

Universität Potsdam

REMOTE SENSING OF THE ENVIRONMENT

WINTERSEMESTER 2024-2025

LAB 3

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Question 1

Figure 1 shows the map that was to be created in Question 1. You can see the water areas in and around Berlin and Potsdam. The map was created with QGIS after the calculation of the NDWI ($B3-B8)/(B3+B8)$ was executed by SNAP.

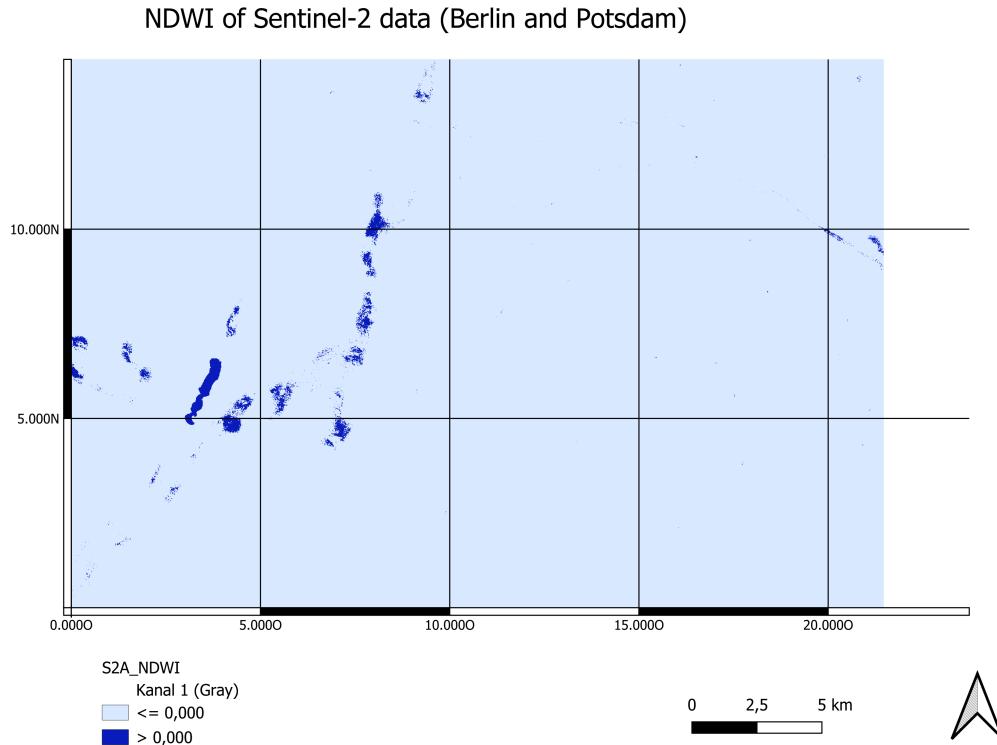


Figure 1

Question 2

Figure 2 shows the map of the differences between the NDWI of the two sensors. The histogram in Figure 3 shows that the values of the two NDWI maps were closer to each other than of NDVI. Most of the pixel values were between 0.1 and 0.2 apart. I think this is the case because NDWI mainly shows the water surface; this is a much smaller area than the vegetation density that NDVI shows. In addition, the water area does not differ as much from measurement to measurement as the vegetation (e.g. because of the seasons).

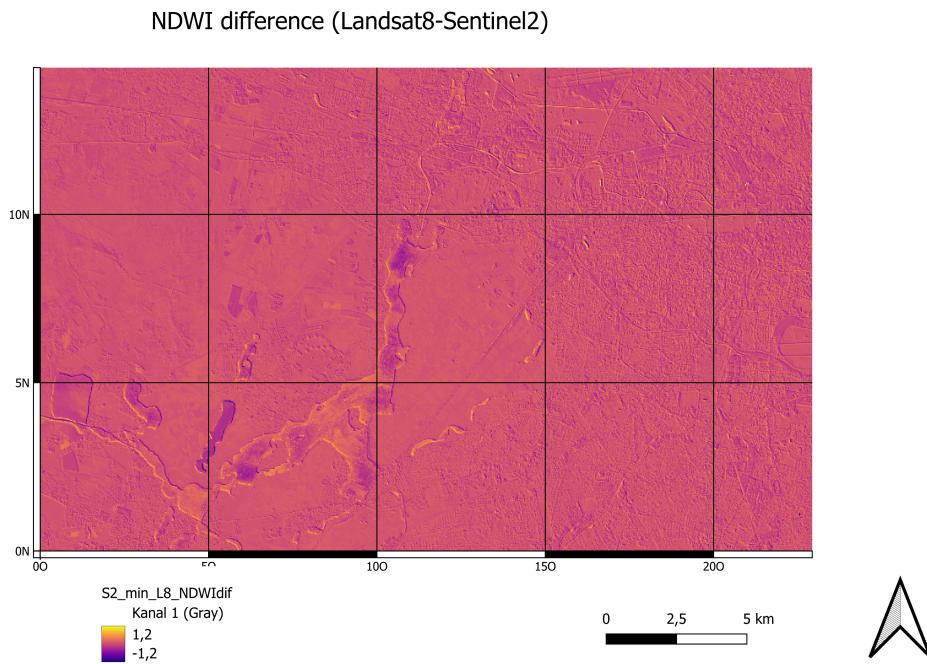


Figure 2

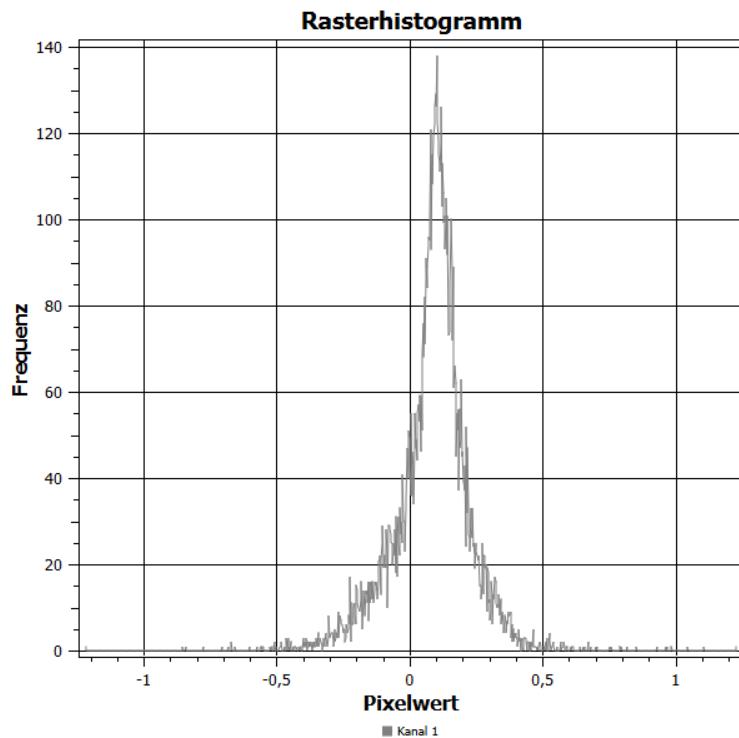


Figure 3

Question 3

Figure 4 shows the NDVI and Figure 5 shows the NDWI in the northern part of Lower Saxony, Germany. The Sentinel-2 (S2A_MSIL2A) data from which the two maps were calculated are from 2024-11-29 at T10:34:01.

