



## Using Google Earth Pro for making maps for Nutrient Management Plans (when no P-Risk assessments are required)

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**Introduction** Google Earth Pro is a free program that can be downloaded to your desktop and can assist you in generating maps for a Maryland Nutrient Management Plan. The elements of a map that can be drawn using this program are farm and field boundaries as well as nutrient setbacks for waterbodies.

Once the map is generated, you can copy and paste it into a Microsoft Word document to add the remaining required elements such as name and address of the client, address and tax account ID(s) of the property, names and acreage of each field, and road names (if not already visible). An example of a map can be found on the ANMP website under Software -> QGIS -> QGIS Help Guides and Templates:

<https://extension.umd.edu/anmp/software/qgis-help-guides-and-templates>.

\*\*If P-Risk assessments are needed for the farm, please use QGIS instead. QGIS has the ability to measure slope and distance for determining soil loss while Google Earth Pro does not.

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**Contents** In this document, you will find instructions for:

- [Downloading Google Earth Pro](#)
- [Locating and mapping the property of interest](#)
- [Mapping water features and their required buffer zones](#)

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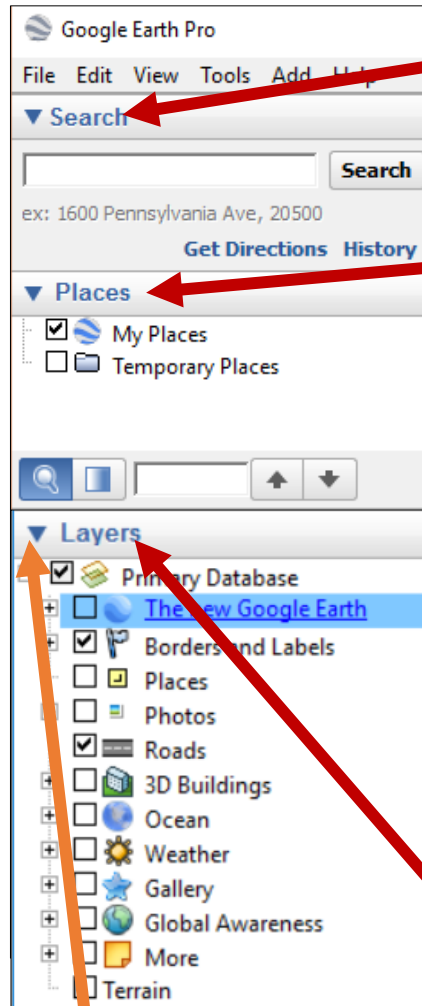
### Downloading Google Earth Pro

#### Instructions

Step	Action
1	<p>Download Google Earth Pro here: <a href="https://www.google.com/earth/download/gep/agree.html">https://www.google.com/earth/download/gep/agree.html</a>.</p> <p>In your "Downloads" folder, click on the GoogleEarthProSetup.exe file and follow prompts to install the program.</p>
2	<p>Open the program. Close the "Startup Tips" screen if applicable.</p> <ul style="list-style-type: none"> <li>• You can choose to turn this feature on or off near the "Close" button.</li> </ul>

3

### Become familiar with Google Earth Pro:



- **Search box**
  - Type in an address or city/town to find the location of interest

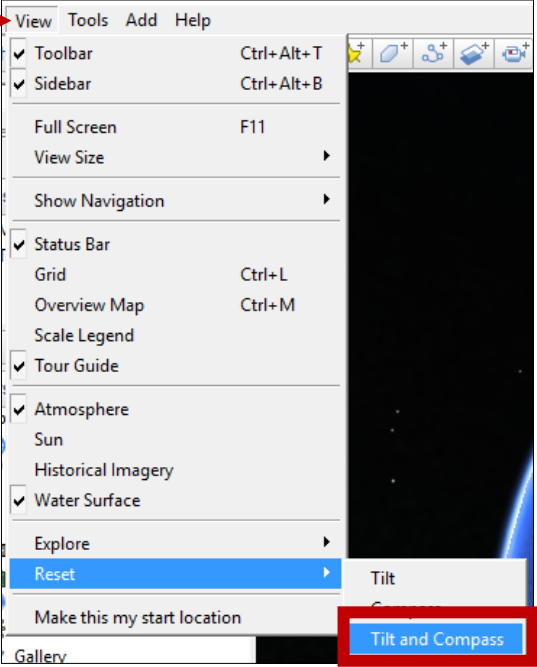
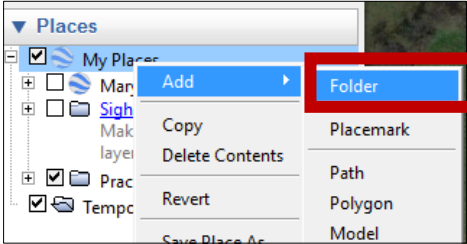
- **Places box**
  - The layers you create (like farm and field boundaries) will go under “My Places”
  - If you open any .KML files in Google Earth Pro, they will open in your “Temporary Places” section. You’ll have to drag them up to your “My Places” section to keep them from disappearing when you close Google Earth Pro

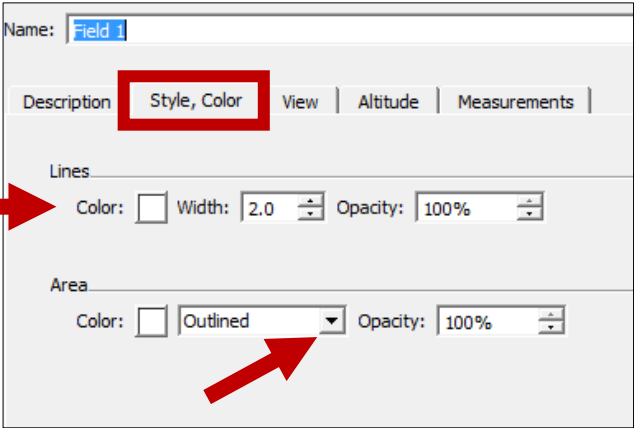
- **Layers box**
  - Make sure “Borders and Labels” and “Roads” have a checkmark next to them.
  - All other layers can be turned off (click on the box to remove the checkmark).
    - This will help Google Earth Pro load faster the next time you open the program

\*\*Any of these boxes can be minimized using the blue triangle next to the name. For example, click on the blue triangle next to “Layers” to minimize it.


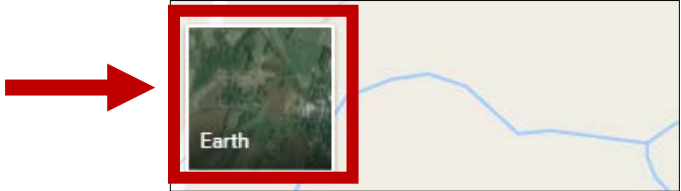
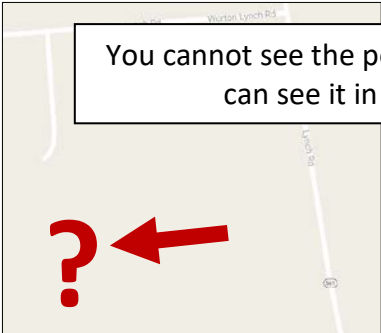

**Locating and mapping the property of interest**

**Instructions**

Step	Action
1	<p>When Google Earth Pro is open, a globe or map is displayed on the right side of the screen and three boxes; Search, Places and Layers are displayed on the left.</p> <p>a) In the Search box, enter the address of the property for which you will create a map. Then press return or click on "Search". An aerial view of the property will display on the right side of the screen.</p>  <p>b) In the toolbar, click on "View" -&gt; "Reset" -&gt; "Tilt and Compass". This will reset and align the aerial view. You may need to repeat this step before taking a screenshot of your finished map.</p>
2	<p>Click on the arrow to the left in the "Places" box.</p> <p>a) Right click on <b>My Places</b>, then click "Add" then "Folder" to create a folder to store this map. Give the folder the client's name, then click "OK".</p> 
3	<p>If the client farms multiple tracts/properties you may choose to add additional folders for each tract/property within the client folder.</p> <ul style="list-style-type: none"> <li>Right click the client's folder, then choose "Add" and "Folder". Give the folder the tract/property name.</li> </ul>

4	<p>Right click on the tract/property folder you just created. Choose “Add” and choose “Polygon”.</p> <p>a) Give the polygon a field name/number (you may choose to include the farm name to keep things organized).</p> <ul style="list-style-type: none"> <li>○ Within this “Google Earth Pro- New polygon” box, click on the “Style, Color” tab. Under <b>Lines</b>, select the line color you wish to use (white copies best) and width of the line. Select the color by clicking on the white box to the right of the word <b>Color</b>. This will bring up the color palette.</li> <li>○ Under <b>Area</b> choose “outlined” from the drop-down menu.</li> </ul>  <p>b) <b>Do Not</b> click “OK” or close the New Polygon box yet.</p> <p>c) Move your cursor over to the map. It will change to a square. Click around the perimeter of the field you want to outline.</p> <p>d) When finished with that field, click “OK” in the New Polygon box to close it.</p>
5	<p>Repeat step 4 for each of the fields on the farm until all fields are outlined.</p> <p>Be sure to make a polygon of the entire farm to show the farm boundaries. You may want to make this a different color than field boundaries.</p>
6	<p>As always, reset the tilt and compass of your map when you are finished making changes.</p> <ul style="list-style-type: none"> <li>• In the toolbar, click on “View” -&gt; “Reset” -&gt; “Tilt and Compass”.</li> </ul>

**Mapping water features and their required buffer zones**

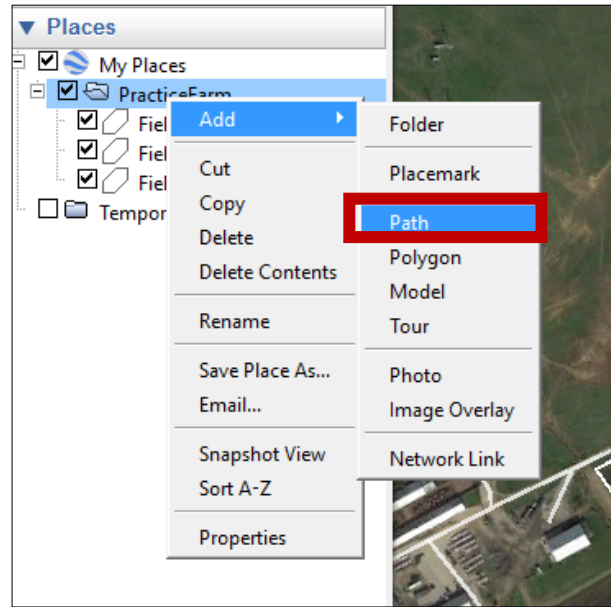
Step	Action
1	<p>Determine if there are any waterbodies on or near your client's properties that could need nutrient application setbacks:</p> <ul style="list-style-type: none"> <li>• Use your client's knowledge</li> <li>• Verify using Google Maps: <a href="https://maps.google.com/">https://maps.google.com/</a> <ul style="list-style-type: none"> <li>○ Use the search bar to locate the property.</li> <li>○ Light blue lines represent streams and blue polygons represent ponds.</li> </ul> </li> </ul>  <ul style="list-style-type: none"> <li>○ <b>**Hint:</b> Click on the "Earth" box in the lower right corner to see if the map matches what you see in Google Earth Pro</li> </ul>  <ul style="list-style-type: none"> <li>• Make sure to inspect your map in Google Earth Pro as well since some waterbodies may not be outlined. <ul style="list-style-type: none"> <li>○ For example:</li> </ul> </li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>?</p> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>You cannot see the pond in the left picture but can see it in the right picture</p> </div> <div style="text-align: center;">  </div> </div>

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Next, you will need to add these waterbodies to your map for the specific farm you are working on. First, we'll start with any streams. Skip this step if no streams are present.

For streams:

- a) Right click on the client's folder in the **My Places** menu. Choose "Add"-> "Path".



- b) A window will pop up labeled "Google Earth Pro – New Path". Name your pathway as a stream.
  - o Under the "Style, Color" tab, choose the **Color** you'd like for your stream (pick something different than your field and farm boundaries). Also set the **Width** to 2.0.
- c) Keeping this window open, trace the pathway of the stream by clicking along the pathway.
- d) When you are done, click "OK" in the "Google Earth Pro – New Path window".

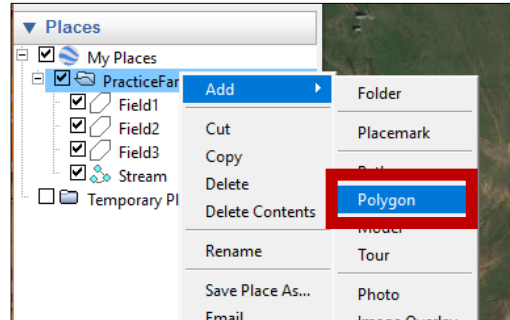
**\*\*Hint:** You can go back and edit properties or even the location of your stream by right clicking on the Stream in the Places menu and clicking on Properties. This will open up the Pathway window you were just viewing.

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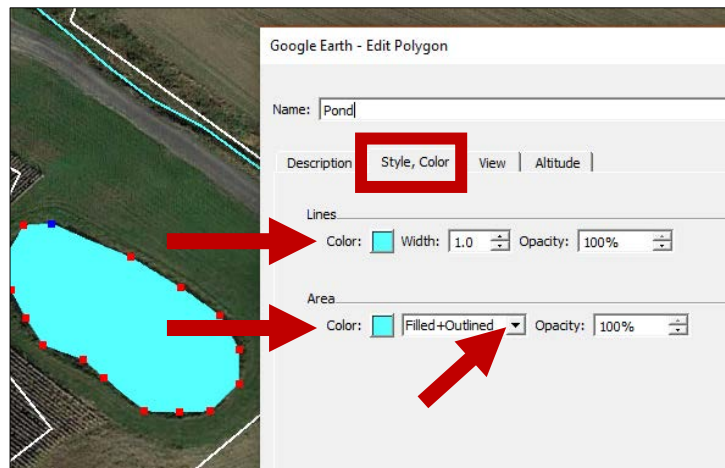
Now you should map any ponds (skip this step if none are present).

For Ponds:

- a) Right click on the client's folder in the **My Places** menu. Choose "Add"-> "Polygon".



- b) A window will pop up labeled "Google Earth Pro – New Polygon". Name your polygon as a pond.
- o Under the "Style, Color" tab, choose the **Color** you'd like for your pond. Keep the color the same in the **Lines** and **Area** sections. For the **Area**, choose "Filled+Outlined" from the drop-down menu.

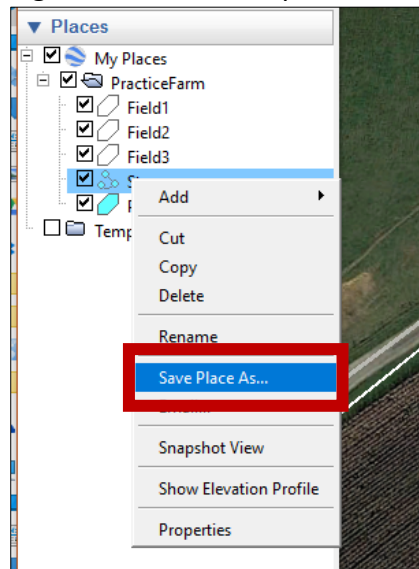


- c) Keeping this window open, trace the shape of the pond by clicking along the pond edges.
- d) When you are done, click "OK" in the "Google Earth Pro – New Polygon" window.

**\*\*Hint:** You can go back and edit properties or even the location of your pond by right clicking on the Pond Polygon in the Places menu and clicking on Properties. This will open up the Polygon window you were just viewing.

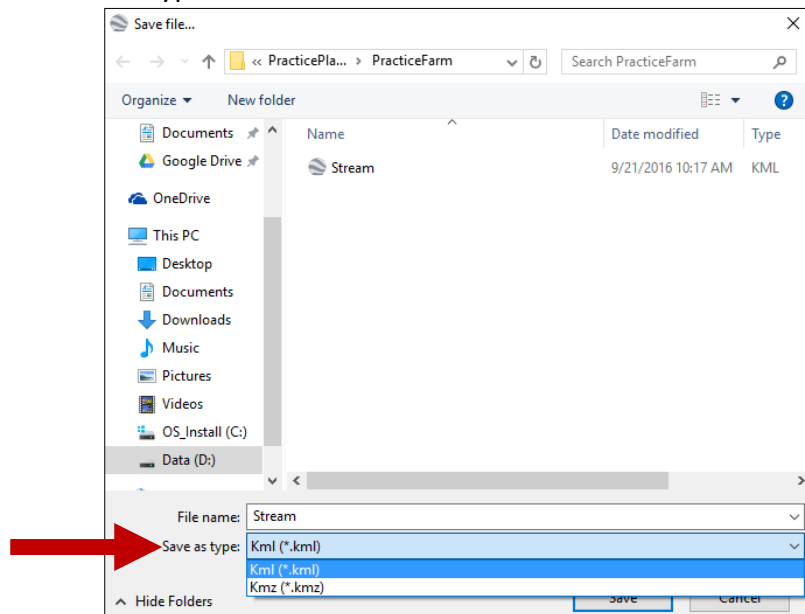
4 To create buffers, you will need to save your stream and pond as .KML files. **Each will need to be done separately.**

a) Right click on the shape, and click on “Save Place As...”



b) Navigate to your client’s folder on your computer.

- Type in a **File name**.
- Change the **Save as type** to the Kml (\*.kml) type. Then click on Save.



c) Repeat step 4 for all streams and ponds.



5 The buffers have to be developed by an outside source. Go to: <http://extension.unh.edu/kmltools/index.cfm>

a) In the "Upload KML file" box, type in a description and then choose the file you want buffered. Click on submit.

**University of New Hampshire**  
Cooperative Extension  
**KML TOOLS**

The **KML Tools Project** at UNH Cooperative Extension was created to help users of Google mapping tools perform basic GIS analyses on KML files. Our website will allow users of Google Earth and Google My Maps users to apply geoprocessing analyses to the map layers they create, filling a gap in the functionality of these programs and bringing the world of Google mapping closer to that of traditional GIS programs.

The **KML Tools Project** currently supports the following analyses with KML files:

- Area** - calculate the area of a shape
- Buffer** - create buffer shapes a fixed distance from a point, line or shape
- Cruise points** - produce regularly spaced grid or random set of points within a polygon
- Generalize** - reduce complexity of a line or shape by selective vertex removal

To conduct analyses on your own KML file, use the Upload KML file box below to upload your file to the site.

If you don't have a KML and would like to see how the site works, use our [demonstration KML file](#).

**Upload KML file**

Description:  
Streams

File (KML):  
Choose File Stream.kml

Submit

**Important notes:**

1. KMZ files can not be used on this site. If you have a KMZ file, please bring it into Google Earth and convert it to a KML file using uploading it to the site.
2. To use the site, you will upload your file to the site, select the type of analyses to be conducted, then download the resultant KMZ. Files are housed only temporarily on our site during analysis and will not be accessible by anyone (including you) if you return to the site. Download your results to your own computer, and don't worry about anyone else seeing your data or the results of your analyses.

6 For buffering streams (skip this step if no streams are present):

a) Type in the buffer distance to 35 and make sure to change the units to feet. Then click on "Buffer".

**University of New Hampshire**  
Cooperative Extension  
**KML TOOLS**

CURRENT FILE: Streams  
[Load new file](#)

**Lines**

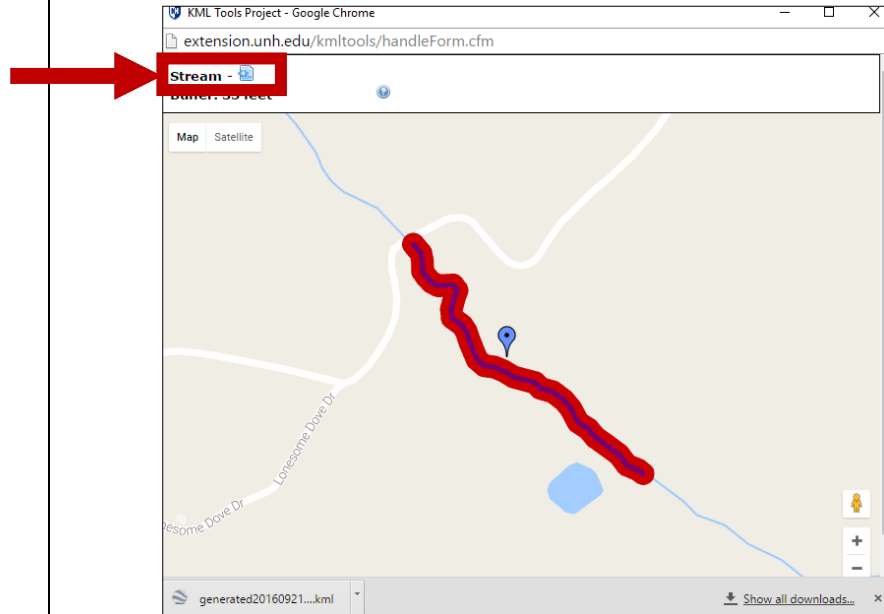
**Stream**

Actions: GENERALIZE  
Least Generalize

BUFFER  
35 feet meters kilometers feet miles

Buffer

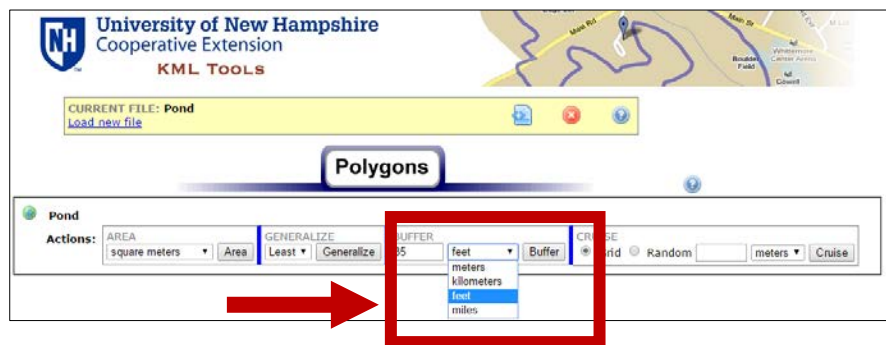
b) A window with a map will pop up to show you the buffered stream. At the top of the window, next to “Stream” click on the blue icon to download the new KML file.



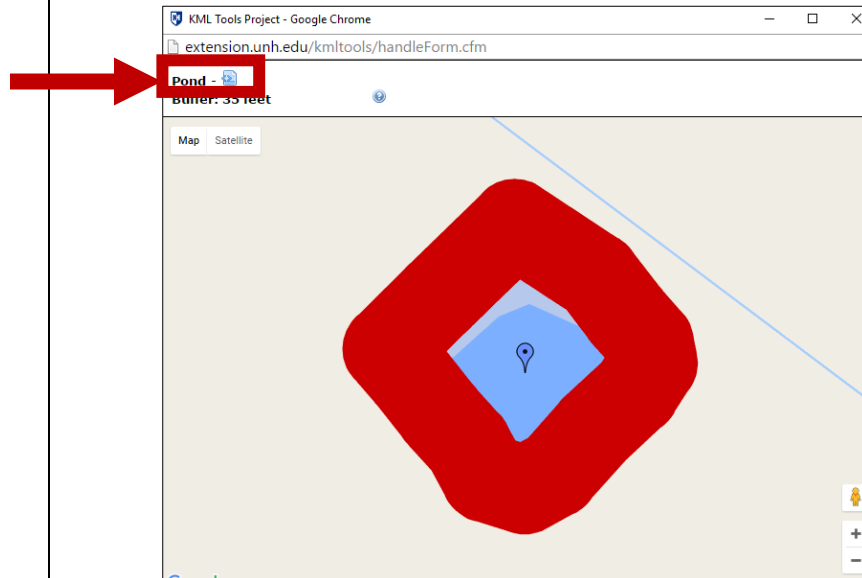
- c) Find the file (it will likely be saved in the Downloads folder on your computer) and rename it to include the farm, the stream, and the size of the buffer (for example: “PracticeStreamBuffer35ft”).
- d) Move the file to your client’s folder.
- e) Go back to the map window and close it. Back at the U. of New Hampshire website, enter 10 feet into the buffer box and click “Buffer”.
- f) Repeat steps 6b – 6d to save and name the file in the appropriate folder.

7 For Ponds (skip this step if no ponds are present):

a) Type in the buffer distance you would like to see and make sure to change the units to feet. Then click on “Buffer”.



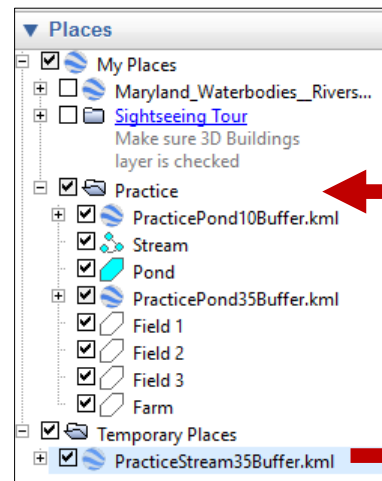
- b) A window with a map will pop up to show you the buffered pond. At the top of the window, next to “Pond” click on the blue icon to download the new KML file.



- c) Find the file (it will likely be saved in the Downloads folder on your computer) and rename it to include the farm, the pond, and the size of the buffer (for example: “PracticePondBuffer35ft”).
- d) Move the file to your client’s folder.
- e) Go back to the map window and close it. Back at the U. of New Hampshire website, enter 10 feet into the buffer box and click “Buffer”.
- f) Repeat steps 7b – 7d to save and name the file in the appropriate folder.

8 To load the files into Google Earth Pro:

- a) Click on “File” -> “Open...”
- b) Navigate to where you saved your files. Choose one of the 35’ buffer files first. Click on “Open”.
- c) The file will load under **Temporary Places** in the **My Places** menu. Drag it to your client’s folder under **My Places**.



	<p>d) Click on the + box next to the layer to expand it. To change the look of the layers, right click on each and then click on Properties.</p> <ul style="list-style-type: none"> <li>o Change the colors of the lines/polygons if you wish. For the buffer layers, change the Opacity to 50% or less.</li> </ul> <p>e) Repeat this step for all buffered layers that need to be added to your map.</p>
9	<p>As always, reset the tilt and compass of your map when you are finished making changes.</p> <ul style="list-style-type: none"> <li>• In the toolbar, click on “View” -&gt; “Reset” -&gt; “Tilt and Compass”.</li> </ul>

