land

# Supplementary tables

**Table S1.** Summarised data for the pixel count and Area (ha) for each land cover class at each time period, at the municipal scale (entire LGA). NV = non-vegetated; PV = partially vegetated; V = vegetated.

| | Land cover class | Bayside | Hobsons Bay | Hume | Melbourne | Mornington Peninsula | Whitehorse |
|---|---|---|---|---|---|---|---|
| Pixels per class 2001 | NV | 6103 | 22172 | 36574 | 26901 | 24423 | 19243 |
| | PV | 10186 | 14324 | 17614 | 3681 | 40340 | 22403 |
| | V | 35888 | 53934 | 652934 | 20430 | 960723 | 48940 |
| Area (Ha) 2001 | NV | 549.3 | 1995.5 | 3291.7 | 2421.1 | 2198.1 | 1731.9 |
| | PV | 916.7 | 1289.2 | 1585.3 | 331.3 | 3630.6 | 2016.3 |
| | V | 3229.9 | 4854.1 | 58764.1 | 1838.7 | 86465.1 | 4404.6 |
| Pixels per class 2006 | NV | 7607 | 26202 | 77288 | 27977 | 30286 | 27491 |
| | PV | 13297 | 17870 | 73959 | 3890 | 51541 | 20258 |
| | V | 31273 | 46356 | 555854 | 19145 | 943659 | 42837 |
| Area (Ha) 2006 | NV | 684.6 | 2358.2 | 6955.9 | 2517.9 | 2725.7 | 2474.2 |
| | PV | 1196.7 | 1608.3 | 6656.3 | 350.1 | 4638.7 | 1823.2 |
| | V | 2814.6 | 4172.0 | 50026.9 | 1723.1 | 84929.3 | 3855.3 |
| Pixels per class 2011 | NV | 8081 | 24255 | 61719 | 27432 | 25435 | 15847 |
| | PV | 14519 | 15570 | 28958 | 3895 | 40272 | 33981 |
| | V | 29577 | 50586 | 616423 | 19688 | 959779 | 40740 |
| Area (Ha) 2011 | NV | 727.3 | 2183.0 | 5554.7 | 2468.9 | 2289.2 | 1426.2 |
| | PV | 1306.7 | 1401.3 | 2606.2 | 350.6 | 3624.5 | 3058.3 |
| | V | 2661.9 | 4552.7 | 55478.1 | 1771.9 | 86380.1 | 3666.6 |
| Pixels per class 2016 | NV | 11336 | 30077 | 95724 | 28392 | 28857 | 28795 |
| | PV | 18692 | 21317 | 78996 | 3992 | 55939 | 29700 |
| | V | 22149 | 39017 | 532380 | 18631 | 940690 | 32073 |
| Area (Ha) 2016 | NV | 1020.2 | 2706.9 | 8615.2 | 2555.3 | 2597.1 | 2591.6 |
| | PV | 1682.3 | 1918.5 | 7109.6 | 359.3 | 5034.5 | 2673.0 |
| | V | 1993.4 | 3511.5 | 47914.2 | 1676.8 | 84662.1 | 2886.6 |

**Table S2.** Summarised data for the pixel count and Area (ha) for each land cover class at each time period, at the scale of 2002 Public Open Space features within four LGAs. NV = non-vegetated; PV = partially vegetated; V = vegetated.

| | Land cover class | Bayside | Hobsons Bay | Melbourne | Whitehorse |
|---|---|---|---|---|---|
| Pixels per class 2001 | NV | 589 | 2996 | 915 | 1271 |
| | PV | 475 | 1210 | 463 | 938 |
| | V | 8491 | 18887 | 10348 | 11584 |
| Area (Ha) 2001 | NV | 53.0 | 269.6 | 82.4 | 114.4 |
| | PV | 42.8 | 108.9 | 41.7 | 84.4 |
| | V | 764.2 | 1699.8 | 931.3 | 1042.6 |
| Pixels per class 2006 | NV | 646 | 3183 | 934 | 1729 |
| | PV | 657 | 1342 | 562 | 749 |
| | V | 8252 | 18568 | 10230 | 11315 |
| Area (Ha) 2006 | NV | 58.1 | 286.5 | 84.1 | 155.6 |
| | PV | 59.1 | 120.8 | 50.6 | 67.4 |
| | V | 742.7 | 1671.1 | 920.7 | 1018.4 |
| Pixels per class 2011 | NV | 630 | 3057 | 917 | 1373 |
| | PV | 640 | 1218 | 472 | 1146 |
| | V | 8285 | 18818 | 10337 | 11272 |
| Area (Ha) 2011 | NV | 56.7 | 275.1 | 82.5 | 123.6 |
| | PV | 57.6 | 109.6 | 42.5 | 103.1 |
| | V | 745.7 | 1693.6 | 930.3 | 1014.5 |
| Pixels per class 2016 | NV | 859 | 3602 | 921 | 1876 |
| | PV | 852 | 1922 | 525 | 1124 |
| | V | 7844 | 17569 | 10280 | 10791 |
| Area (Ha) 2016 | NV | 77.3 | 324.2 | 82.9 | 168.8 |
| | PV | 76.7 | 173.0 | 47.3 | 101.2 |
| | V | 706.0 | 1581.2 | 925.2 | 971.2 |

**Table S3: Absolute dynamic change for each land cover class between the different time periods, summarised at the municipal scale (entire LGA).** Absolute gain represents the number of pixels transitioning from NV = non-vegetated to V = vegetated. Absolute loss represents the number of pixels transitioning from V = vegetated to NV = non-vegetated.

| | Bayside | Hobsons Bay | Hume | Melbourne | Mornington Peninsula | Whitehorse |
|---|---|---|---|---|---|---|
| **T1: 2001—2006** | | | | | | |
| Absolute Gain (Pixels) | 29 | 282 | 404 | 508 | 430 | 148 |
| Absolute Loss (Pixels) | 403 | 2087 | 30887 | 1246 | 5070 | 1744 |
| Absolute Gain (Ha) | 2.61 | 25.38 | 36.36 | 45.72 | 38.7 | 13.32 |
| Absolute Loss (Ha) | 36.27 | 187.83 | 2779.83 | 112.14 | 456.3 | 156.96 |
| Total pixels in LGA feature | 52177 | 90430 | 707122 | 51012 | 1025486 | 90586 |
| Absolute Gain (%) | 0.06% | 0.31% | 0.06% | 1.00% | 0.04% | 0.16% |
| Absolute Loss (%) | 0.77% | 2.31% | 4.37% | 2.44% | 0.49% | 1.93% |
| **T2: 2006—2012** | | | | | | |
| Absolute Gain (Pixels) | 31 | 1178 | 14234 | 905 | 2118 | 325 |
| Absolute Loss (Pixels) | 404 | 1303 | 8056 | 796 | 2873 | 402 |
| Absolute Gain (Ha) | 2.79 | 106.02 | 1281.06 | 81.45 | 190.62 | 29.25 |
| Absolute Loss (Ha) | 36.36 | 117.27 | 725.04 | 71.64 | 258.57 | 36.18 |
| Total pixels in LGA feature | 52177 | 90430 | 707122 | 51012 | 1025486 | 90586 |
| Absolute Gain (%) | 0.06% | 1.30% | 2.01% | 1.77% | 0.21% | 0.36% |
| Absolute Loss (%) | 0.77% | 1.44% | 1.14% | 1.56% | 0.28% | 0.44% |
| **T3: 2011—2016** | | | | | | |
| Absolute Gain (Pixels) | 17 | 154 | 1509 | 291 | 567 | 4 |
| Absolute Loss (Pixels) | 678 | 2493 | 27817 | 1326 | 2633 | 1212 |
| Absolute Gain (Ha) | 1.53 | 13.86 | 135.81 | 26.19 | 51.03 | 0.36 |
| Absolute Loss (Ha) | 61.02 | 224.37 | 2503.53 | 119.34 | 236.97 | 109.08 |
| Total pixels in LGA feature | 52177 | 90430 | 707122 | 51012 | 1025486 | 90586 |
| Absolute Gain (%) | 0.03% | 0.17% | 0.21% | 0.57% | 0.06% | 0.00% |
| Absolute Loss (%) | 1.30% | 2.76% | 3.93% | 2.60% | 0.26% | 1.34% |

**Table S4.** Absolute dynamic change for each land cover class between the different time periods, summarised at the scale of 2002 Public Open Space features within four LGAs. Absolute gain represents the number of pixels transitioning from NV = non-vegetated to V = vegetated. Absolute loss represents the number of pixels transitioning from V = vegetated to NV = non-vegetated.

| | Bayside | Hobsons Bay | Melbourne | Whitehorse |
|---|---|---|---|---|
| **T1: 2001—2006** | | | | |
| Absolute Gain (Pixels) | 8 | 142 | 162 | 107 |
| Absolute Loss (Pixels) | 35 | 162 | 151 | 335 |
| Absolute Gain (Ha) | 0.72 | 12.78 | 14.58 | 9.63 |
| Absolute Loss (Ha) | 3.15 | 14.58 | 13.59 | 30.15 |
| Total pixels in LGA feature | 9555 | 23093 | 11726 | 13793 |
| Absolute Gain (%) | 0.08% | 0.61% | 1.38% | 0.78% |
| Absolute Loss (%) | 0.37% | 0.70% | 1.29% | 2.43% |
| **T2: 2006—2012** | | | | |
| Absolute Gain (Pixels) | 5 | 224 | 219 | 66 |
| Absolute Loss (Pixels) | 72 | 345 | 182 | 149 |
| Absolute Gain (Ha) | 0.45 | 20.16 | 19.71 | 5.94 |
| Absolute Loss (Ha) | 6.48 | 31.05 | 16.38 | 13.41 |
| Total pixels in LGA feature | 9555 | 23093 | 11726 | 13793 |
| Absolute Gain (%) | 0.05% | 0.97% | 1.87% | 0.48% |
| Absolute Loss (%) | 0.75% | 1.49% | 1.55% | 1.08% |
| **T3: 2011—2016** | | | | |
| Absolute Gain (Pixels) | 3 | 30 | 39 | 4 |
| Absolute Loss (Pixels) | 53 | 246 | 93 | 119 |
| Absolute Gain (Ha) | 0.27 | 2.7 | 3.51 | 0.36 |
| Absolute Loss (Ha) | 4.77 | 22.14 | 8.37 | 10.71 |
| Total pixels in LGA feature | 9555 | 23093 | 11726 | 13793 |
| Absolute Gain (%) | 0.03% | 0.13% | 0.33% | 0.03% |
| Absolute Loss (%) | 0.55% | 1.07% | 0.79% | 0.86% |

**Table S5.** Potential and total dynamic change for each land cover class between the different time periods, summarised at the municipal scale (entire LGA). Potential Gain was recorded if non-vegetated (NV) pixels changed to partially vegetated (PV) or if partially vegetated (PV) pixels changed to vegetated (V) pixels. Potential loss was recorded if vegetated (V) pixels changed to partially vegetated (PV) pixels, or partially vegetated (PV) pixels changed to non-vegetated (NV) pixels. Total Gain and Total Loss represented the Potential Gain/Loss + Absolute Gain/Loss (Table S3).

| | Bayside | Hobsons Bay | Hume | Melbourne | Mornington Peninsula | Whitehorse |
|---|---|---|---|---|---|---|
| **T1: 2001—2006** | | | | | | |
| Total Pixels | 52177 | 90430 | 707122 | 51012 | 1025486 | 90586 |
| Potential Gain (Pixels) | 1140 | 1702 | 1001 | 788 | 11879 | 2855 |
| Potential Loss (Pixels) | 5381 | 7474 | 67590 | 1335 | 24303 | 7362 |
| Potential Gain (%) | 2.18% | 1.88% | 0.14% | 1.54% | 1.16% | 3.15% |
| Potential Loss (%) | 10.31% | 8.26% | 9.56% | 2.62% | 2.37% | 8.13% |
| Total Gain (Pixels) | 1169 | 1984 | 1405 | 1296 | 12309 | 3003 |
| Total Loss (Pixels) | 5784 | 9561 | 98477 | 2581 | 29373 | 9106 |
| Total Gain (%) | 2.24% | 2.19% | 0.20% | 2.54% | 1.20% | 3.32% |
| Total Loss (%) | 11.09% | 10.57% | 13.93% | 5.06% | 2.86% | 10.05% |
| **T2: 2006—2011** | | | | | | |
| Total Pixels | 52177 | 90430 | 707122 | 51012 | 1025486 | 90586 |
| Potential Gain (Pixels) | 2732 | 6741 | 59196 | 1288 | 27747 | 4361 |
| Potential Loss (Pixels) | 4055 | 2376 | 4800 | 854 | 10872 | 6381 |
| Potential Gain (%) | 5.24% | 7.45% | 8.37% | 2.52% | 2.71% | 4.81% |
| Potential Loss (%) | 7.77% | 2.63% | 0.68% | 1.67% | 1.06% | 7.04% |
| Total Gain (Pixels) | 2763 | 7919 | 73430 | 2193 | 29865 | 4686 |
| Total Loss (Pixels) | 4459 | 3679 | 12856 | 1650 | 13745 | 6783 |
| Total Gain (%) | 5.30% | 8.76% | 10.38% | 4.30% | 2.91% | 5.17% |
| Total Loss (%) | 8.55% | 4.07% | 1.82% | 3.23% | 1.34% | 7.49% |
| **T3: 2011—2016** | | | | | | |
| Total Pixels | 52177 | 90430 | 707122 | 51012 | 1025486 | 90586 |
| Potential Gain (Pixels) | 864 | 944 | 3783 | 1001 | 8047 | 1764 |
| Potential Loss (Pixels) | 7631 | 10174 | 61518 | 1023 | 25069 | 9223 |
| Potential Gain (%) | 1.66% | 1.04% | 0.53% | 1.96% | 0.78% | 1.95% |
| Potential Loss (%) | 14.63% | 11.25% | 8.70% | 2.01% | 2.44% | 10.18% |
| Total Gain (Pixels) | 881 | 1098 | 5292 | 1292 | 8614 | 1768 |
| Total Loss (Pixels) | 8309 | 12667 | 89335 | 2349 | 27702 | 10435 |
| Total Gain (%) | 1.69% | 1.21% | 0.75% | 2.53% | 0.84% | 1.95% |
| Total Loss (%) | 15.92% | 14.01% | 12.63% | 4.60% | 2.70% | 11.52% |

**Table S6.** Potential and total dynamic change for each land cover class between the different time periods, summarised at the scale of 2002 Public Open Space features within four LGAs. Potential Gain was recorded if non-vegetated (NV) pixels changed to partially vegetated (PV) or if partially vegetated (PV) pixels changed to vegetated (V) pixels. Potential loss was recorded if vegetated (V) pixels changed to partially vegetated (PV) pixels, or partially vegetated (PV) pixels changed to non-vegetated (NV) pixels. Total Gain and Total Loss represented the Potential Gain/Loss + Absolute Gain/Loss (Table S4).

| | **Bayside** | **Hobsons Bay** | **Melbourne** | **Whitehorse** |
|---|---|---|---|---|
| **T1: 2001—2006** | | | | |
| Total Pixels | 9555 | 23093 | 11726 | 13793 |
| Potential Gain (Pixels) | 45 | 312 | 140 | 277 |
| Potential Loss (Pixels) | 257 | 611 | 269 | 318 |
| Potential Gain (%) | 0.47% | 1.35% | 1.19% | 2.01% |
| Potential Loss (%) | 2.69% | 2.65% | 2.29% | 2.31% |
| Total Gain (Pixels) | 53 | 454 | 302 | 384 |
| Total Loss (Pixels) | 292 | 773 | 420 | 653 |
| Total Gain (%) | 0.55% | 1.97% | 2.58% | 2.78% |
| Total Loss (%) | 3.06% | 3.35% | 3.58% | 4.73% |
| **T2: 2006—2011** | | | | |
| Total Pixels | 9555 | 23093 | 11726 | 13793 |
| Potential Gain (Pixels) | 240 | 656 | 215 | 356 |
| Potential Loss (Pixels) | 140 | 285 | 145 | 316 |
| Potential Gain (%) | 2.51% | 2.84% | 1.83% | 2.58% |
| Potential Loss (%) | 1.47% | 1.23% | 1.24% | 2.29% |
| Total Gain (Pixels) | 245 | 880 | 434 | 422 |
| Total Loss (Pixels) | 212 | 630 | 327 | 465 |
| Total Gain (%) | 2.56% | 3.81% | 3.70% | 3.06% |
| Total Loss (%) | 2.22% | 2.73% | 2.79% | 3.37% |
| **T3: 2011—2016** | | | | |
| Total Pixels | 9555 | 23093 | 11726 | 13793 |
| Potential Gain (Pixels) | 58 | 163 | 162 | 115 |
| Potential Loss (Pixels) | 449 | 1196 | 165 | 481 |
| Potential Gain (%) | 0.61% | 0.71% | 1.38% | 0.83% |
| Potential Loss (%) | 4.70% | 5.18% | 1.41% | 3.49% |
| Total Gain (Pixels) | 61 | 193 | 201 | 119 |
| Total Loss (Pixels) | 502 | 1442 | 258 | 600 |
| Total Gain (%) | 0.64% | 0.84% | 1.71% | 0.86% |
| Total Loss (%) | 5.25% | 6.24% | 2.20% | 4.35% |