

Aim: - Apply different supervised classification techniques to classify the satellite image

Step 1: Open QGIS

Step 2: Click on Layer and Select Add Layer and then Select Add Raster Layer

Step 3: Select Source Type File and then Click on Browse

Step 4: Select at least 7 Tif files and then Click on Open

- Click on Add
- landsat 8 satellite image

Step 5: Click on SCP and then Select Band set

- Click on Add bands loaded in QGIS
- Select All Files and then Click on OK
- Check Create raster of band set (stack bands) and then Click on Run
- Create New folder and Give Name Output and then Click on Select Folder

Step 6: Again, Click on Layer and Select Add Layer and then Select Add Raster Layer

- Select Source Type File and then Click on Browse
- Select stack raster files and then Click on Open
- Click on Add

Step 7: Click on Layer and then Select Layer Properties

- Under Layer Properties Click on symbology, change render type to “multiband color” and select

RGB bands as shown in figure, Click on Apply.

Step 8: Click on SCP Dock and Click on Training input and then Click on Create a new training input

- Give File name (Here it is: trainingset) and then Click on Save

Step 9: Click on Create a ROI polygon

- Draw the input on the map. After drawing the input, next step is to save that input and for that we have to give MC ID = 1, MC Name = Forest and C ID & C Name will be same as MC ID & MC Name and then Click on “save temporary ROI to training input”, we named MC Name forest because we have taken the first input for forest.
- We can take multiple inputs for single class, we took 4 inputs for forest area.
- Next step is to merge all the inputs for single class, so for that we'll select all the inputs and click on “merge highlighted spectral”.
- Click on Yes
- So we took many types of inputs for training such as forest, water, barren land.

Step 10: Click on SCP Within SCP Select Band processing and then Select Classification

- Select Class ID and then Click on Run
- After Clicking on RUN, you have to give a file name of “classified” then Click on Save.

- The classification process of our training input is complete, this is our classified product.

Now we have to give our merged inputs their natural colors. Go to the Layer Styling Double Click on forest and then we get the option of “change color” by which we can give our inputs their natural color and then Click on Apply.

- Same for Water and barren land.
- After giving each inputs to their natural colors see real or natural colors of our landsat 8 satellite image.