**NASA DEVELOP Spring 2022 Maine Ecological Forecasting II**

**1985 LULC Accuracy Assessment Confusion Matrix**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **OBJECTID** | **Class** | **Cloud/**  **Snow Mask** | **Water** | **Developed** | **Barren** | **Deciduous** | **Evergreen** | **Mixed** | **Shrublands** | **Herbaceous** | **Planted/**  **Cultivated** | **Wetlands** | **Total** | **U\_Accuracy** | **Kappa** |
| 1 | Cloud/  Snow Mask | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1 | 0 |
| 2 | Water | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | 1 | 0 |
| 3 | Developed | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 10 | 0.5 | 0 |
| 4 | Barren | 0 | 0 | 1 | 8 | 1 | 0 | 0 | 0 | 0 | 1 | 4 | 15 | 0.5333 | 0 |
| 5 | Deciduous | 0 | 2 | 0 | 0 | 129 | 3 | 7 | 0 | 0 | 0 | 0 | 141 | 0.9149 | 0 |
| 6 | Evergreen | 0 | 0 | 0 | 0 | 0 | 126 | 1 | 0 | 0 | 0 | 0 | 127 | 0.9921 | 0 |
| 7 | Mixed | 0 | 0 | 0 | 0 | 0 | 6 | 28 | 0 | 0 | 0 | 0 | 34 | 0.8235 | 0 |
| 8 | Shrublands | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 10 | 0.9 | 0 |
| 9 | Herbaceous | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 1 | 10 | 0.7 | 0 |
| 10 | Planted/  Cultivated | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 6 | 0 | 10 | 0.6 | 0 |
| 11 | Wetlands | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 8 | 10 | 0.8 | 0 |
| 12 | Total | 10 | 53 | 8 | 10 | 134 | 135 | 37 | 9 | 7 | 10 | 15 | 428 | 0 | 0 |
| 13 | P\_Accuracy | 1 | 0.9623 | 0.625 | 0.8 | 0.9627 | 0.933 | 0.7568 | 1 | 1 | 0.6 | 0.5333 | 0 | 0.9042 | 0 |
| 14 | Kappa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8768 |

**2003 LULC Accuracy Assessment Confusion Matrix**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **OBJECTID** | **Class** | **Water** | **Developed** | **Barren** | **Deciduous** | **Coniferous** | **Mixed** | **Shrublands** | **Herbaceous** | **Planted/**  **Cultivated** | **Wetlands** | **Total** | **U\_Accuracy** | **Kappa** |
| 1 | Water | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 1 | 0 |
| 2 | Developed | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 10 | 0.7 | 0 |
| 3 | Barren | 1 | 0 | 4 | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 10 | 0.4 | 0 |
| 4 | Deciduous | 0 | 0 | 1 | 106 | 20 | 5 | 0 | 0 | 0 | 0 | 132 | 0.803030303 | 0 |
| 5 | Coniferous | 1 | 1 | 0 | 5 | 114 | 3 | 1 | 0 | 0 | 2 | 127 | 0.897637795 | 0 |
| 6 | Mixed | 1 | 2 | 0 | 1 | 5 | 37 | 0 | 0 | 0 | 0 | 46 | 0.804347826 | 0 |
| 7 | Shrublands | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 0 | 2 | 10 | 0.6 | 0 |
| 8 | Herbaceous | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 7 | 0 | 0 | 12 | 0.583333333 | 0 |
| 9 | Planted/  Cultivated | 0 | 3 | 3 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 10 | 0.2 | 0 |
| 10 | Wetlands | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 4 | 12 | 0.333333333 | 0 |
| 11 | Total | 53 | 13 | 9 | 123 | 139 | 47 | 11 | 11 | 4 | 9 | 419 | 0 | 0 |
| 12 | P\_Accuracy | 0.943396226 | 0.538461538 | 0.444444444 | 0.861788618 | 0.820143885 | 0.787234043 | 0.545454545 | 0.636363636 | 0.5 | 0.444444444 | 0 | 0.804295943 | 0 |
| 13 | Kappa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.747831193 |

**2021 LULC Accuracy Assessment Confusion Matrix**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **OBJECTID** | **ClassValue** | **Masked** | **Water** | **Developed** | **Barren** | **Deciduous** | **Coniferous** | **Mixed Forest** | **Shrublands** | **Herbaceous** | **Planted/**  **Cultivated** | **Wetlands** | **Total** | **U\_Accuracy** | **Kappa** |
| 1 | Masked | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1 | 0 |
| 2 | Water | 0 | 49 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0.98 | 0 |
| 3 | Developed | 0 | 0 | 5 | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 4 | 15 | 0.333333333 | 0 |
| 4 | Barren | 0 | 0 | 0 | 5 | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 10 | 0.5 | 0 |
| 5 | Deciduous | 0 | 1 | 1 | 1 | 142 | 9 | 0 | 0 | 0 | 0 | 1 | 155 | 0.916129032 | 0 |
| 6 | Coniferous | 0 | 0 | 0 | 0 | 5 | 105 | 3 | 0 | 1 | 0 | 0 | 114 | 0.921052632 | 0 |
| 7 | Mixed | 0 | 0 | 0 | 0 | 1 | 2 | 18 | 0 | 0 | 0 | 0 | 21 | 0.857142857 | 0 |
| 8 | Shrubland | 0 | 0 | 0 | 0 | 5 | 0 | 3 | 2 | 0 | 0 | 0 | 10 | 0.2 | 0 |
| 9 | Herbaceous | 0 | 0 | 2 | 0 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 10 | 0.1 | 0 |
| 10 | Planted/  Cultivated | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 6 | 1 | 11 | 0.545454545 | 0 |
| 11 | Wetlands | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 10 | 0.8 | 0 |
| 12 | Total | 10 | 50 | 8 | 10 | 161 | 121 | 25 | 5 | 2 | 8 | 16 | 416 | 0 | 0 |
| 13 | P\_Accuracy | 1 | 0.98 | 0.625 | 0.5 | 0.881987578 | 0.867768595 | 0.72 | 0.4 | 0.5 | 0.75 | 0.5 | 0 | 0.84375 | 0 |
| 14 | Kappa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.793025321 |