User Instructions

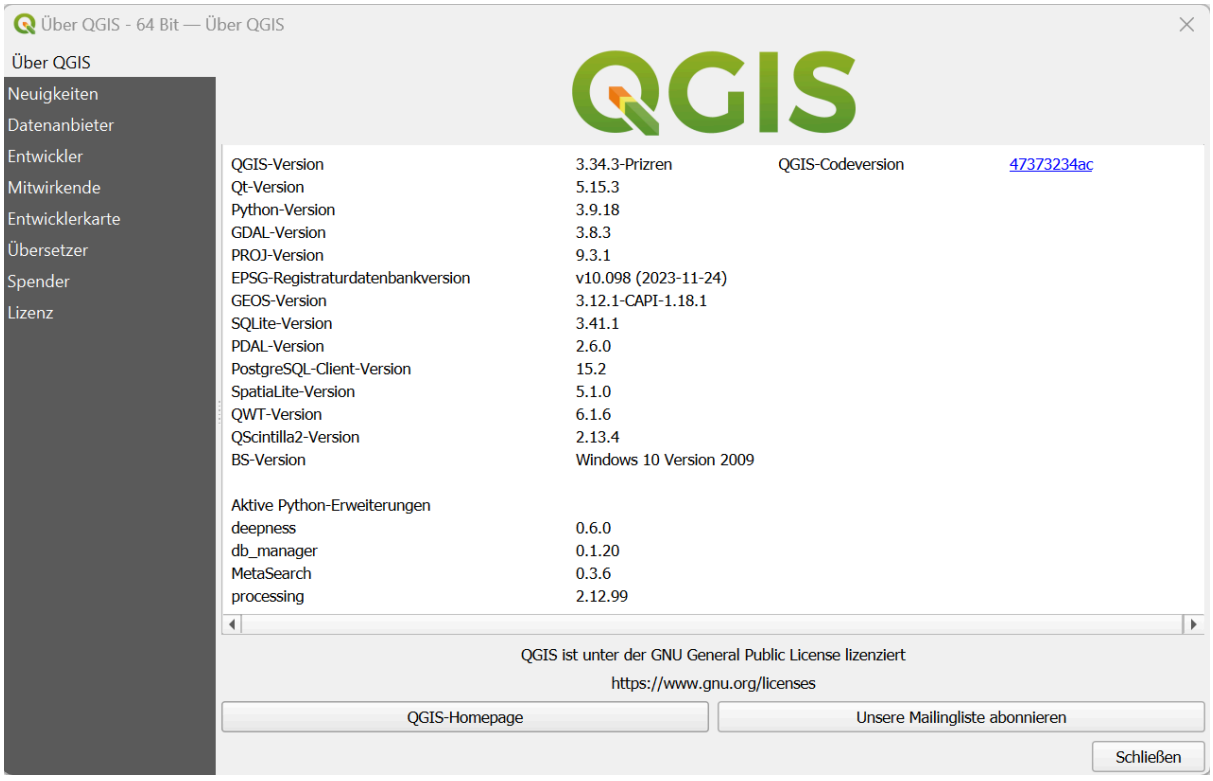
This document explains how to install the **Deepness-Plugins** in **QGIS** so that the **Model** can be used to segment noise barrier walls.

The *Deepness QGIS-Plugin* has a simple user interface so that users can easily process the raster data with the provided segmentation model. Further documentation on the plugin itself can be found at the following URL:
https://qgis-plugin-deepness.readthedocs.io/en/latest/

Requirements

The Deepness QGIS plugin can be downloaded from the following URL: https://plugins.qgis.org/plugins/deepness/version/0.6.1/download/

We assume that QGIS is already installed on your system. At the time of testing the plugin and model, the following version of QGIS was used:



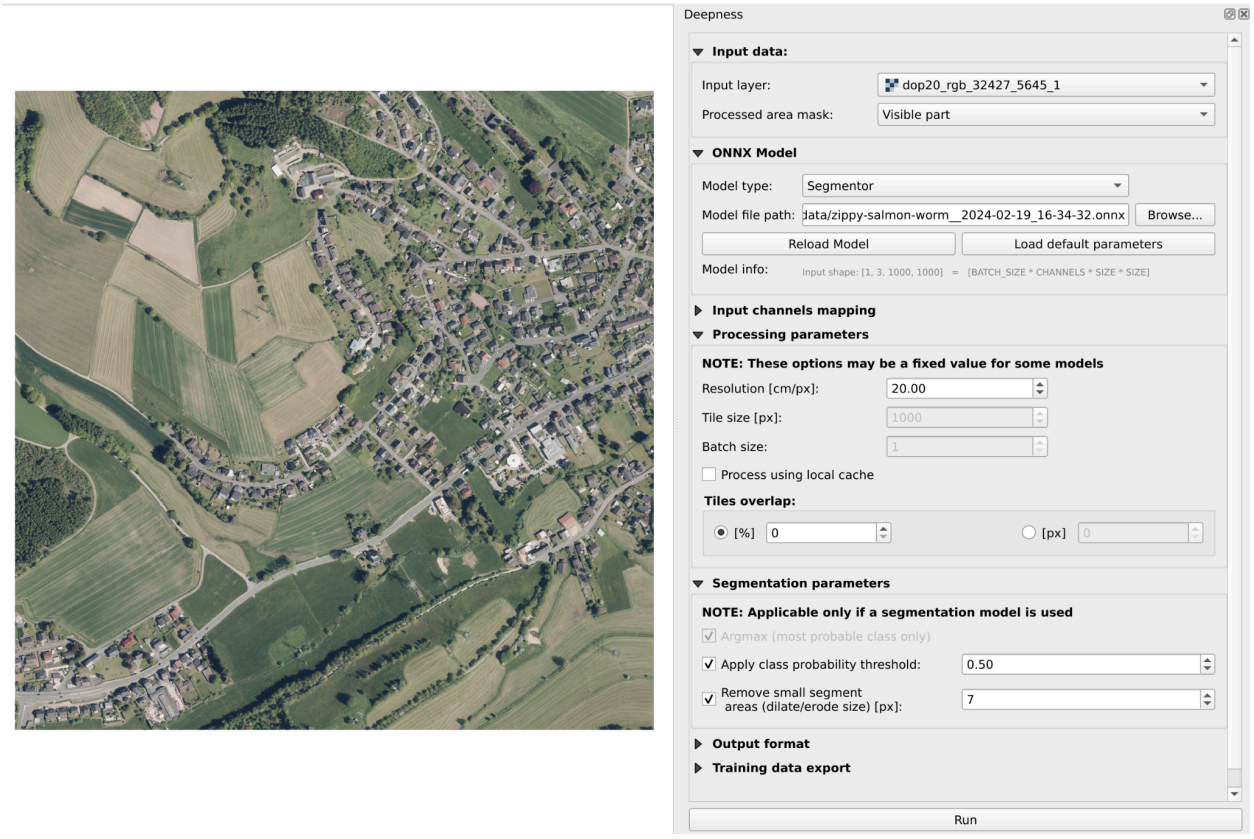
Plugin Installation

The plugin can be installed directly within QGIS by clicking *Plugins* → *Manage and Install Plugins…* → *Install from ZIP* click and select the downloaded ZIP file. If the plugin is successfully installed, you should be able to see the following icon in the QGIS toolbar:

Using the model to segment noise barriers

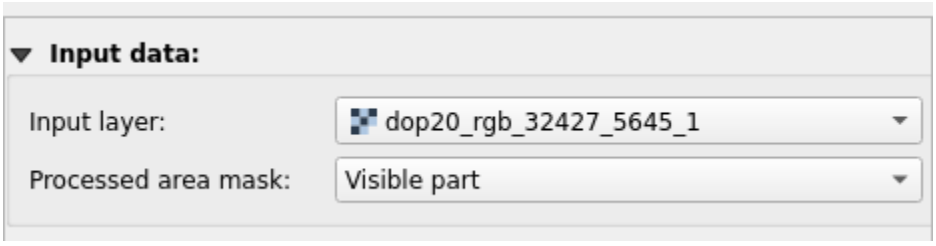
The following process describes using the model on a raster layer to make new predictions:

1) Load the raster layers into QGIS by clicking *Layer* → *Add layers* → *Add raster layer*. Click and select one or more .tif files you want to run inference on.
2) Click on the Deepness icon to open the plugin control panel on the right (see screenshot below).
3) Click below the section *ONNX Model* on *Browse* and select the specified model path (the model file should have a .onnx extension).
4) Click on *Load default parameters to* load the correct parameters to use the model.
5) Make sure the following parameters are set:
    a) The resolution (*Resolution*) is set to 20.
    b) The overlap of the tiles (*Tiles Overla*p) is set to 0.



6) Additionally, the plugin allows two different ways of using the model, via the *Input data menu.*

   If you choose "*Visible part*", the model will only make predictions on the part of the layer that is currently visible via the user interface, i.e. that you have just zoomed in on. This can save time because the model has less data to process.



   If you choose "*Entire layer*" , the model makes predictions for the entire added layer. Depending on the size of the layer, this may take more time. The approximate runtime for a single 5000×5000 px layer is between 3-10 minutes depending on the hardware.

7) Finally click *Run* to start calculation and inference. Once the model is finished calculating, you should be able to see the model's output by inspecting the newly created layer, as shown in the screenshot below.