

Supplementary Material

Where to prescribe burn: the costs and benefits of prescribed burning close to houses

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Table S1. Prescribed burning costs and area treated per combination of treatment size and distance from towns (landscape treatments, minimum cost plus net value change model and minimum house loss model)

| Distance from closest town (km) | Size of treatment (ha) | Hectares treated per regime | | | | Coefficient β_i | Coefficient μ_x | Estimated cost/ha (AU\$) ^a | Costs per regime (AU\$) ^b | | | |
|---------------------------------|------------------------|-----------------------------|--------|---------|---------|-----------------------|---------------------|---------------------------------------|--------------------------------------|-----------|-----------|------------|
| | | 5% | 10% | 15% | 20% | | | | 5% | 10% | 15% | 20% |
| < 5 | < 100 | 80 | 160 | 240 | 320 | 5.05 | 1.66 | 771 | 61,700 | 123,400 | 185,100 | 246,800 |
| < 5 | 100-500 | 400 | 790 | 1,190 | 1,580 | 5.05 | 1.66 | 771 | 308,490 | 609,280 | 917,770 | 1,218,550 |
| < 5 | 500-1500 | 750 | 1,500 | 2,250 | 3,000 | 5.05 | 0.51 | 237 | 177,710 | 355,420 | 533,130 | 710,840 |
| < 5 | > 1500 | 0 | 0 | 0 | 0 | 5.05 | 0.37 | 172 | 0 | 0 | 0 | 0 |
| 5-10 | < 100 | 120 | 240 | 360 | 470 | 1.29 | 1.66 | 197 | 23,640 | 47,280 | 70,920 | 92,590 |
| 5-10 | 100-500 | 990 | 1,970 | 2,960 | 3,950 | 1.29 | 1.66 | 197 | 195,040 | 388,110 | 583,150 | 778,180 |
| 5-10 | 500-1500 | 2,250 | 4,500 | 6,750 | 9,010 | 1.29 | 0.51 | 61 | 136,190 | 272,370 | 408,560 | 545,350 |
| 5-10 | > 1500 | 2,760 | 5,530 | 8,300 | 11,060 | 1.29 | 0.37 | 44 | 121,200 | 242,830 | 364,470 | 485,660 |
| 10-20 | < 100 | 180 | 350 | 530 | 710 | 1.29 | 1.66 | 197 | 35,460 | 68,950 | 104,410 | 139,880 |
| 10-20 | 100-500 | 2,170 | 4,350 | 6,520 | 8,690 | 1.29 | 1.66 | 197 | 427,510 | 856,990 | 1,284,500 | 1,712,010 |
| 10-20 | 500-1500 | 3,380 | 6,750 | 10,130 | 13,510 | 1.29 | 0.51 | 61 | 204,580 | 408,560 | 613,140 | 817,720 |
| 10-20 | > 1500 | 9,680 | 19,360 | 29,030 | 38,710 | 1.29 | 0.37 | 44 | 425,060 | 850,130 | 1,274,750 | 1,699,820 |
| > 20 | < 100 | 20 | 40 | 60 | 80 | 0.67 | 1.66 | 102 | 2,050 | 4,090 | 6,140 | 8,190 |
| > 20 | 100-500 | 400 | 790 | 1,180 | 1,580 | 0.67 | 1.66 | 102 | 40,930 | 80,830 | 120,740 | 161,670 |
| > 20 | 500-1500 | 1,120 | 2,250 | 3,380 | 4,500 | 0.67 | 0.51 | 31 | 35,210 | 70,730 | 106,260 | 141,460 |
| > 20 | > 1500 | 15,200 | 30,420 | 45,620 | 60,830 | 0.67 | 0.37 | 23 | 346,660 | 693,780 | 1,040,450 | 1,387,340 |
| Total | | 39,500 | 79,000 | 118,500 | 158,000 | | | | 2,541,430 | 5,072,750 | 7,613,490 | 10,146,060 |

Notes: Coefficient β_i varies with distance from the closest town, coefficient μ_x varies with the size of the treatment (see Table 3 in main article).

^a Cost per hectare for each combination of distance from towns and treatment size are calculated by multiplying β_i , μ_x and W_p ; where W_p is the average per hectare cost of prescribed burning for DBCA. $W_p = \$92/\text{ha}$. Thus, for instance, per hectare costs of applying a treatment of 800 ha located 8 km from the closest town would be \$61/ha ($1.29 \times 0.51 \times \$92/\text{ha}$); and total costs of such treatment would be \$48,800.

^b Rounded to the nearest multiple of ten.

Table S2. Prescribed burning costs and area treated per combination of treatment size and distance from towns (WUI treatments, minimum cost plus net value change model and minimum house loss model)

| Distance from closest town (km) | Size of treatment (ha) | Hectares treated per regime | | | | Coefficient β_i | Coefficient μ_x | Estimated cost/ha (AU\$) | Costs per regime (AU\$) ^a | | | |
|---------------------------------|------------------------|-----------------------------|--------|---------|---------|-----------------------|---------------------|--------------------------|--------------------------------------|------------|------------|------------|
| | | 5% | 10% | 15% | 20% | | | | 5% | 10% | 15% | 20% |
| < 5 | < 100 | 3,448 | 3,448 | 3,448 | 3,448 | 5.05 | 1.66 | 771 | 2,659,250 | 2,659,250 | 2,659,250 | 2,659,250 |
| < 5 | 100-500 | 2,414 | 2,414 | 2,414 | 2,414 | 5.05 | 1.66 | 771 | 1,861,480 | 1,861,480 | 1,861,480 | 1,861,480 |
| < 5 | 500-1500 | 1,034 | 1,034 | 1,034 | 1,034 | 5.05 | 0.51 | 237 | 245,100 | 245,100 | 245,100 | 245,100 |
| < 5 | > 1500 | 0 | 0 | 0 | 0 | 5.05 | 0.37 | 172 | 0 | 0 | 0 | 0 |
| 5-10 | < 100 | 4,139 | 5,524 | 8,550 | 11,576 | 1.29 | 1.66 | 197 | 815,470 | 1,088,230 | 1,684,390 | 2,280,550 |
| 5-10 | 100-500 | 3,104 | 4,143 | 6,412 | 8,682 | 1.29 | 1.66 | 197 | 611,600 | 816,180 | 1,263,290 | 1,710,410 |
| 5-10 | 500-1500 | 2,070 | 2,762 | 4,275 | 5,788 | 1.29 | 0.51 | 61 | 125,270 | 167,170 | 258,750 | 350,320 |
| 5-10 | > 1500 | 1,035 | 1,381 | 2,137 | 2,894 | 1.29 | 0.37 | 44 | 45,440 | 60,640 | 93,860 | 127,080 |
| 10-20 | < 100 | 5,564 | 10,036 | 15,534 | 21,032 | 1.29 | 1.66 | 197 | 1,096,150 | 1,977,150 | 3,060,270 | 4,143,400 |
| 10-20 | 100-500 | 7,790 | 14,050 | 21,747 | 29,444 | 1.29 | 1.66 | 197 | 1,534,610 | 2,768,010 | 4,284,380 | 5,800,760 |
| 10-20 | 500-1500 | 5,564 | 10,036 | 15,534 | 21,032 | 1.29 | 0.51 | 61 | 336,770 | 607,440 | 940,200 | 1,272,970 |
| 10-20 | > 1500 | 3,338 | 6,022 | 9,320 | 12,619 | 1.29 | 0.37 | 44 | 146,590 | 264,410 | 409,270 | 554,120 |
| > 20 | < 100 | 0 | 363 | 562 | 761 | 0.67 | 1.66 | 102 | 0 | 37,150 | 57,490 | 77,840 |
| > 20 | 100-500 | 0 | 908 | 1,405 | 1,902 | 0.67 | 1.66 | 102 | 0 | 92,860 | 143,740 | 194,610 |
| > 20 | 500-1500 | 0 | 1,815 | 2,809 | 3,804 | 0.67 | 0.51 | 31 | 0 | 57,060 | 88,320 | 119,580 |
| > 20 | > 1500 | 0 | 15,065 | 23,319 | 31,572 | 0.67 | 0.37 | 23 | 0 | 343,590 | 531,820 | 720,050 |
| Total | | 39,500 | 79,000 | 118,500 | 158,000 | | | | 9,477,730 | 13,045,720 | 17,581,610 | 22,117,520 |

^a Rounded to the nearest multiple of ten.

Table S3. Prescribed burning costs and area treated according to treatment size (landscape treatments, equal asset value and modified costs model)

| Distance from closest town (km) | Size of treatment (ha) | Hectares treated per regime | | | | Coefficient μ_x | Estimated cost/ha (AU\$) ^a | Costs per regime (AU\$) ^b | | | |
|---------------------------------|------------------------|-----------------------------|--------|---------|---------|---------------------|---------------------------------------|--------------------------------------|-----------|-----------|-----------|
| | | 5% | 10% | 15% | 20% | | | 5% | 10% | 15% | 20% |
| < 5 | < 100 | 80 | 160 | 240 | 320 | 1.66 | 153 | 12,220 | 24,440 | 36,650 | 48,870 |
| < 5 | 100-500 | 400 | 790 | 1,190 | 1,580 | 1.66 | 153 | 61,090 | 120,650 | 181,740 | 241,300 |
| < 5 | 500-1500 | 750 | 1,500 | 2,250 | 3,000 | 0.51 | 47 | 35,190 | 70,380 | 105,570 | 140,760 |
| < 5 | > 1500 | 0 | 0 | 0 | 0 | 0.37 | 34 | 0 | 0 | 0 | 0 |
| 5-10 | < 100 | 120 | 240 | 360 | 470 | 1.66 | 153 | 18,330 | 36,650 | 54,980 | 71,780 |
| 5-10 | 100-500 | 990 | 1,970 | 2,960 | 3,950 | 1.66 | 153 | 151,190 | 300,860 | 452,050 | 603,240 |
| 5-10 | 500-1500 | 2,250 | 4,500 | 6,750 | 9,010 | 0.51 | 47 | 105,570 | 211,140 | 316,710 | 422,750 |
| 5-10 | > 1500 | 2,760 | 5,530 | 8,300 | 11,060 | 0.37 | 34 | 93,950 | 188,240 | 282,530 | 376,480 |
| 10-20 | < 100 | 180 | 350 | 530 | 710 | 1.66 | 153 | 27,490 | 53,450 | 80,940 | 108,430 |
| 10-20 | 100-500 | 2,170 | 4,350 | 6,520 | 8,690 | 1.66 | 153 | 331,400 | 664,330 | 995,730 | 1,327,140 |
| 10-20 | 500-1500 | 3,380 | 6,750 | 10,130 | 13,510 | 0.51 | 47 | 158,590 | 316,710 | 475,300 | 633,890 |
| 10-20 | > 1500 | 9,680 | 19,360 | 29,030 | 38,710 | 0.37 | 34 | 329,510 | 659,010 | 988,180 | 1,317,690 |
| > 20 | < 100 | 20 | 40 | 60 | 80 | 1.66 | 153 | 3,050 | 6,110 | 9,160 | 12,220 |
| > 20 | 100-500 | 400 | 790 | 1,180 | 1,580 | 1.66 | 153 | 61,090 | 120,650 | 180,210 | 241,300 |
| > 20 | 500-1500 | 1,120 | 2,250 | 3,380 | 4,500 | 0.51 | 47 | 52,550 | 105,570 | 158,590 | 211,140 |
| > 20 | > 1500 | 15,200 | 30,420 | 45,620 | 60,830 | 0.37 | 34 | 517,410 | 1,035,500 | 1,552,900 | 2,070,650 |
| Total | | 39,500 | 79,000 | 118,500 | 158,000 | | | 1,958,630 | 3,913,690 | 5,871,240 | 7,827,640 |

^a Cost per hectare depend only on treatment size. They are calculated by multiplying μ_x and W_p ; where W_p is the average per hectare cost of prescribed burning for DBCA. $W_p = \$92/\text{ha}$. Thus, for instance, per hectare costs of applying a treatment of 800 ha (regardless of location) would be $\$47/\text{ha}$ ($0.51 \times \$92/\text{ha}$); and total costs of such treatment would be $\$37,600$.

^b Rounded to the nearest multiple of ten.

Table S4. Prescribed burning costs and area treated according to treatment size (WUI treatments, equal asset value and modified costs model)

| Distance from closest town (km) | Size of treatment (ha) | Hectares treated per regime | | | | Coefficient μ_x | Estimated cost/ha (AU\$) | Costs per regime (AU\$) ^a | | | |
|---------------------------------|------------------------|-----------------------------|--------|---------|---------|---------------------|--------------------------|--------------------------------------|-----------|------------|------------|
| | | 5% | 10% | 15% | 20% | | | 5% | 10% | 15% | 20% |
| < 5 | < 100 | 3,448 | 3,448 | 3,448 | 3,448 | 1.66 | 153 | 526,580 | 526,580 | 526,580 | 526,580 |
| < 5 | 100-500 | 2,414 | 2,414 | 2,414 | 2,414 | 1.66 | 153 | 368,610 | 368,610 | 368,610 | 368,610 |
| < 5 | 500-1500 | 1,034 | 1,034 | 1,034 | 1,034 | 0.51 | 47 | 48,530 | 48,530 | 48,530 | 48,530 |
| < 5 | > 1500 | 0 | 0 | 0 | 0 | 0.37 | 34 | 0 | 0 | 0 | 0 |
| 5-10 | < 100 | 4,139 | 5,524 | 8,550 | 11,576 | 1.66 | 153 | 632,150 | 843,590 | 1,305,730 | 1,767,870 |
| 5-10 | 100-500 | 3,104 | 4,143 | 6,412 | 8,682 | 1.66 | 153 | 474,110 | 632,690 | 979,300 | 1,325,900 |
| 5-10 | 500-1500 | 2,070 | 2,762 | 4,275 | 5,788 | 0.51 | 47 | 97,110 | 129,590 | 200,580 | 271,570 |
| 5-10 | > 1500 | 1,035 | 1,381 | 2,137 | 2,894 | 0.37 | 34 | 35,230 | 47,010 | 72,760 | 98,510 |
| 10-20 | < 100 | 5,564 | 10,036 | 15,534 | 21,032 | 1.66 | 153 | 849,730 | 1,532,670 | 2,372,310 | 3,211,940 |
| 10-20 | 100-500 | 7,790 | 14,050 | 21,747 | 29,444 | 1.66 | 153 | 1,189,620 | 2,145,740 | 3,321,230 | 4,496,710 |
| 10-20 | 500-1500 | 5,564 | 10,036 | 15,534 | 21,032 | 0.51 | 47 | 261,060 | 470,880 | 728,840 | 986,800 |
| 10-20 | > 1500 | 3,338 | 6,022 | 9,320 | 12,619 | 0.37 | 34 | 113,640 | 204,970 | 317,260 | 429,550 |
| > 20 | < 100 | 0 | 363 | 562 | 761 | 1.66 | 153 | 0 | 55,440 | 85,810 | 116,180 |
| > 20 | 100-500 | 0 | 908 | 1,405 | 1,902 | 1.66 | 153 | 0 | 138,600 | 214,530 | 290,460 |
| > 20 | 500-1500 | 0 | 1,815 | 2,809 | 3,804 | 0.51 | 47 | 0 | 85,160 | 131,820 | 178,470 |
| > 20 | > 1500 | 0 | 15,065 | 23,319 | 31,572 | 0.37 | 34 | 0 | 512,830 | 793,760 | 1,074,700 |
| Total | | 39,500 | 79,000 | 118,500 | 158,000 | | | 4,596,370 | 7,742,890 | 11,467,650 | 15,192,380 |

^a Rounded to the nearest multiple of ten.