**Supplementary Document**

Table 1: GPS Locations recorded for image accuracy assessment.

|  |  |  |  |
| --- | --- | --- | --- |
| Class | Locations | POINT\_X | POINT\_Y |
| Built-up | 1.1 | 848227.8139470 | 2634381.0430600 |
| 1.2 | 848239.1249070 | 2634562.9444600 |
| 1.3 | 848139.5338870 | 2634012.5411300 |
| 1.4 | 847838.3316180 | 2634061.7272700 |
| 1.5 | 848321.1971670 | 2633897.8969400 |
| 1.6 | 848233.7433810 | 2633755.1274900 |
| 1.7 | 848302.9977660 | 2634061.8630900 |
| 1.8 | 847875.7552420 | 2633921.7136800 |
| Water | 2.1 | 847977.5944520 | 2634558.8485900 |
| 2.2 | 847908.8026480 | 2634330.2481400 |
| 2.3 | 847782.8607300 | 2633849.7638400 |
| 2.4 | 848530.0455570 | 2634045.5559000 |
| 2.5 | 848642.2291150 | 2634306.9647600 |
| Vegetation | 3.1 | 848465.0637610 | 2634101.5969700 |
| 3.2 | 847976.8536180 | 2633835.3859100 |
| 3.3 | 848134.0164320 | 2633738.5482200 |
| 3.4 | 848461.0420860 | 2633776.6483000 |
| 3.5 | 848533.4057720 | 2634568.7594600 |
| 3.6 | 848204.9249070 | 2634685.5467800 |
| 3.7 | 848162.0539430 | 2634105.9956700 |
| 3.8 | 848261.8501250 | 2634207.7623400 |
| 3.9 | 848341.0259640 | 2634160.4741500 |
| 3.10 | 848125.5885540 | 2633846.3293200 |
| Shadow | 4.1 | 848189.5790430 | 2634289.3324500 |
| 4.2 | 848375.6255960 | 2634239.4142900 |
| 4.3 | 847877.1495990 | 2634076.1660500 |
| 4.4 | 848291.7304630 | 2634456.0202800 |
| 4.5 | 848275.3421380 | 2633920.6295400 |

Table 2: Detail Confusion Matrix for S2 (Sentinel 2) Classified image

|  |  |  |  |
| --- | --- | --- | --- |
|   | Ground Truth | Total | User Accuracy |
| Classified in Satellite Image as | Classes | Built-up | Water | Vegetation | Shadow  |
| Built-up | 6 | 0 | 0 | 0 | 6 | 1.00 |
| Water  | 0 | 4 | 1 | 1 | 6 | 0.67 |
| Vegetation | 1 | 0 | 7 | 0 | 8 | 0.88 |
| Shadow | 1 | 1 | 2 | 4 | 8 | 0.50 |
| Total | 8 | 5 | 10 | 5 | 28 |  |
|   | Producer Accuracy | 0.75 | 0.8 | 0.7 | 0.8 |  |  |

Table 3: Detail Confusion Matrix for L8 (Landsat 8) Classified image

|  |  |  |  |
| --- | --- | --- | --- |
|   | Ground Truth |  Total |  User Accuracy |
| Classified in Satellite Image as | Classes | Built-up | Water | Vegetation | Shadow  |
| Built-up | 6 | 2 | 2 | 1 | 11 | 0.55 |
| Water  | 0 | 3 | 1 | 1 | 5 | 0.60 |
| Vegetation | 1 | 0 | 7 | 0 | 8 | 0.88 |
| Shadow Veg | 1 | 0 | 0 | 3 | 4 | 0.75 |
| Total | 8 | 5 | 10 | 5 | 28 |  |
|   | Producer Accuracy | 0.75 | 0.60 | 0.70 | 0.60 |  |  |