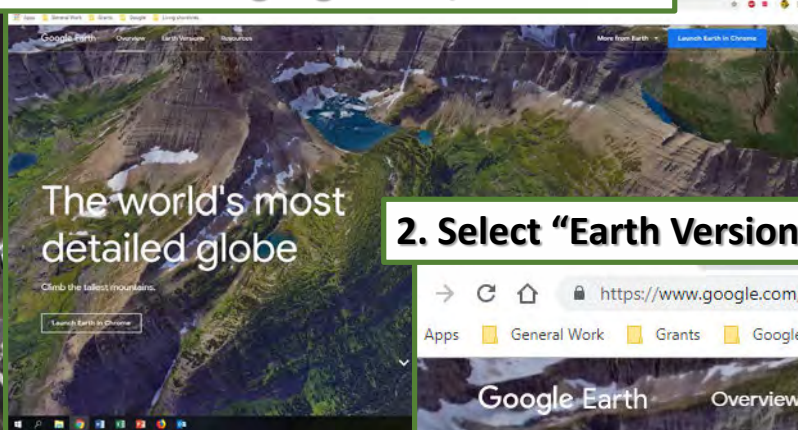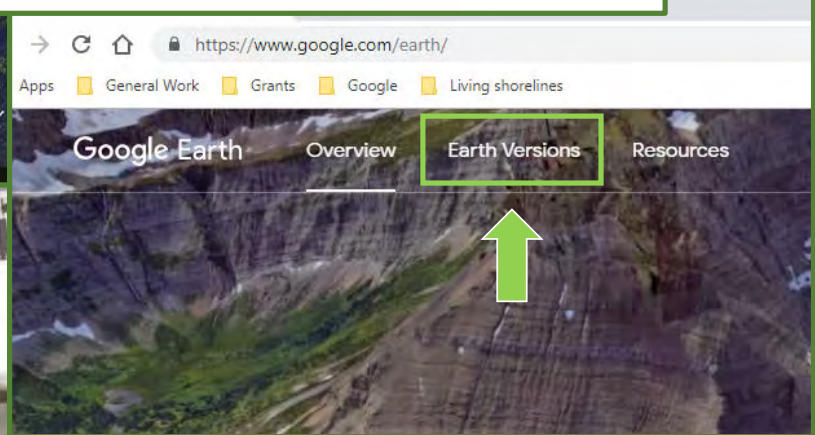# How to download Google Earth

1. Go to www.google.com/earth

This example uses Google Chrome, but other browsers will also work.

How to download Google Earth
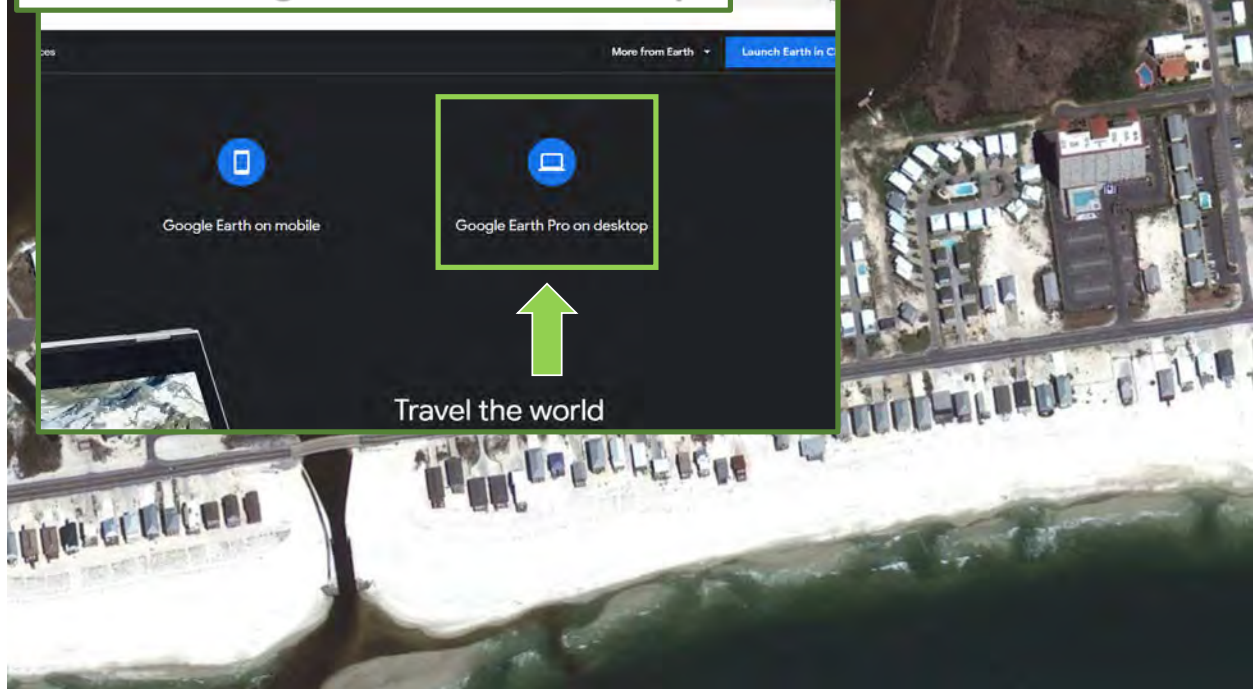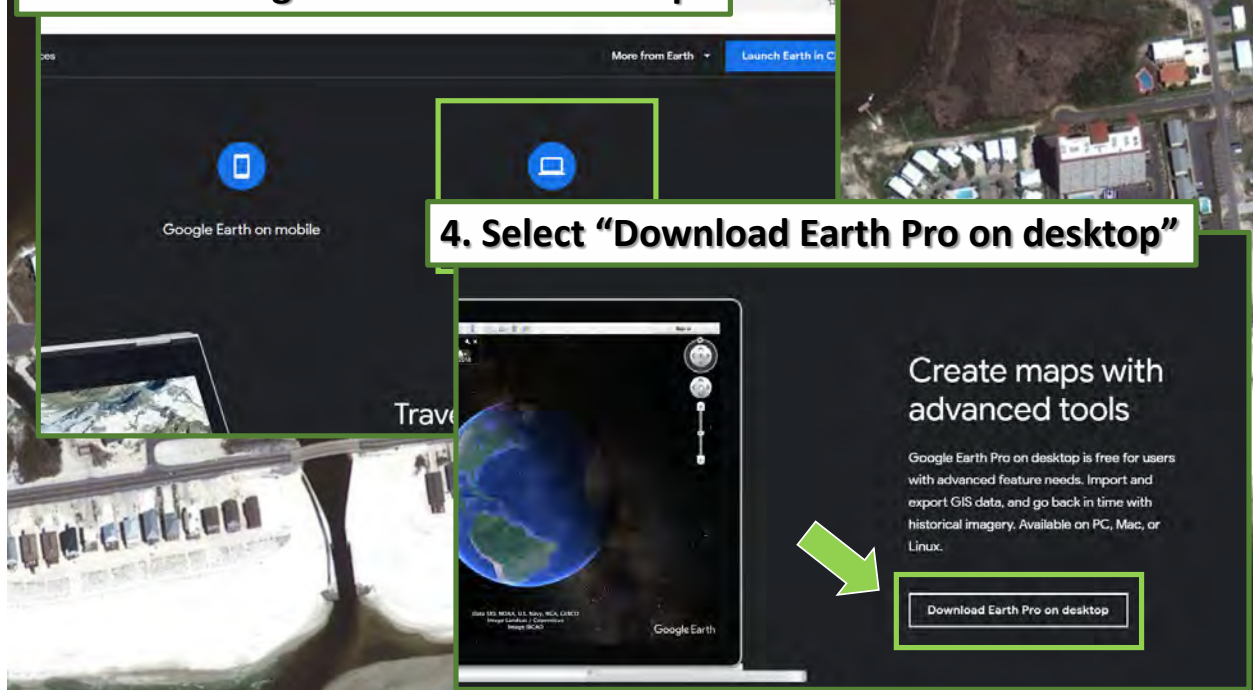
1. Go to www.google.com/earth

2. Select "Earth Versions"

How to download Google Earth

3. Select "Google Earth Pro on desktop"

How to download Google Earth

3. Select "Google Earth Pro on desktop"

4. Select "Download Earth Pro on desktop"

How to download Google Earth

5. Select "Accept & Download"

How to download Google Earth

5. Select "Accept & Download"

6. Click the execute command and select "Yes" to allow changes to your computer

Try Google Earth for Chrome

With Google Earth for Chrome, fly a cities right in your browser. Roll the with Voyager, and measure distance

GoogleEarthProSe....exe
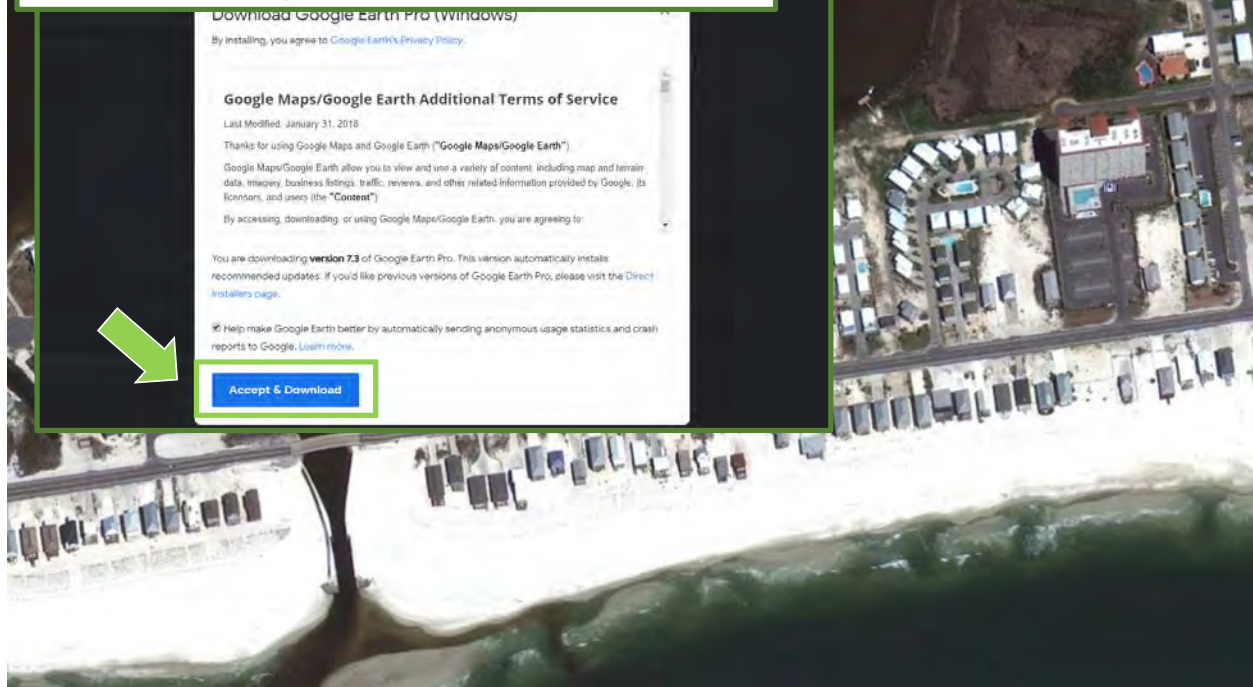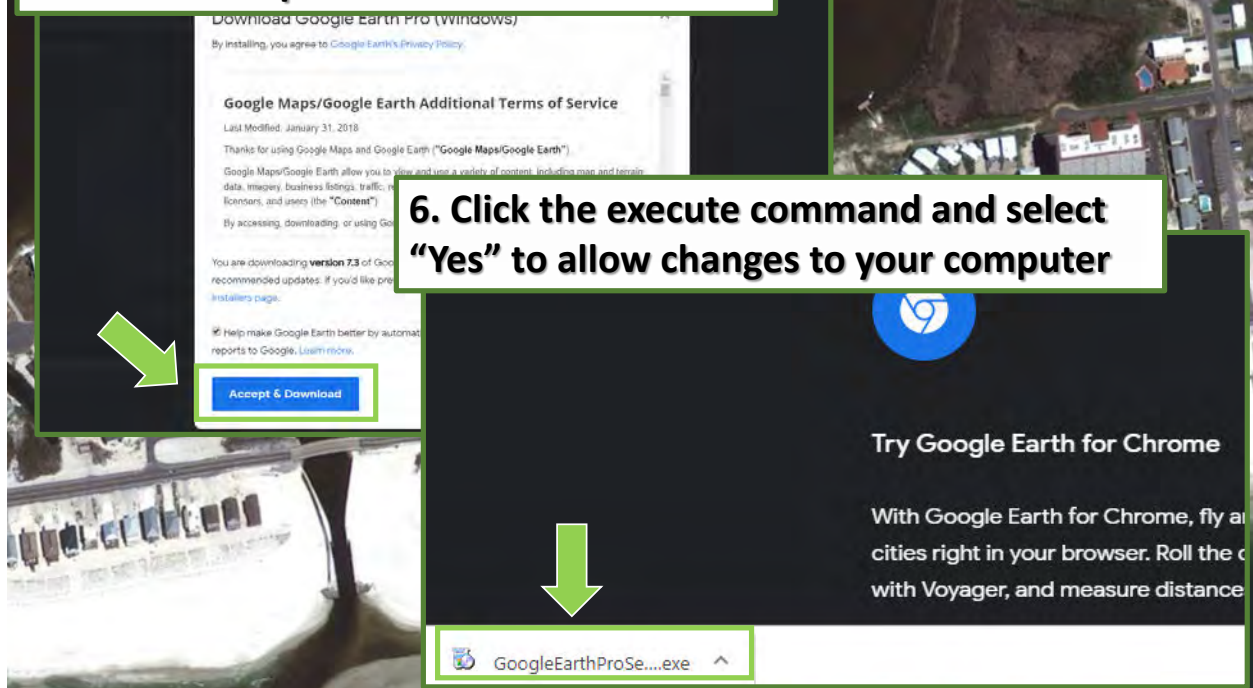
Welcome to Google Earth!

Step 1: Enter location into search bar

▼ Search

2031 Norman Lane, Gulf Shores, AL, USA

Search

Get Directions   History
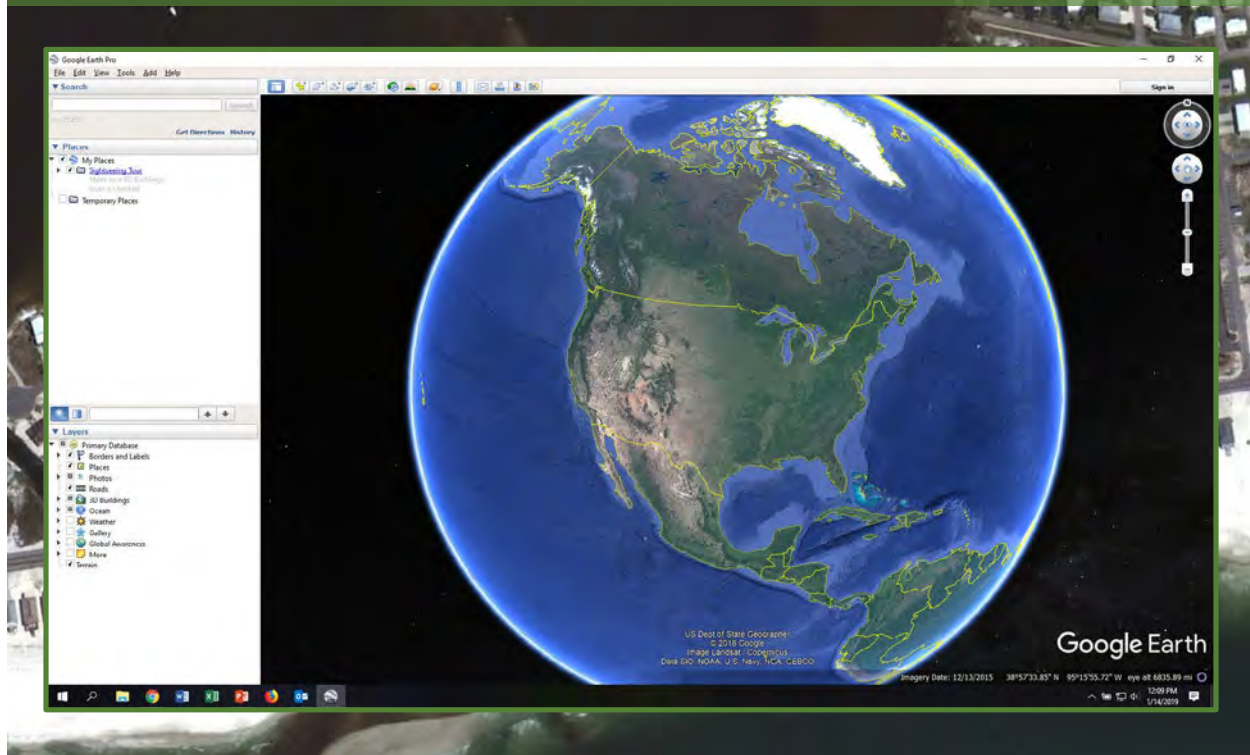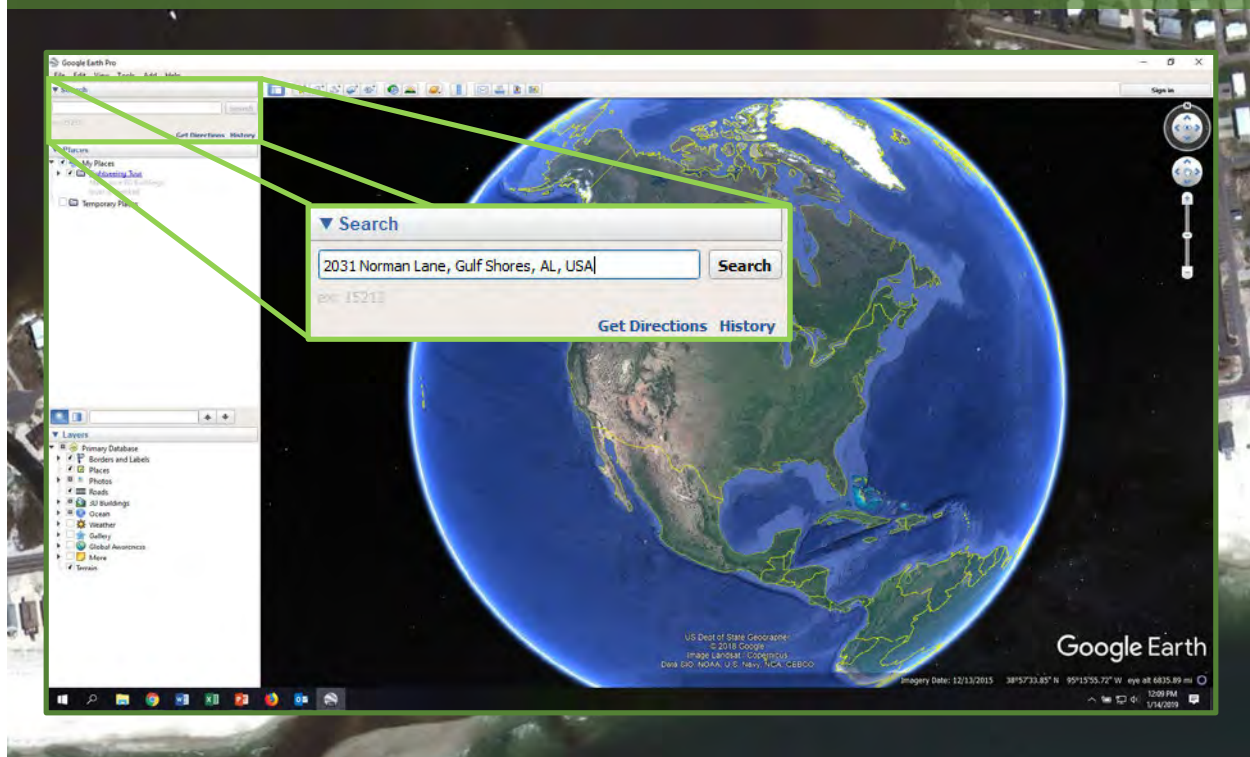
1. Enter location into search bar
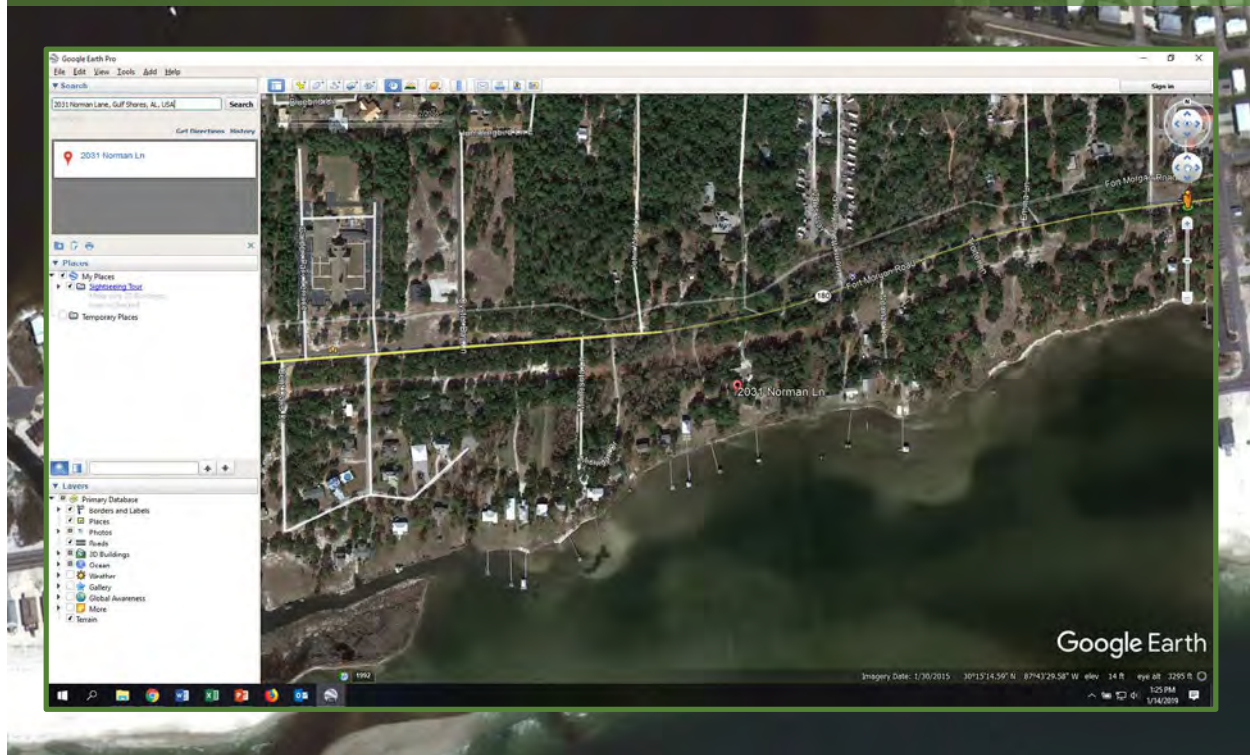
2. Go back in time
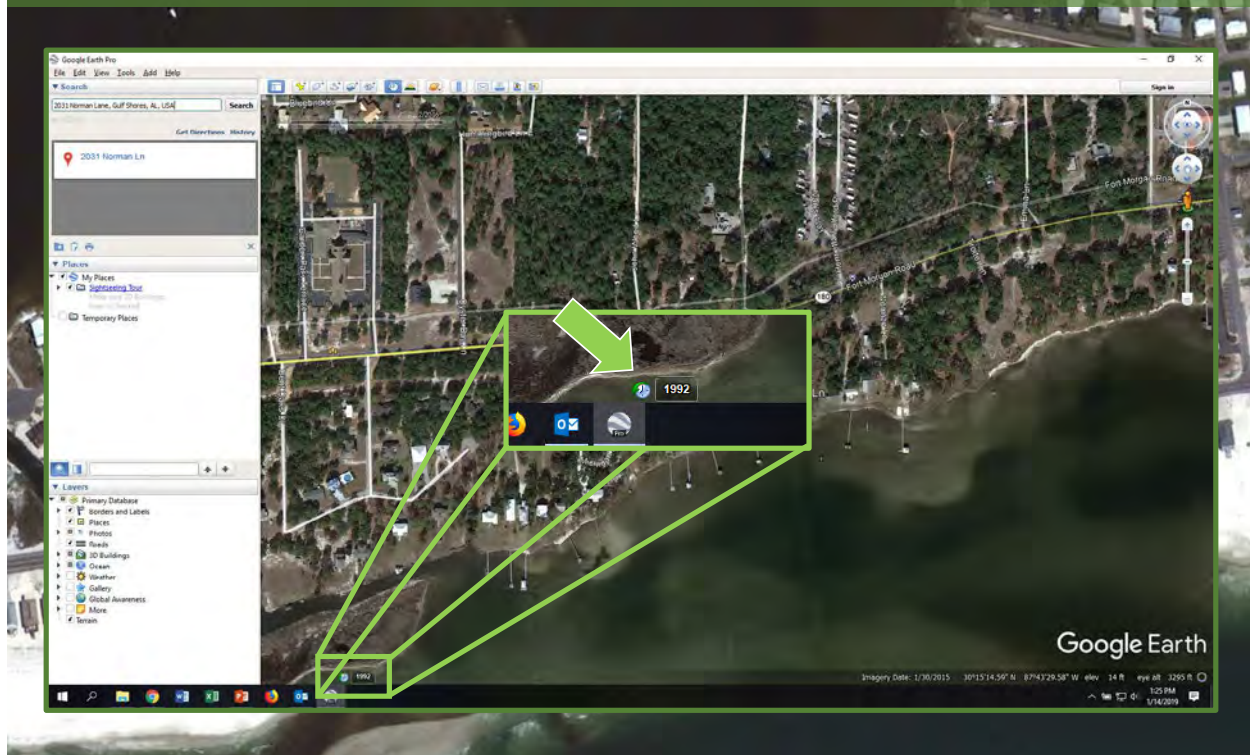
2. Go back in time
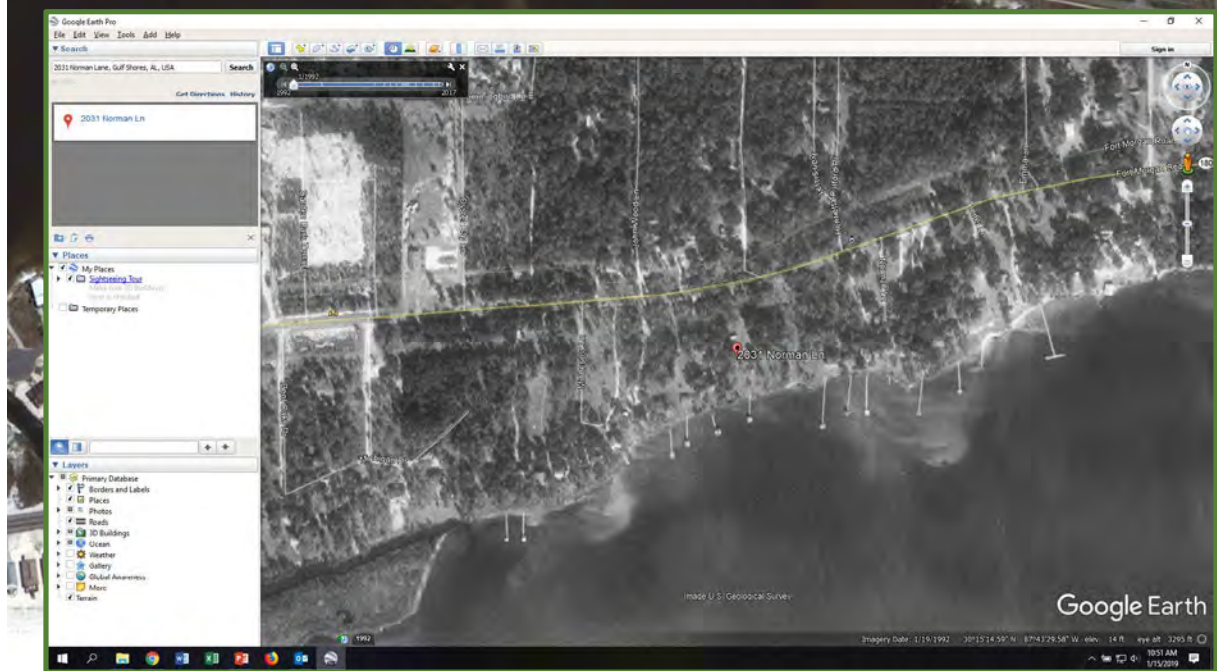
3. Zoom in as much as possible while still being able to discern the shoreline

Can zoom in by:
- **Pressing the + button here**
- **Scrolling up with the mouse wheel**
- **Zooming in on a touchpad**

3. Zoom in as much as possible while still being able to discern the shoreline

4. Save the zoomed-in image

Be sure to include the year in the name of the picture file!
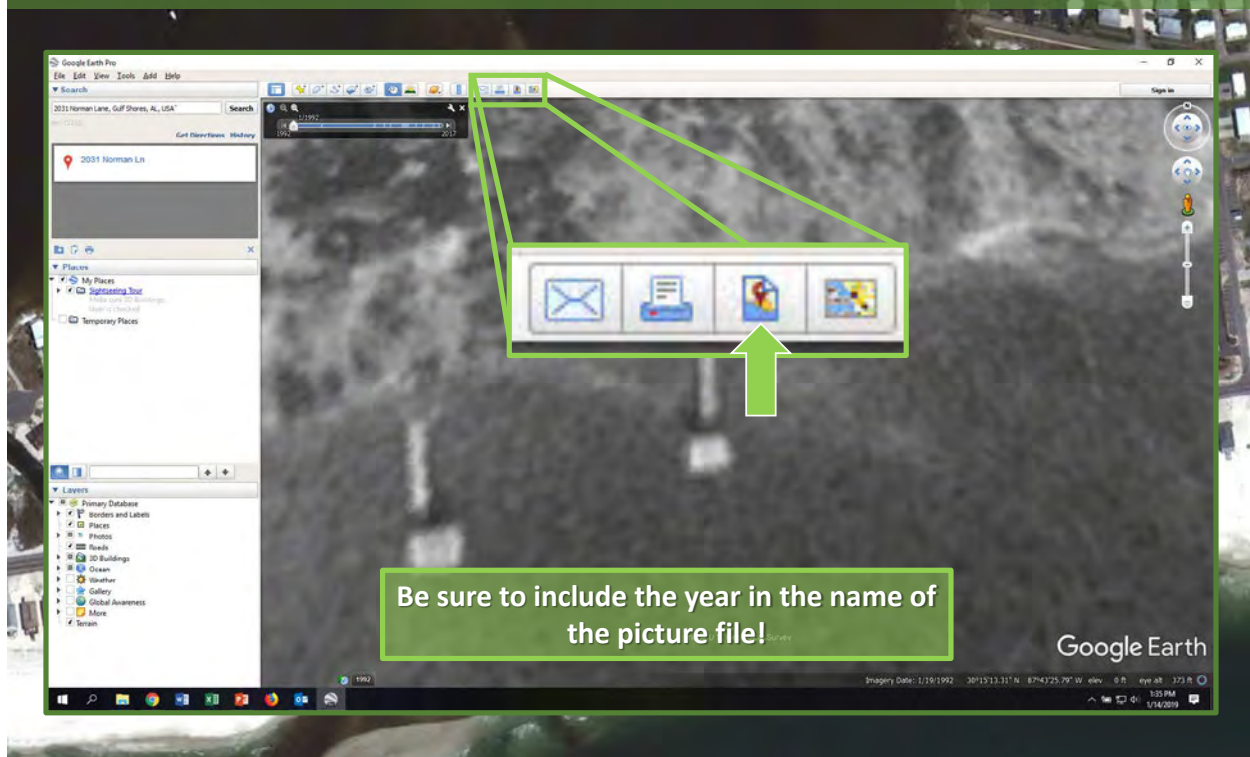
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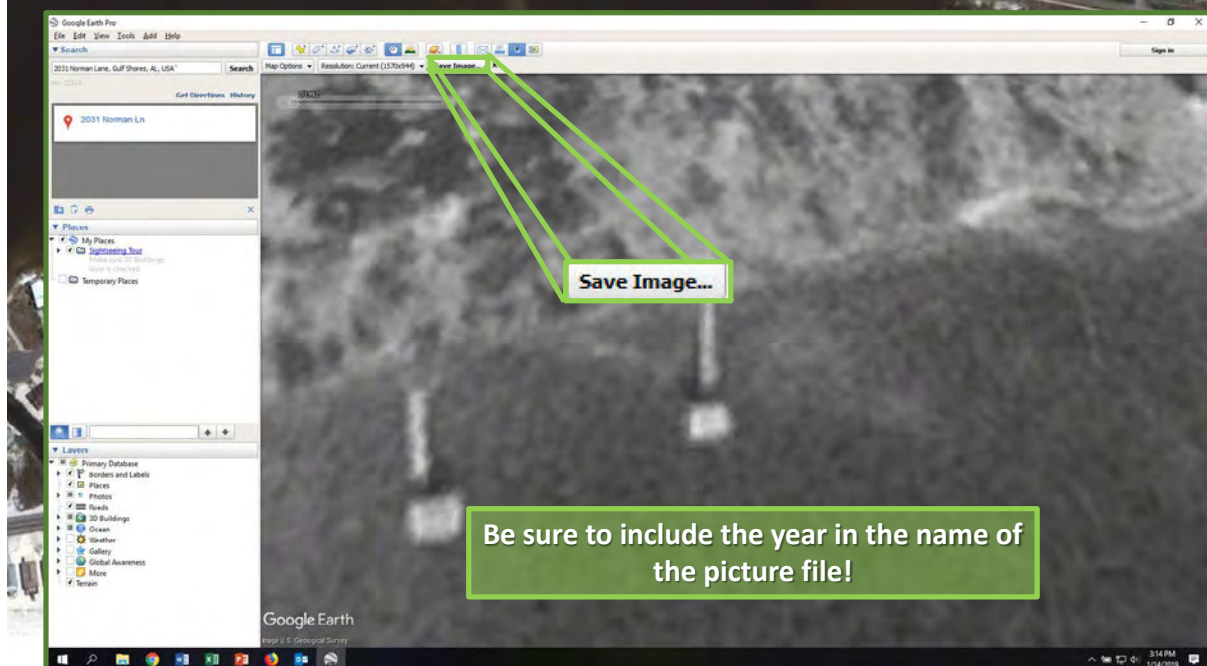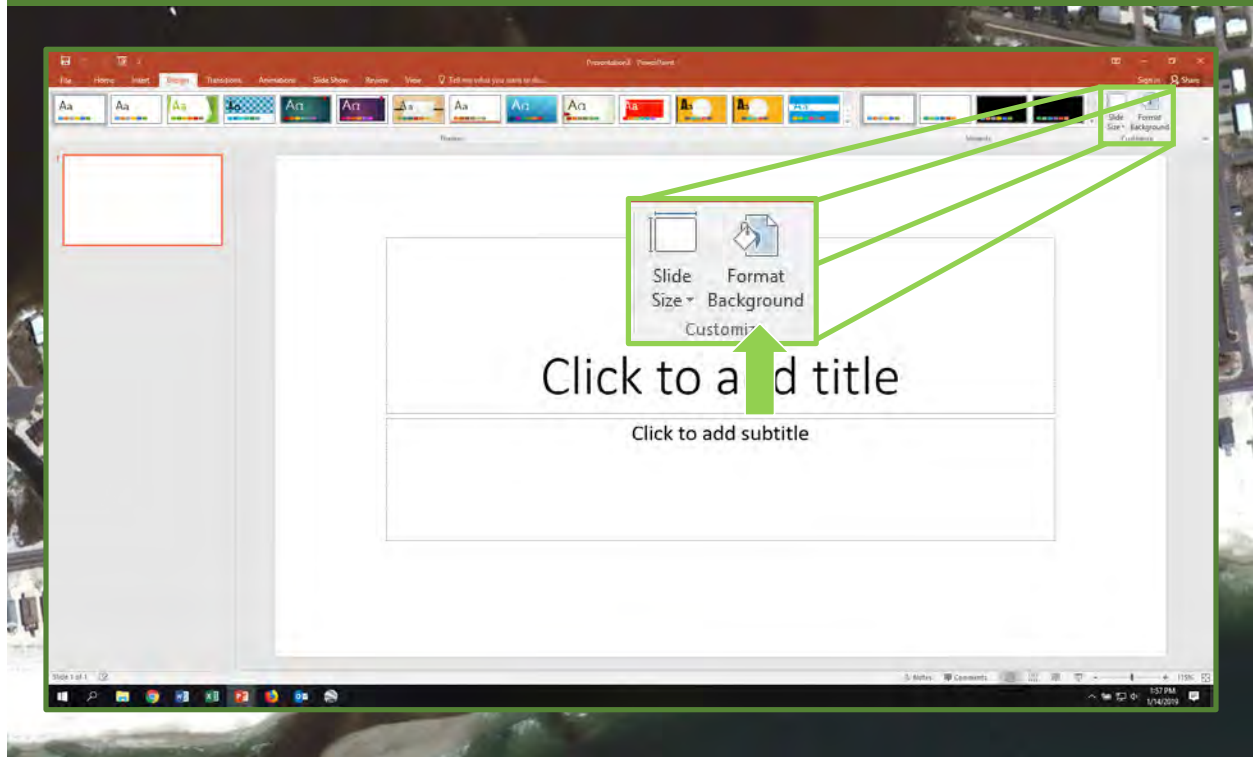
Save Image...

Be sure to include the year in the name of the picture file!

5. Set picture as slide background in PowerPoint

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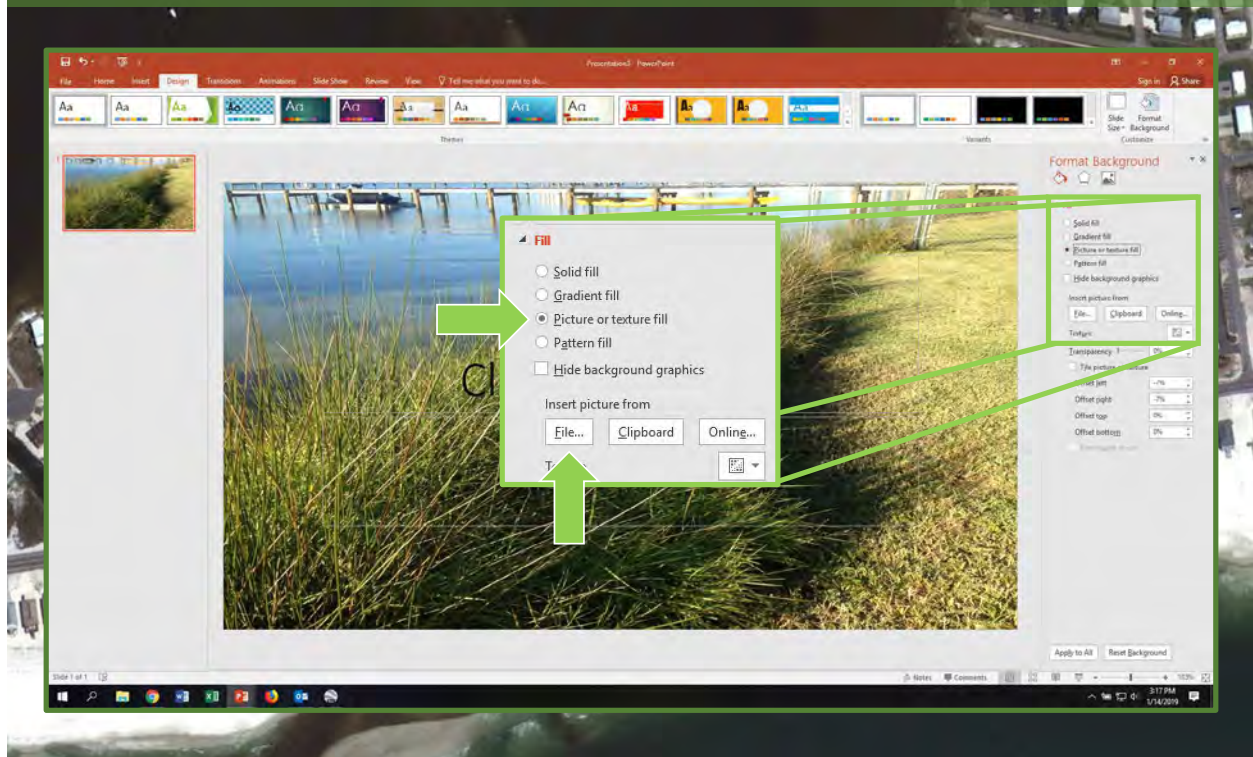
5. Set picture as slide background in PowerPoint
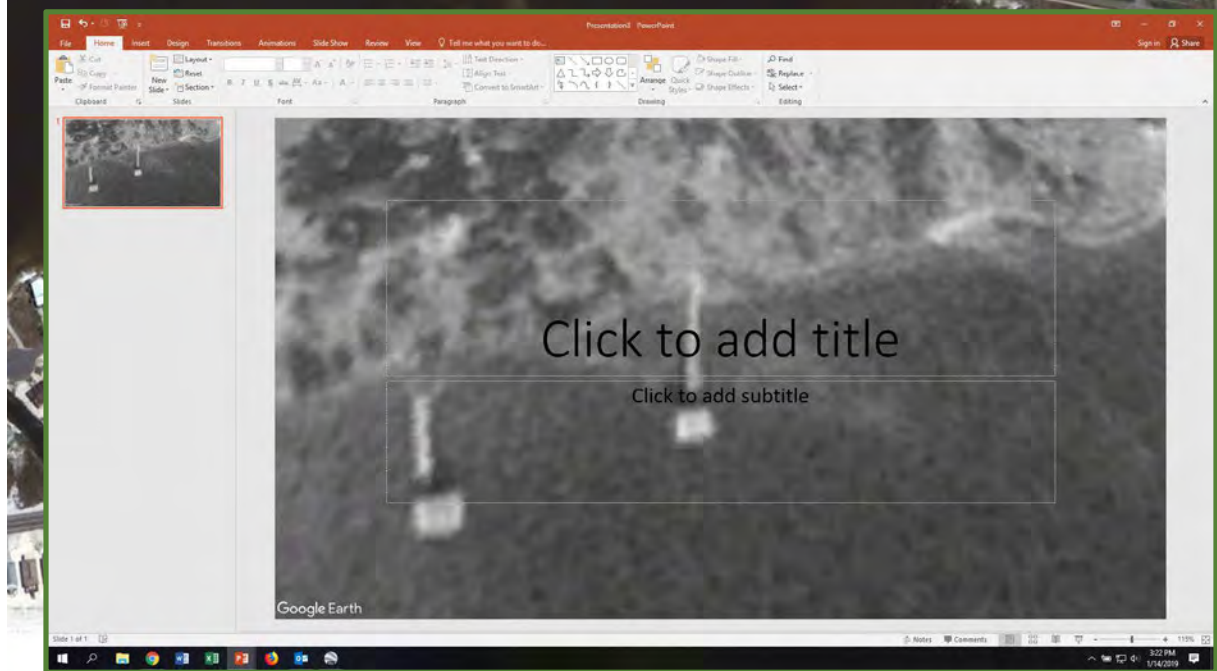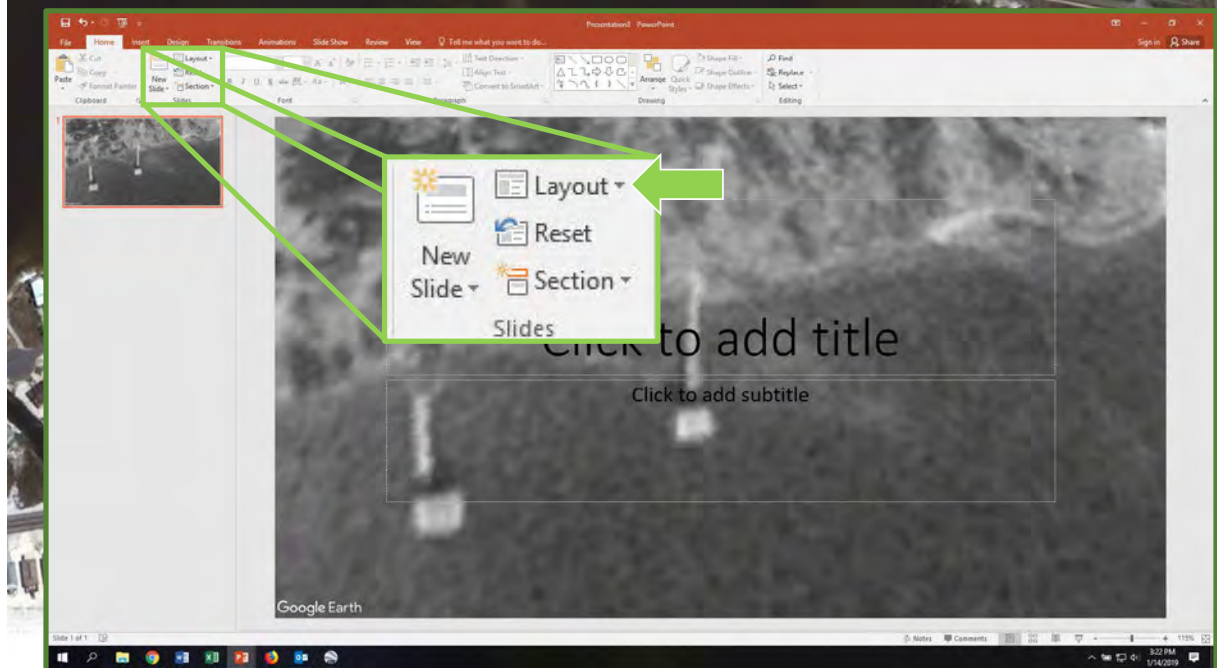
6. Get rid of text boxes
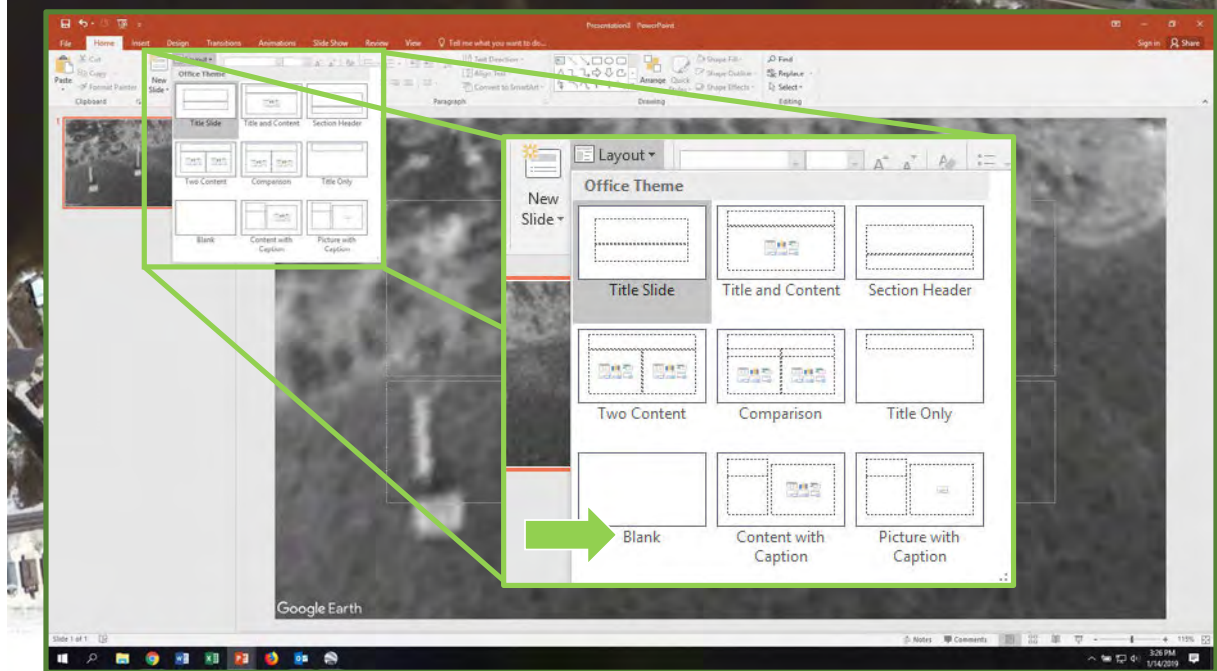
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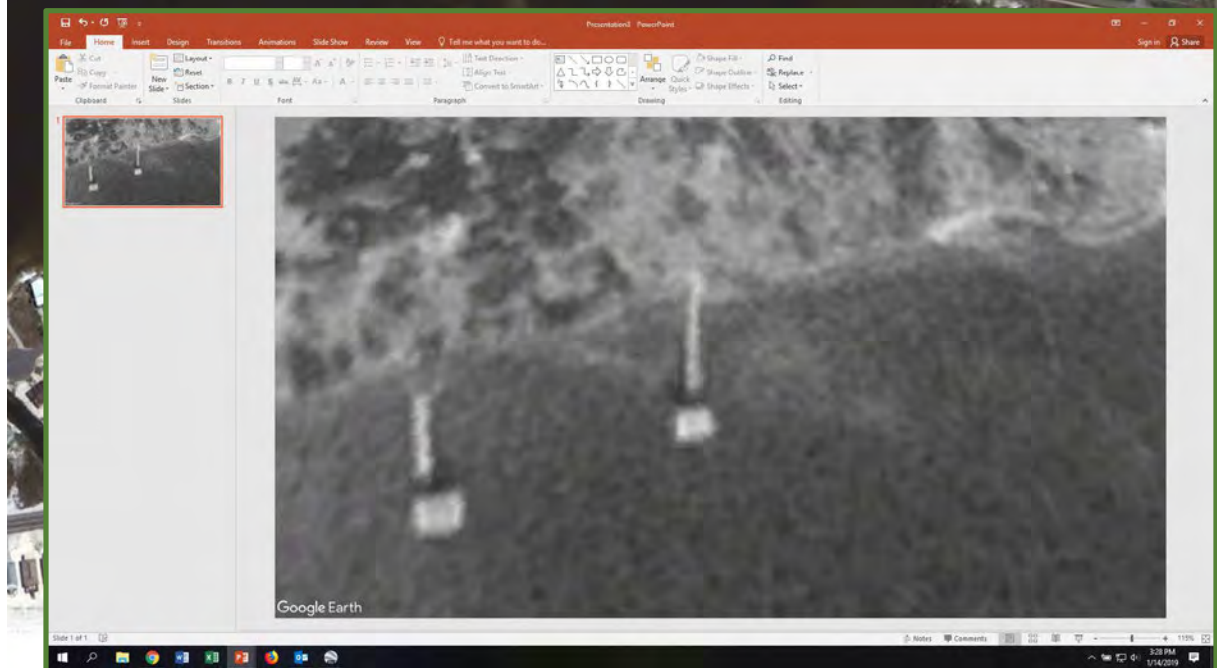
7. Trace shoreline
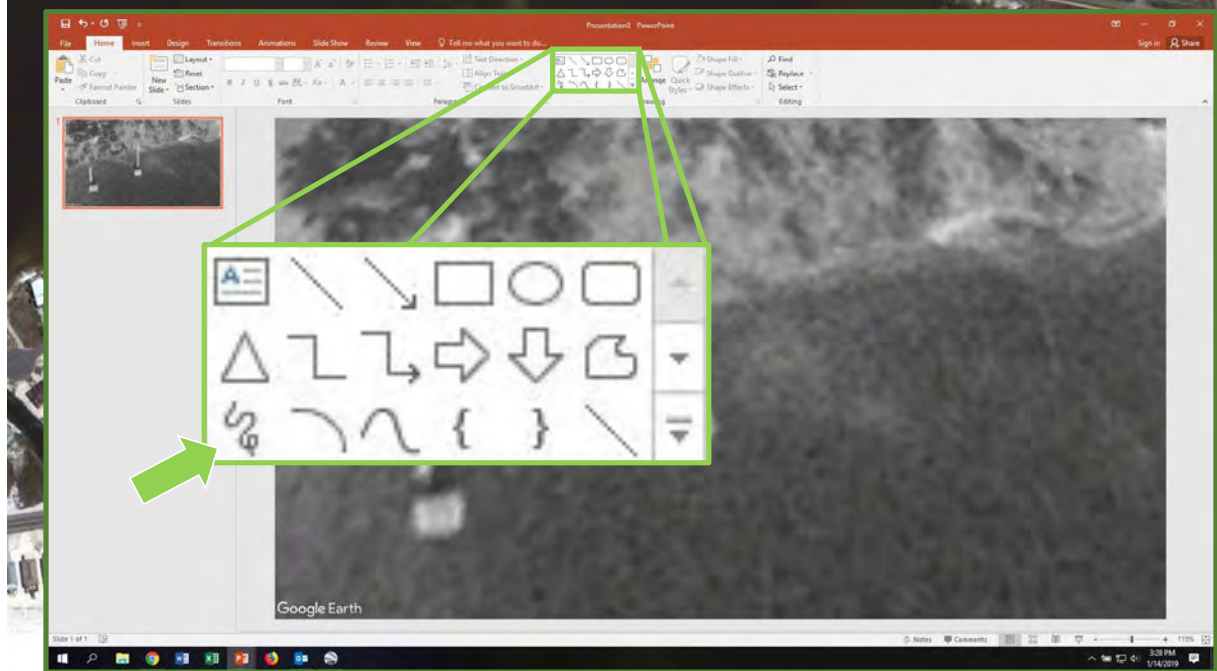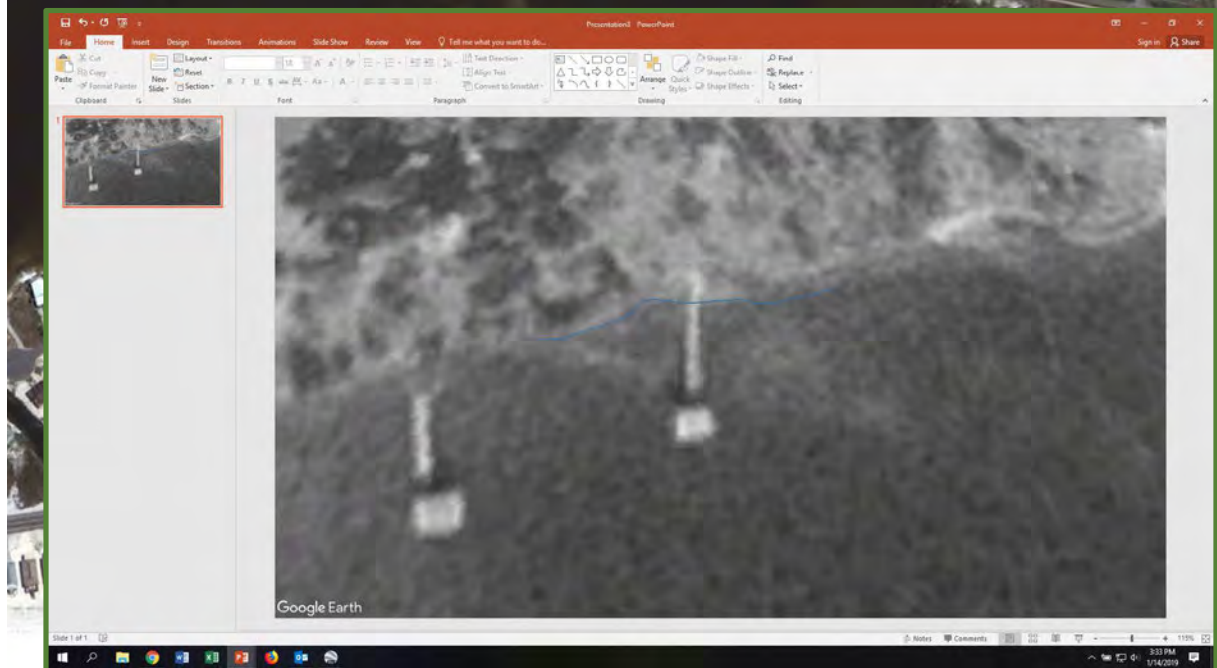
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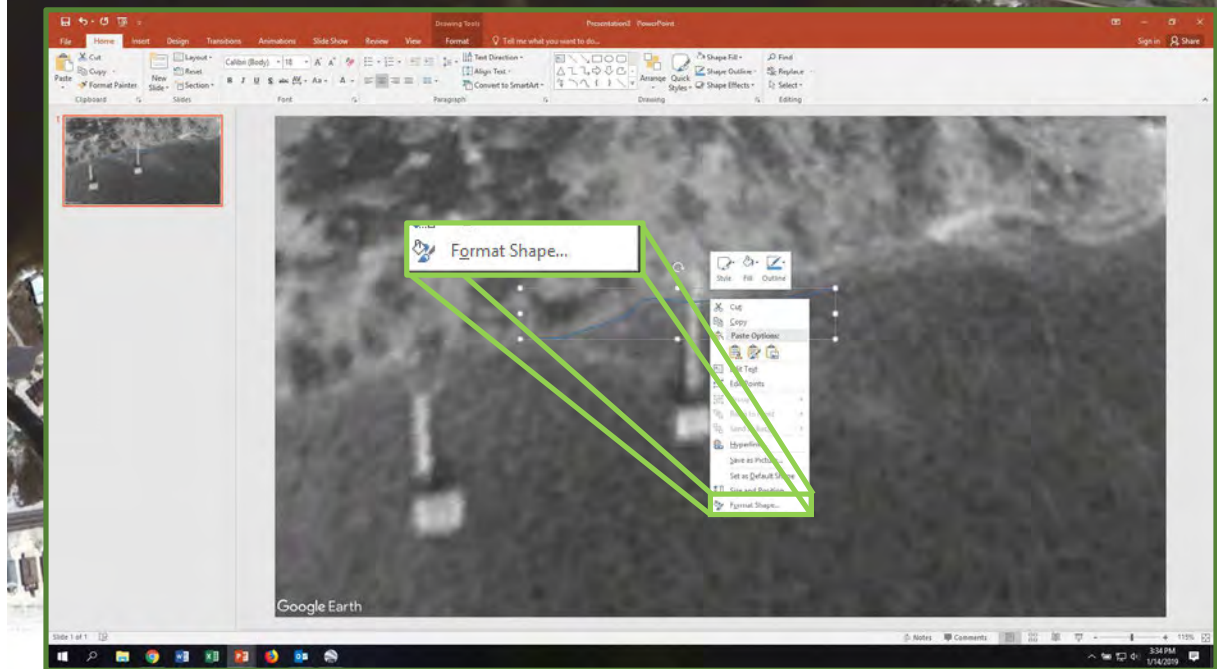
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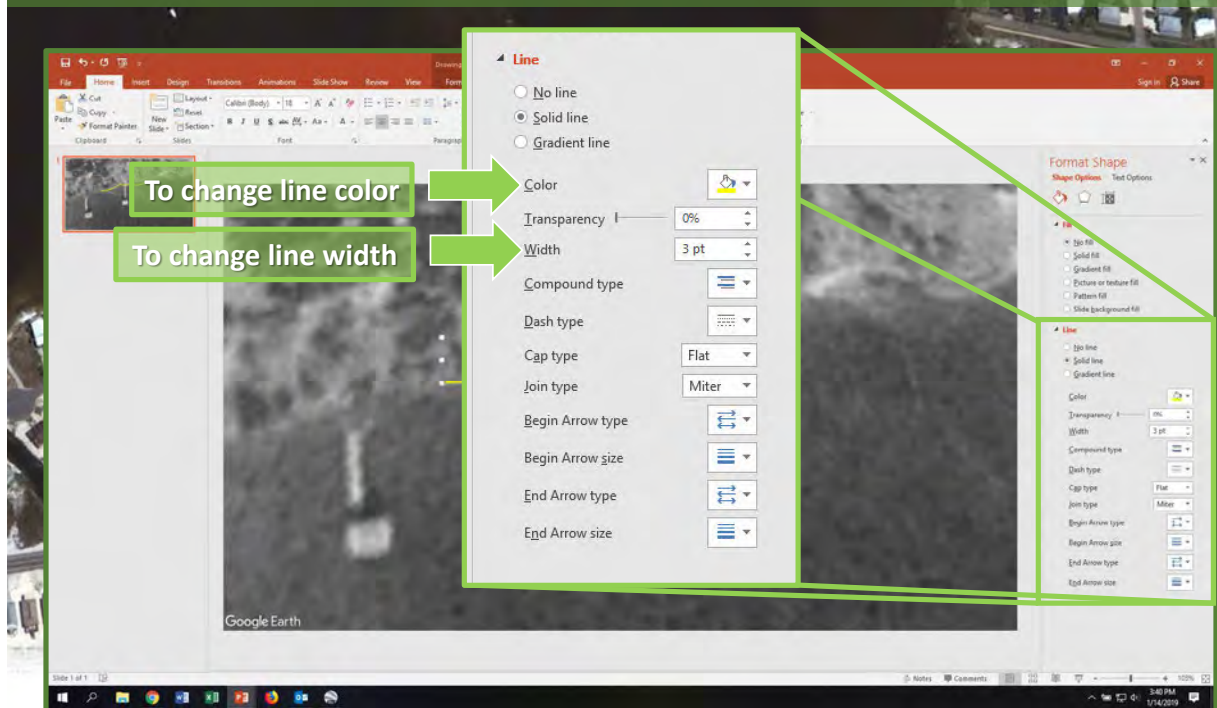
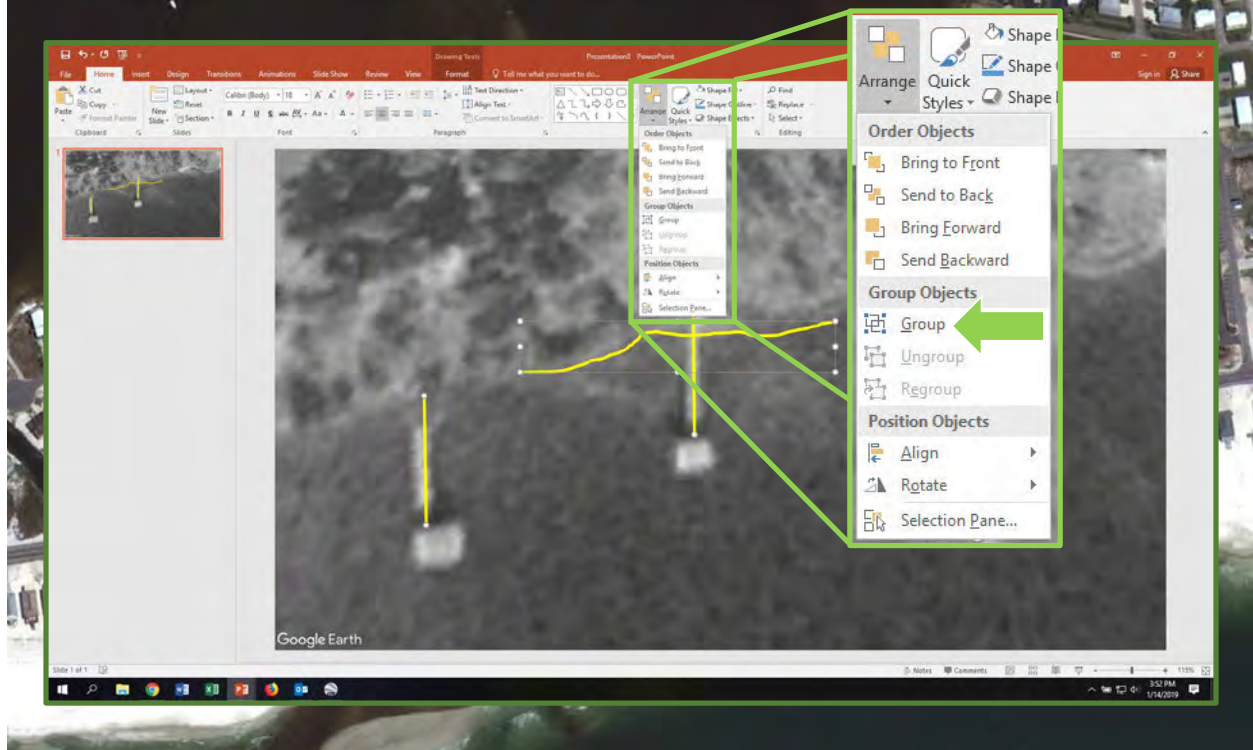# 7. Trace shoreline

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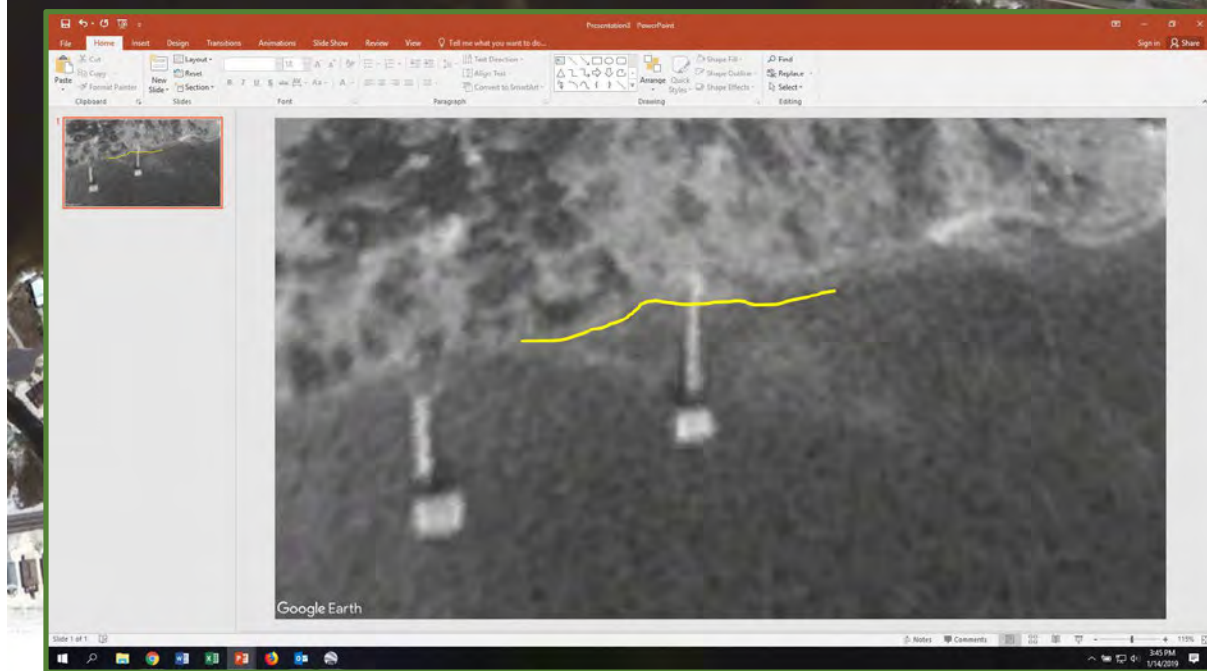
8. Trace reference line

9. Group the tracings together

Select all by holding down shift and clicking each.

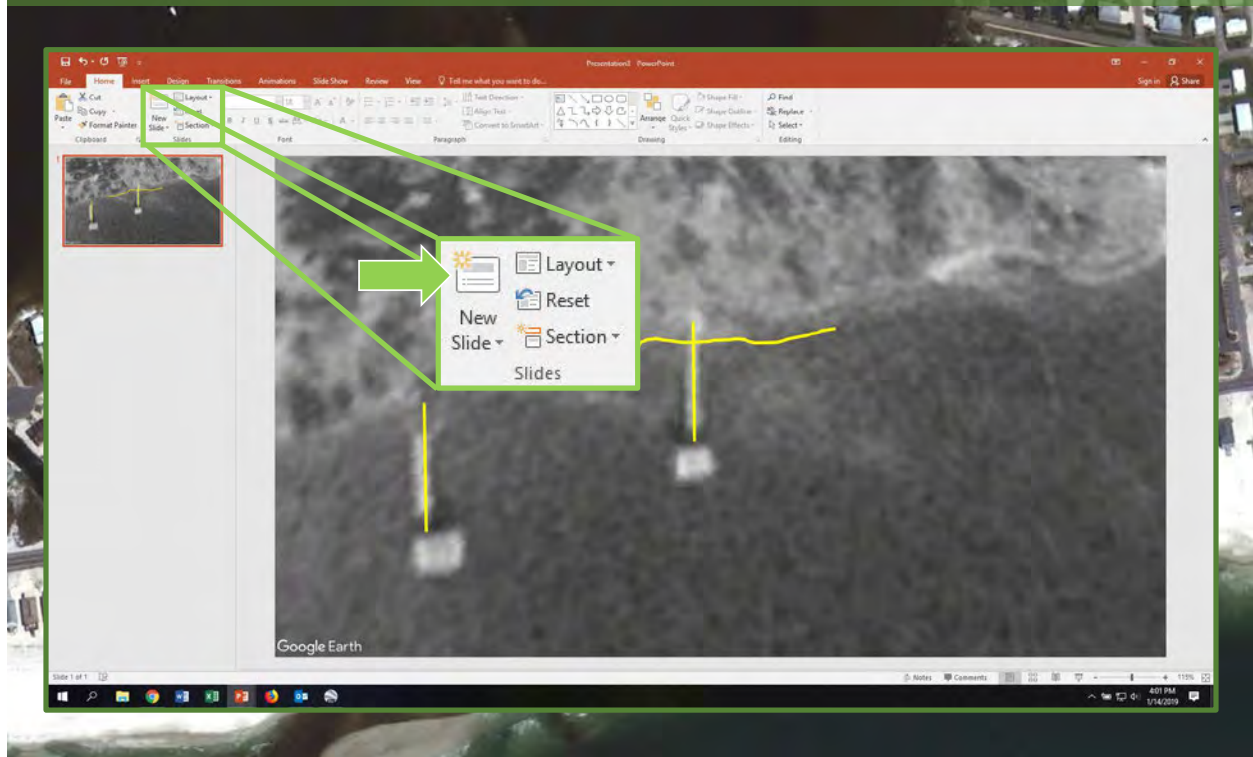# 9. Group the tracings together

Arrange

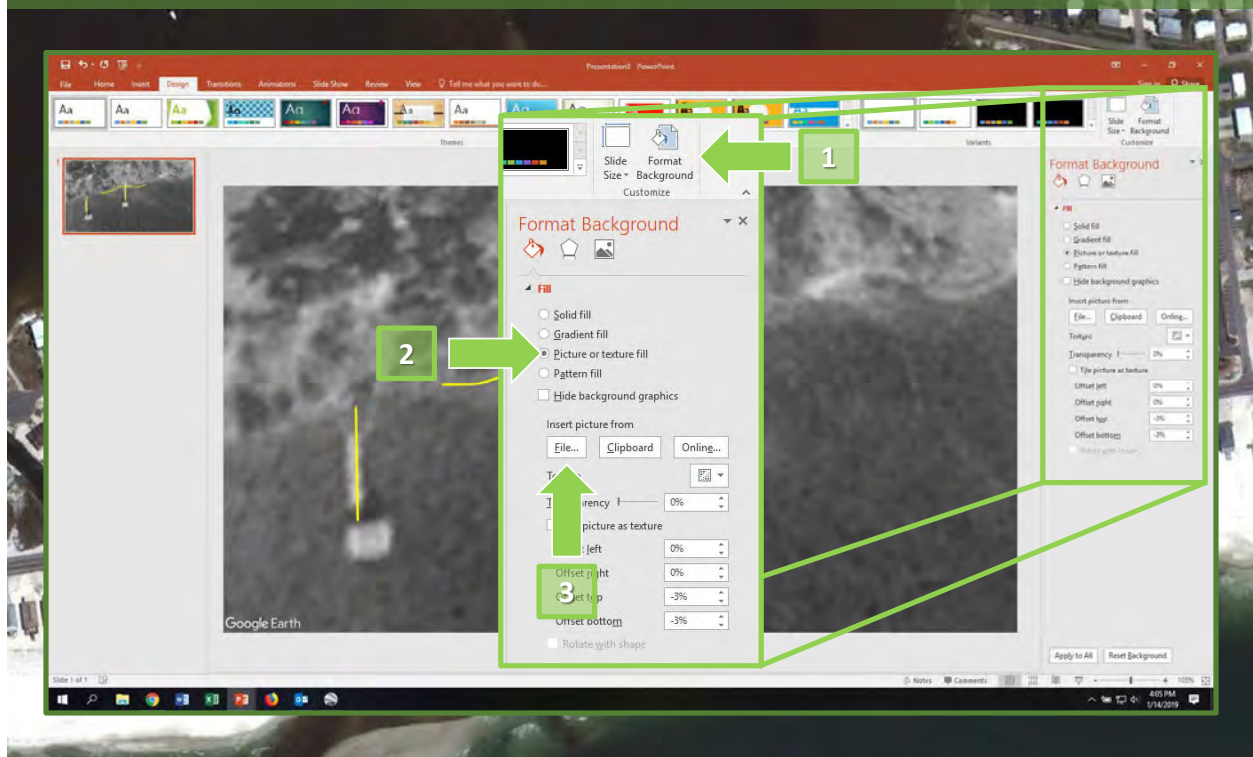# 9. Group the tracings together

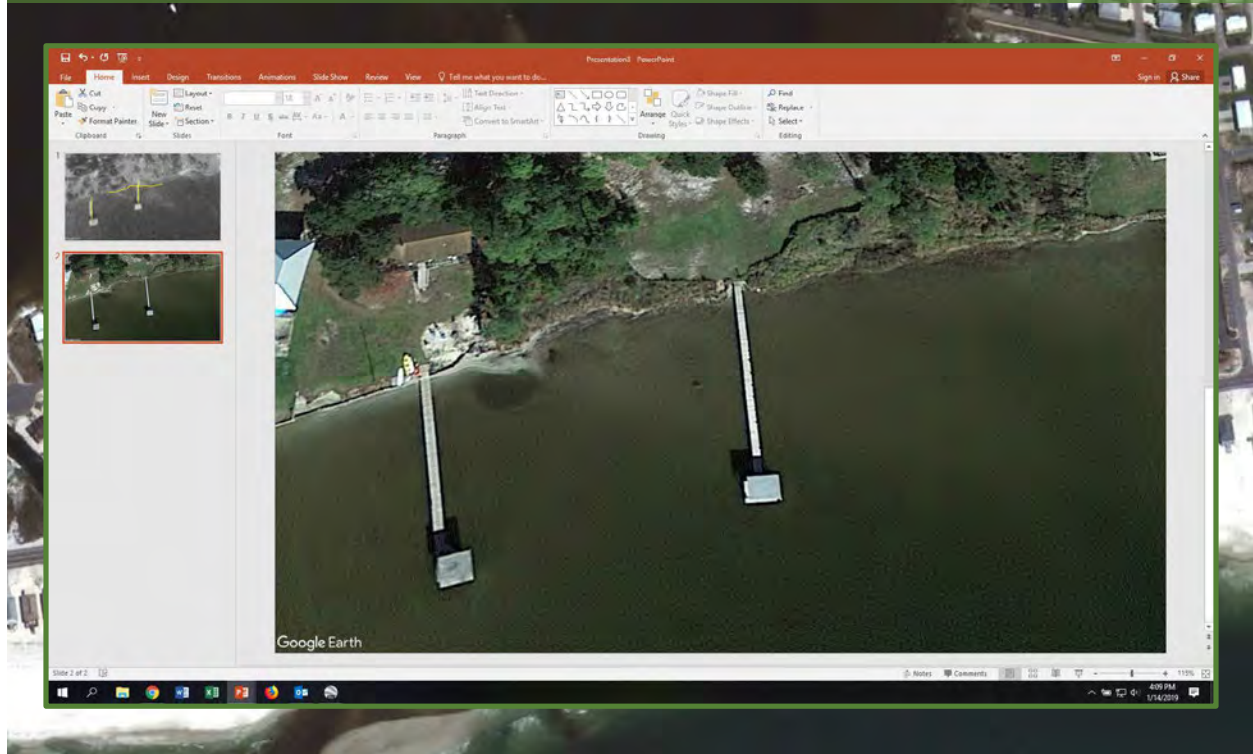# 10. Save later image from Google Earth
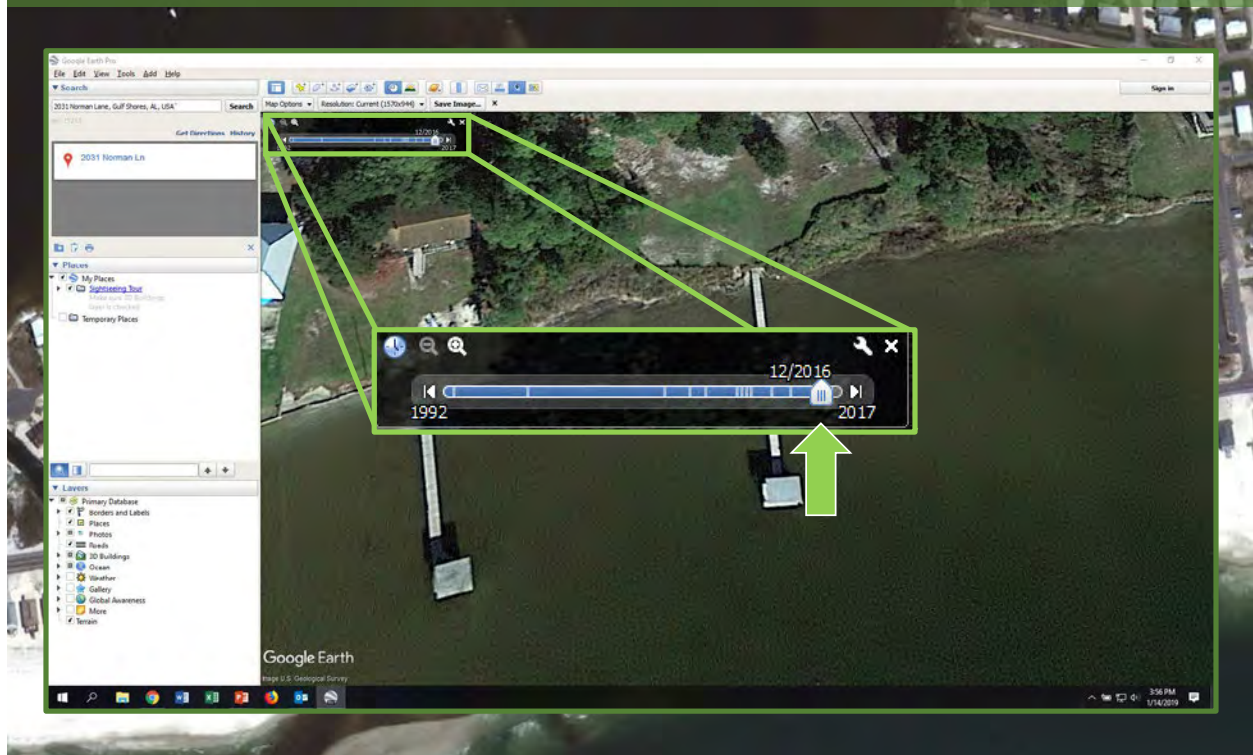
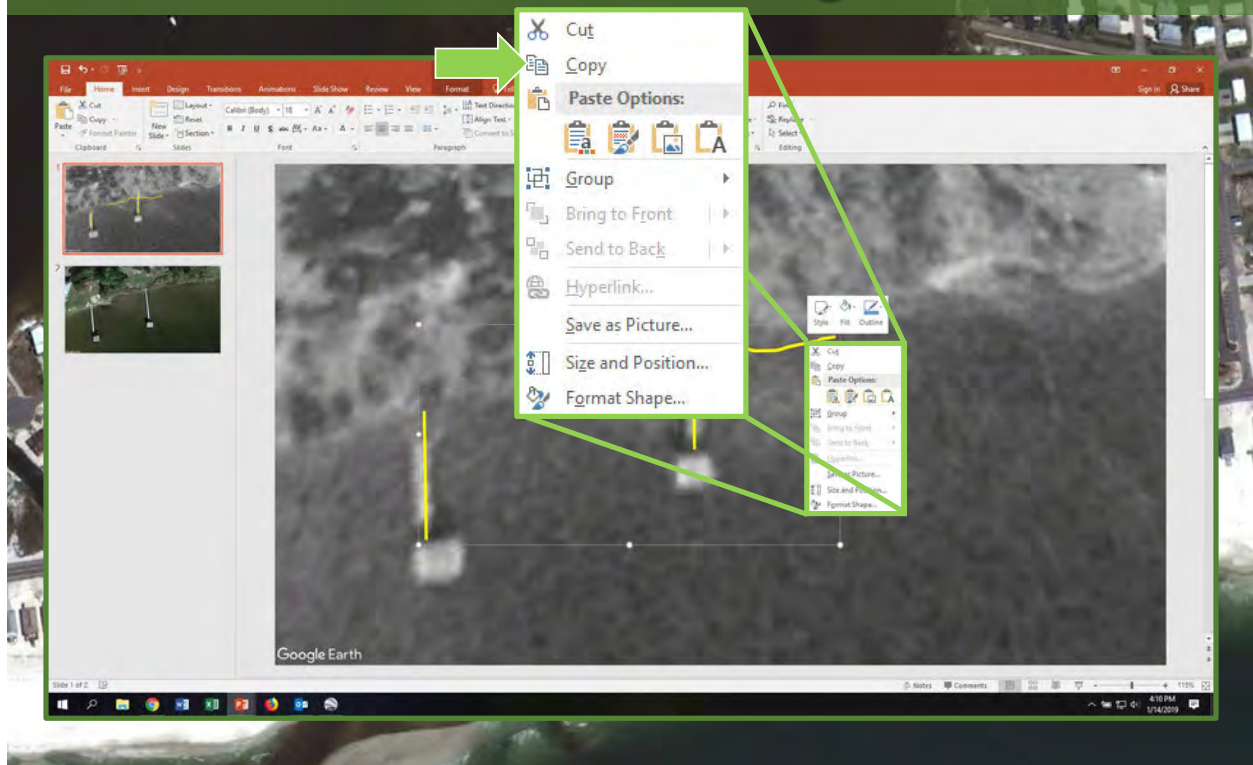11. Set second image as background on a new PowerPoint slide

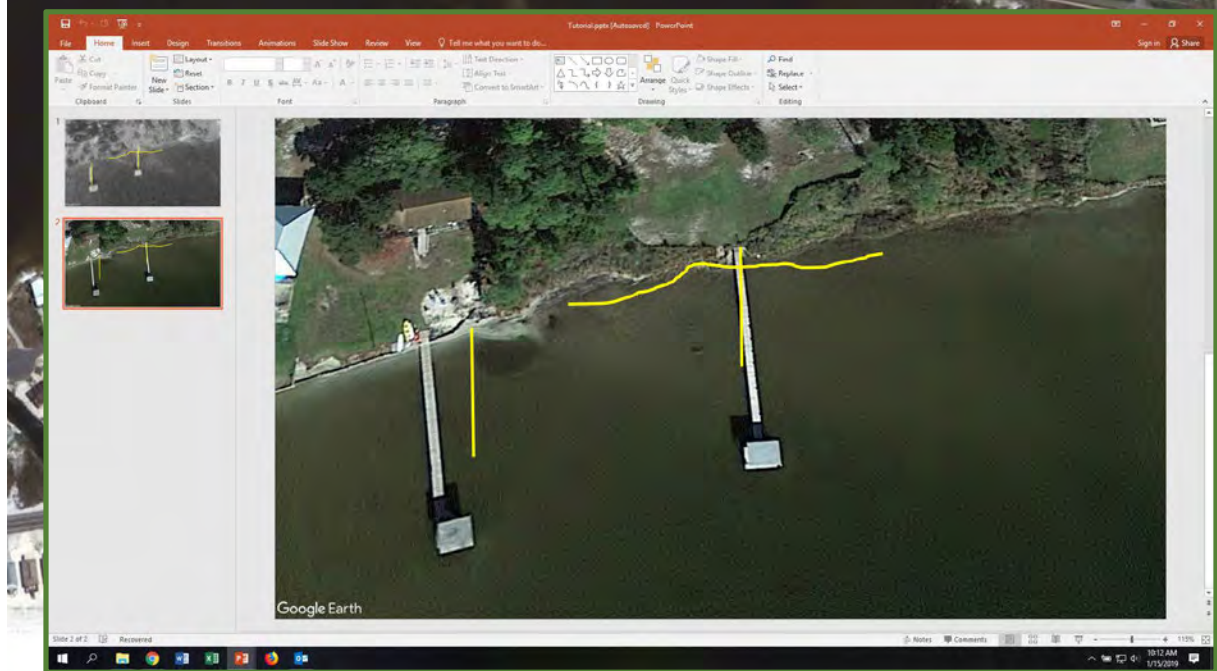11. Set second image as background on a new PowerPoint slide

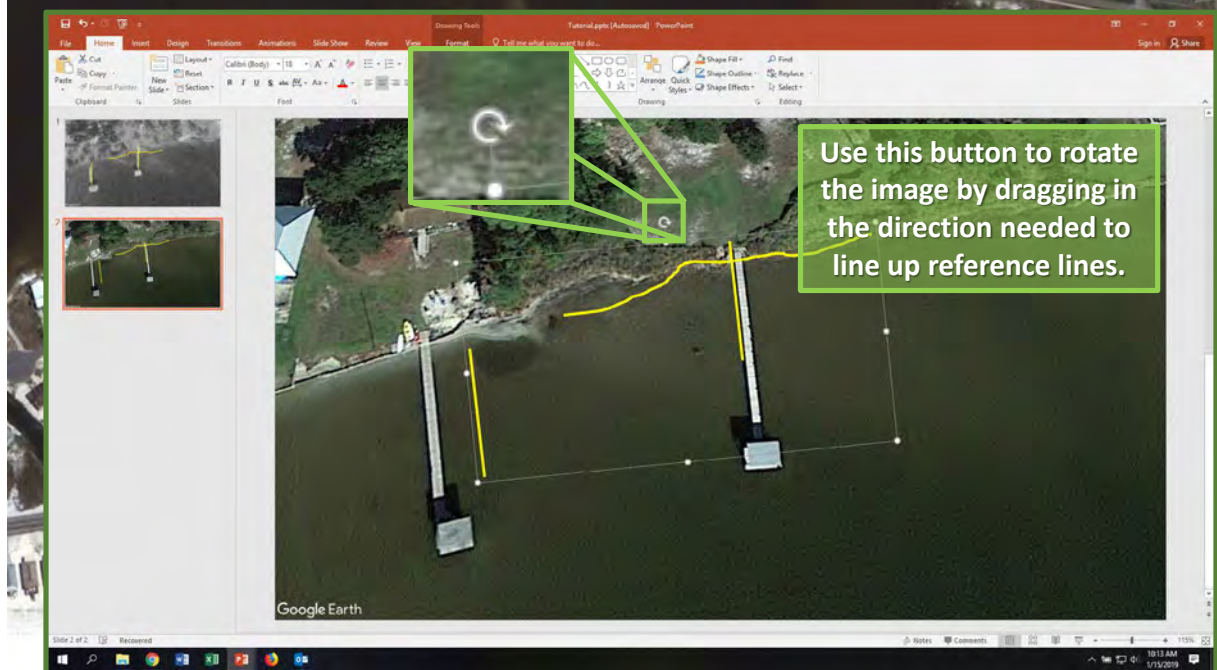11. Set second image as background on a new PowerPoint slide

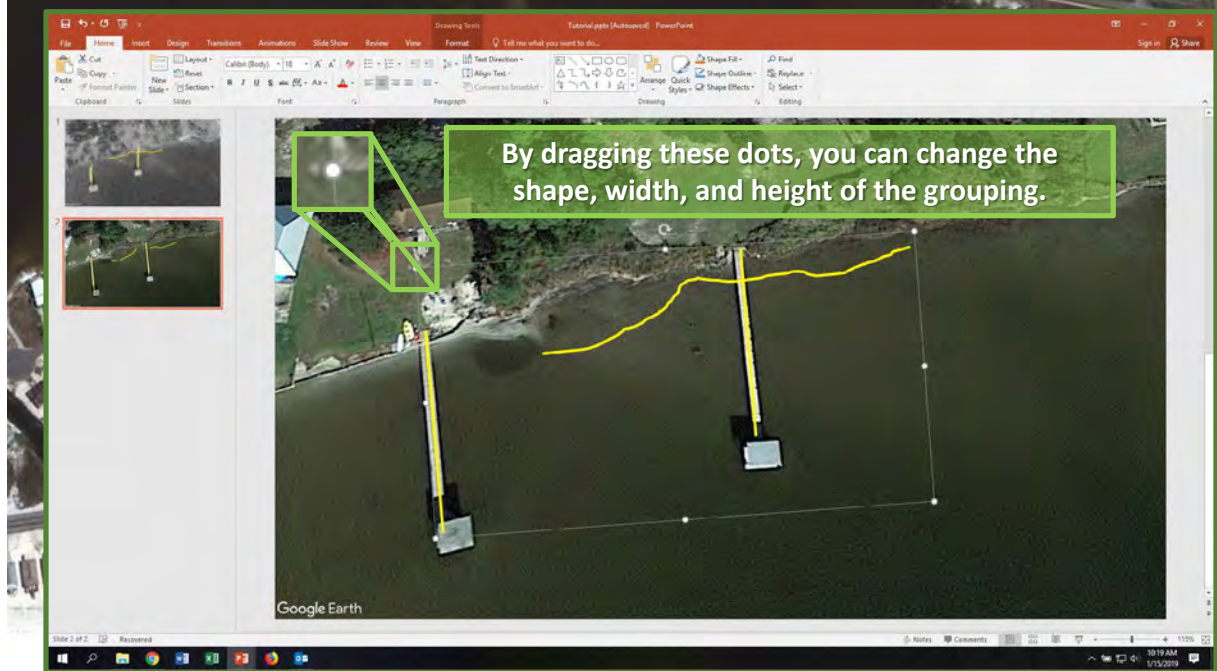12. Add tracings from first image to second image
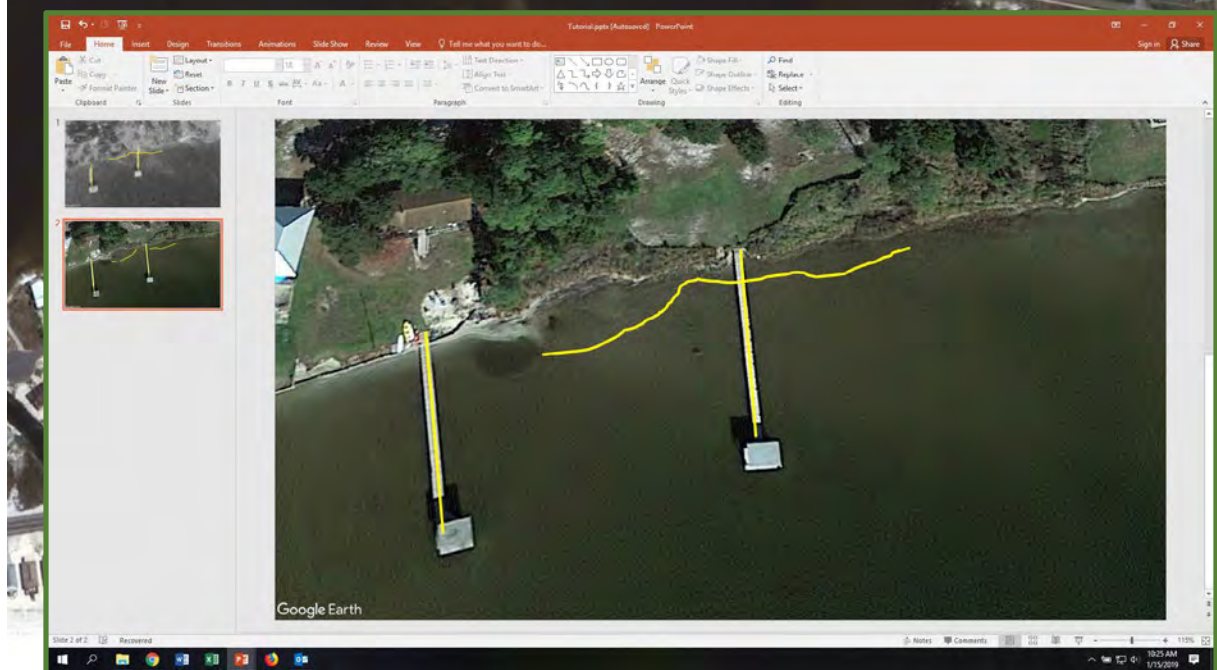
12. Add tracings from first image to second image
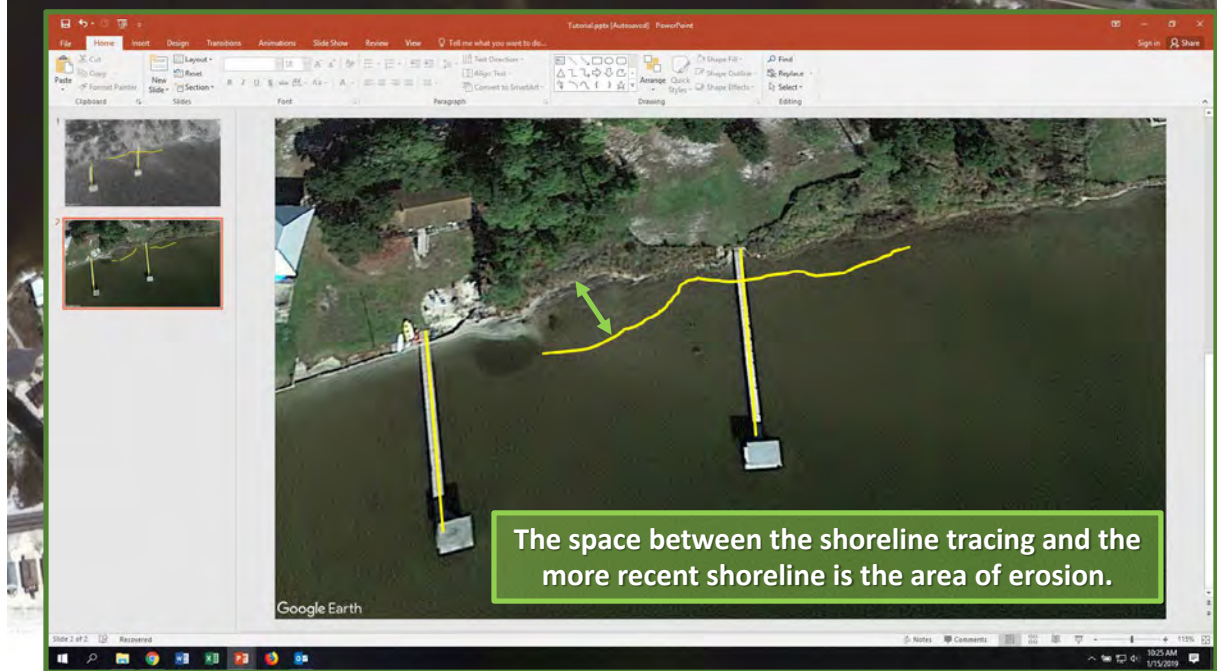

13. Use reference lines to adjust shoreline tracing

Use this button to rotate the image by dragging in the direction needed to line up reference lines.

13. Use reference lines to adjust shoreline tracing

By dragging these dots, you can change the shape, width, and height of the grouping.

14. How to interpret the pictures

The space between the shoreline tracing and the more recent shoreline is the area of erosion.

14. How to interpret the pictures

1992

2017
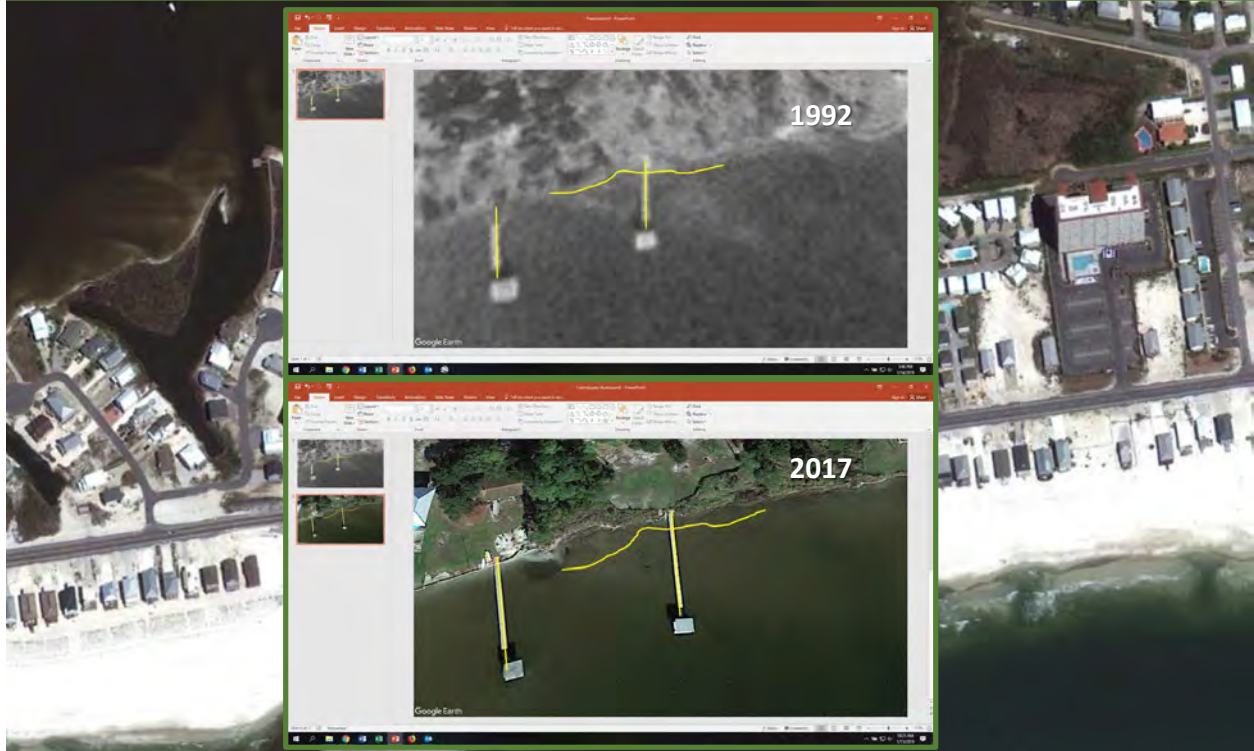
For more information:

**Visit http://masgc.org/living-shorelines
or
email eric.sparks@msstate.edu**

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