

Report on Practical 3

Topic: Image Classification and Accuracy Assessment

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Course title: Digital Processing of Remotely Sensed Data

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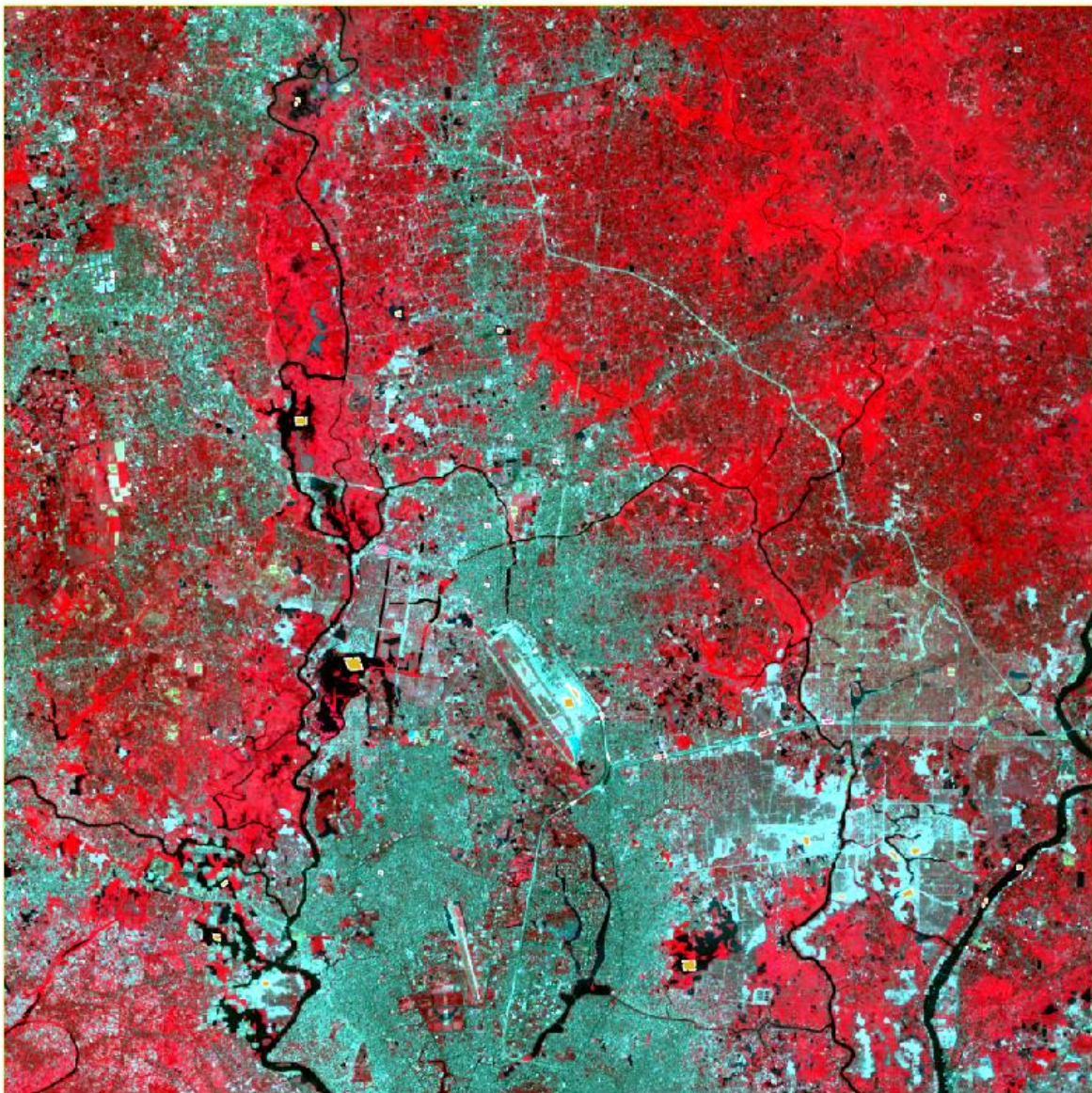
Location: Dhaka, Bangladesh

Image Metadata:

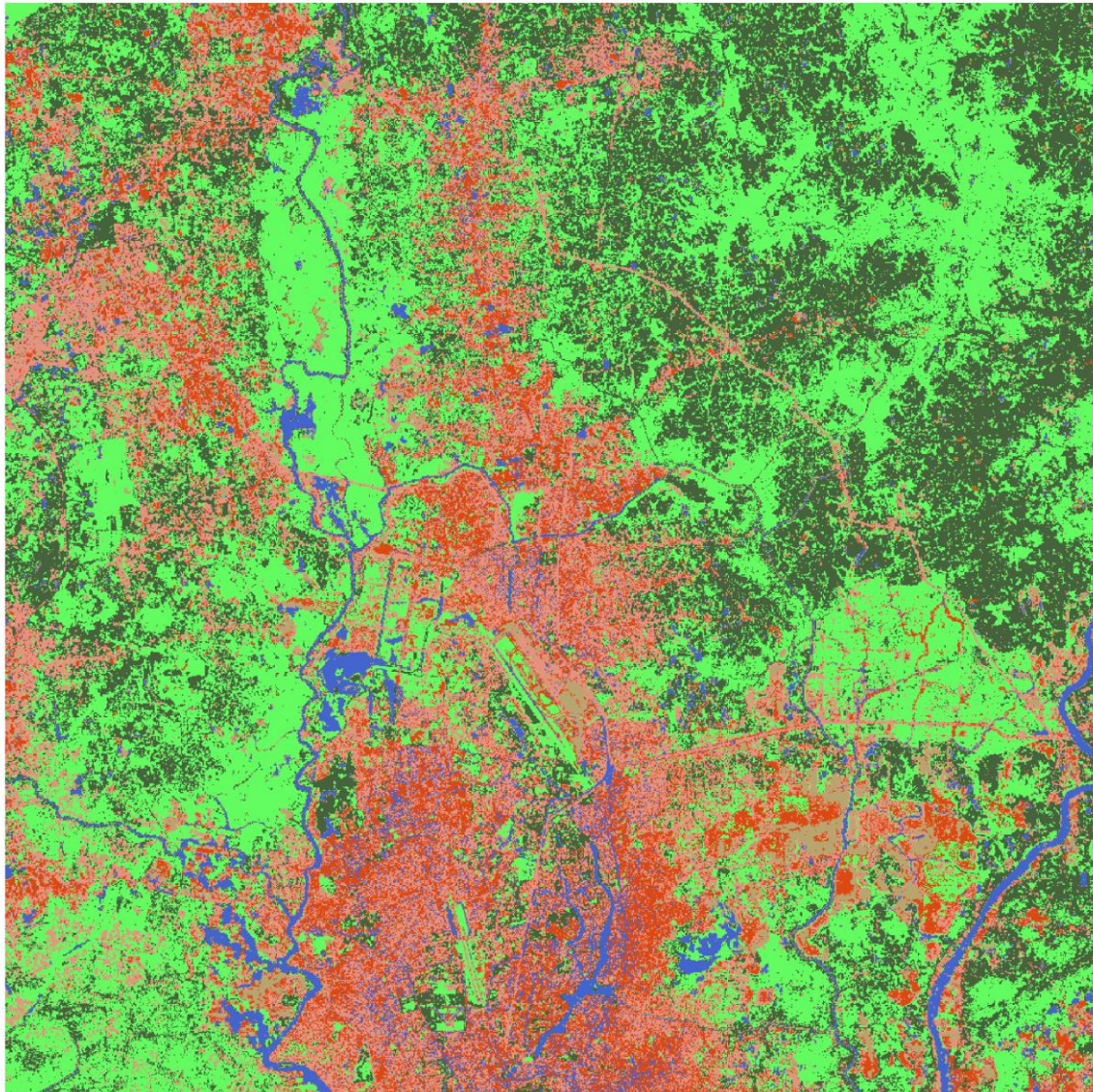
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WRS_PATH = 137	CLOUD_COVER = 0.05
WRS_ROW = 43	

Image False Colour Composite (5-4-3) with training ROIs

-Training ROIs Symbolised in Yellow colour.



Classification Map



Landclass Classification of Dhaka

Legends

ClassifiedMaximumLikelihood


Band 1 (Gray)

-  WaterSurface
-  Baresoil
-  Grassland
-  Tree
-  Road
-  Building

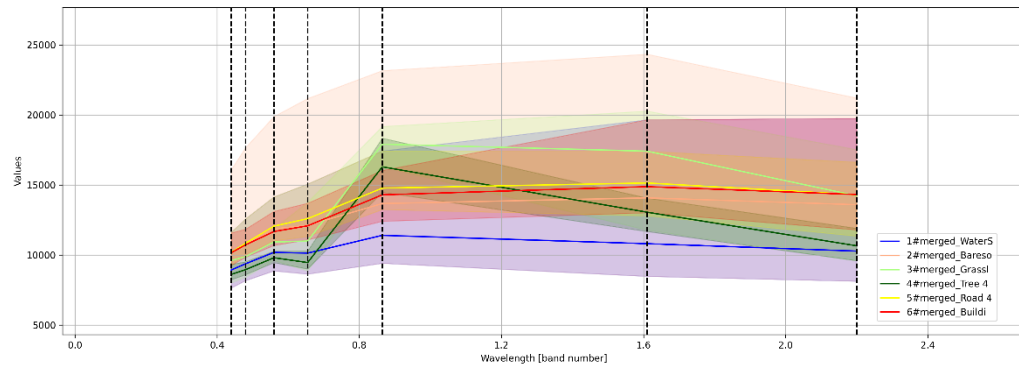
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0 2,5 5 km

A horizontal scale bar with a black segment on the left and a white segment on the right, representing distances of 0, 2.5, and 5 km.

Spectral Signature Plot of the Classes



Accuracy Matrix

		Predicted Class							
Reference Class		Water	Baresoil	Grassland	Tree	Road	Building	RowTotal	Producer Accuracy
	Water	1	1	1	0	0	0	3	25%
	Baresoil	0	0	2	0	2	0	4	-100%
	Grassland	0	0	36	5	1	0	42	80%
	Tree	0	0	5	19	0	1	25	79%
	Road	0	0	1	0	4	0	5	27%
	Building	3	1	0	0	8	9	21	90%
	Column Total	4	2	45	24	15	10	100	
User Accuracy	25%	0%	80%	79%	27%	90%			
Overall Accuracy = (1+0+36+19+4+9)/100 * 100 = 69%									
Aggrement Accuracy		1/4 = 25%	0/2 = 0%	36/45 = 80%	19/24 = 79%	4/15 = 27%	9/10 = 90%		
Omission Error		3/4 = 75%	2/2 = 100%	9/45 = 20%	5/24 = 0.21%	11/15 = 73%	1/10 = 10%		
Commission Error		(1+1)/3 = 0.67	(2+2)/4 = 1	(5+1)/42= 0.14	(5+1)/25= 0.24	1/5 =0.2	(3+1+8)/21 = 0.57		
N = 100									
Sum of (xii) = 1+0+36+19+4+9 = 69									
sum of (xi+ and x+i) = (3*4)+(4*2)+(45*42)+(25*2 4)+(15*5)+(21*10) = 2795 K = (100*69)-2795 / 100*100 -2795 = 57.97%									