

Using Google Earth to Estimate Shoreline Erosion History



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

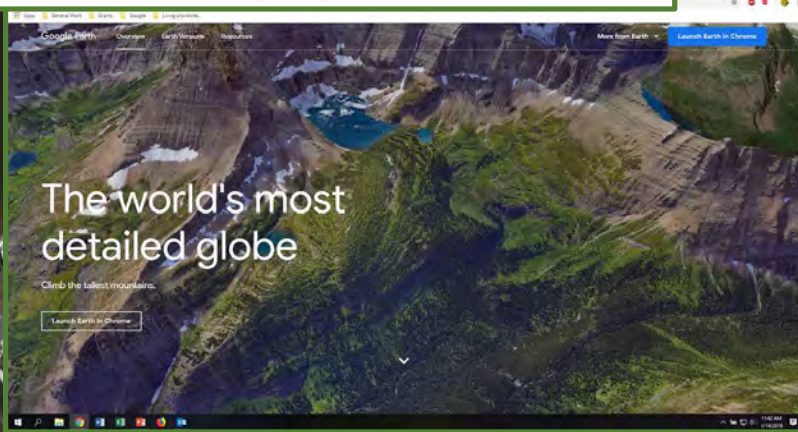
Programs Needed

Google Earth



How to download Google Earth

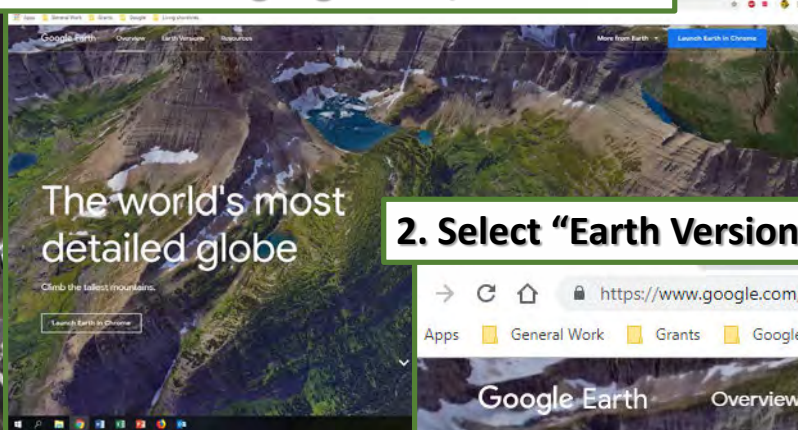
1. Go to www.google.com/earth



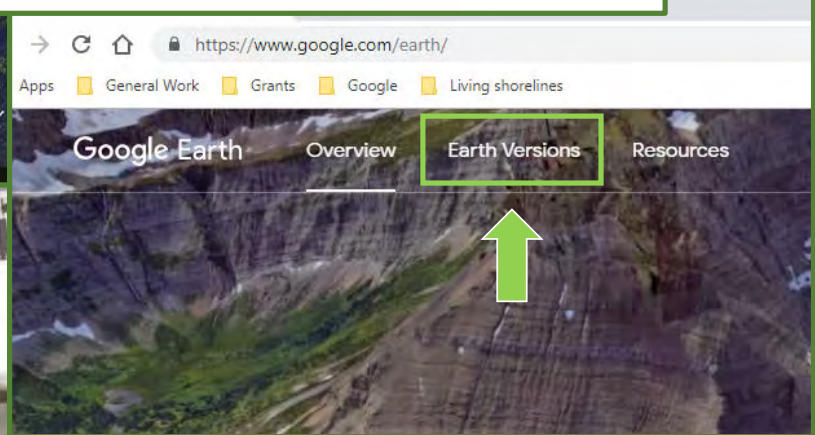
***This example uses Google Chrome, but other browsers will also work.**

How to download Google Earth

1. Go to www.google.com/earth

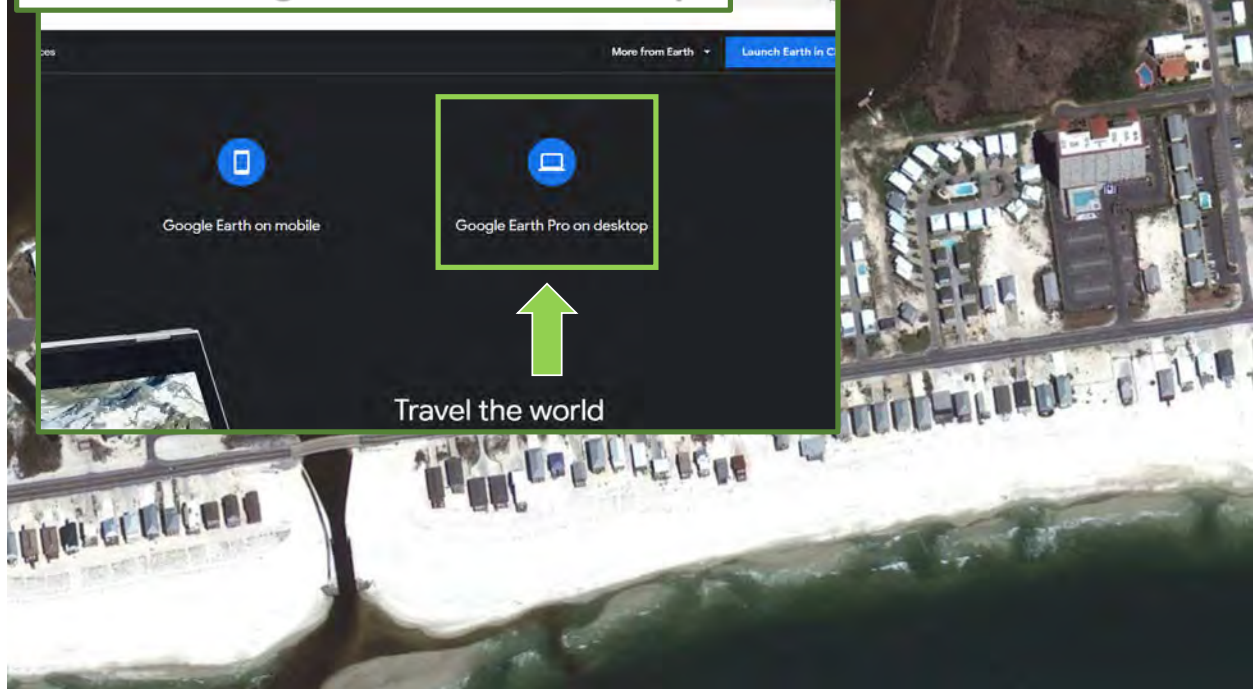


2. Select "Earth Versions"



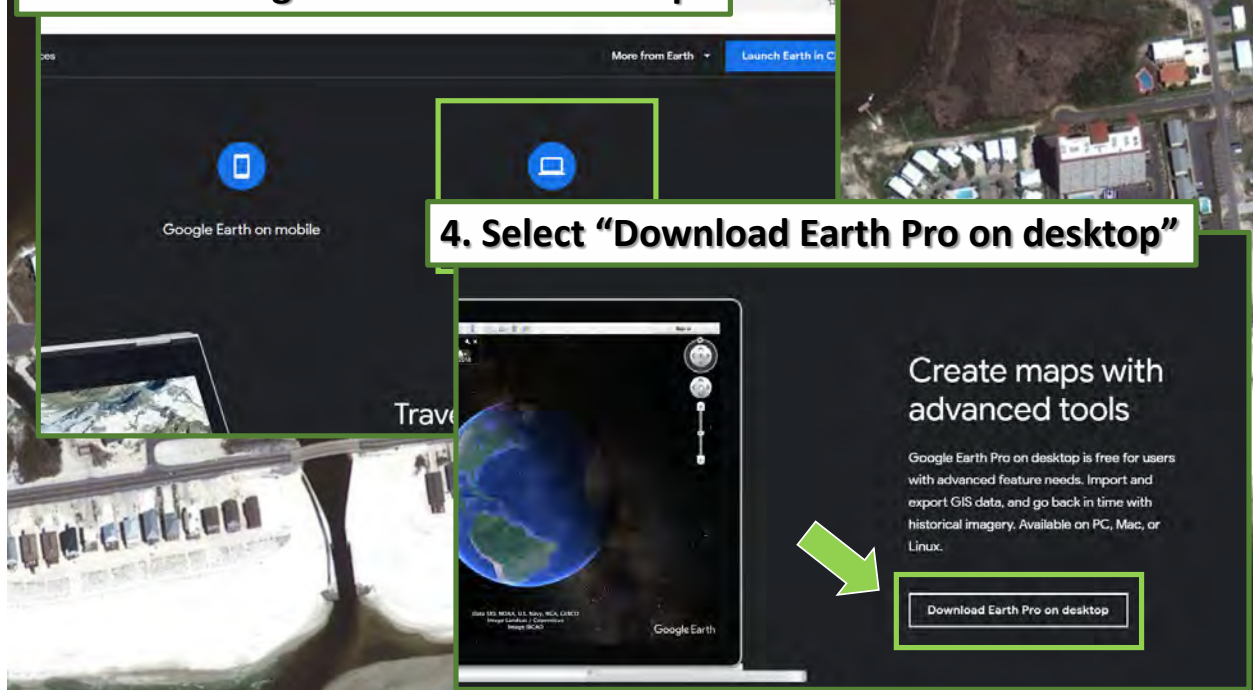
How to download Google Earth

3. Select "Google Earth Pro on desktop"



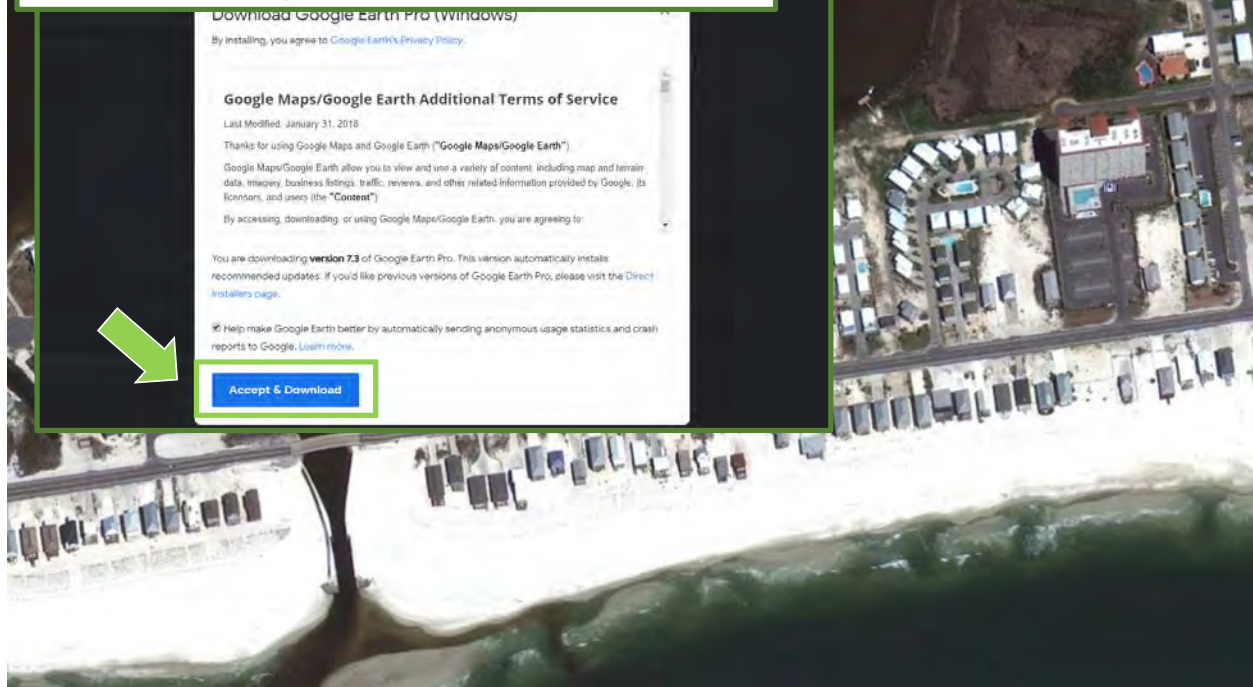
How to download Google Earth

3. Select "Google Earth Pro on desktop"



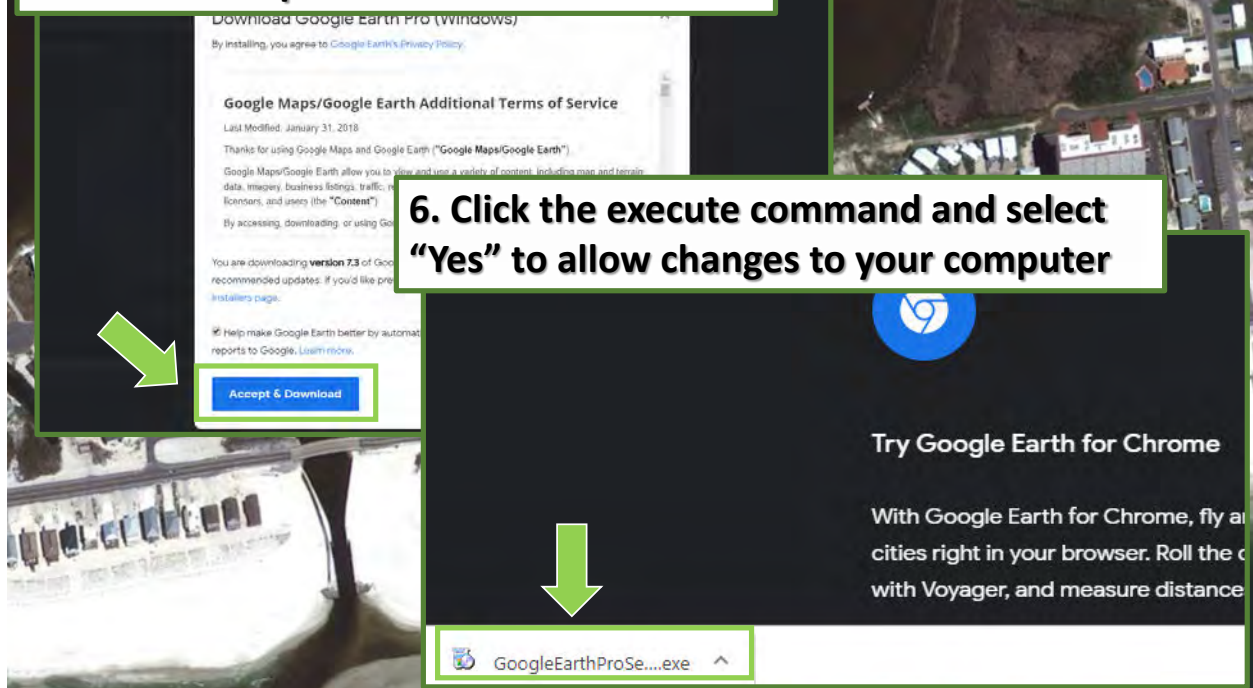
How to download Google Earth

5. Select "Accept & Download"

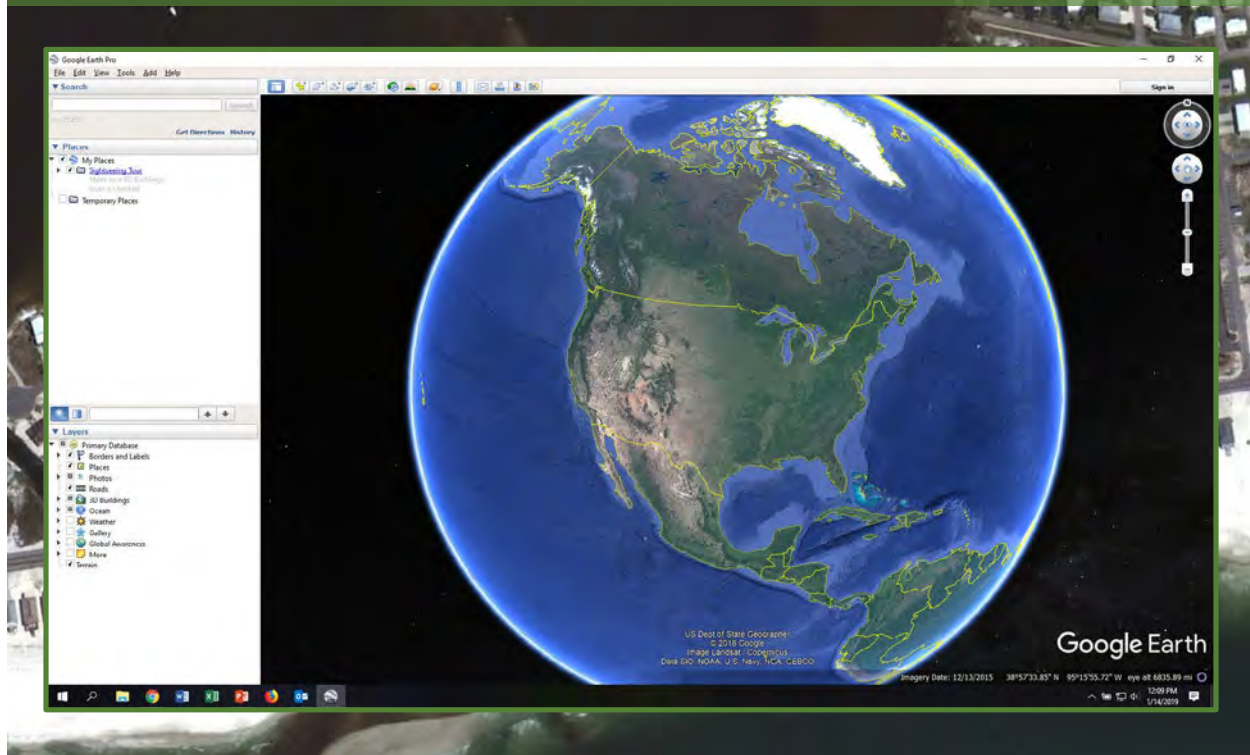


How to download Google Earth

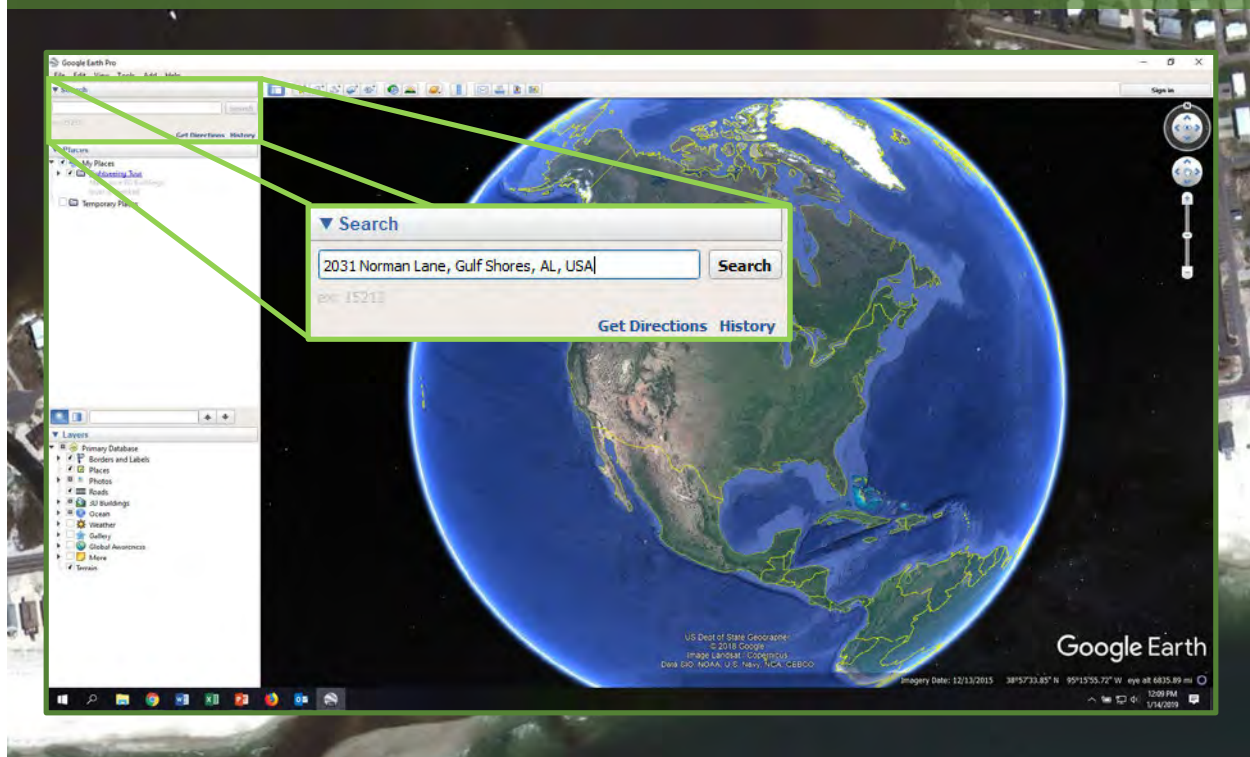
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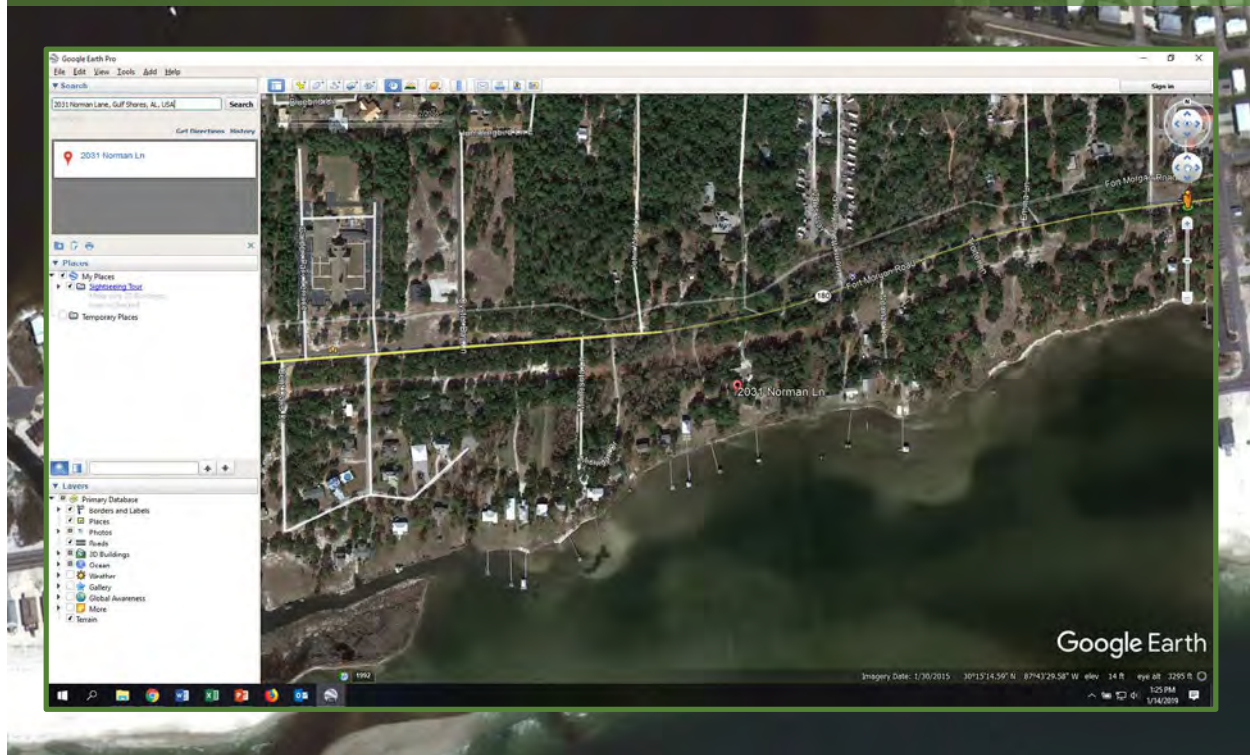
Welcome to Google Earth!



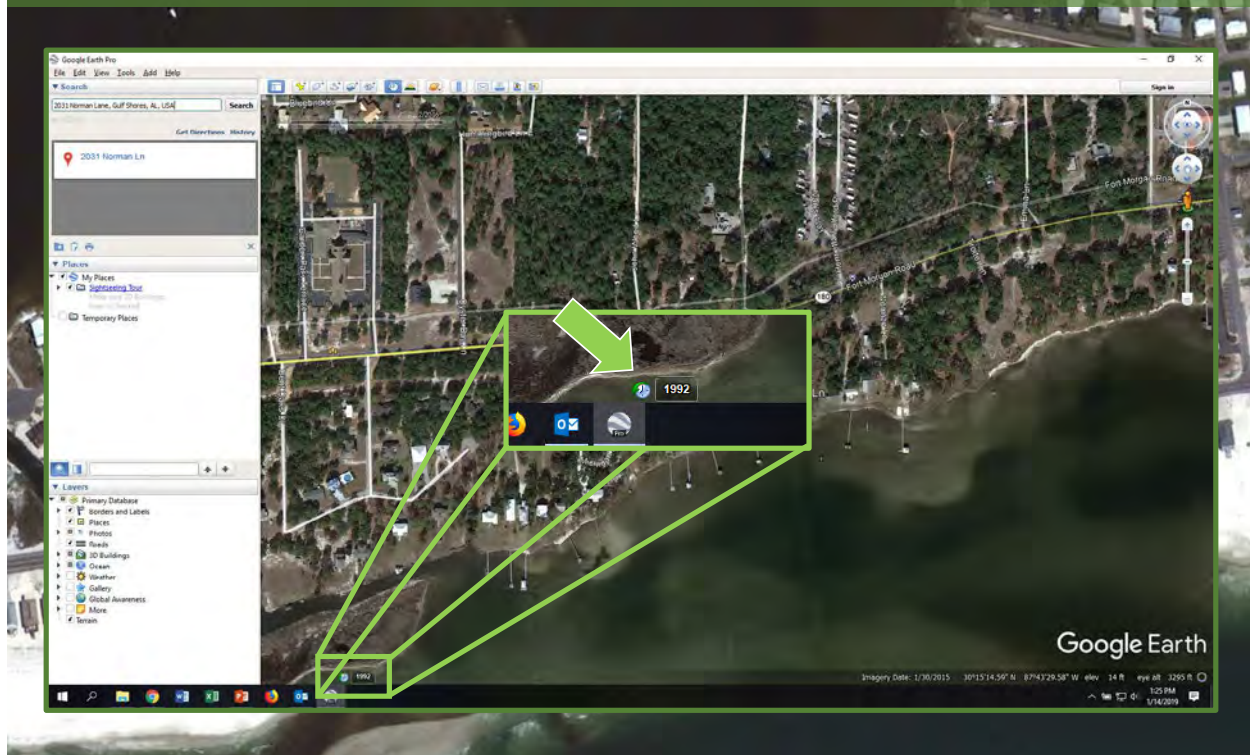
Step 1: Enter location into search bar



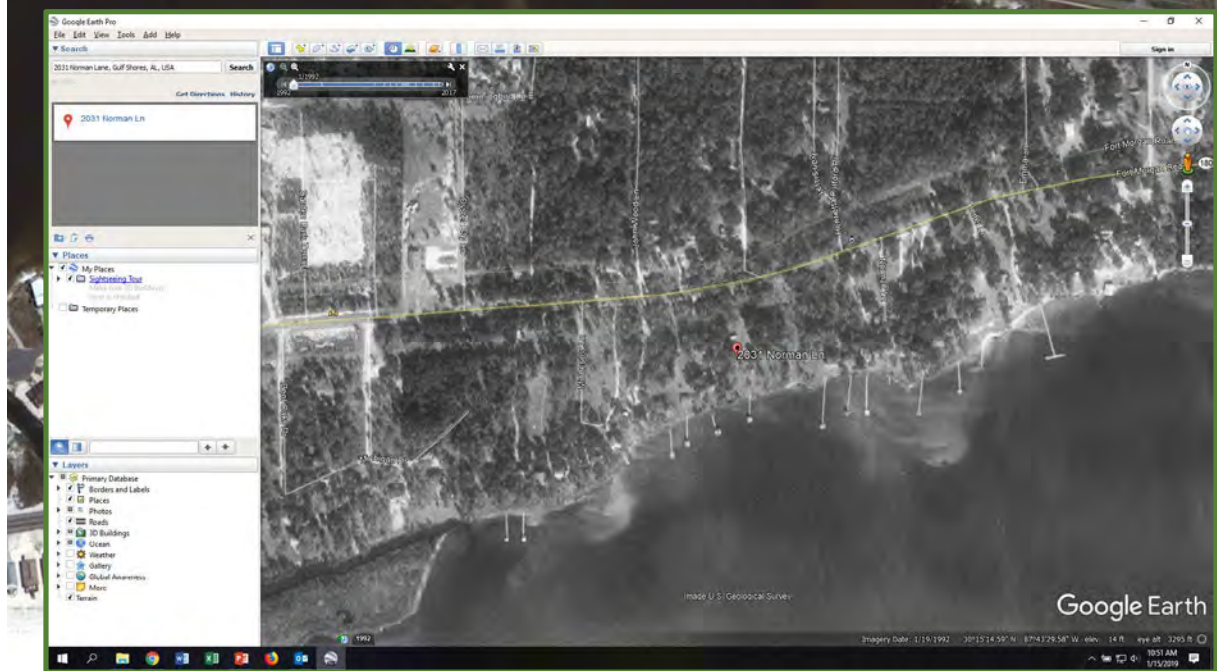
1. Enter location into search bar



2. Go back in time



2. Go back in time



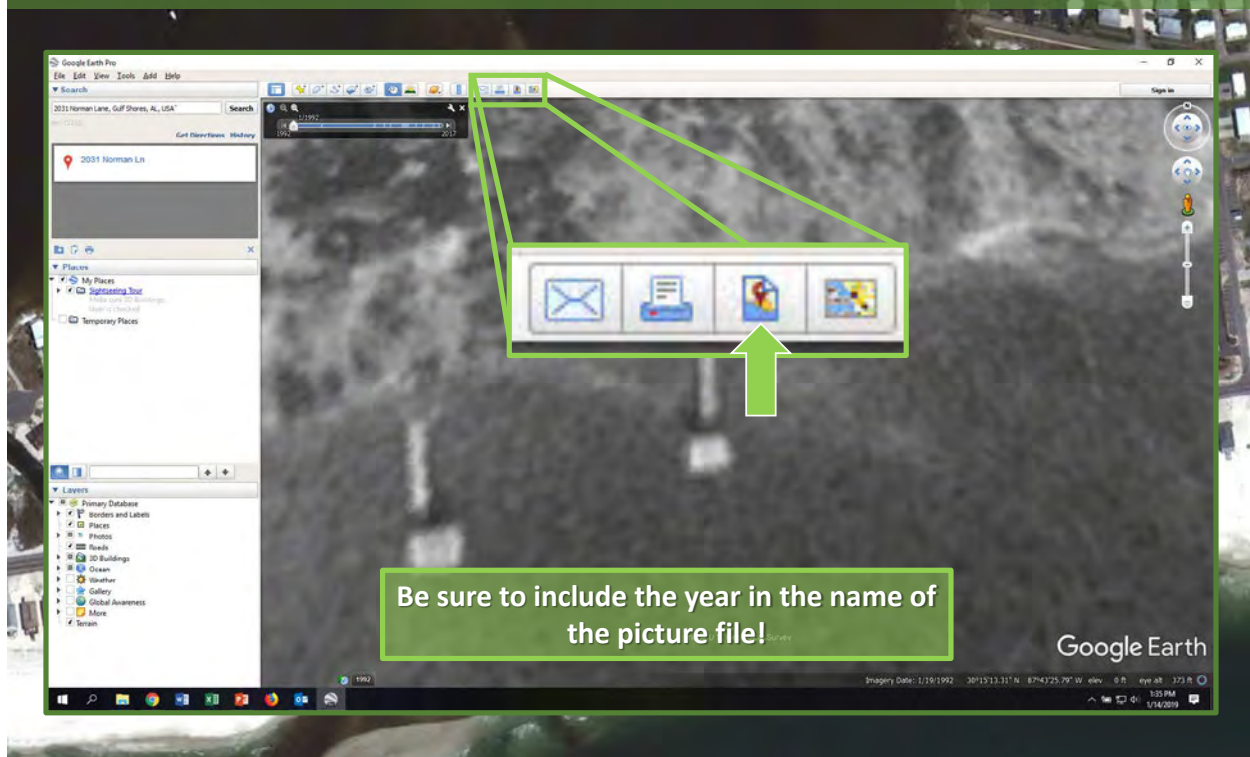
3. Zoom in as much as possible while still being able to discern the shoreline



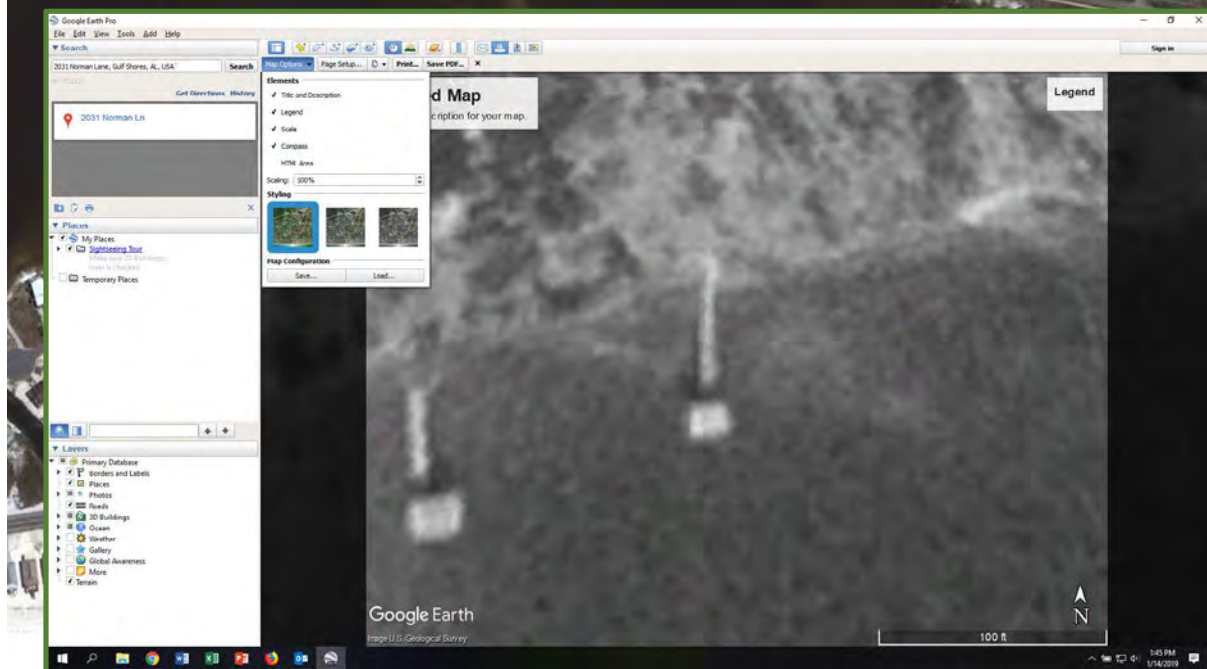
3. Zoom in as much as possible while still being able to discern the shoreline



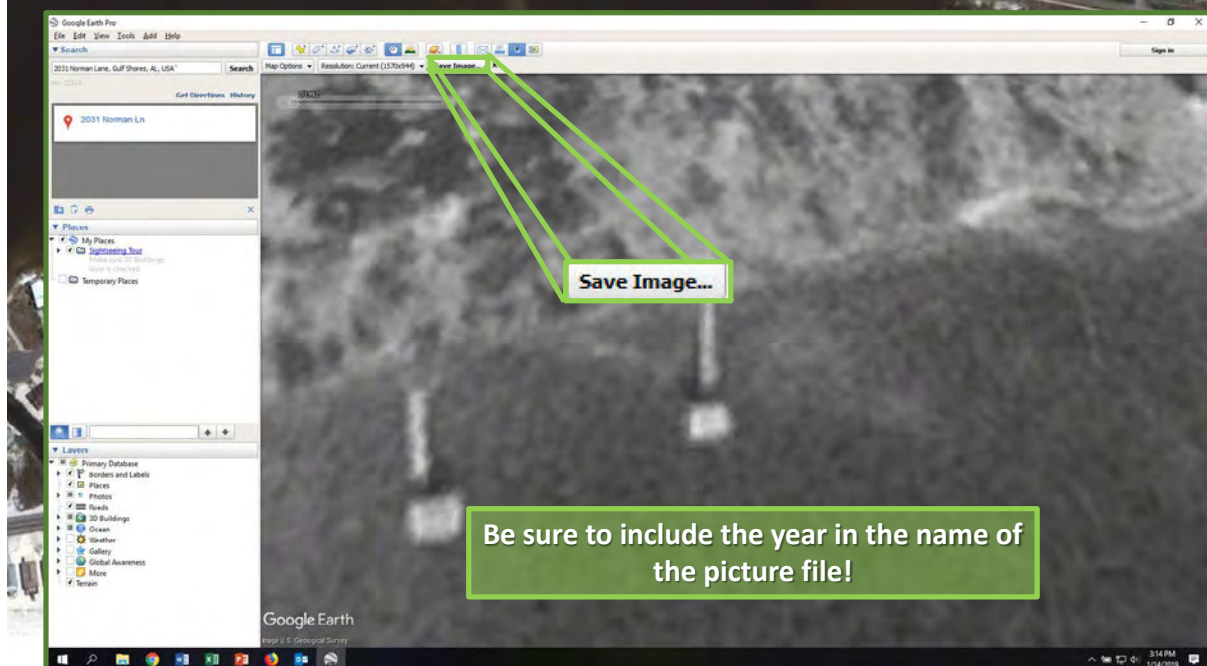
4. Save the zoomed-in image



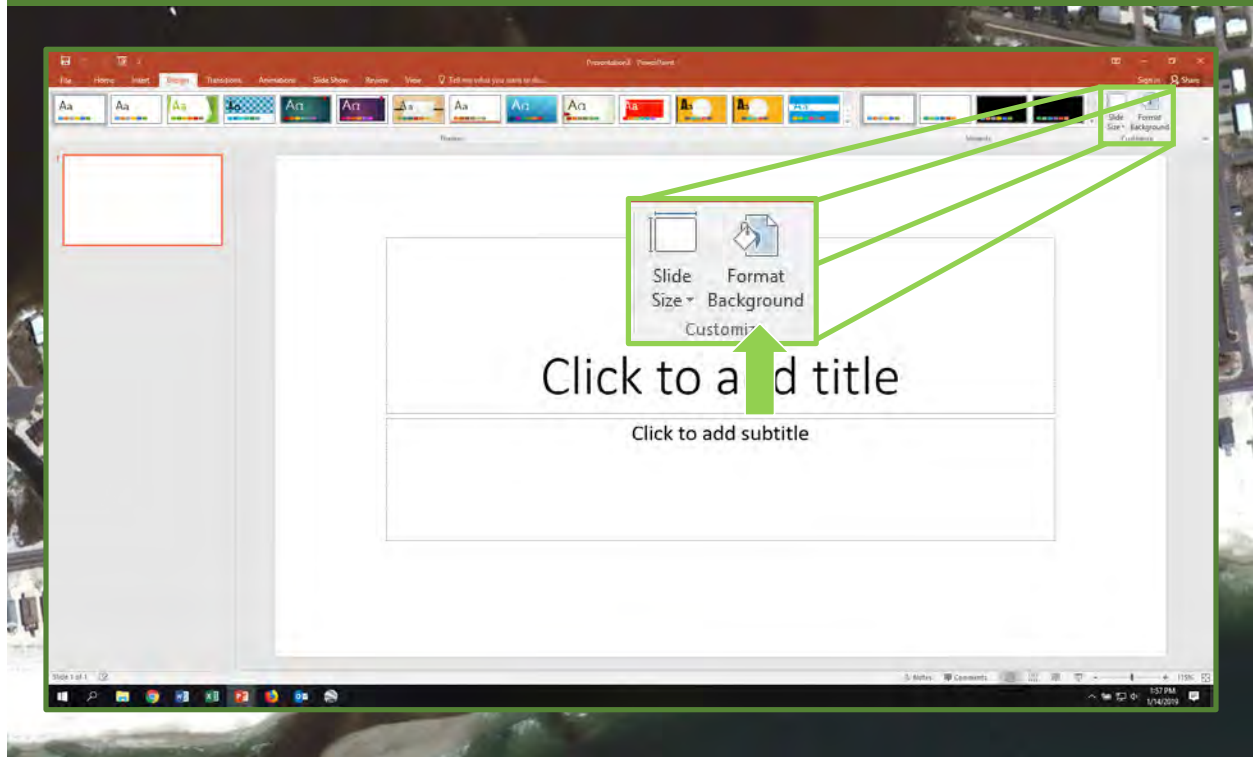
4. Save the zoomed-in image



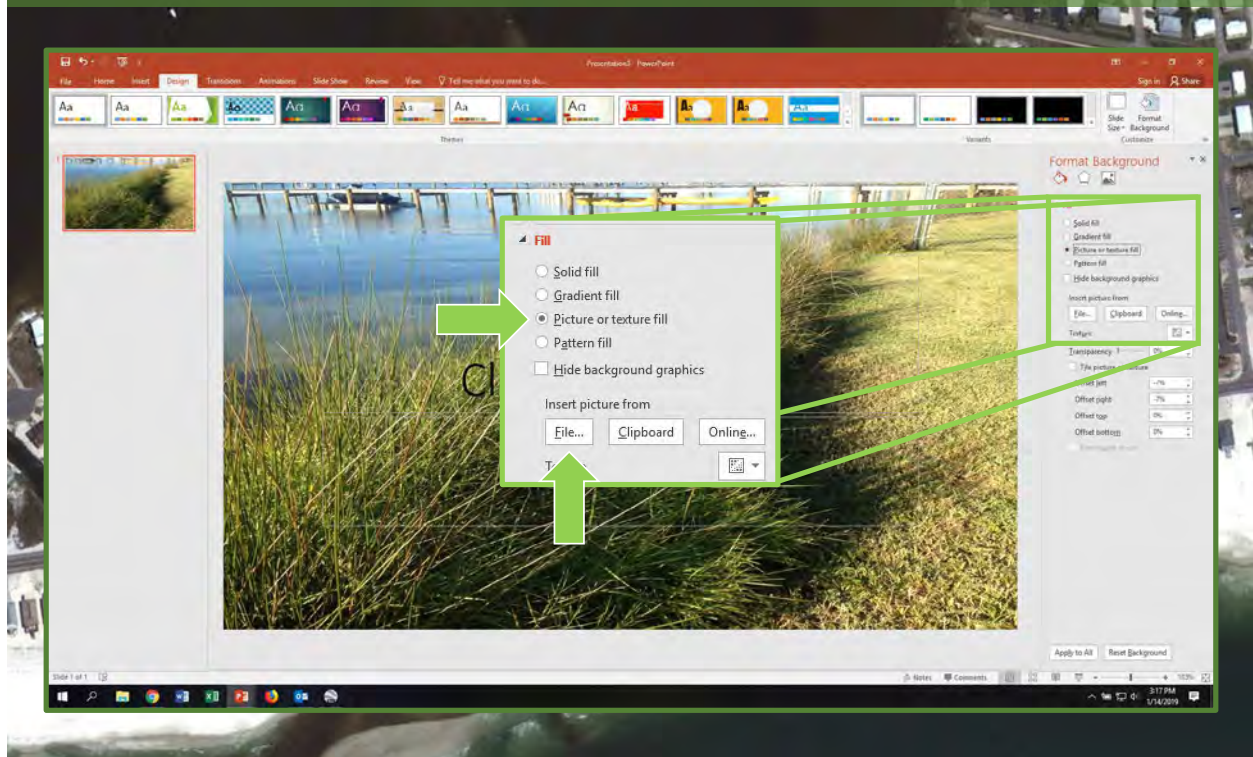
4. Save the zoomed-in image



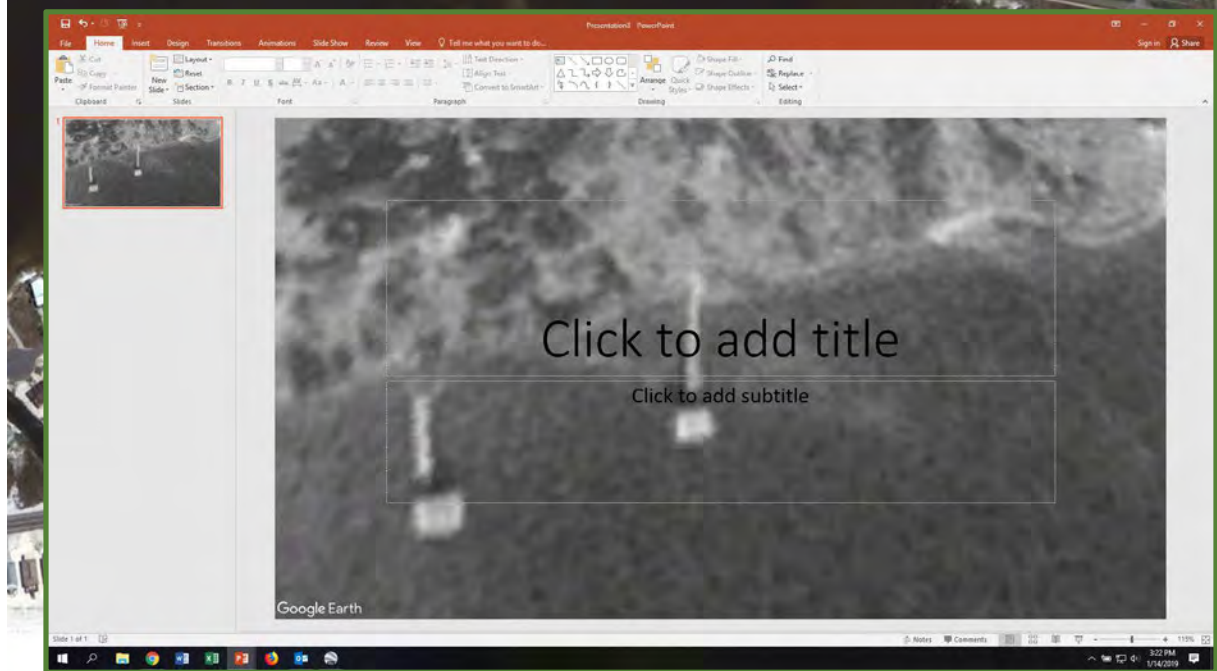
5. Set picture as slide background in PowerPoint



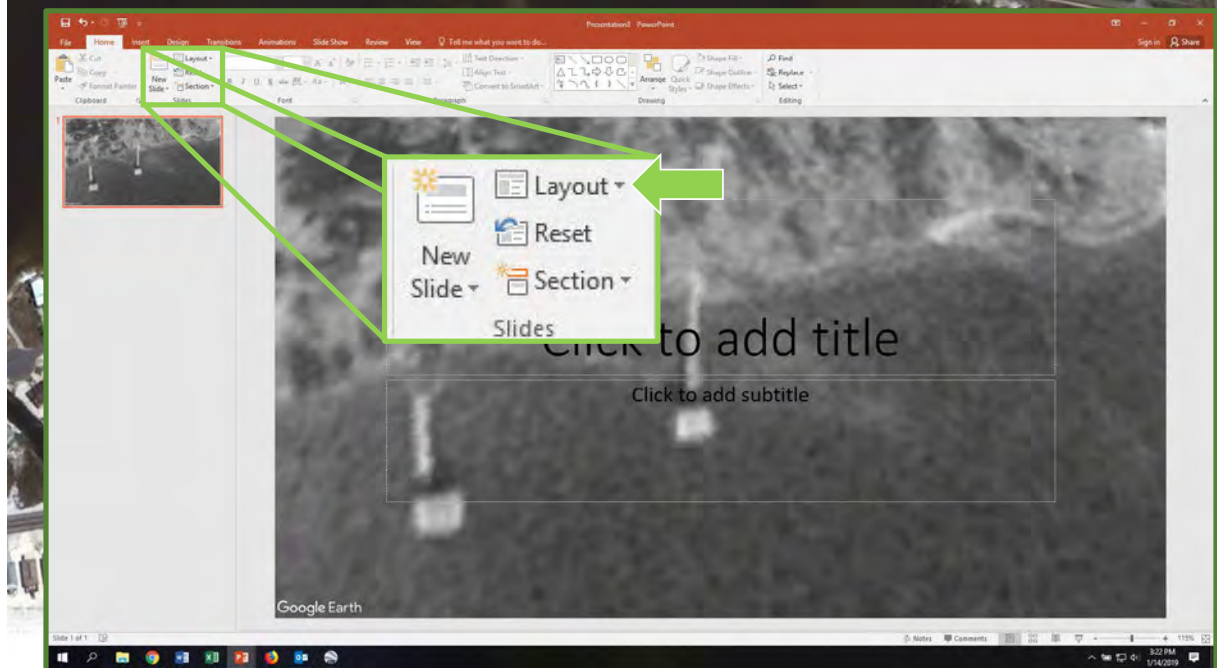
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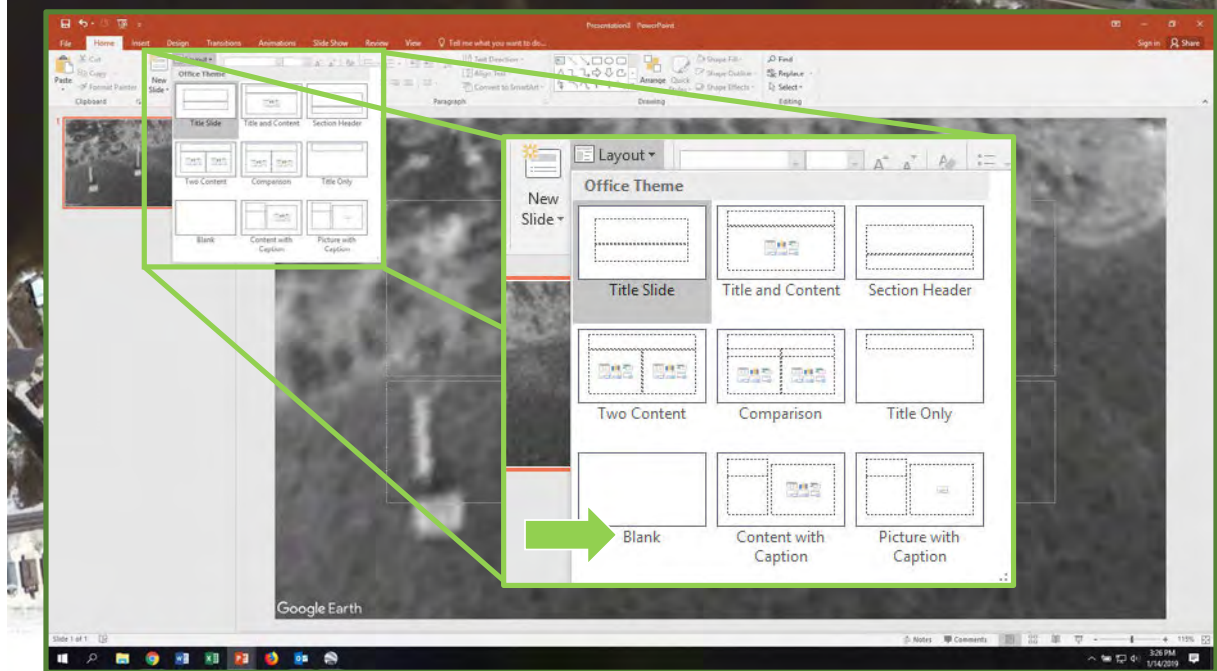
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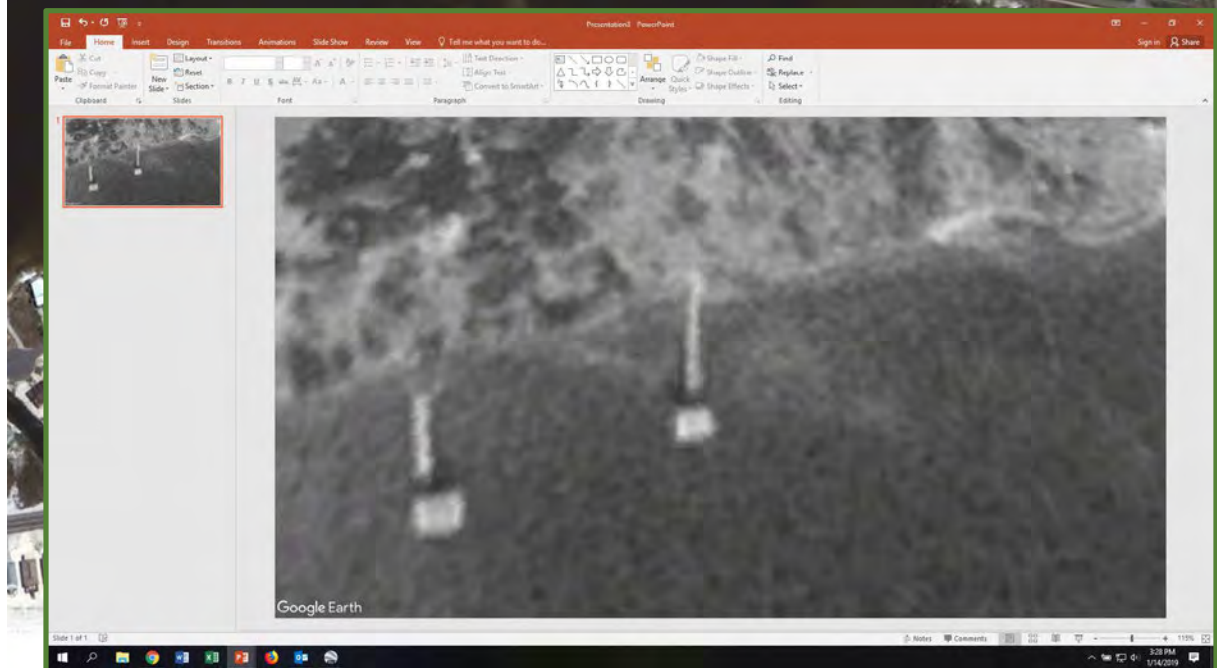
6. Get rid of text boxes



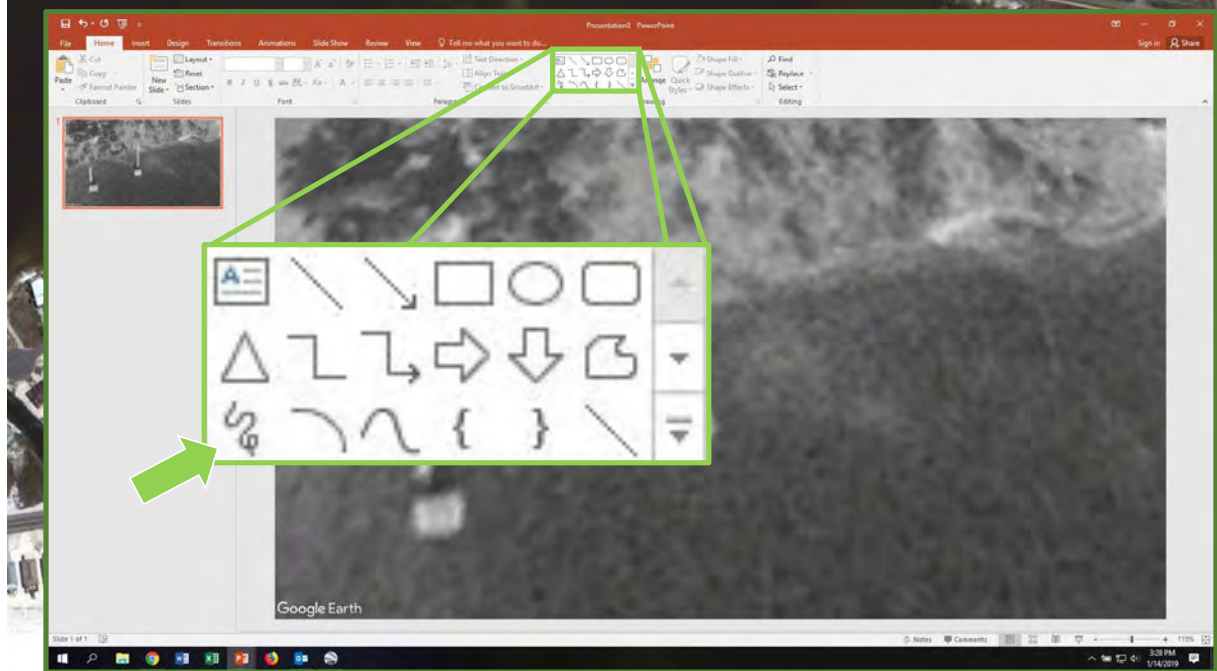
6. Get rid of text boxes



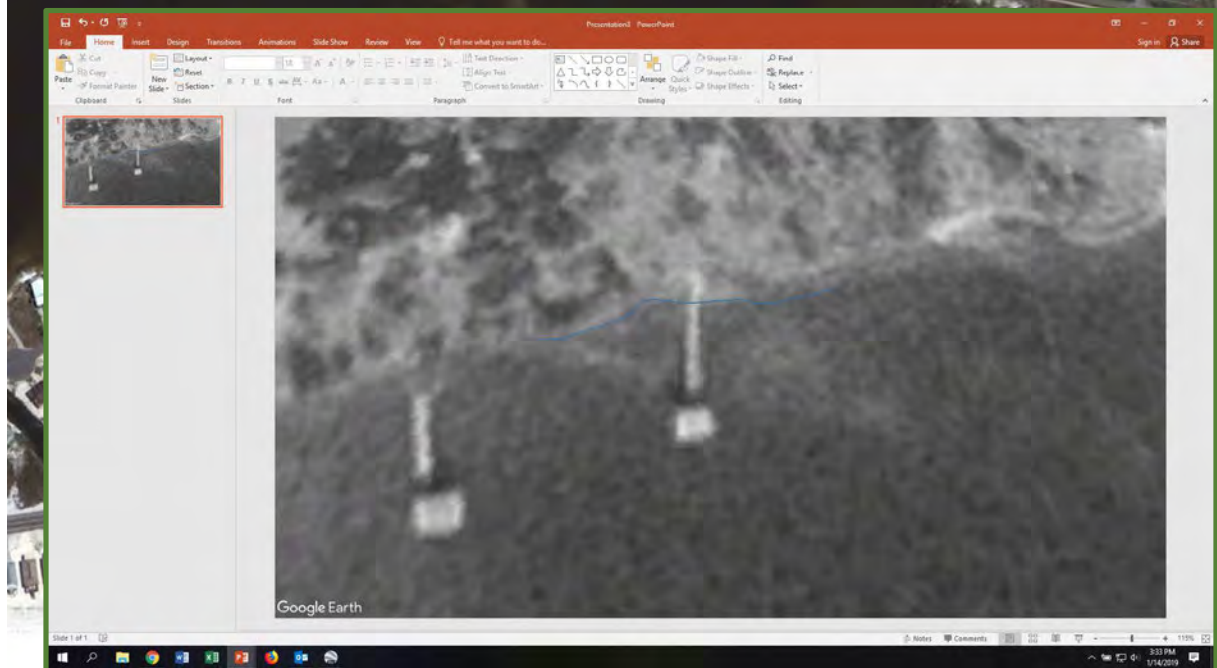
6. Get rid of text boxes



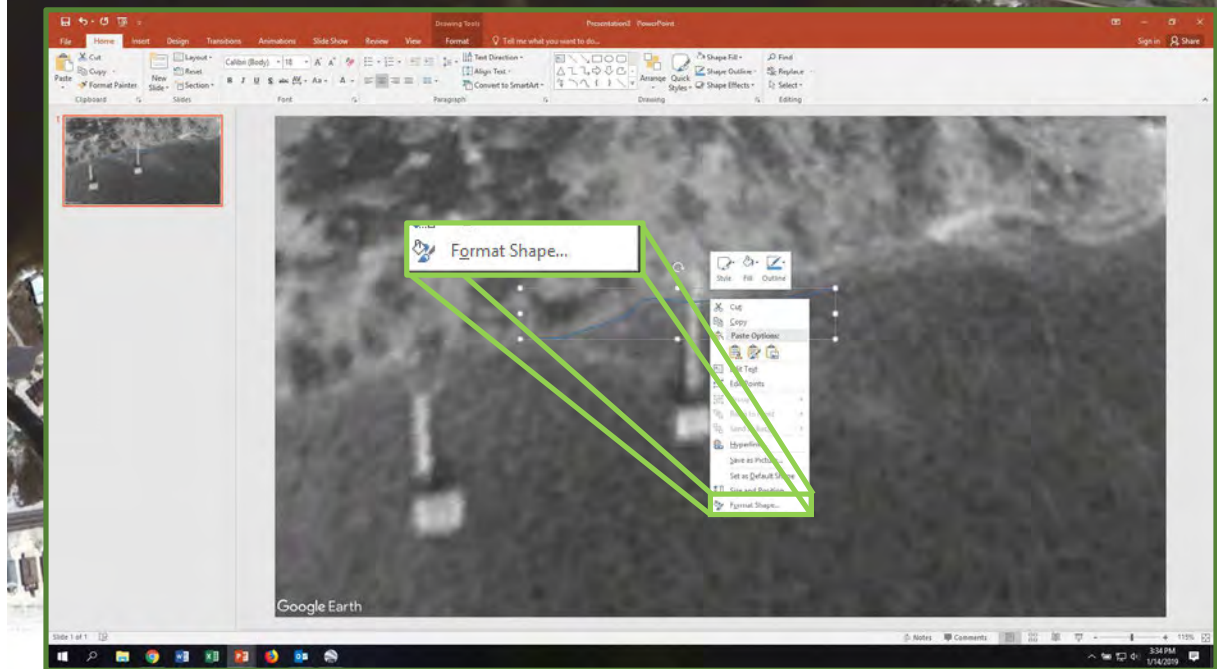
7. Trace shoreline



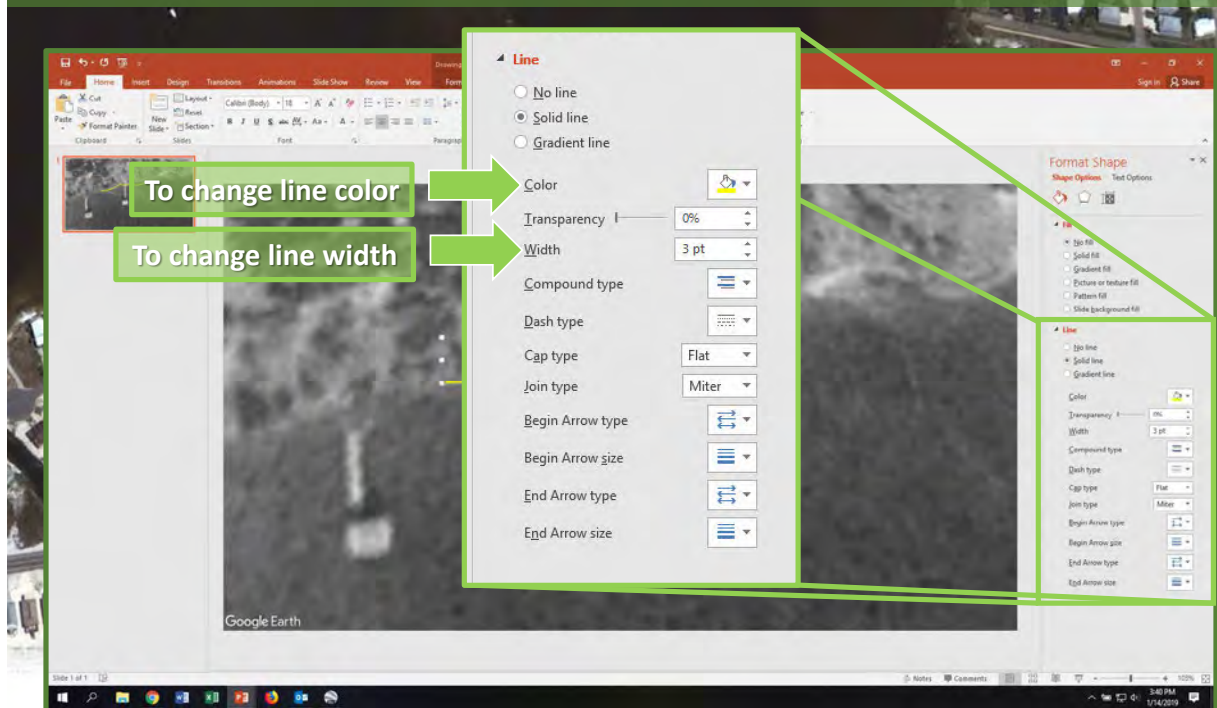
7. Trace shoreline



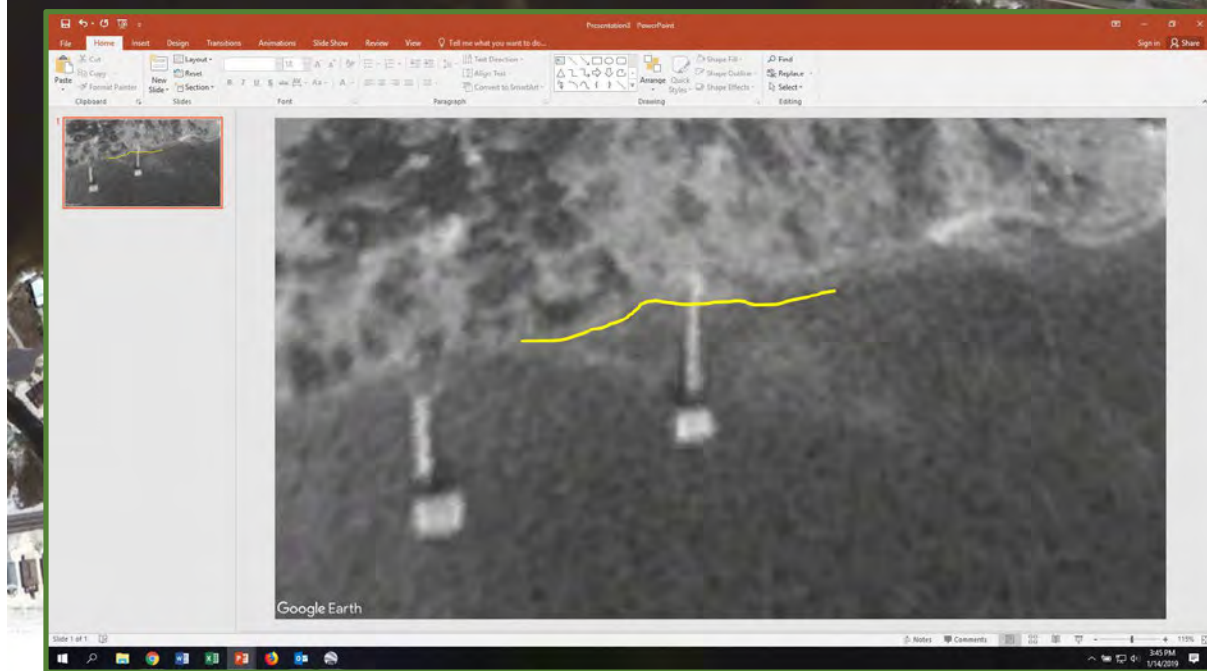
7. Trace shoreline



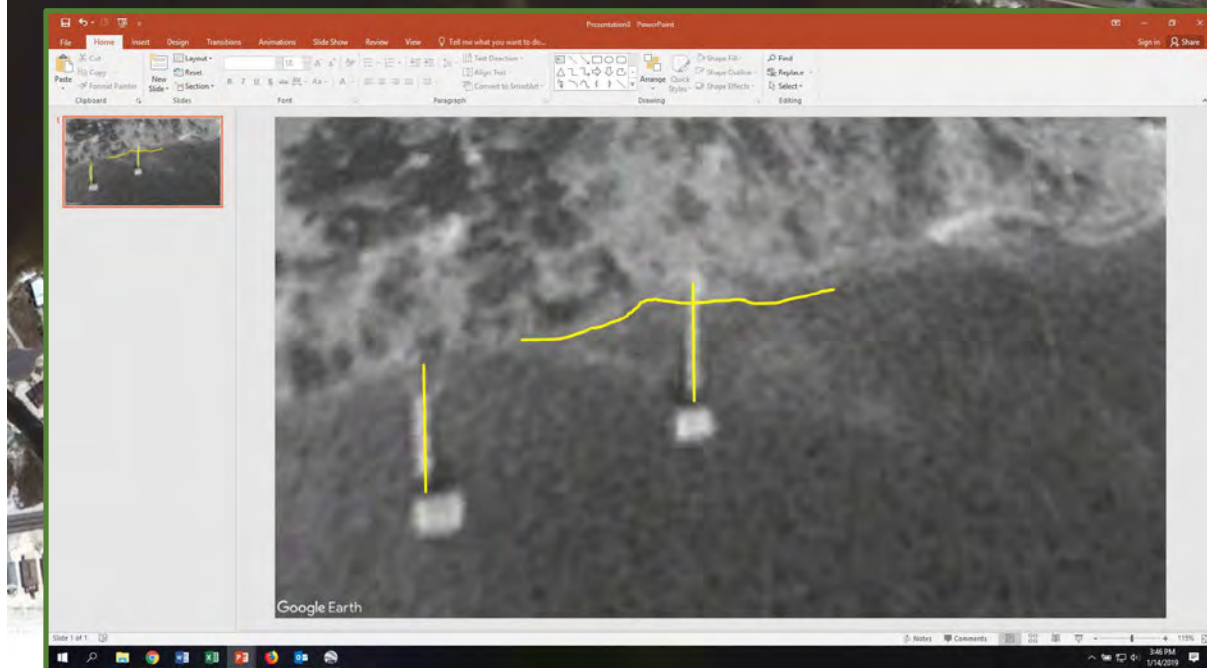
7. Trace shoreline



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8. Trace reference line

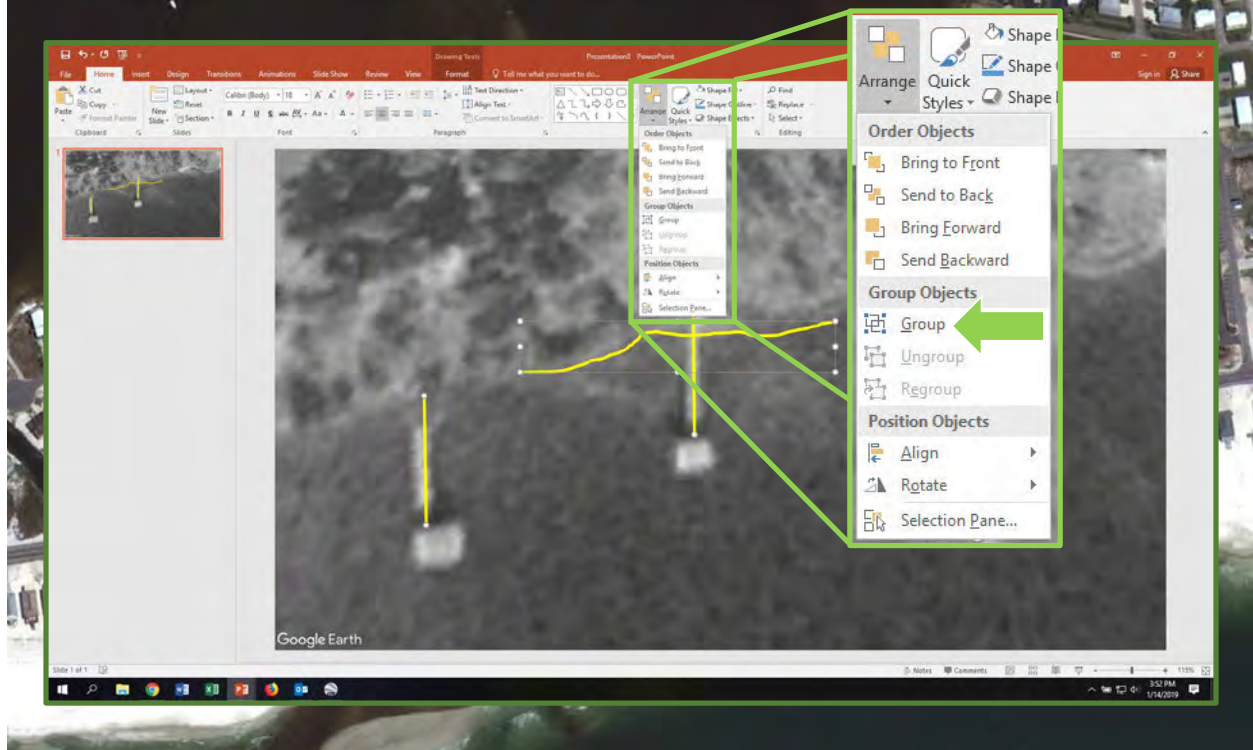


9. Group the tracings together

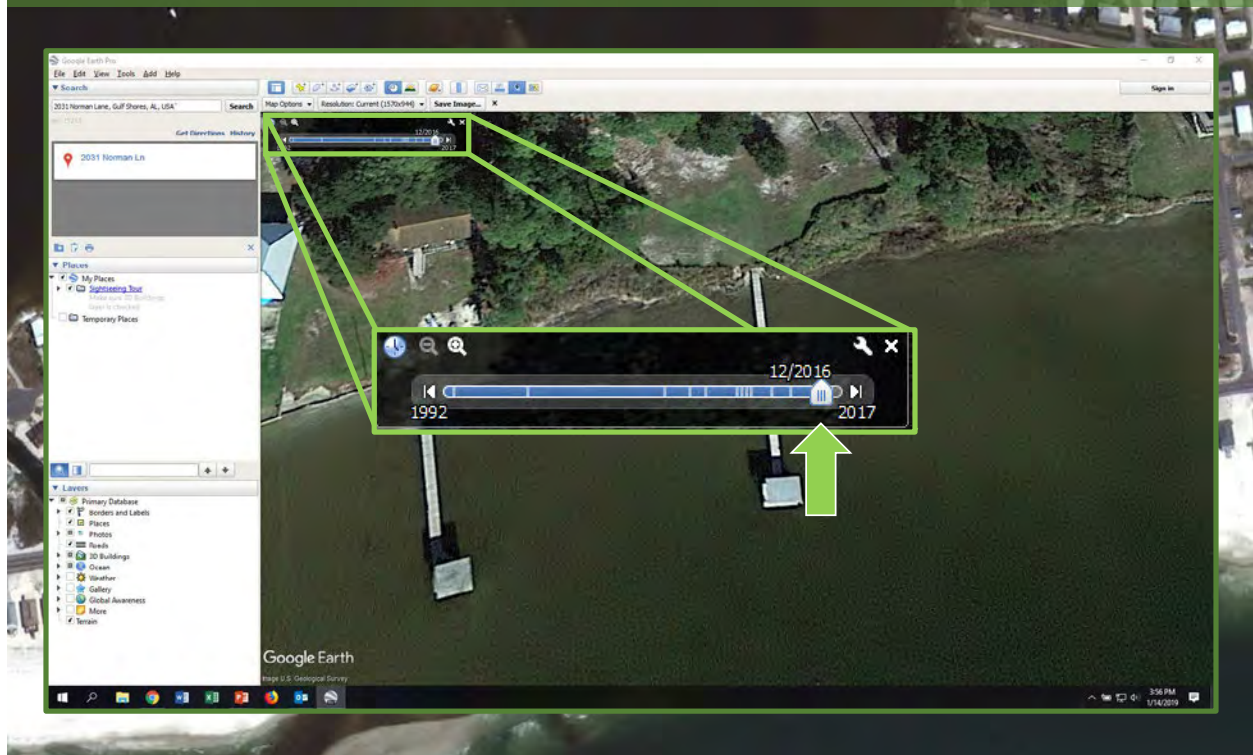
A screenshot of a Microsoft PowerPoint presentation. The main slide area displays a grayscale satellite image from Google Earth. Overlaid on this image are several yellow lines: a horizontal line with a small vertical segment in the middle, and two vertical lines extending downwards from the horizontal line. The PowerPoint interface is visible, including the ribbon at the top with tabs like 'File', 'Home', 'Insert', 'Design', 'Transitions', 'Animations', 'Slide Show', 'Review', and 'View'. The 'Home' tab is active, showing options for font, paragraph, and drawing. A green rectangular box is positioned at the bottom of the slide, containing the text 'Select all by holding down shift and clicking each.' in white. The Windows taskbar is visible at the very bottom of the screen.

9. Group the tracings together

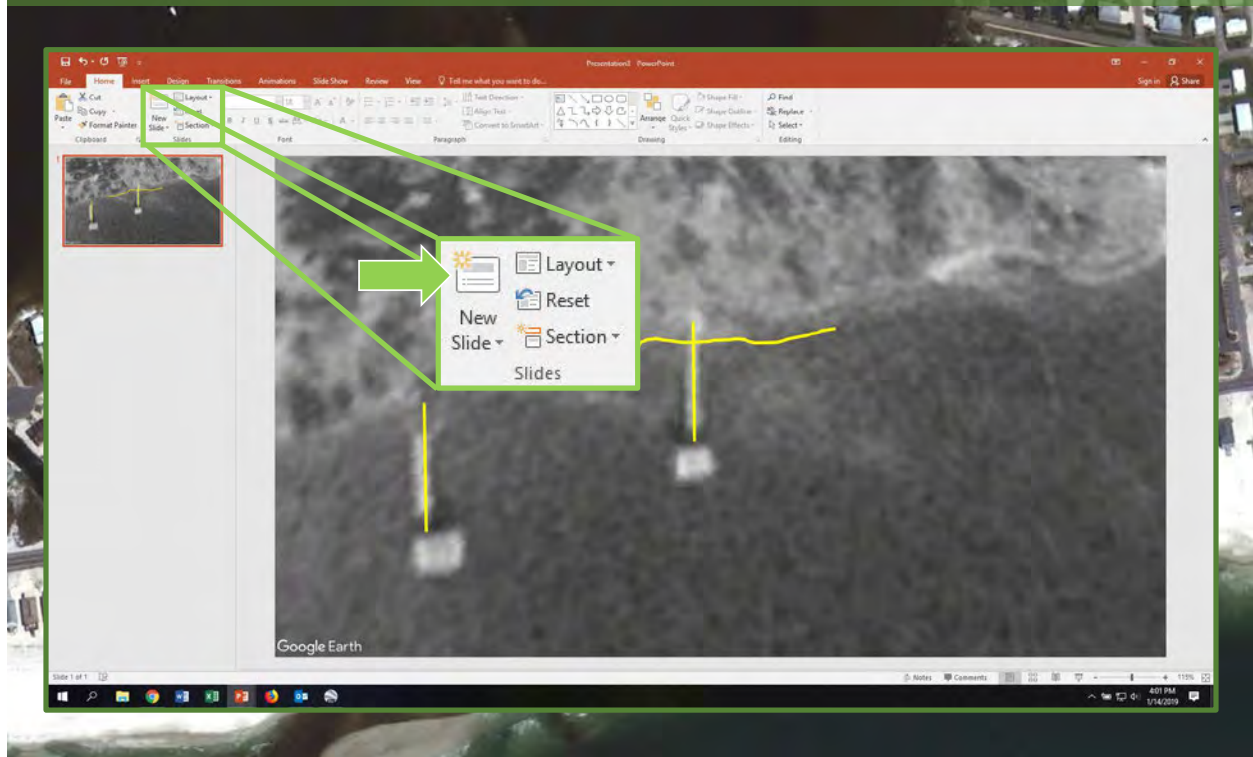
9. Group the tracings together



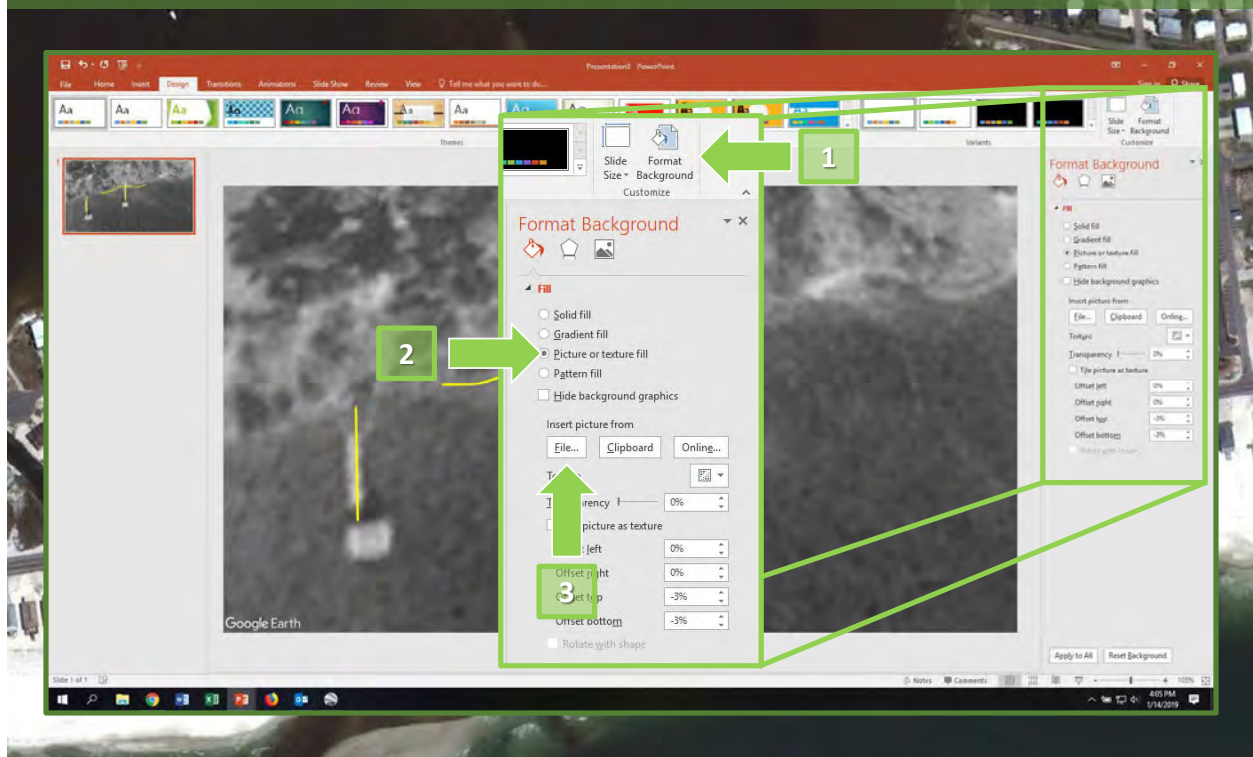
10. Save later image from Google Earth



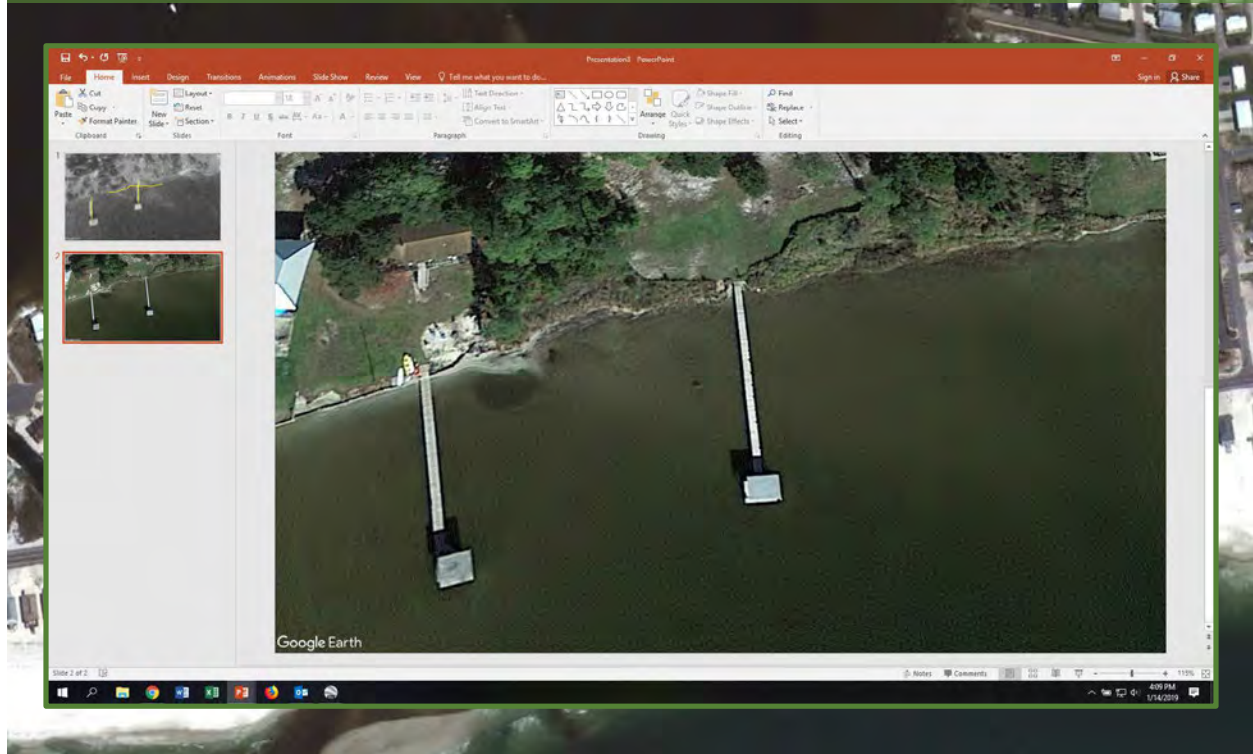
11. Set second image as background on a new PowerPoint slide



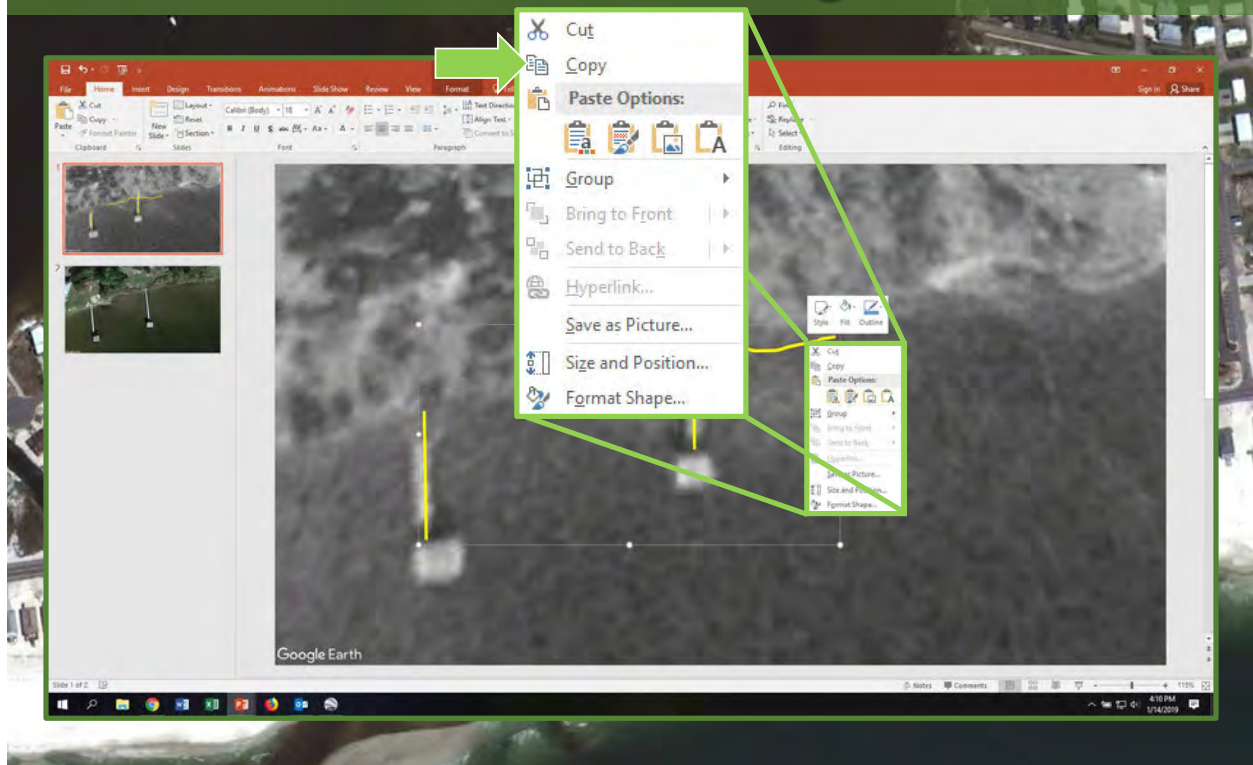
11. Set second image as background on a new PowerPoint slide



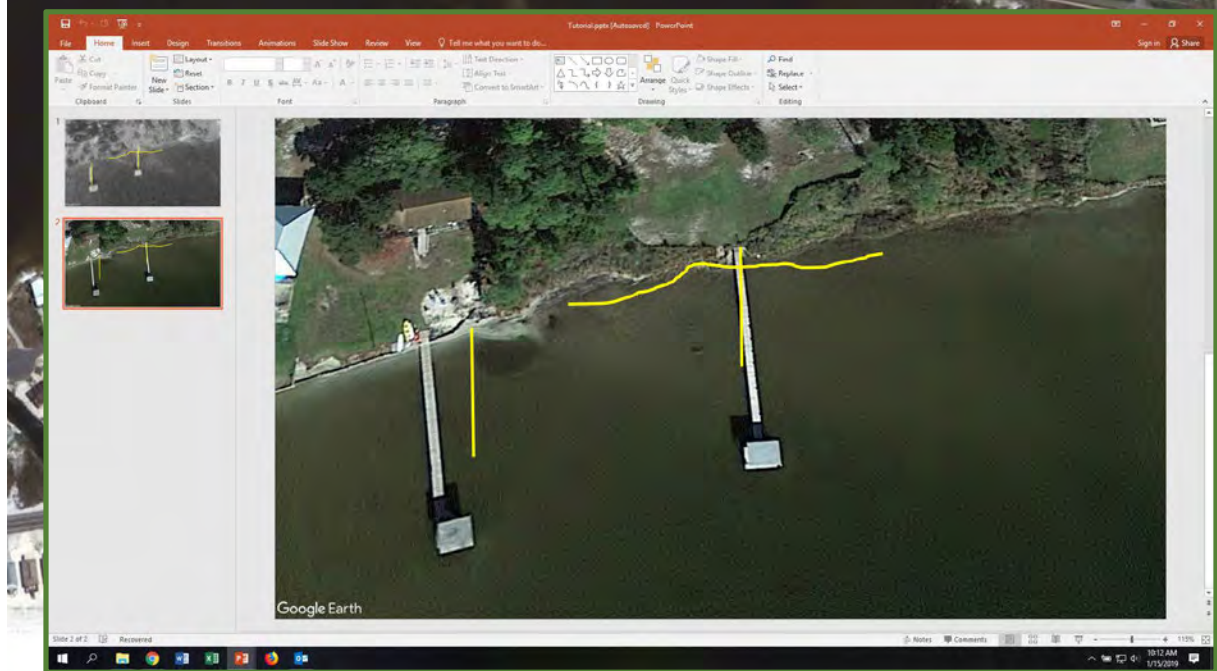
11. Set second image as background on a new PowerPoint slide



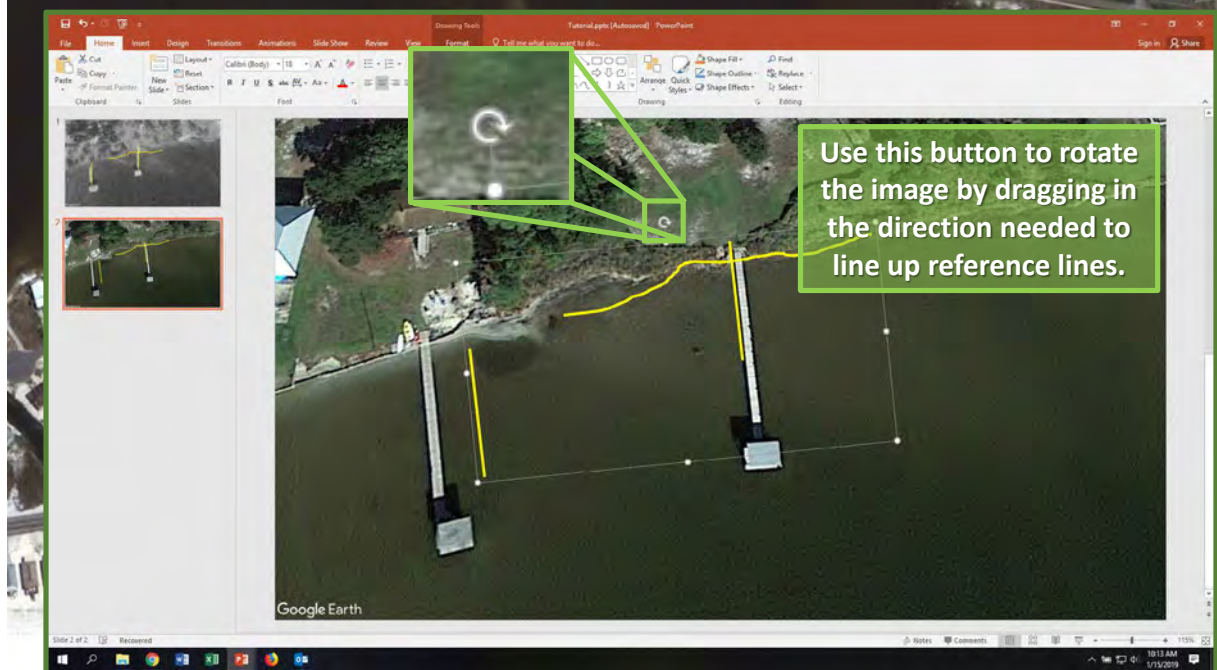
12. Add tracings from first image to second image



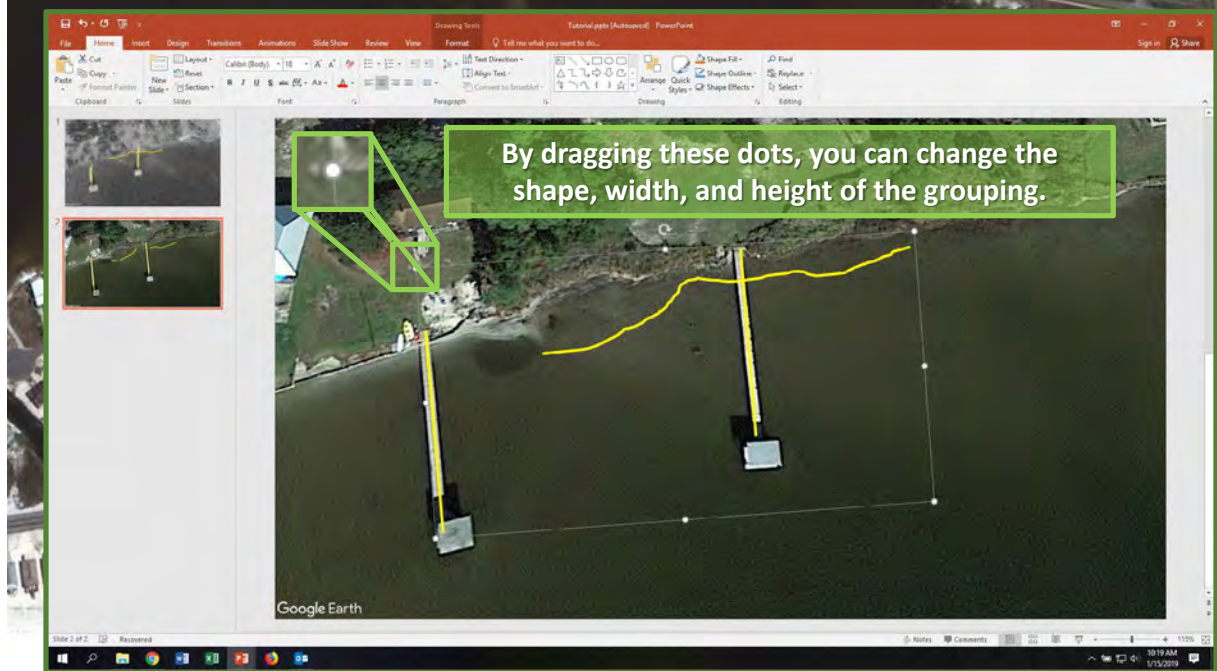
12. Add tracings from first image to second image



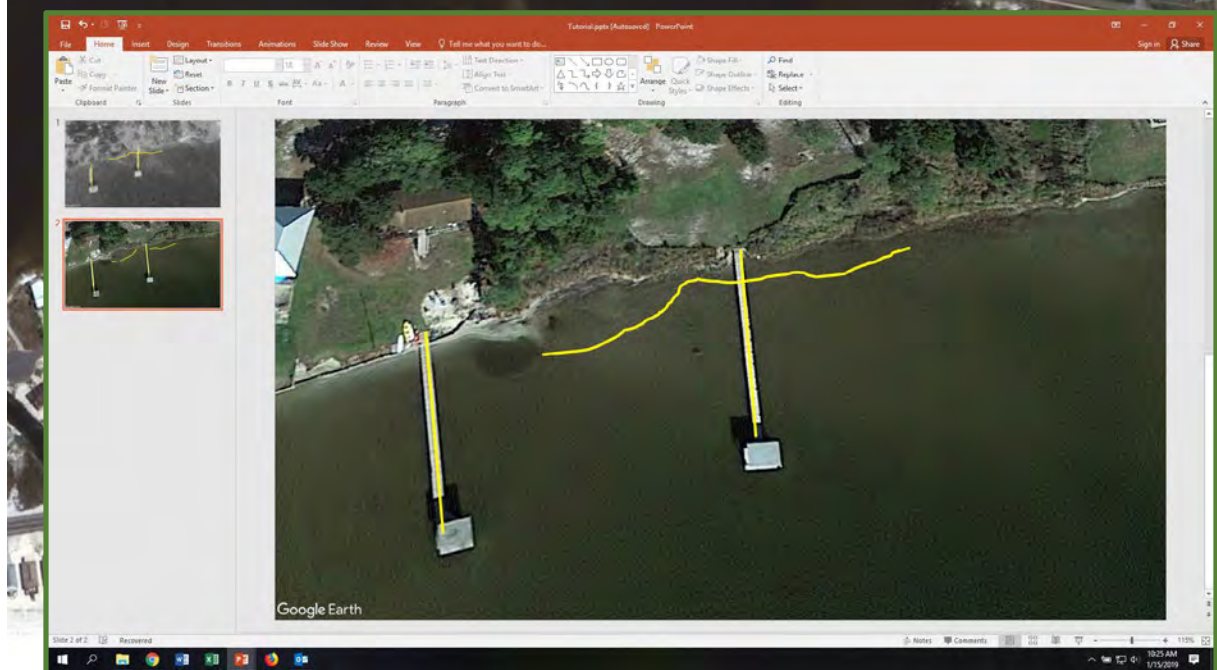
13. Use reference lines to adjust shoreline tracing



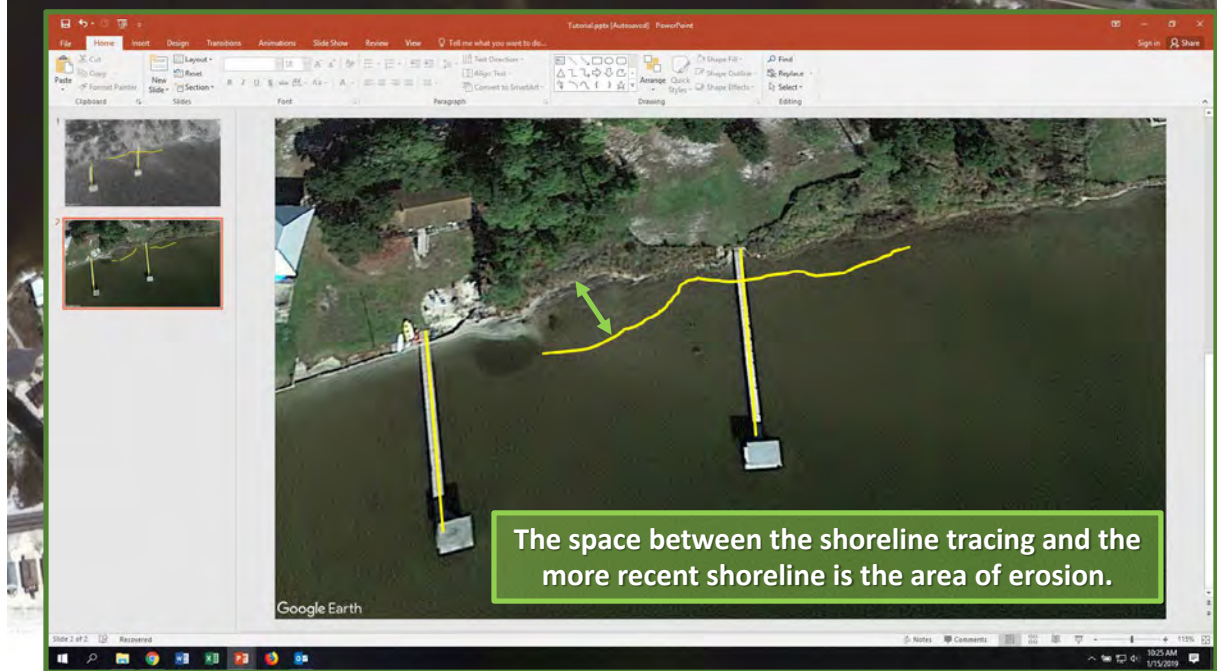
13. Use reference lines to adjust shoreline tracing



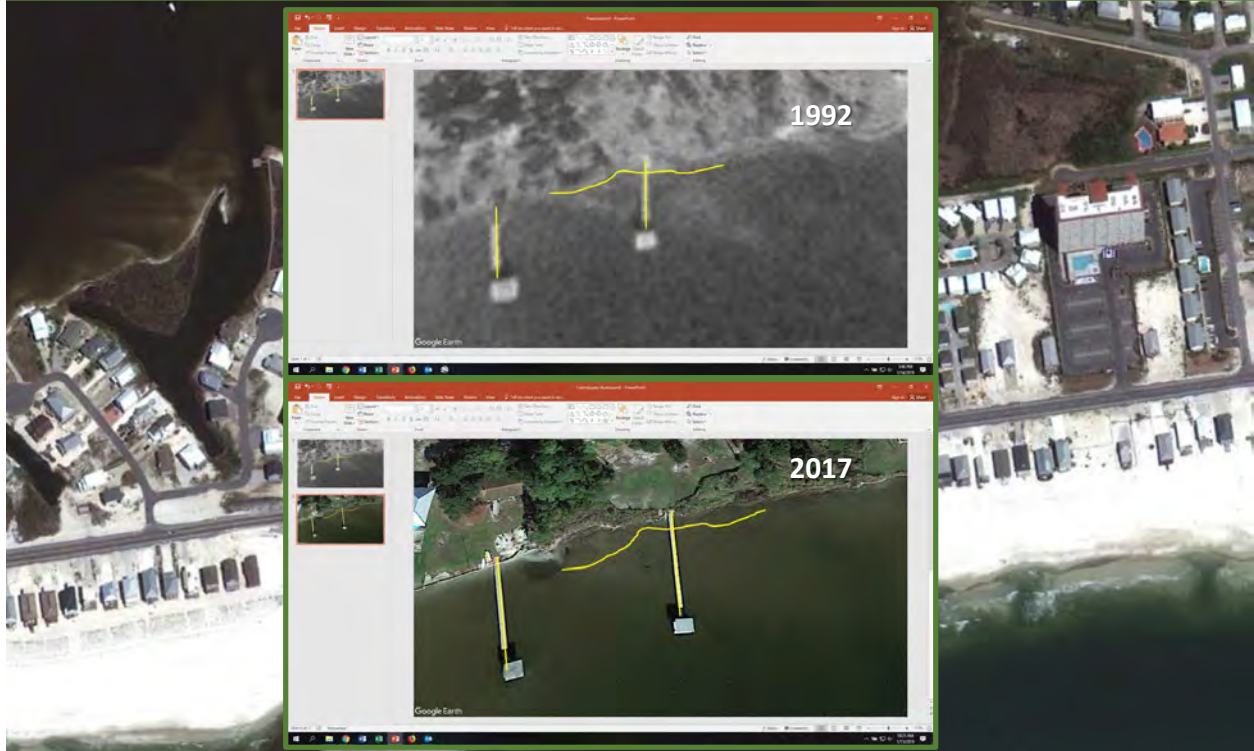
13. Use reference lines to adjust shoreline tracing



14. How to interpret the pictures



14. How to interpret the pictures





For more information:

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

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