



**PLANET
CHANGE**

Tutorial Google Earth Pro



Co-funded by the
Erasmus+ Programme
of the European Union

Planet change is the short name of an EU Erasmus+ project aimed at VET teachers and their students. With small activities, the idea is to create awareness about sustainability and acquire 21st century skills. All this is done in a technical context, mostly from space technology.

www.planetchange.eu



Introduction to *Google Earth Pro*

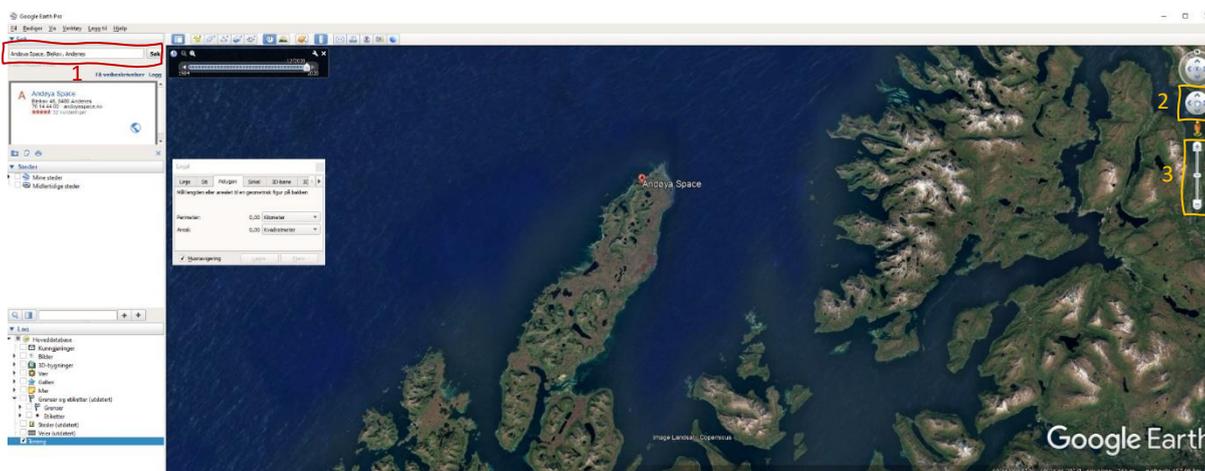
Background:

Google Earth Pro is a powerful and easy-to-use online tool that displays satellite imagery. This application is recommended as the first tool to work with satellite images. It provides excellent high-resolution true color images and a good set of features. The Pro version is especially recommended as it contains a library of satellite images over different areas, covering decades. This makes it possible to monitor the changes and analyse the possible anthropic impact.

Tutorial

This tutorial goes through the basic functionalities. This should be enough to learn the main features needed to complete the activities.

Note that **it must be the “pro” version**. This is a standalone tool. You can download and install it from the following address: <https://www.google.com/intl/en/earth/versions/#earth-pro>



Google Earth Pro interface is intuitive. There are several features, but we will use it in a simple way. In the image above you can see the *Google Earth Pro* user interface and below a description of the main tools we are going to use in this task.

- Find a place by writing its name in the search field – 1 (locate numbers in the image above)
- Move around the area by dragging the mouse while holding down the left button. Alternatively, you can use the move tool - 2
- Zoom in/out by using the mouse wheel. Alternatively, you can use the zoom tool - 3
- Access to older satellite images by clicking in the historical images tool . A small window will appear. Each vertical line indicates a previous image. Drag the pointer to the different positions to see the historical images.



- You can measure distances and areas using the measure tool . Click to activate it. To measure a distance, select the *line* tab and click with the right button in the initial and final point. You can also measure the areal and perimeter of an area by using the *polygon* tab



To explore more in detail *Google Earth Pro* check the tutorial: <https://youtu.be/3lGI1VZitg4>

Activity:

This activity focus on exploring the anthropogenic impact from space using *Google Earth Pro*.

- i. Open *Google Earth Pro*. This is a great tool for exploring the Earth using satellite images. The “Pro” version includes a collection of historic satellites images giving the opportunity to explore changes in an area due natural or anthropogenic cause. We will proceed exploring changes in predefined places.
 - a. Download the provided file “PlacesGoogleEarth.zip”. It contains a few Google Earth files (kmz). Unpack the zip file.
 - b. In the main menu, select *File-Open*. Navigate to the folder where you placed the files and select “*Aral Sea.kmz*”. Google Earth will fly to the area. Keep on place in the area displayed without moving around and open the historical image tool .
 - c. Explore the changes in the area by selecting the most recent images vs older images. Take note of the changes you see.
 - d. Use the measure tool  to have an idea about the scale of the changes. You can measure for example changes in the distance of a feature from edge to edge with the *line* tab, or perimeters and areal with the *polygon* tab. Write some interesting findings.
 - e. Now we concentrate in changes in the Amazonia rainforest. Repeat the procedure for the other files “*Rondonia.kmz*” and “*Nova Xavantina.kmz*”.
 - f. Discuss and find information about the possible reasons behind the changes in places like Rondonia, Madagascar and Aral Sea.
- ii. **Evaluating the tool (for teachers).** Discuss with your colleagues the following questions:
 - a. Do you find the tool attractive to use by your students?
 - b. Do you find it suitable to use in your classroom. Explain
 - c. Do you think it can help to cover learning objectives of your VET program?
 - d. Explain possible limitations.



Introduction to *Google Earth Pro*

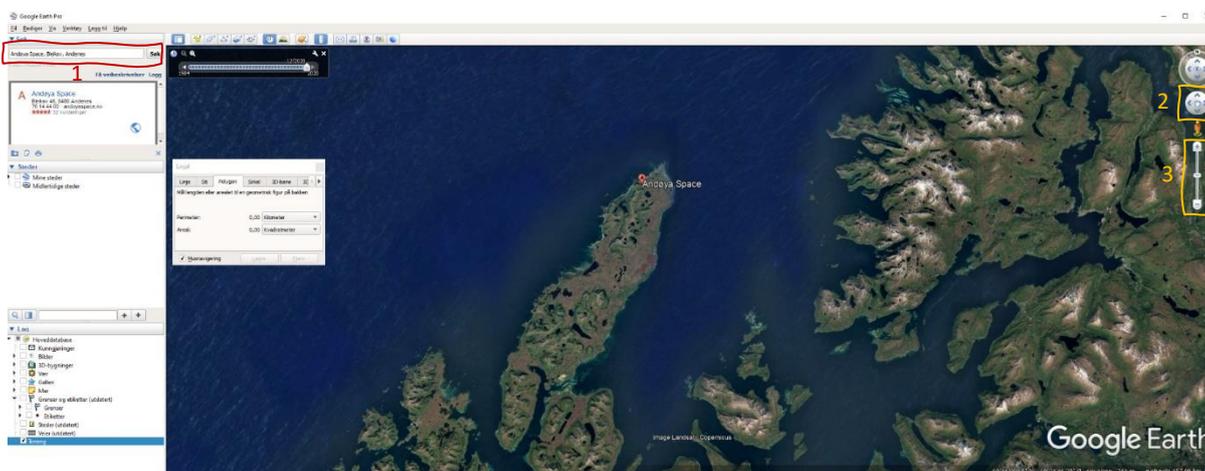
Background:

Google Earth Pro is a powerful and easy-to-use online tool that displays satellite imagery. This application is recommended as the first tool to work with satellite images. It provides excellent high-resolution true color images and a good set of features. The Pro version is especially recommended as it contains a library of satellite images over different areas, covering decades. This makes it possible to monitor the changes and analyse the possible anthropic impact.

Tutorial

This tutorial goes through the basic functionalities. This should be enough to learn the main features needed to complete the activities.

Note that **it must be the “pro” version**. This is a standalone tool. You can download and install it from the following address: <https://www.google.com/intl/en/earth/versions/#earth-pro>

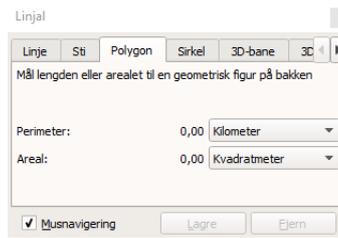


Google Earth Pro interface is intuitive. There are several features, but we will use it in a simple way. In the image above you can see the *Google Earth Pro* user interface and below a description of the main tools we are going to use in this task.

- Find a place by writing its name in the search field – 1 (locate numbers in the image above)
- Move around the area by dragging the mouse while holding down the left button. Alternatively, you can use the move tool - 2
- Zoom in/out by using the mouse wheel. Alternatively, you can use the zoom tool - 3
- Access to older satellite images by clicking in the historical images tool . A small window will appear. Each vertical line indicates a previous image. Drag the pointer to the different positions to see the historical images.



- You can measure distances and areas using the measure tool . Click to activate it. To measure a distance, select the *line* tab and click with the right button in the initial and final point. You can also measure the areal and perimeter of an area by using the *polygon* tab



To explore more in detail *Google Earth Pro* check the tutorial: <https://youtu.be/3lGI1VZitg4>

Activity:

This activity focus on exploring the anthropogenic impact from space using *Google Earth Pro*.

- iii. Open *Google Earth Pro*. This is a great tool for exploring the Earth using satellite images. The “Pro” version includes a collection of historic satellites images giving the opportunity to explore changes in an area due natural or anthropogenic cause. We will proceed exploring changes in predefined places.
 - a. Download the provided file “PlacesGoogleEarth.zip”. It contains a few Google Earth files (kmz). Unpack the zip file.
 - b. In the main menu, select *File-Open*. Navigate to the folder where you placed the files and select “*Aral Sea.kmz*”. Google Earth will fly to the area. Keep on place in the area displayed without moving around and open the historical image tool .
 - c. Explore the changes in the area by selecting the most recent images vs older images. Take note of the changes you see.
 - d. Use the measure tool  to have an idea about the scale of the changes. You can measure for example changes in the distance of a feature from edge to edge with the *line* tab, or perimeters and areal with the *polygon* tab. Write some interesting findings.
 - e. Now we concentrate in changes in the Amazonia rainforest. Repeat the procedure for the other files “*Rondonia.kmz*” and “*Nova Xavantina.kmz*”.
 - f. Discuss and find information about the possible reasons behind the changes in places like Rondonia, Madagascar and Aral Sea.
- iv. **Evaluating the tool (for teachers).** Discuss with your colleagues the following questions:
 - a. Do you find the tool attractive to use by your students?
 - b. Do you find it suitable to use in your classroom. Explain.
 - c. Do you think it can help to cover learning objectives of your VET program?
 - d. Explain possible limitations.

