
Botanical implementation and validation monitoring of project buffers

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PREFACE

This report is the result of a cooperative Challenge Cost Share project between the Institute for Applied Ecology (IAE) and a federal agency. IAE is a non-profit organization dedicated to natural resource conservation, research, and education. Our aim is to provide a service to public and private agencies and individuals by developing and communicating information on ecosystems, species, and effective management strategies and by conducting research, monitoring, and experiments. IAE offers educational opportunities through 3-4 month internships. Our current activities are concentrated on rare and endangered plants and invasive species.

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Cover photographs: iButton monitoring station, *Allotropa virgata* at a buffer in the Grants Pass Resource Area (photographs by Andrea S. Thorpe).

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INTRODUCTION

Areas selected for timber harvest often contain rare and threatened species that are known to prefer interior and/or old forest habitats. Because of this, areas of uncut forest are frequently left where these species are known to occur in order to provide some refuge habitat. However, because these patches are surrounded by cut forest, they may be subject to edge effects that may have negative impacts on the species of concern.

Edge effects have been observed in a number of species. California red-backed voles (*Clethrionomys californicus*) were found six times more often in the interior of forest remnants than on edge (Mills 1995, but see Tallmon 2004). Distribution of the primary food item of red-backed voles, hypogeous sporocarps of mycorrhizal fungi, followed the same patterns as the voles' distribution, suggesting that that fungus was more abundant in the interior of forest remnants than along the edge (Mills 1995). Growth of two moss species in boreal forests in northern Sweden increased exponentially with distance from the edge to the interior in both north- and south-facing edges (Hylander 2005).

Gradients in microclimate variables have been found to be variable through space and time, and have been found to be affected by things such as the type of timber operation, the variables being measured, topographic relief, and forest type (Chen 1999, Danehy and Kirpes 2000, Meleason and Quinn 2004, and Anderson et al. 2007). For example, in one study, the depth to which the edge-effects penetrated the interior of a forest varied from 16 to 137 m (Chen 1992). One of the issues with utilizing these studies

In the Medford District of the Bureau of Land Management (BLM), areas of uncut forest (buffers) are left around Sensitive Species during timber operations. These buffers are typically 100 ft. in radius. However, if the buffer is located near a forest edge, the boundary of the timber harvest may be altered so that the buffer is contiguous with the adjacent uncut forest. The assumption guiding these practices has been that 100 ft. is sufficient to ameliorate the effects of the timber cut on environmental variables that would affect the growth of Sensitive Species. ***The objective of this study*** was to determine the appropriateness of using buffers with a 100 ft. radius to protect Sensitive Species.

METHODS

We selected nine study sites distributed in three resource areas in the Medford District for this study (Table 1). Sites were selected primarily based on the ability to locate obvious buffers.

Table 1. Locations of buffer study sites.

Resource Area	Buffer type*	UTM or Lat./Long.	TRS
Butte Falls			
BF1	edge	10529942N, 4715233E	T34S R2E S19
BF2	edge	10546866N, 4716669E	T34S R2E S23
Ashland			
Ash1	circular	10540911N, 4686990W	T37S R3E S19
Ash2	circular	10540786N, 4686234W	T37S R3E S19
Ash3	circular	10540572N, 4687754W	T37S R3E S19
Grants Pass			
GP3	edge	42°33'58", 123°29'35"	T34S R7W S35
GP4	edge	10T463639N, 4705620W	T35S R6W S29
GP8	circular	10T457440N, 4716380W	T34S R7W S27
GP13	edge	10T459672N, 4710165W	T35S R7W S11

*Edge buffers are those where the proposed buffer was located near the boundary of the timber harvest and so the boundary was altered in order to envelope the buffer. Circular buffers are those where the buffer was located in the interior of a designated harvest area and a circular buffer with a radius of 100 ft was left surrounding a sensitive species located near the center of the buffer.

At each site, we placed five monitoring stations, one each in the cut area, on the edge of the cut and buffer, 50 ft into the buffer, 100 ft into the buffer, and in the interior of an uncut forest. We determined the locations for each monitoring station by haphazardly selecting a location on the southern edge for the “edge” iButton station then running a transect into the center of the buffer. Monitoring stations were placed at 50 ft and 100 ft along the transect. For edge buffers, we continued the transect into the uncut forest and placed an “interior” monitoring station at least 160 ft into the interior of the forest. For circular buffers, entered the southern edge of the nearest uncut forest, then placed a monitoring station approximately 160 ft from the edge. 160 ft was selected as the distance for the interior stations as the aspect and slope of the area generally changed dramatically past this distance. We placed the cut stations along the same transect line, approximately 60 ft into the harvest area.

At each station, we used a densitometer to determine canopy cover and placed iButtons (Maxim/Dallas Semiconductor, Dallas, Texas; <http://www.ibutton.com>) to measure the belowground temperature and aboveground temperature and relative humidity. The iButtons were programmed to measure every 20 minutes. The belowground iButtons were placed on a fob, attached to a tag and wire and buried approximately 18 cm below ground. The wire was looped through a large nail with a washer at the top in order to aid in locating the iButton at the end of the monitoring period (Figure 1). The aboveground iButtons were placed on a fob, then attached to a wooden stake. Stakes were positioned facing north. We stapled a playing card to the top of each stake to shelter the iButton from direct sun and rain (Figure 1).

Monitoring stations were placed July 22 – 24 and recorded data until September 3 – 6. Based on these varying dates, we selected data from July 24 – September 2 for analysis. For each variable, we calculated the daily minimum, maximum, average, and

variance. Variance was calculated as $\sum(x-\bar{x})$. We also randomly selected one date, 1 August, and calculated the hourly minimum, maximum, average, and variance. All data was analyzed graphically.

RESULTS

Canopy cover

In both the Ashland and Butte Falls resource areas, canopy cover was lowest at the cut (Figure 2). In the Ashland RA, canopy cover increased slightly at the edge, then gradually increased further into the transect. At Butt Falls, canopy cover increased from the cut to 50 ft, then was relatively the same at 100 ft and the interior. Surprisingly, in Grants Pass, canopy cover decreased from cut to 50 ft, then increased towards the interior. Despite this variation between resource areas, when all the data was pooled, the canopy cover at the cut and edge positions were relatively similar, then cover increased gradually towards the interior (Figure 3).

Variability between resource areas

As with canopy cover, different patterns in hourly aboveground temperature, relative humidity, and belowground temperature were observed at each of the resource areas (Figure 4). However, as these differences were generally less than 1° and 4 %, we pooled the data between resource areas to look for generally patterns across the broader landscape.



Figure 1. A monitoring station to measure aboveground temperature and relative humidity. On the surface of the ground to the right of the stake you can see the washer and tag for a belowground iButton.

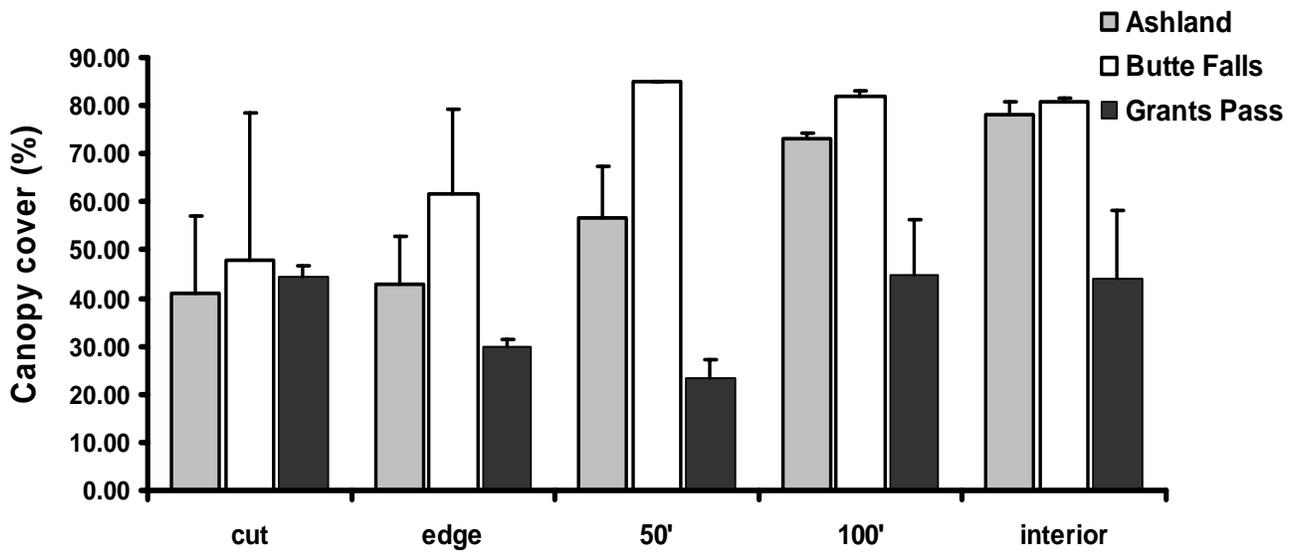


Figure 2. Average canopy cover (%) in each resource area at five locations along a transaction from a cut area into the interior of a forest. Bars are means + 1 S.E. Ashland, n=3; Butte Falls, n=2; Grants Pass, n=4.

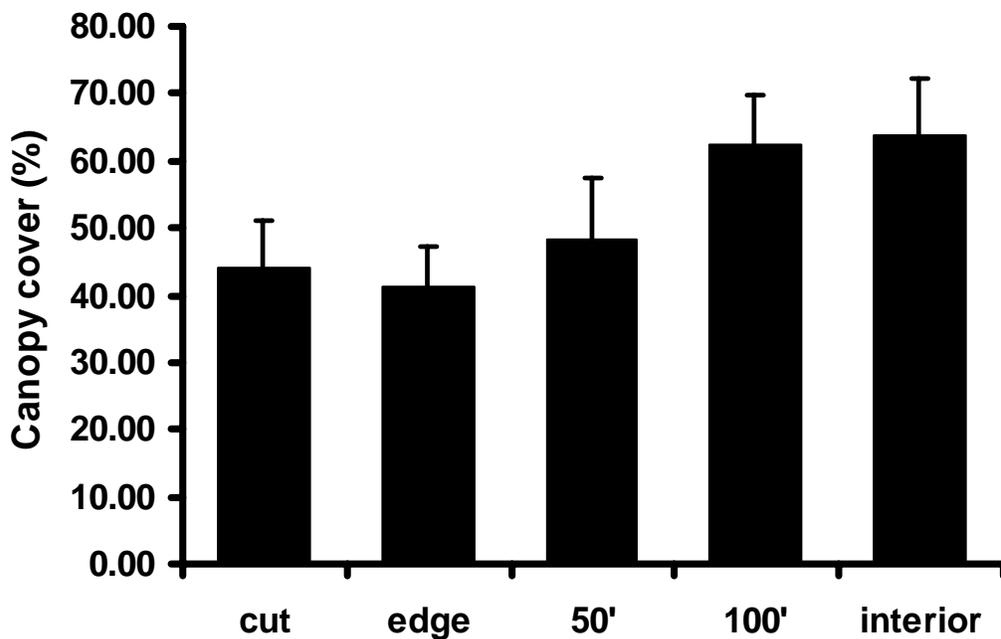


Figure 3. Average canopy cover (%) at five locations along a transaction from a cut area into the interior of a forest measured at nine sites in the Medford District, BLM. Bars are means + 1 S.E.

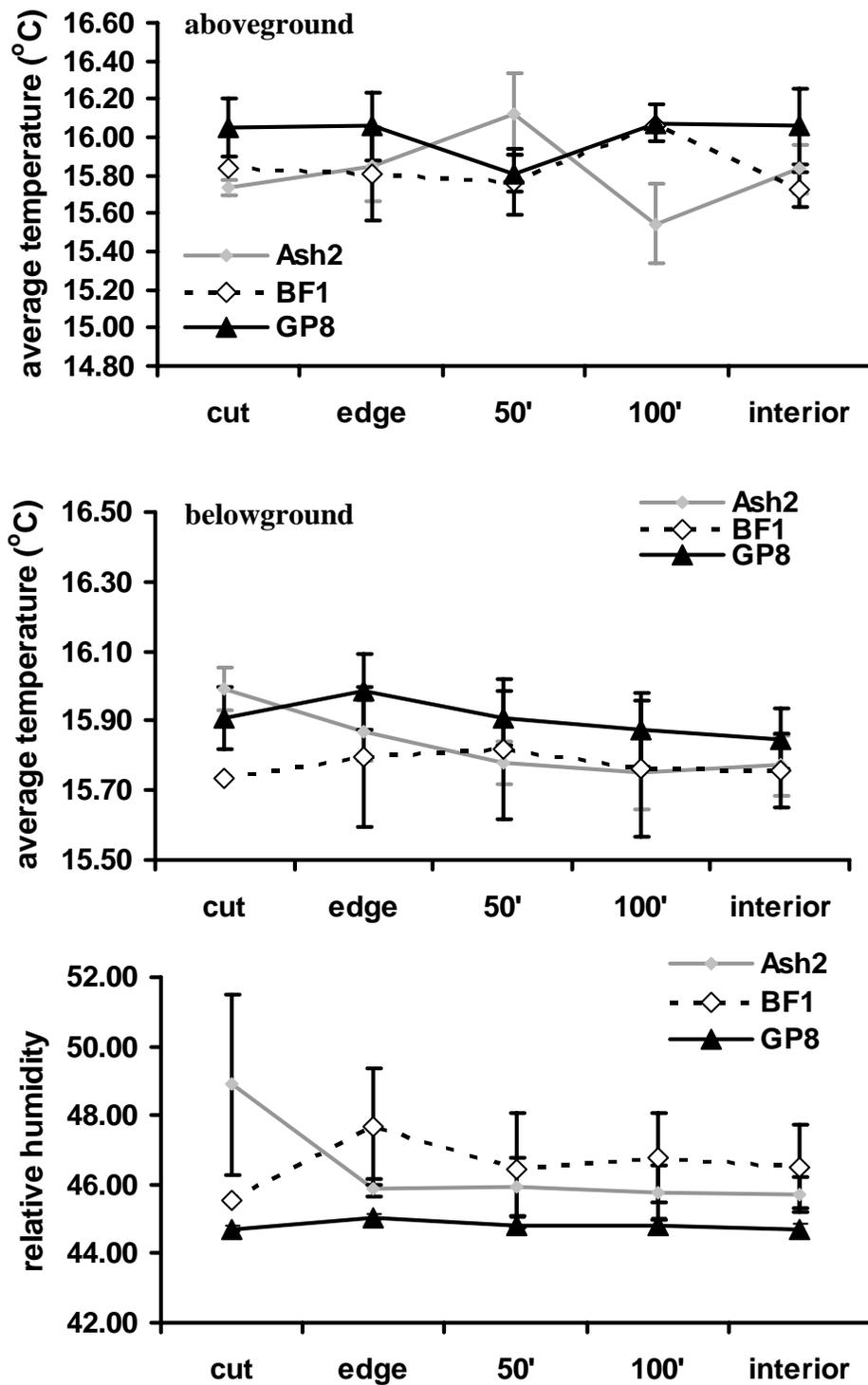


Figure 4. Average aboveground temperature, belowground temperature, and aboveground relative humidity on 1 August, 2007 in the Ashland (n=3), Butte Falls (n=2), and Grants Pass (n=4) Resource Areas. Values are means + 1 SE.

Belowground temperature

There was little difference in the average (Figure 5), minimum (Figure 7), and maximum (Figure 9) daily temperatures between the five transect locations; differences in daily averages were usually less than 1 °C. Differences were more apparent when viewed hourly for 1 August, 2007. The interior of the forest maintained the lowest average hourly temperature, while the edge location had the highest average hourly temperature (Figure 6). Average hourly temperature was intermediate in the cut, 50', and 100' locations. The interior of the forest also maintained the lowest minimum hourly temperature (Figure 8). The other locations on the transect fluctuated throughout the day. Though the cut had the highest minimum temperature approximately half of the day, the difference between this and the other transect locations was less than 0.5°C. In contrast to the other summaries of belowground temperature, the interior did not consistently have the lowest maximum hourly temperature (Figure 10). The maximum hourly temperature in the interior remained relatively stable from 12:00 AM to 4 PM. At the other transect locations, the maximum hourly temperature started higher than that in the interior, dropped lower than that in the interior from 4:00 AM to 11 AM, then increased to above the interior for most of the remainder of the day. The difference between locations was less than 1°C throughout the day.

Aboveground temperature

As with belowground daily temperatures, there was little difference in the average (Figure 11), minimum (Figure 13), and maximum (Figure 15) daily temperatures between the five transect locations; differences in daily averages were usually less than 1°C. There were differences between the transect locations when viewed hourly for 1 August, 2007. The average hourly aboveground temperature was consistently higher in the cut compared to all other transect locations, ranging from less than 0.5°C higher at 12:01 AM to almost 2°C greater at 11 PM (Figure 12). All other locations remained within approximately 0.5°C of each other with no clear gradient along the transect. The minimum aboveground hourly temperature varied the most in the cut and interior, which were similar throughout the daily (Figure 14). The minimum hourly temperature tended to be greatest at 100'. There was less than 1°C difference between locations at each hour. The maximum hourly aboveground temperature was most similar at the cut, interior, and 100' locations throughout the day (Figure 16). There was less than 1°C difference between locations at each hour.

Aboveground relative humidity

The average daily relative humidity (RH) of the cut was generally greater than the other locations until August 21 (Figure 17). After this, it was lower than that at the other locations. Although the interior forest tended to have a lower RH than the other locations on the transect, differences between locations were less than 1%. The daily minimum (Figure 19) and maximum (Figure 21) aboveground RH followed similar patterns as the average RH.

When viewed on an hourly basis, differences between locations on the transect were much more apparent. The average hourly RH in the cut was generally 1.5% greater

than the next highest location, edge, on 1 August, 2007 (Figure 18). Average hourly RH was lowest at interior and 50'; 100' was intermediate between edge and 50'. The differences between the four uncut locations were less than 1%.

The minimum daily RH at the uncut locations tended to follow a gradient, with the minimum RH being highest on the edge to lowest in the interior (Figure 20). When viewed hourly for 1 August, 2007, the same gradient is apparent at the uncut locations. Although the cut location tended to have a higher RH, it was also much more variable throughout the 24-hour period. Variability in the minimum RH of the uncut positions was higher on the edge and decreased towards the interior.

The maximum hourly RH in the cut was 1 – 2% greater than the uncut locations (Figure 22). The interior and 100' locations had very similar RH values throughout the 24-hour period. The edge had the highest RH values of the uncut positions, and 50' was intermediate between the edge and 100'.

Variance

The most dramatic effect of location on variance was in the variance in aboveground temperature. The variance in aboveground temperature ranged by approximately 250% (Figure 23). While the variance in aboveground temperature varied daily at the other locations, there was little difference between the uncut locations (Figure 24). There was little difference in variance in belowground temperature between any of the locations (Figure 25). In contrast, variance in relative humidity tended to follow a pattern of greatest variance in the interior to lowest variance in the cut.

DISCUSSION

While there was some edge effect for a few of the variables, this effect tended to be relatively small. There are a few factors that may have contributed to not finding much of an edge effect in this study. First, we monitored temperature and relative humidity in what is usually the hottest and driest time of the year when hourly and daily variation tend to be relatively small. Thus, the hot and dry conditions would be expected to penetrate further into the interior of the forest at this time of year. Second, many of these areas were subjected to thinning or selective cut, which still leave some of the forest canopy intact; the majority of the studies that have found significant edge effects studied the effects of clear-cutting which has a much greater effect on the canopy. Of note, Anderson et al. (2007) also reported finding small (1-4°C), but significant edge effects on microclimate when comparing thinned stands to unthinned stands. It is also of note that many species, particularly forbs and fungi, are either not active during this time period or are near the end of their yearly growth cycle.

We plan to repeat this study late April through June 2008 in order to determine if there is an edge effect on climatic variables at these sites at a time of year when we expect to find greater hourly and daily variation and that is more biologically relevant for Sensitive Species.

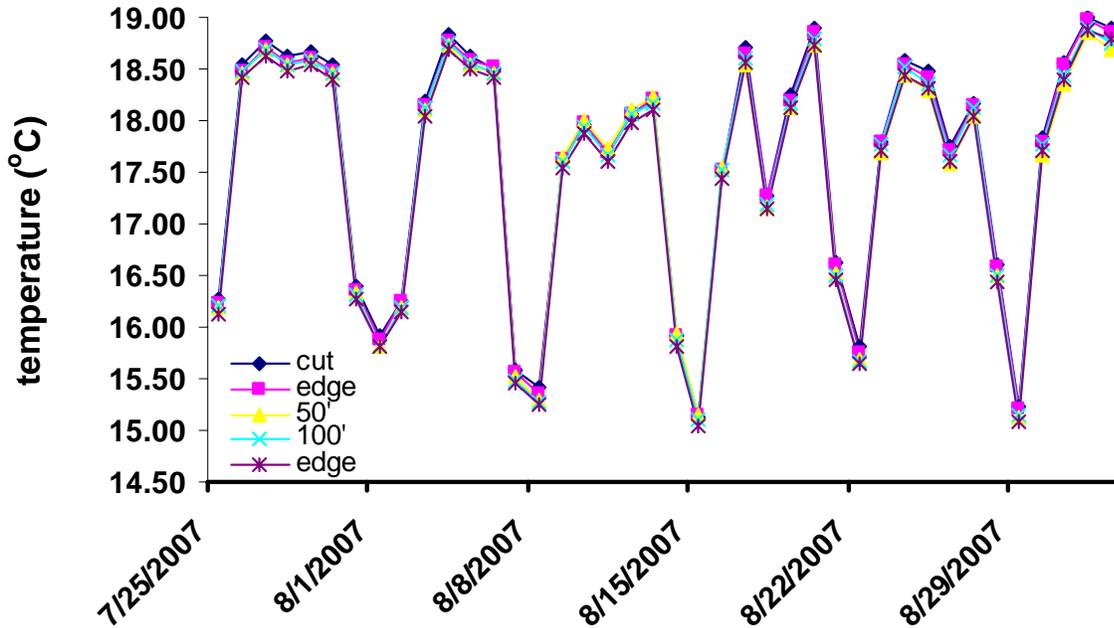


Figure 5. Average daily belowground temperature at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

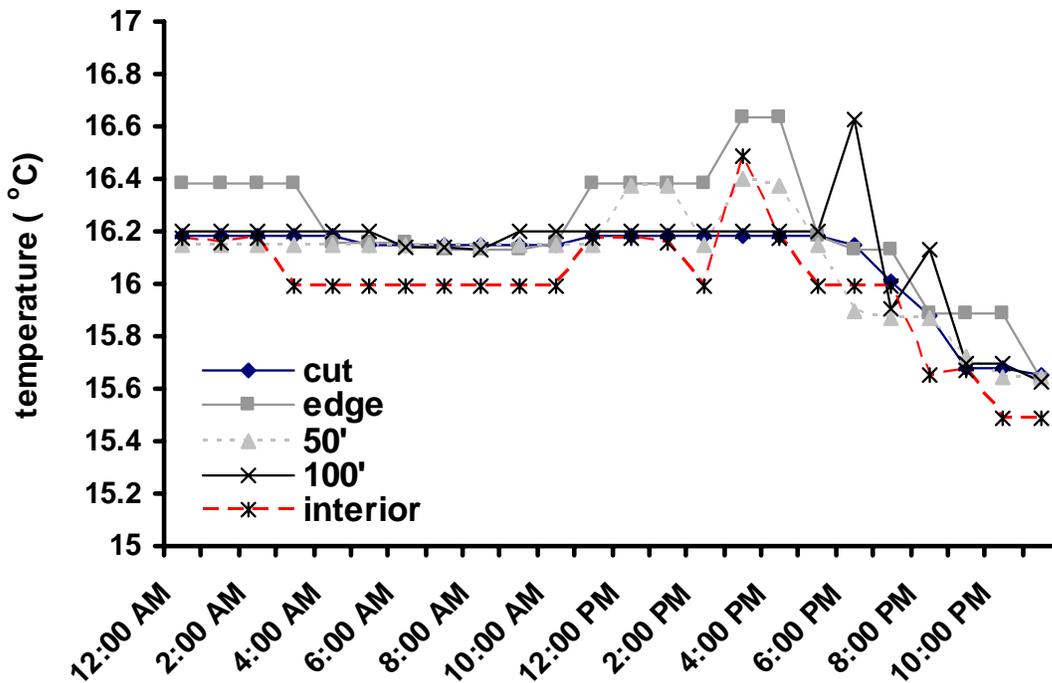


Figure 6. Average hourly belowground temperature on 1 August, 2007 at three locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

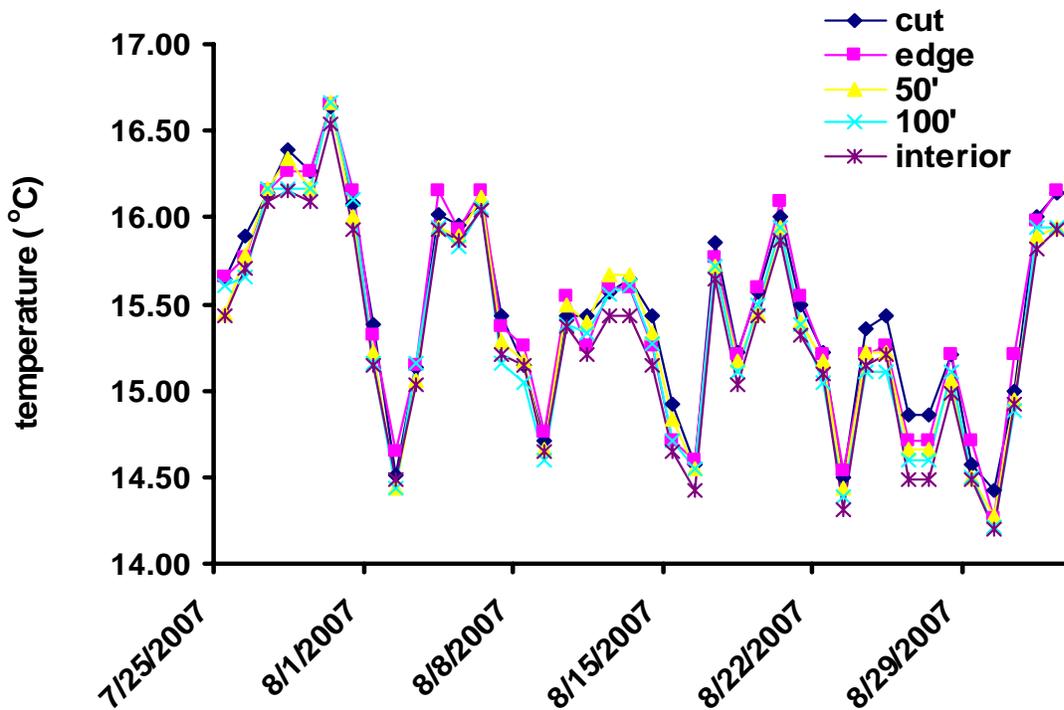


Figure 7. Minimum daily belowground temperature at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

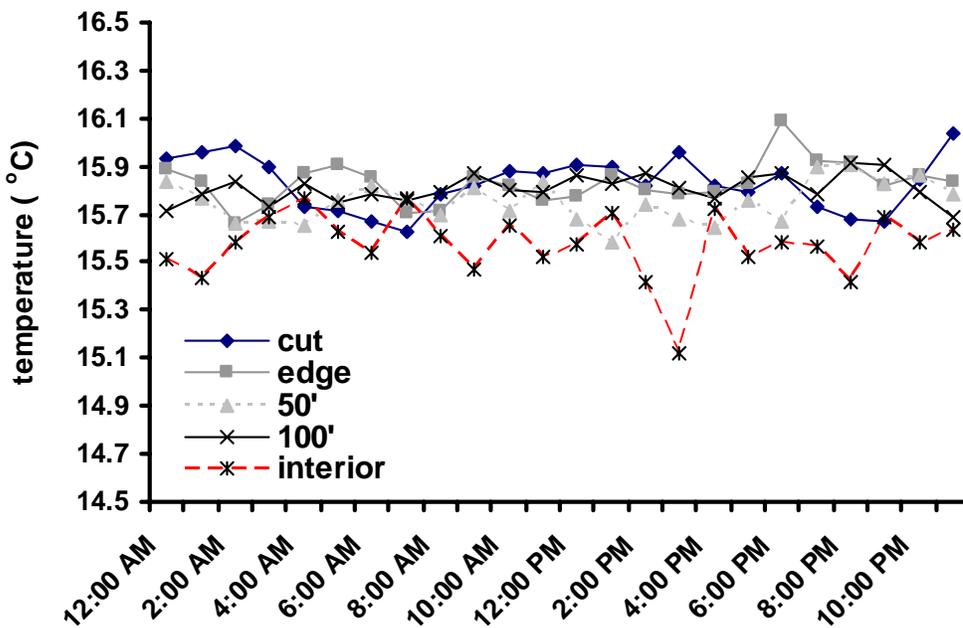


Figure 8. Minimum hourly belowground temperature on 1 August, 2007 at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

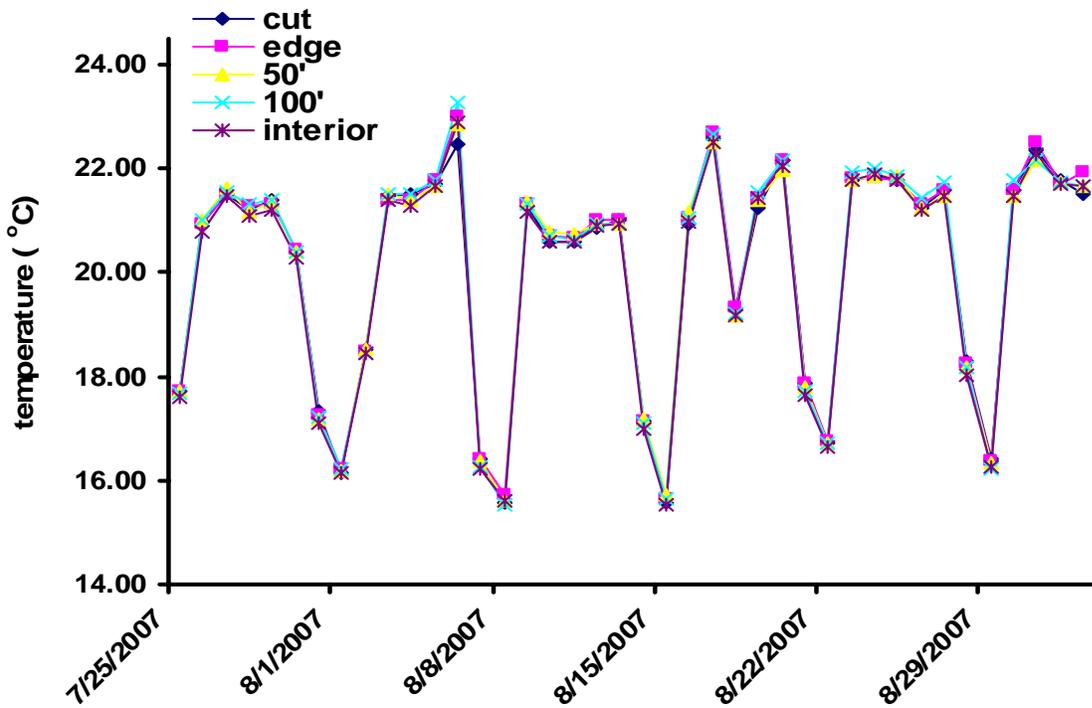


Figure 9. Maximum daily belowground temperature at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

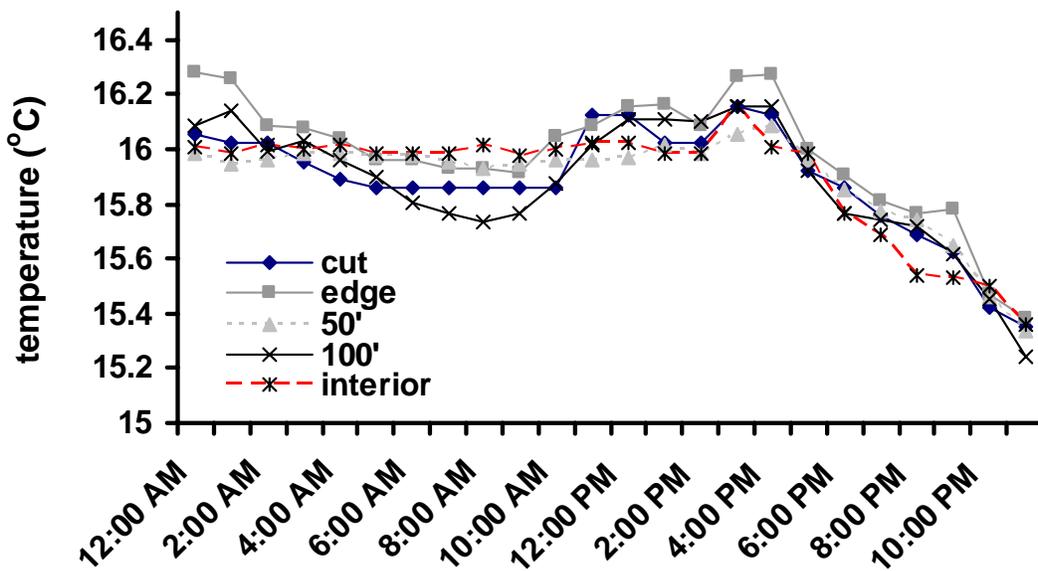


Figure 10. Maximum hourly belowground temperature on 1 August, 2007 at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

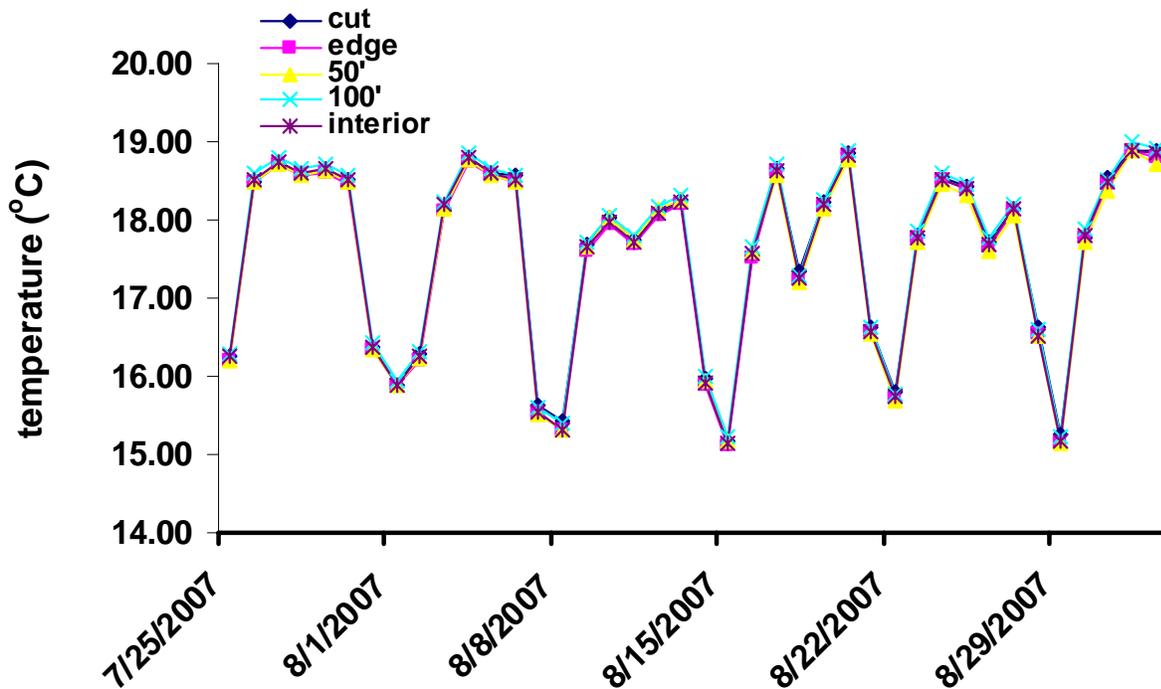


Figure 11. Average daily aboveground temperature at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

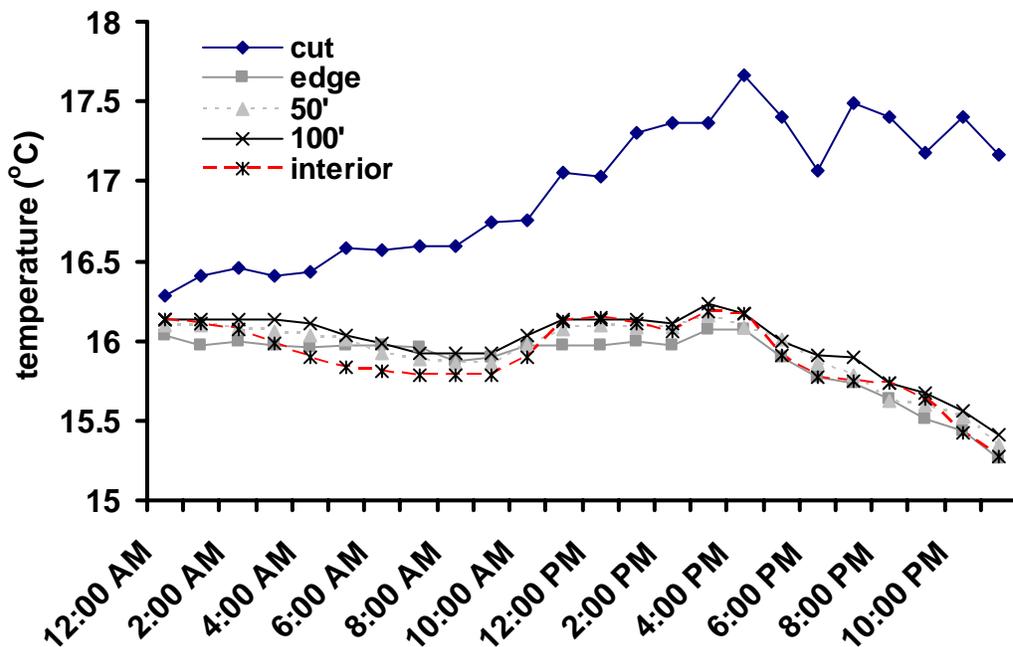


Figure 12. Average hourly Aboveground temperature on 1 August, 2007 at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

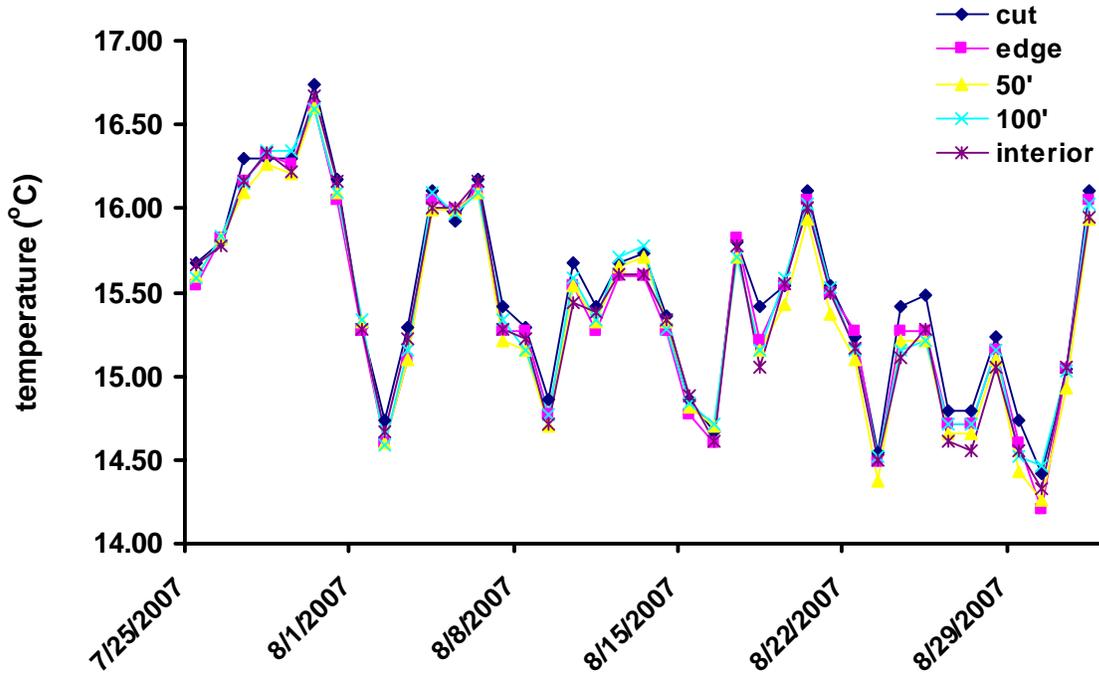


Figure 13. Minimum daily aboveground temperature at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

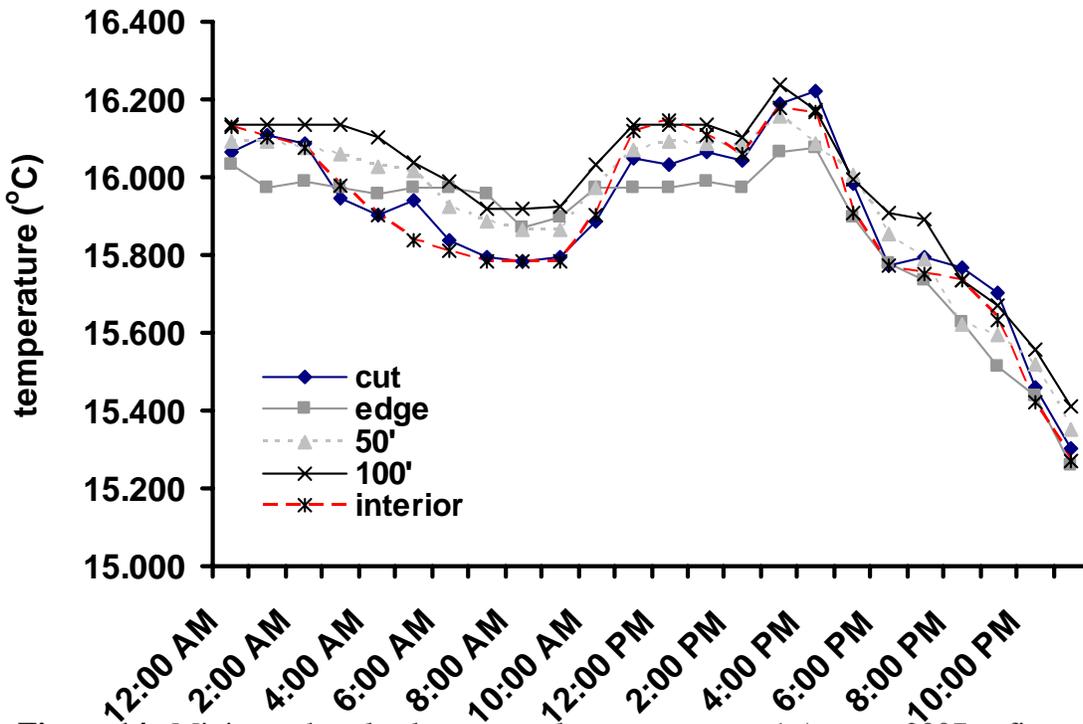


Figure 14. Minimum hourly aboveground temperature on 1 August, 2007 at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

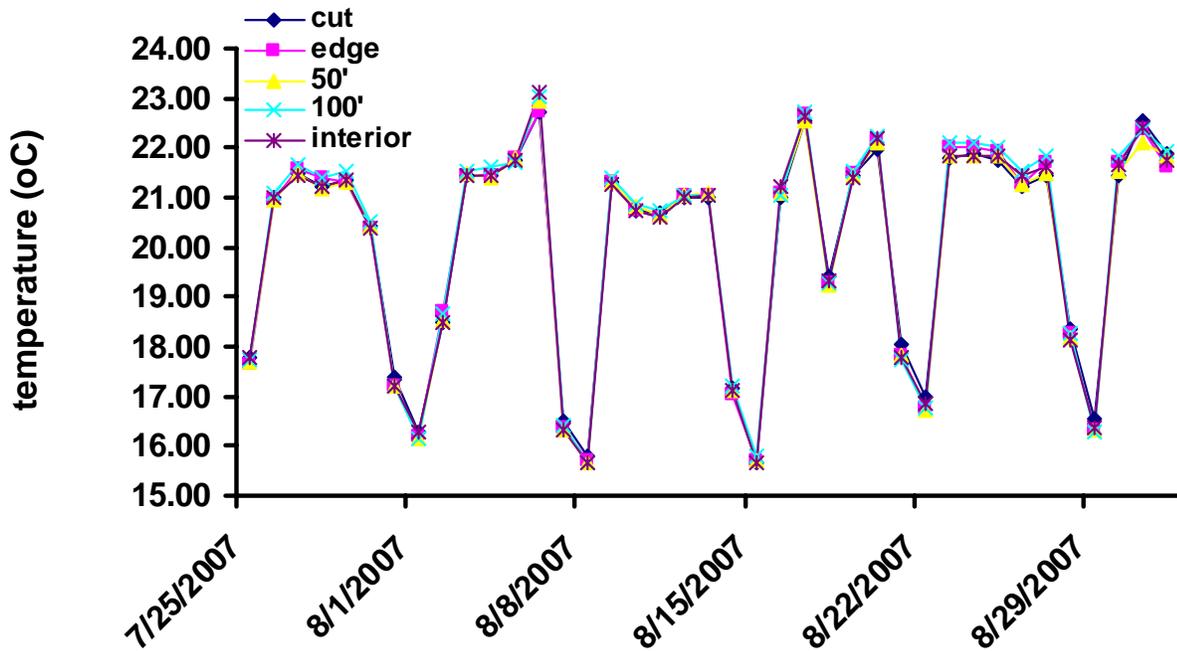


Figure 15. Maximum daily aboveground temperature at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

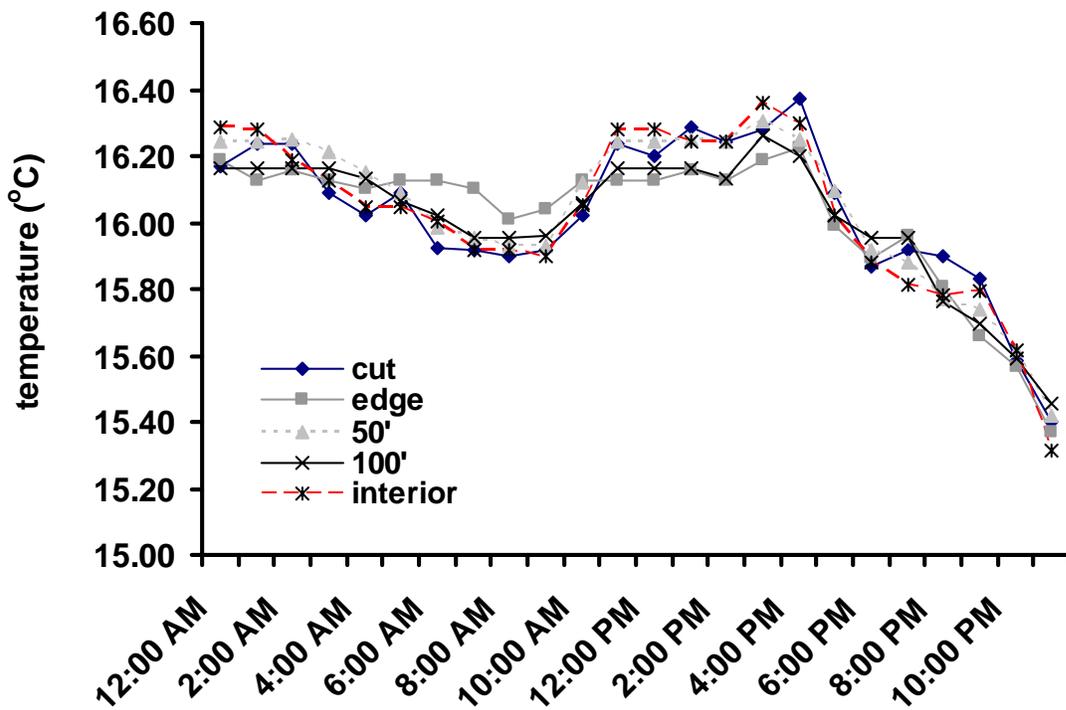


Figure 16. Maximum hourly aboveground temperature on 1 August, 2007 at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

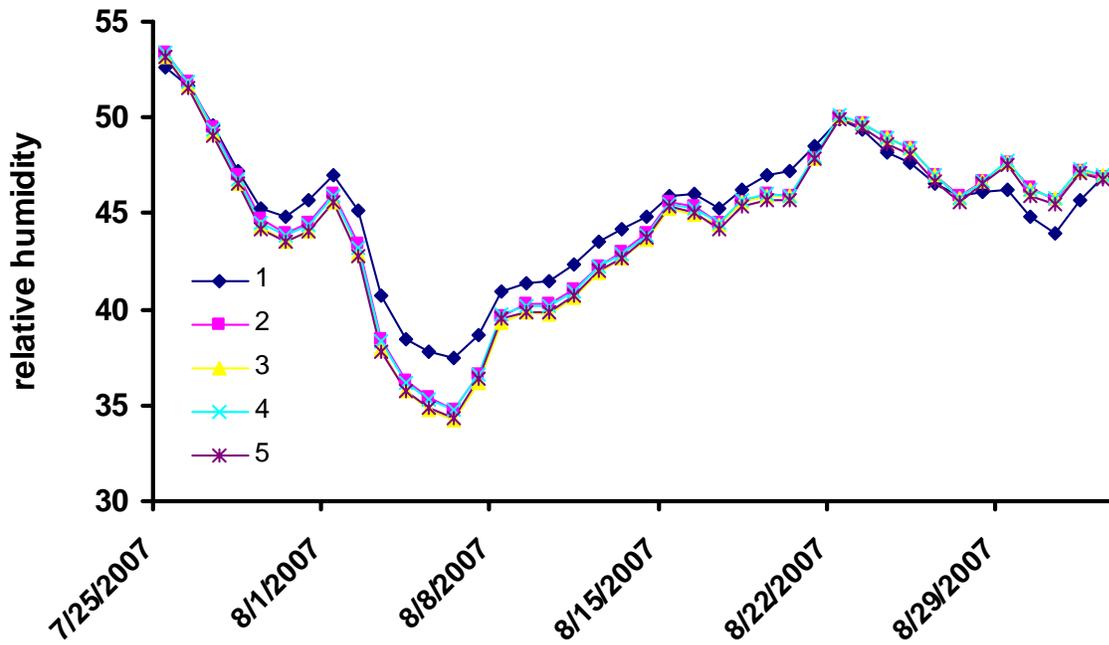


Figure 17. Average daily aboveground relative humidity (%) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

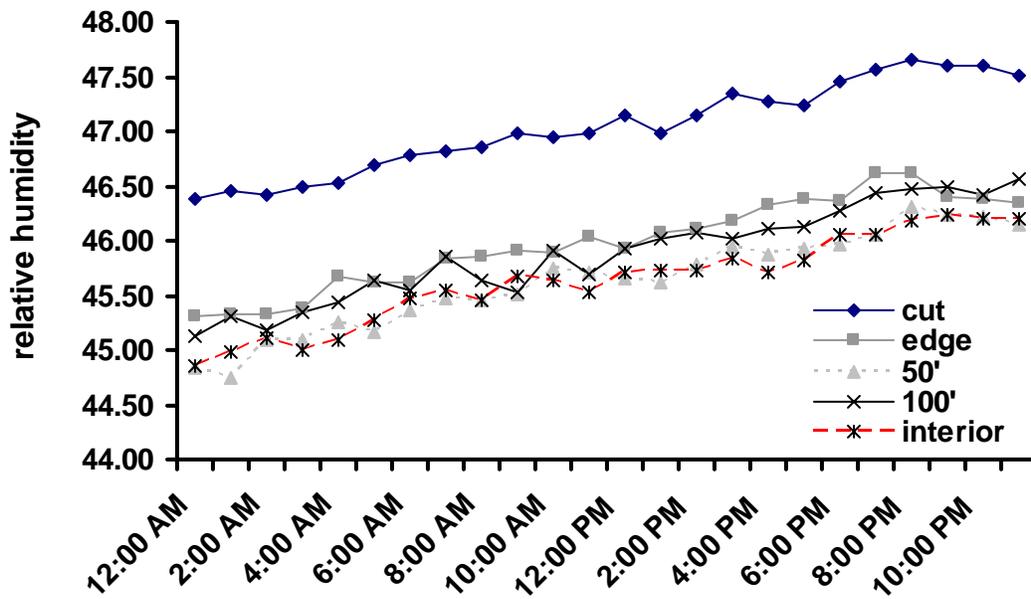


Figure 18. Average hourly aboveground relative humidity (%) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

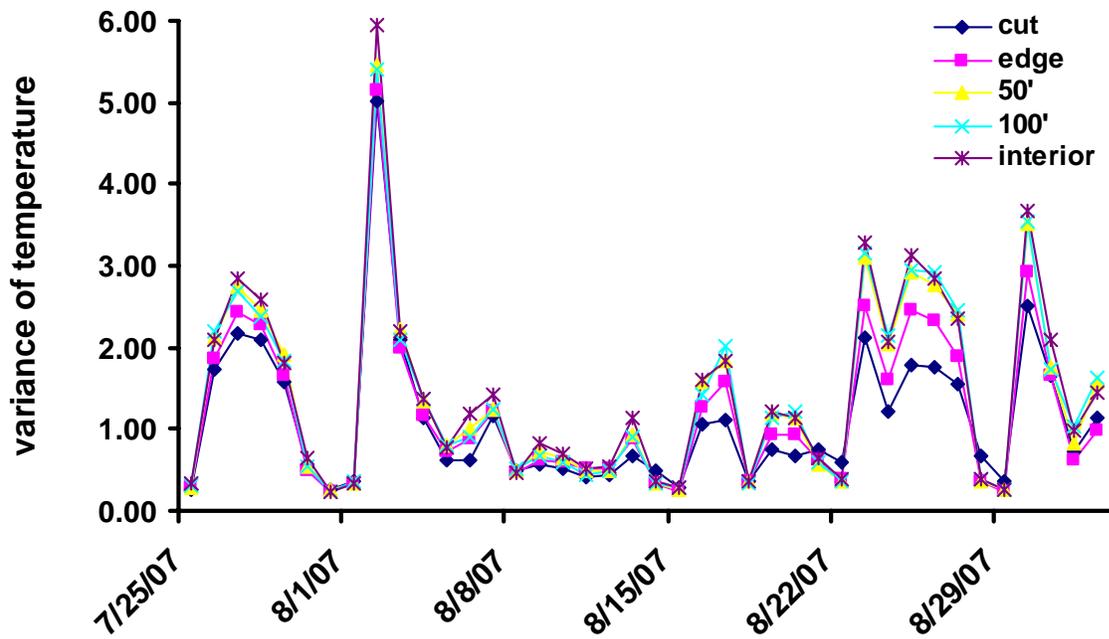


Figure 19. Minimum daily aboveground relative humidity (%) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

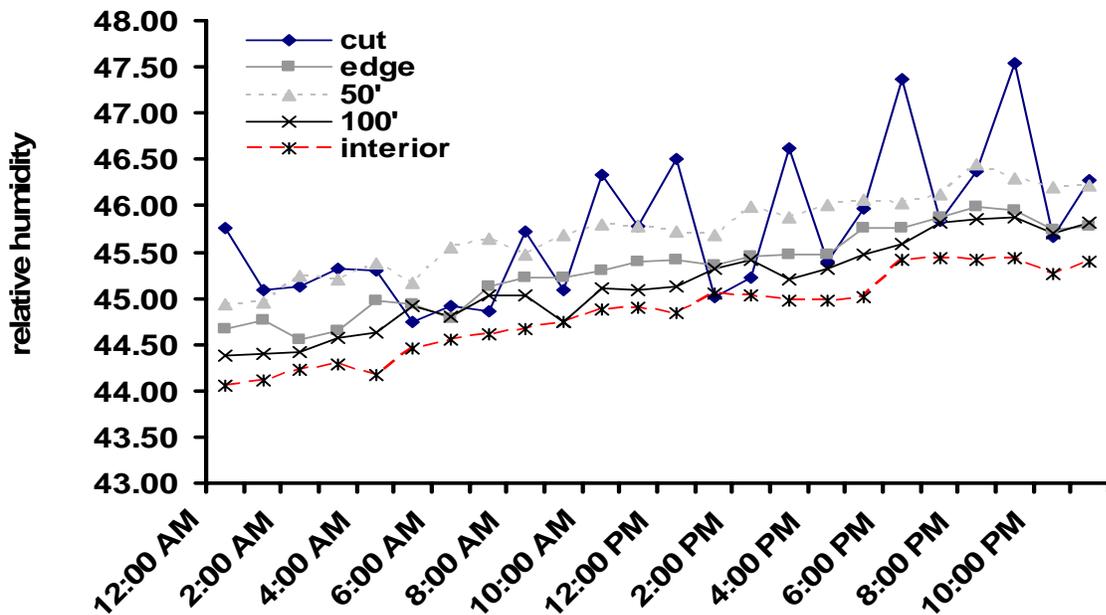


Figure 20. Minimum hourly aboveground relative humidity (%) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

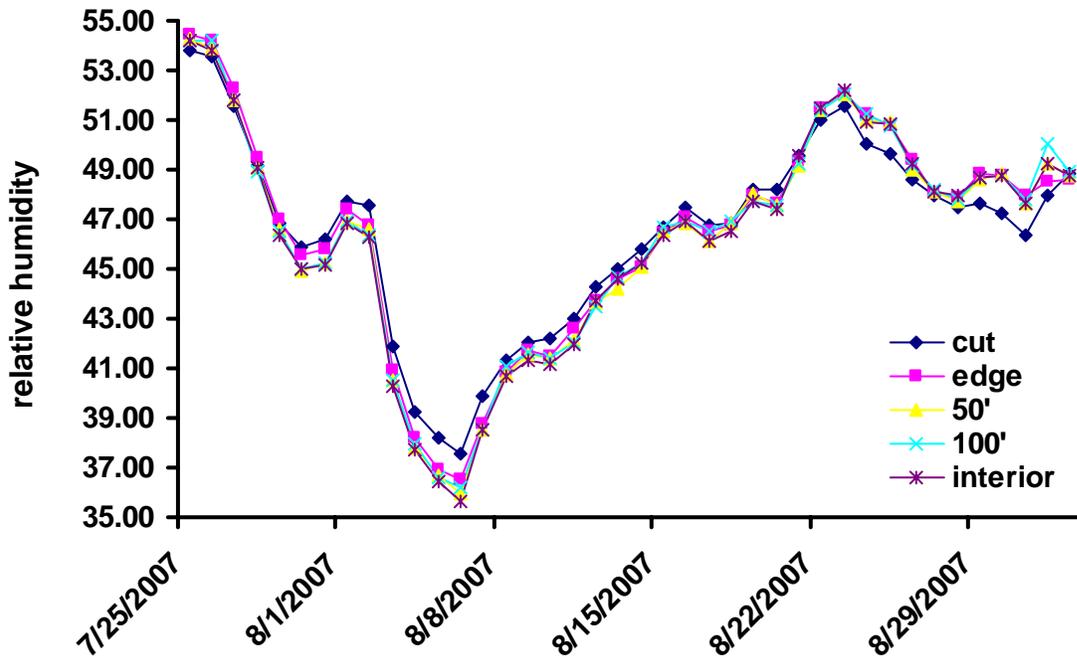


Figure 21. Maximum daily aboveground relative humidity (%) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

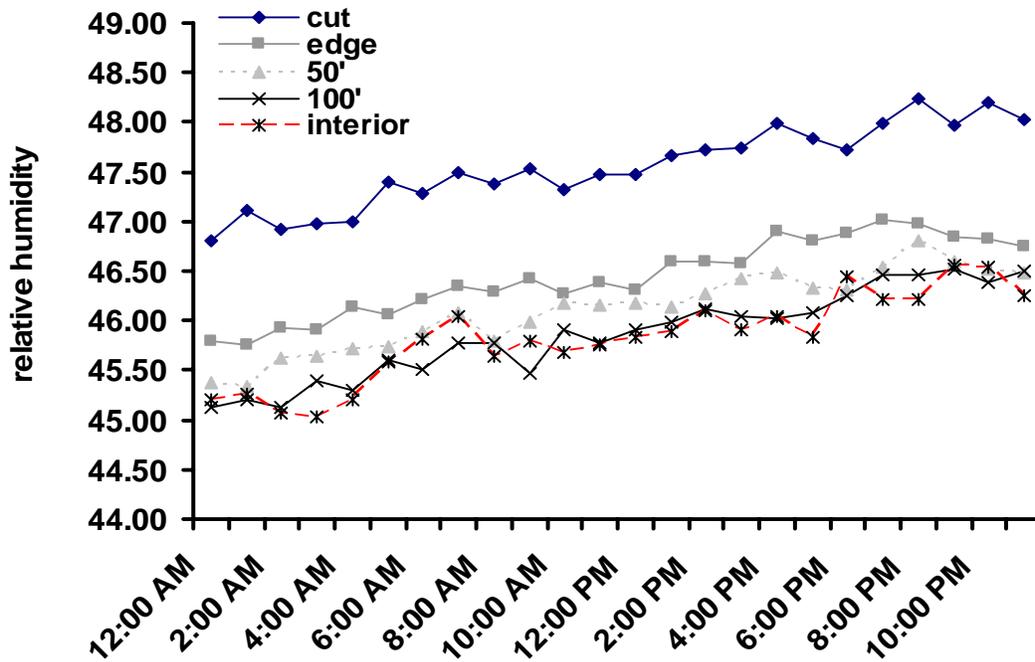


Figure 22. Maximum hourly aboveground relative humidity (%) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

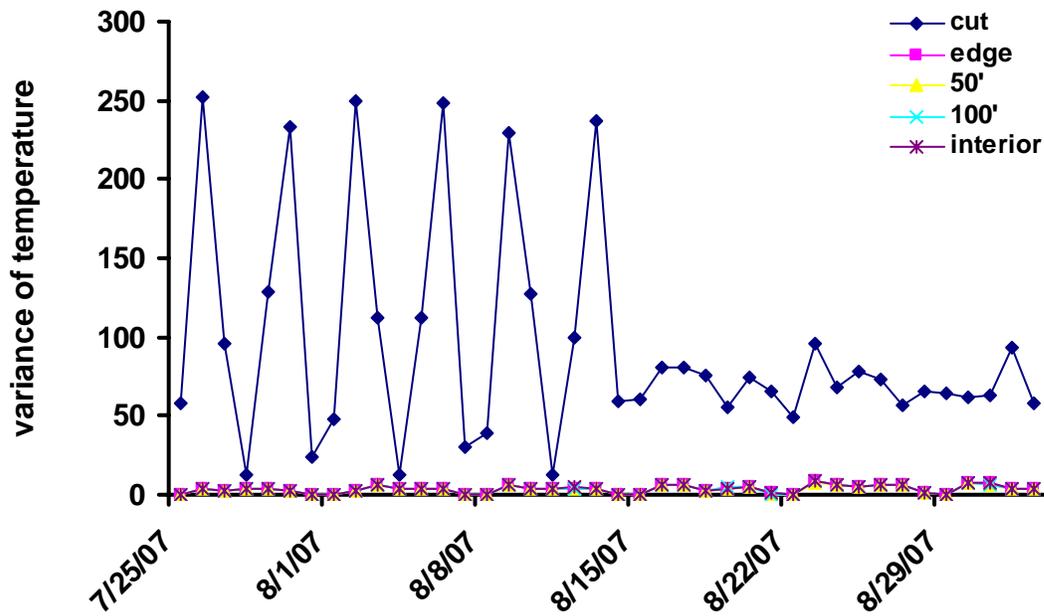


Figure 23. Variance in aboveground temperature at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

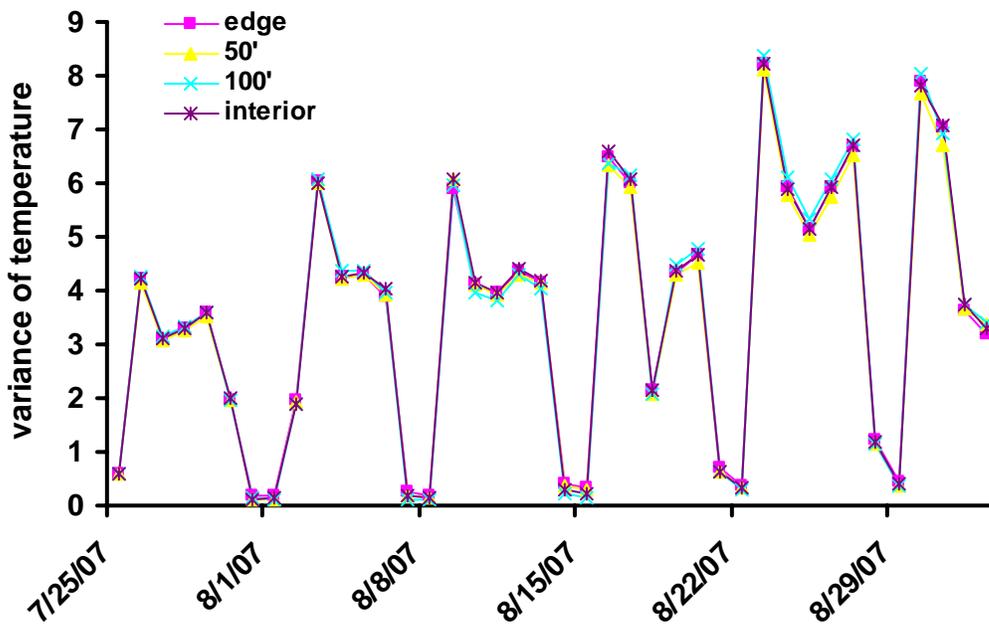


Figure 24. Variance in aboveground temperature at four locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

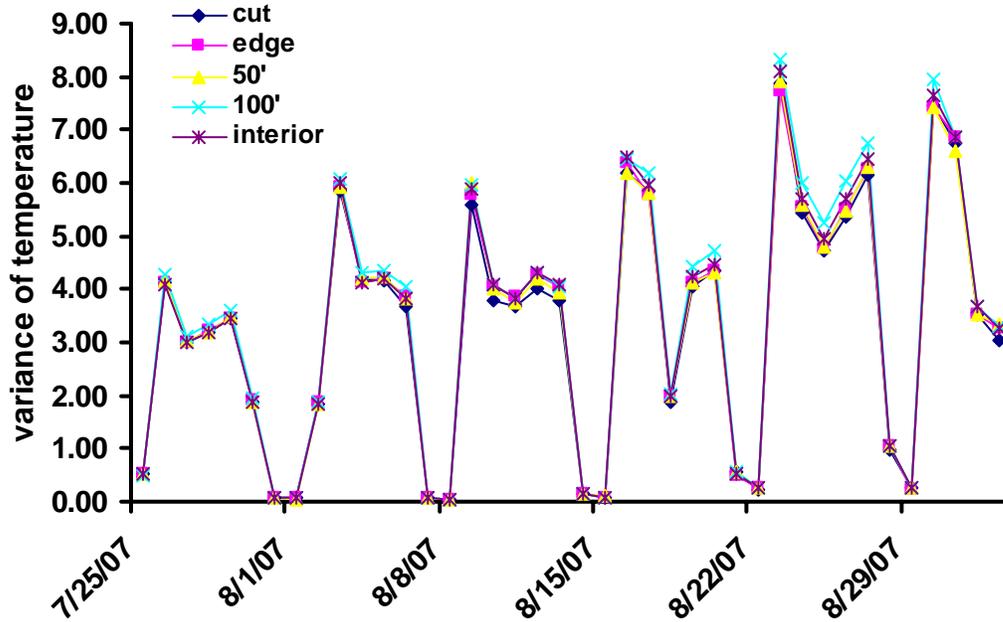


Figure 25. Variance in belowground temperature at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

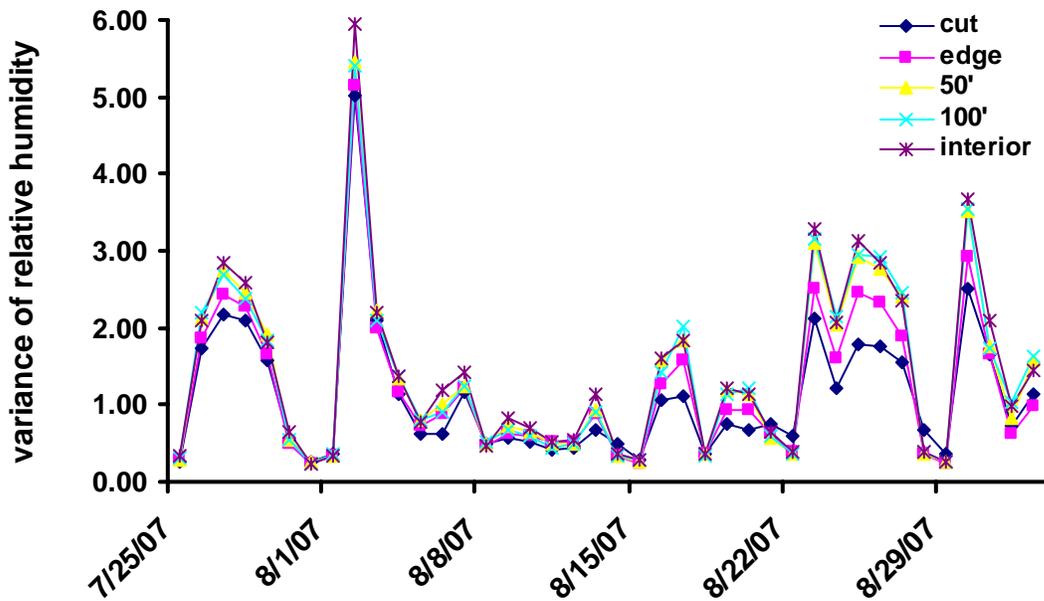


Figure 26. Variance in aboveground relative humidity at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

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APPENDIX A. SUMMARY OF DATA

Table 2. Average daily belowground temperature (°C) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

date	cut	edge	50'	100'	interior
7/25/2007	16.27	16.23	16.18	16.22	16.13
7/26/2007	18.55	18.48	18.46	18.47	18.42
7/27/2007	18.77	18.71	18.68	18.70	18.63
7/28/2007	18.63	18.57	18.54	18.54	18.49
7/29/2007	18.68	18.61	18.58	18.59	18.54
7/30/2007	18.53	18.48	18.45	18.46	18.39
7/31/2007	16.41	16.36	16.34	16.30	16.26
8/1/2007	15.92	15.87	15.81	15.81	15.82
8/2/2007	16.26	16.25	16.19	16.19	16.15
8/3/2007	18.19	18.14	18.11	18.13	18.05
8/4/2007	18.84	18.77	18.73	18.75	18.68
8/5/2007	18.63	18.59	18.54	18.57	18.50
8/6/2007	18.51	18.52	18.47	18.46	18.41
8/7/2007	15.58	15.56	15.52	15.48	15.45
8/8/2007	15.42	15.36	15.30	15.27	15.24
8/9/2007	17.60	17.62	17.65	17.60	17.54
8/10/2007	17.96	17.97	18.00	17.94	17.88
8/11/2007	17.67	17.69	17.72	17.66	17.60
8/12/2007	18.07	18.07	18.10	18.05	17.98
8/13/2007	18.20	18.21	18.23	18.17	18.11
8/14/2007	15.92	15.92	15.94	15.87	15.82
8/15/2007	15.12	15.14	15.15	15.10	15.04
8/16/2007	17.51	17.51	17.54	17.53	17.45
8/17/2007	18.71	18.65	18.55	18.61	18.56
8/18/2007	17.28	17.28	17.17	17.18	17.15
8/19/2007	18.24	18.20	18.13	18.17	18.12
8/20/2007	18.90	18.85	18.73	18.79	18.73
8/21/2007	16.63	16.61	16.52	16.51	16.47
8/22/2007	15.81	15.76	15.68	15.67	15.64
8/23/2007	17.80	17.79	17.69	17.77	17.70
8/24/2007	18.59	18.53	18.44	18.51	18.45
8/25/2007	18.48	18.41	18.29	18.36	18.31
8/26/2007	17.75	17.70	17.59	17.67	17.61
8/27/2007	18.17	18.14	18.04	18.12	18.04
8/28/2007	16.60	16.58	16.49	16.49	16.44
8/29/2007	15.23	15.21	15.13	15.14	15.09
8/30/2007	17.84	17.80	17.67	17.78	17.70
8/31/2007	18.56	18.54	18.36	18.44	18.39
9/1/2007	19.00	18.98	18.86	18.89	18.86
9/2/2007	18.89	18.85	18.68	18.76	18.79

Table 3. Average hourly belowground temperature (°C) on 1 August, 2007, at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

hour	cut	edge	50'	100'	interior
12:00 AM	16.18	16.38	16.15	16.20	16.17
1:00 AM	16.18	16.38	16.15	16.20	16.15
2:00 AM	16.18	16.38	16.15	16.20	16.17
3:00 AM	16.18	16.38	16.15	16.20	15.99
4:00 AM	16.18	16.16	16.15	16.20	15.99
5:00 AM	16.15	16.16	16.15	16.20	15.99
6:00 AM	16.15	16.16	16.15	16.14	15.99
7:00 AM	16.15	16.13	16.15	16.14	15.99
8:00 AM	16.15	16.13	16.15	16.13	15.99
9:00 AM	16.15	16.13	16.15	16.20	15.99
10:00 AM	16.15	16.16	16.15	16.20	15.99
11:00 AM	16.18	16.38	16.15	16.20	16.17
12:00 PM	16.18	16.38	16.37	16.20	16.17
1:00 PM	16.18	16.38	16.37	16.20	16.15
2:00 PM	16.18	16.38	16.15	16.20	15.99
3:00 PM	16.18	16.64	16.40	16.20	16.49
4:00 PM	16.18	16.64	16.37	16.20	16.17
5:00 PM	16.18	16.18	16.15	16.20	15.99
6:00 PM	16.15	16.13	15.90	16.63	15.99
7:00 PM	16.01	16.13	15.87	15.90	15.99
8:00 PM	15.88	15.88	15.87	16.13	15.65
9:00 PM	15.68	15.88	15.73	15.70	15.67
10:00 PM	15.68	15.88	15.65	15.70	15.49
11:00 PM	15.65	15.63	15.65	15.63	15.49

Table 4. Minimum daily belowground temperature (°C) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

date	cut	edge	50'	100'	interior
7/25/2007	15.64	15.65	15.44	15.61	15.43
7/26/2007	15.89	15.76	15.78	15.66	15.70
7/27/2007	16.14	16.15	16.17	16.16	16.09
7/28/2007	16.39	16.26	16.34	16.16	16.15
7/29/2007	16.26	16.26	16.17	16.16	16.09
7/30/2007	16.64	16.65	16.67	16.66	16.54
7/31/2007	16.08	16.15	16.00	16.11	15.93
8/1/2007	15.39	15.32	15.22	15.16	15.15
8/2/2007	14.51	14.65	14.44	14.44	14.48
8/3/2007	15.14	15.15	15.05	15.16	15.04
8/4/2007	16.01	16.15	15.95	15.94	15.93
8/5/2007	15.95	15.93	15.89	15.83	15.87
8/6/2007	16.08	16.15	16.11	16.05	16.04
8/7/2007	15.43	15.37	15.28	15.16	15.20
8/8/2007	15.14	15.26	15.17	15.05	15.15
8/9/2007	14.71	14.76	14.66	14.60	14.65
8/10/2007	15.43	15.54	15.50	15.38	15.37
8/11/2007	15.43	15.26	15.39	15.33	15.20
8/12/2007	15.57	15.60	15.67	15.55	15.43
8/13/2007	15.64	15.60	15.67	15.61	15.43
8/14/2007	15.43	15.26	15.33	15.27	15.15
8/15/2007	14.93	14.70	14.83	14.71	14.65
8/16/2007	14.57	14.59	14.55	14.55	14.42
8/17/2007	15.86	15.76	15.72	15.72	15.65
8/18/2007	15.21	15.21	15.17	15.10	15.04
8/19/2007	15.57	15.60	15.44	15.49	15.43
8/20/2007	16.00	16.10	15.94	15.94	15.87
8/21/2007	15.50	15.54	15.39	15.38	15.32
8/22/2007	15.21	15.21	15.17	15.05	15.09
8/23/2007	14.50	14.54	14.44	14.38	14.31
8/24/2007	15.36	15.21	15.22	15.10	15.15
8/25/2007	15.43	15.26	15.22	15.10	15.20
8/26/2007	14.86	14.70	14.66	14.60	14.48
8/27/2007	14.86	14.70	14.66	14.60	14.48
8/28/2007	15.21	15.21	15.05	15.10	14.98
8/29/2007	14.57	14.70	14.50	14.49	14.48
8/30/2007	14.43	14.26	14.27	14.21	14.20
8/31/2007	15.00	15.21	14.94	14.88	14.93
9/1/2007	16.00	15.99	15.89	15.94	15.82
9/2/2007	16.14	16.15	15.95	15.94	15.93

Table 5. Minimum hourly belowground temperature (°C) on 1 August, 2007, at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

hour	cut	edge	50'	100'	interior
12:00 AM	15.94	15.89	15.84	15.71	15.51
1:00 AM	15.96	15.84	15.76	15.79	15.43
2:00 AM	15.98	15.66	15.66	15.83	15.58
3:00 AM	15.90	15.74	15.67	15.73	15.69
4:00 AM	15.73	15.87	15.65	15.83	15.76
5:00 AM	15.71	15.91	15.76	15.75	15.62
6:00 AM	15.67	15.86	15.82	15.79	15.54
7:00 AM	15.62	15.71	15.77	15.76	15.77
8:00 AM	15.79	15.72	15.69	15.79	15.61
9:00 AM	15.82	15.85	15.81	15.87	15.47
10:00 AM	15.88	15.82	15.72	15.80	15.66
11:00 AM	15.87	15.76	15.84	15.79	15.52
12:00 PM	15.91	15.77	15.68	15.86	15.58
1:00 PM	15.90	15.86	15.59	15.83	15.71
2:00 PM	15.82	15.80	15.74	15.88	15.42
3:00 PM	15.96	15.78	15.68	15.81	15.12
4:00 PM	15.82	15.79	15.64	15.77	15.72
5:00 PM	15.79	15.83	15.76	15.85	15.52
6:00 PM	15.87	16.09	15.67	15.88	15.58
7:00 PM	15.73	15.92	15.90	15.78	15.56
8:00 PM	15.68	15.92	15.91	15.92	15.42
9:00 PM	15.67	15.82	15.82	15.91	15.69
10:00 PM	15.84	15.87	15.86	15.79	15.58
11:00 PM	16.03	15.84	15.79	15.69	15.63

Table 6. Maximum daily belowground temperature (°C) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

date	cut	edge	50'	100'	interior
7/25/2007	17.71	17.71	17.73	17.67	17.60
7/26/2007	20.96	20.94	21.01	21.00	20.77
7/27/2007	21.52	21.49	21.62	21.56	21.49
7/28/2007	21.21	21.27	21.18	21.34	21.10
7/29/2007	21.40	21.33	21.34	21.39	21.21
7/30/2007	20.40	20.44	20.40	20.39	20.27
7/31/2007	17.33	17.27	17.17	17.22	17.10
8/1/2007	16.14	16.21	16.17	16.22	16.15
8/2/2007	18.52	18.49	18.51	18.44	18.43
8/3/2007	21.46	21.38	21.51	21.50	21.38
8/4/2007	21.52	21.38	21.40	21.50	21.27
8/5/2007	21.71	21.77	21.68	21.78	21.66
8/6/2007	22.46	23.00	22.84	23.28	22.88
8/7/2007	16.43	16.43	16.39	16.27	16.21
8/8/2007	15.57	15.71	15.61	15.55	15.59
8/9/2007	21.30	21.33	21.34	21.34	21.16
8/10/2007	20.58	20.72	20.79	20.73	20.60
8/11/2007	20.58	20.66	20.73	20.61	20.60
8/12/2007	20.87	20.99	20.95	20.95	20.88
8/13/2007	21.01	20.99	20.95	20.95	20.94
8/14/2007	17.15	17.15	17.17	17.11	16.98
8/15/2007	15.57	15.65	15.72	15.66	15.54
8/16/2007	20.94	21.05	21.18	21.06	20.99
8/17/2007	22.58	22.72	22.51	22.67	22.49
8/18/2007	19.29	19.33	19.17	19.22	19.16
8/19/2007	21.23	21.44	21.40	21.56	21.44
8/20/2007	22.15	22.16	21.96	22.17	22.05
8/21/2007	17.86	17.88	17.78	17.72	17.65
8/22/2007	16.72	16.76	16.72	16.72	16.65
8/23/2007	21.80	21.83	21.79	21.95	21.77
8/24/2007	21.87	21.83	21.84	22.00	21.88
8/25/2007	21.80	21.77	21.84	21.84	21.77
8/26/2007	21.23	21.33	21.23	21.45	21.21
8/27/2007	21.58	21.61	21.45	21.73	21.49
8/28/2007	18.29	18.27	18.17	18.17	18.04
8/29/2007	16.43	16.37	16.34	16.22	16.26
8/30/2007	21.58	21.61	21.45	21.78	21.49
8/31/2007	22.37	22.50	22.18	22.17	22.27
9/1/2007	21.80	21.72	21.73	21.73	21.71
9/2/2007	21.51	21.94	21.68	21.67	21.66

Table 7. Maximum hourly belowground temperature (°C) on 1 August, 2007, at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

hour	cut	edge	50'	100'	interior
12:00 AM	16.06	16.28	15.98	16.09	16.00
1:00 AM	16.02	16.26	15.95	16.14	15.99
2:00 AM	16.02	16.08	15.96	15.99	16.02
3:00 AM	15.96	16.08	15.98	16.03	16.00
4:00 AM	15.89	16.04	15.98	15.96	16.02
5:00 AM	15.86	15.96	15.98	15.90	15.98
6:00 AM	15.86	15.96	15.98	15.80	15.98
7:00 AM	15.86	15.93	15.96	15.76	15.98
8:00 AM	15.86	15.93	15.93	15.73	16.01
9:00 AM	15.86	15.91	15.94	15.77	15.98
10:00 AM	15.86	16.05	15.96	15.88	16.00
11:00 AM	16.12	16.08	15.96	16.02	16.02
12:00 PM	16.12	16.16	15.97	16.11	16.02
1:00 PM	16.02	16.16	16.02	16.11	15.99
2:00 PM	16.02	16.08	15.98	16.11	15.98
3:00 PM	16.16	16.27	16.05	16.16	16.16
4:00 PM	16.12	16.27	16.08	16.16	16.01
5:00 PM	15.92	16.00	15.96	15.92	15.98
6:00 PM	15.86	15.90	15.85	15.77	15.77
7:00 PM	15.76	15.81	15.77	15.74	15.69
8:00 PM	15.69	15.77	15.74	15.72	15.54
9:00 PM	15.62	15.78	15.65	15.62	15.53
10:00 PM	15.42	15.47	15.46	15.45	15.50
11:00 PM	15.35	15.38	15.34	15.24	15.36

Table 8. Average daily aboveground temperature (°C) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

date	cut	edge	50'	100'	interior
7/25/2007	16.27	16.19	16.21	16.28	16.27
7/26/2007	18.47	18.48	18.50	18.60	18.51
7/27/2007	18.72	18.70	18.71	18.81	18.73
7/28/2007	18.58	18.57	18.57	18.66	18.59
7/29/2007	18.63	18.61	18.62	18.71	18.64
7/30/2007	18.52	18.46	18.48	18.56	18.52
7/31/2007	16.38	16.35	16.35	16.43	16.37
8/1/2007	15.87	15.87	15.89	15.93	15.88
8/2/2007	16.27	16.21	16.23	16.30	16.26
8/3/2007	18.15	18.11	18.14	18.24	18.19
8/4/2007	18.79	18.75	18.77	18.86	18.80
8/5/2007	18.60	18.56	18.59	18.66	18.61
8/6/2007	18.56	18.49	18.49	18.57	18.52
8/7/2007	15.62	15.54	15.52	15.59	15.54
8/8/2007	15.42	15.31	15.32	15.40	15.32
8/9/2007	17.68	17.61	17.67	17.72	17.65
8/10/2007	18.02	17.95	18.03	18.05	17.97
8/11/2007	17.74	17.68	17.76	17.80	17.70
8/12/2007	18.11	18.07	18.14	18.17	18.10
8/13/2007	18.25	18.21	18.26	18.30	18.22
8/14/2007	15.96	15.89	15.95	16.00	15.92
8/15/2007	15.17	15.10	15.17	15.23	15.15
8/16/2007	17.55	17.52	17.60	17.65	17.58
8/17/2007	18.66	18.64	18.58	18.71	18.63
8/18/2007	17.35	17.22	17.19	17.29	17.25
8/19/2007	18.24	18.18	18.15	18.26	18.21
8/20/2007	18.87	18.81	18.76	18.89	18.82
8/21/2007	16.64	16.58	16.53	16.62	16.56
8/22/2007	15.79	15.71	15.70	15.79	15.73
8/23/2007	17.79	17.76	17.72	17.86	17.78
8/24/2007	18.56	18.51	18.46	18.60	18.52
8/25/2007	18.42	18.39	18.30	18.46	18.39
8/26/2007	17.72	17.67	17.61	17.76	17.68
8/27/2007	18.14	18.11	18.07	18.21	18.14
8/28/2007	16.63	16.53	16.51	16.59	16.51
8/29/2007	15.26	15.15	15.14	15.23	15.16
8/30/2007	17.78	17.78	17.71	17.88	17.79
8/31/2007	18.54	18.46	18.37	18.52	18.48
9/1/2007	18.89	18.89	18.89	19.00	18.90
9/2/2007	18.89	18.79	18.72	18.91	18.86

Table 9. Average hourly aboveground temperature (°C) on 1 August, 2007, at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

hour	cut	edge	50'	100'	interior
12:00 AM	16.28	16.03	16.09	16.14	16.13
1:00 AM	16.41	15.97	16.09	16.14	16.10
2:00 AM	16.46	15.99	16.08	16.14	16.07
3:00 AM	16.40	15.97	16.06	16.14	15.98
4:00 AM	16.43	15.96	16.03	16.10	15.90
5:00 AM	16.58	15.97	16.01	16.04	15.84
6:00 AM	16.56	15.97	15.92	15.99	15.81
7:00 AM	16.60	15.96	15.89	15.92	15.78
8:00 AM	16.59	15.87	15.86	15.92	15.78
9:00 AM	16.75	15.90	15.86	15.93	15.79
10:00 AM	16.76	15.97	15.97	16.03	15.90
11:00 AM	17.05	15.97	16.07	16.14	16.12
12:00 PM	17.03	15.97	16.09	16.14	16.14
1:00 PM	17.30	15.99	16.09	16.14	16.11
2:00 PM	17.36	15.97	16.08	16.10	16.06
3:00 PM	17.37	16.07	16.15	16.24	16.18
4:00 PM	17.67	16.07	16.09	16.17	16.17
5:00 PM	17.40	15.89	16.01	15.99	15.91
6:00 PM	17.07	15.78	15.85	15.91	15.77
7:00 PM	17.49	15.74	15.79	15.89	15.75
8:00 PM	17.40	15.63	15.62	15.74	15.73
9:00 PM	17.18	15.51	15.59	15.67	15.63
10:00 PM	17.40	15.44	15.52	15.56	15.42
11:00 PM	17.17	15.26	15.35	15.41	15.27

Table 10. Minimum daily aboveground temperature (°C) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

date	cut	edge	50'	100'	interior
7/25/07	15.67	15.54	15.60	15.59	15.66
7/26/07	15.80	15.82	15.82	15.84	15.78
7/27/07	16.30	16.16	16.10	16.15	16.17
7/28/07	16.30	16.32	16.27	16.34	16.33
7/29/07	16.30	16.27	16.21	16.34	16.22
7/30/07	16.74	16.60	16.60	16.59	16.67
7/31/07	16.17	16.05	16.10	16.09	16.17
8/1/07	15.29	15.27	15.32	15.34	15.28
8/2/07	14.73	14.60	14.60	14.59	14.66
8/3/07	15.29	15.10	15.10	15.15	15.22
8/4/07	16.11	16.05	15.99	16.09	16.00
8/5/07	15.92	15.99	15.99	15.96	16.00
8/6/07	16.17	16.10	16.10	16.09	16.17
8/7/07	15.42	15.27	15.21	15.34	15.28
8/8/07	15.29	15.27	15.15	15.15	15.22
8/9/07	14.86	14.77	14.71	14.77	14.72
8/10/07	15.67	15.54	15.54	15.59	15.44
8/11/07	15.42	15.27	15.32	15.34	15.39
8/12/07	15.67	15.60	15.65	15.71	15.61
8/13/07	15.73	15.60	15.71	15.78	15.61
8/14/07	15.36	15.27	15.32	15.28	15.33
8/15/07	14.86	14.77	14.82	14.84	14.89
8/16/07	14.67	14.60	14.71	14.71	14.61
8/17/07	15.80	15.82	15.71	15.71	15.78
8/18/07	15.42	15.21	15.15	15.15	15.05
8/19/07	15.55	15.55	15.43	15.59	15.55
8/20/07	16.11	16.05	15.93	16.03	16.00
8/21/07	15.55	15.49	15.38	15.53	15.50
8/22/07	15.23	15.27	15.10	15.15	15.16
8/23/07	14.54	14.49	14.37	14.52	14.50
8/24/07	15.42	15.27	15.21	15.15	15.11
8/25/07	15.48	15.27	15.21	15.21	15.28
8/26/07	14.79	14.71	14.65	14.71	14.61
8/27/07	14.79	14.71	14.65	14.71	14.55
8/28/07	15.23	15.16	15.10	15.15	15.05
8/29/07	14.73	14.60	14.43	14.52	14.55
8/30/07	14.42	14.21	14.26	14.46	14.33
8/31/07	15.04	15.04	14.93	15.02	15.05
9/1/07	16.11	16.05	15.93	16.03	15.94

Table 11. Minimum hourly aboveground temperature (°C) on 1 August, 2007, at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

hour	cut	edge	50'	100'	interior
12:00 AM	16.06	16.03	16.09	16.14	16.13
1:00 AM	16.11	15.97	16.09	16.14	16.10
2:00 AM	16.09	15.99	16.08	16.14	16.07
3:00 AM	15.95	15.97	16.06	16.14	15.98
4:00 AM	15.90	15.96	16.03	16.10	15.90
5:00 AM	15.94	15.97	16.01	16.04	15.84
6:00 AM	15.84	15.97	15.92	15.99	15.81
7:00 AM	15.79	15.96	15.89	15.92	15.78
8:00 AM	15.79	15.87	15.86	15.92	15.78
9:00 AM	15.79	15.90	15.86	15.93	15.79
10:00 AM	15.89	15.97	15.97	16.03	15.90
11:00 AM	16.05	15.97	16.07	16.14	16.12
12:00 PM	16.03	15.97	16.09	16.14	16.14
1:00 PM	16.07	15.99	16.09	16.14	16.11
2:00 PM	16.05	15.97	16.08	16.10	16.06
3:00 PM	16.19	16.07	16.15	16.24	16.18
4:00 PM	16.22	16.07	16.09	16.17	16.17
5:00 PM	15.98	15.89	16.01	15.99	15.91
6:00 PM	15.77	15.78	15.85	15.91	15.77
7:00 PM	15.79	15.74	15.79	15.89	15.75
8:00 PM	15.77	15.63	15.62	15.74	15.73
9:00 PM	15.70	15.51	15.59	15.67	15.63
10:00 PM	15.46	15.44	15.52	15.56	15.42
11:00 PM	15.30	15.26	15.35	15.41	15.27

Table 12. Maximum daily aboveground temperature (°C) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

date	cut	edge	50'	100'	interior
7/25/07	17.80	17.66	17.71	17.72	17.78
7/26/07	20.99	20.94	20.94	21.10	21.01
7/27/07	21.49	21.55	21.50	21.66	21.45
7/28/07	21.24	21.39	21.16	21.41	21.23
7/29/07	21.37	21.33	21.33	21.53	21.34
7/30/07	20.43	20.39	20.44	20.53	20.39
7/31/07	17.36	17.21	17.21	17.22	17.22
8/1/07	16.30	16.21	16.15	16.15	16.28
8/2/07	18.49	18.72	18.55	18.66	18.50
8/3/07	21.43	21.44	21.50	21.53	21.45
8/4/07	21.43	21.44	21.38	21.60	21.45
8/5/07	21.74	21.78	21.77	21.72	21.73
8/6/07	22.74	22.72	22.94	23.03	23.12
8/7/07	16.48	16.38	16.32	16.40	16.33
8/8/07	15.80	15.71	15.65	15.65	15.66
8/9/07	21.30	21.33	21.33	21.41	21.28
8/10/07	20.74	20.72	20.83	20.85	20.73
8/11/07	20.68	20.61	20.66	20.72	20.62
8/12/07	20.99	21.05	21.05	21.03	21.01
8/13/07	20.99	21.05	21.11	21.03	21.06
8/14/07	17.17	17.05	17.10	17.22	17.11
8/15/07	15.67	15.71	15.71	15.78	15.66
8/16/07	20.99	21.11	21.11	21.03	21.23
8/17/07	22.55	22.66	22.55	22.72	22.62
8/18/07	19.43	19.27	19.22	19.28	19.34
8/19/07	21.43	21.50	21.44	21.53	21.40
8/20/07	21.99	22.16	22.11	22.22	22.17
8/21/07	18.05	17.83	17.82	17.72	17.78
8/22/07	16.99	16.77	16.71	16.78	16.83
8/23/07	21.80	22.00	21.83	22.10	21.84
8/24/07	21.87	22.00	21.83	22.10	21.84
8/25/07	21.74	21.94	21.83	22.03	21.84
8/26/07	21.24	21.27	21.27	21.53	21.45
8/27/07	21.43	21.72	21.50	21.85	21.62
8/28/07	18.36	18.27	18.16	18.28	18.11
8/29/07	16.55	16.32	16.32	16.28	16.39
8/30/07	21.43	21.72	21.55	21.85	21.67
8/31/07	22.55	22.39	22.11	22.35	22.40
9/1/07	21.87	21.61	21.83	21.91	21.73

Table 13. Maximum hourly aboveground temperature on 1 August, 2007, at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

hour	cut	edge	50'	100'	interior
12:00 AM	16.17	16.19	16.24	16.16	16.29
1:00 AM	16.24	16.13	16.24	16.16	16.28
2:00 AM	16.24	16.16	16.25	16.16	16.19
3:00 AM	16.09	16.13	16.21	16.16	16.13
4:00 AM	16.02	16.10	16.15	16.13	16.05
5:00 AM	16.09	16.13	16.09	16.06	16.04
6:00 AM	15.92	16.13	15.99	16.02	16.00
7:00 AM	15.92	16.10	15.95	15.95	15.92
8:00 AM	15.90	16.01	15.93	15.95	15.92
9:00 AM	15.92	16.04	15.93	15.96	15.90
10:00 AM	16.02	16.13	16.12	16.06	16.05
11:00 AM	16.24	16.13	16.24	16.16	16.28
12:00 PM	16.20	16.13	16.24	16.16	16.28
1:00 PM	16.29	16.16	16.25	16.16	16.24
2:00 PM	16.24	16.13	16.24	16.13	16.25
3:00 PM	16.28	16.19	16.31	16.26	16.36
4:00 PM	16.37	16.23	16.25	16.20	16.30
5:00 PM	16.09	15.99	16.09	16.02	16.02
6:00 PM	15.87	15.89	15.92	15.95	15.88
7:00 PM	15.92	15.96	15.88	15.95	15.81
8:00 PM	15.90	15.80	15.77	15.76	15.78
9:00 PM	15.83	15.66	15.74	15.70	15.79
10:00 PM	15.59	15.57	15.62	15.59	15.62
11:00 PM	15.40	15.37	15.42	15.45	15.31

Table 14. Average daily relative humidity (%) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

date	cut	edge	50'	100'	interior
7/25/2007	52.63	53.35	53.12	53.36	53.16
7/26/2007	51.63	51.91	51.61	51.82	51.53
7/27/2007	49.57	49.45	49.13	49.36	49.05
7/28/2007	47.25	46.99	46.59	46.82	46.54
7/29/2007	45.29	44.69	44.26	44.53	44.22
7/30/2007	44.84	43.98	43.50	43.82	43.51
7/31/2007	45.65	44.45	44.09	44.38	44.06
8/1/2007	47.04	45.98	45.63	45.88	45.63
8/2/2007	45.17	43.37	42.91	43.16	42.74
8/3/2007	40.76	38.48	37.92	38.32	37.81
8/4/2007	38.46	36.28	35.71	36.18	35.70
8/5/2007	37.80	35.38	34.80	35.29	34.83
8/6/2007	37.52	34.80	34.26	34.74	34.28
8/7/2007	38.64	36.56	36.12	36.56	36.37
8/8/2007	40.91	39.65	39.32	39.73	39.47
8/9/2007	41.36	40.26	39.81	40.18	39.87
8/10/2007	41.47	40.23	39.75	40.14	39.89
8/11/2007	42.36	41.05	40.62	40.94	40.70
8/12/2007	43.48	42.28	41.93	42.18	42.00
8/13/2007	44.20	43.03	42.63	42.92	42.65
8/14/2007	44.84	43.96	43.59	43.87	43.73
8/15/2007	45.93	45.57	45.24	45.45	45.33
8/16/2007	45.97	45.38	44.96	45.23	45.00
8/17/2007	45.25	44.47	44.34	44.54	44.20
8/18/2007	46.24	45.62	45.55	45.68	45.38
8/19/2007	47.02	45.97	45.87	46.04	45.69
8/20/2007	47.19	45.87	45.87	45.94	45.71
8/21/2007	48.54	47.86	47.90	47.95	47.80
8/22/2007	49.89	50.01	50.03	50.14	49.97
8/23/2007	49.35	49.70	49.69	49.67	49.46
8/24/2007	48.23	48.89	48.89	48.89	48.65
8/25/2007	47.63	48.37	48.41	48.39	48.13
8/26/2007	46.55	46.97	46.95	46.94	46.65
8/27/2007	45.94	45.91	45.84	45.82	45.59
8/28/2007	46.17	46.71	46.69	46.69	46.53
8/29/2007	46.21	47.67	47.65	47.71	47.50
8/30/2007	44.87	46.31	46.23	46.22	45.96
8/31/2007	43.92	45.73	45.78	45.78	45.50
9/1/2007	45.68	47.22	47.23	47.29	47.07
9/2/2007	46.90	46.93	46.96	47.04	46.72

Table 15. Average hourly relative humidity (%) on 1 August, 2007, at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

hour	cut	edge	50'	100'	interior
12:00 AM	46.39	45.30	44.83	45.13	44.86
1:00 AM	46.45	45.33	44.75	45.30	44.98
2:00 AM	46.41	45.32	45.09	45.18	45.11
3:00 AM	46.49	45.38	45.09	45.34	45.00
4:00 AM	46.53	45.68	45.25	45.44	45.10
5:00 AM	46.69	45.62	45.17	45.63	45.27
6:00 AM	46.79	45.62	45.37	45.54	45.47
7:00 AM	46.83	45.83	45.47	45.85	45.55
8:00 AM	46.85	45.85	45.45	45.64	45.45
9:00 AM	46.99	45.91	45.51	45.54	45.67
10:00 AM	46.95	45.89	45.74	45.91	45.63
11:00 AM	46.99	46.03	45.70	45.70	45.53
12:00 PM	47.14	45.93	45.66	45.93	45.71
1:00 PM	46.99	46.07	45.62	46.02	45.73
2:00 PM	47.14	46.11	45.78	46.07	45.73
3:00 PM	47.34	46.18	45.94	46.02	45.83
4:00 PM	47.28	46.32	45.88	46.10	45.71
5:00 PM	47.24	46.38	45.92	46.12	45.81
6:00 PM	47.46	46.36	45.96	46.28	46.05
7:00 PM	47.56	46.62	46.06	46.43	46.05
8:00 PM	47.66	46.61	46.32	46.47	46.18
9:00 PM	47.60	46.40	46.24	46.49	46.24
10:00 PM	47.60	46.38	46.22	46.41	46.20
11:00 PM	47.52	46.34	46.14	46.57	46.20

Table 16. Minimum daily relative humidity (%) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

date	cut	edge	50'	100'	interior
7/25/2007	51.46	52.05	51.79	51.77	51.60
7/26/2007	49.37	49.92	49.37	49.38	49.11
7/27/2007	46.86	46.93	46.42	46.42	46.23
7/28/2007	44.58	44.63	44.02	43.99	43.90
7/29/2007	42.68	42.59	42.05	42.03	41.78
7/30/2007	42.60	42.67	42.05	42.03	41.93
7/31/2007	44.00	43.47	43.22	43.18	42.81
8/1/2007	45.15	44.85	44.32	44.23	44.12
8/2/2007	40.92	39.89	39.54	39.49	38.97
8/3/2007	37.32	36.41	35.52	35.67	35.24
8/4/2007	35.56	34.55	33.71	34.00	33.51
8/5/2007	35.04	33.80	32.95	33.16	32.98
8/6/2007	34.76	32.76	32.04	32.32	31.10
8/7/2007	35.65	34.71	34.17	34.50	34.34
8/8/2007	38.52	37.98	37.61	37.76	37.71
8/9/2007	39.28	38.57	38.14	38.01	37.94
8/10/2007	39.37	38.49	38.06	38.42	38.17
8/11/2007	40.36	39.60	39.03	39.41	39.06
8/12/2007	41.44	40.70	40.58	40.49	40.61
8/13/2007	42.02	41.22	40.88	40.90	40.61
8/14/2007	42.85	42.53	42.35	42.53	42.30
8/15/2007	44.25	44.27	44.10	44.24	43.99
8/16/2007	43.76	43.18	42.78	43.03	42.89
8/17/2007	42.68	42.16	41.75	41.71	41.50
8/18/2007	44.25	44.28	44.09	44.16	44.06
8/19/2007	44.74	44.05	43.73	43.83	43.48
8/20/2007	44.89	43.91	43.80	43.42	43.48
8/21/2007	46.21	45.94	46.13	45.94	45.95
8/22/2007	48.01	48.72	48.51	48.59	48.61
8/23/2007	46.62	46.86	46.63	46.42	46.17
8/24/2007	46.30	46.58	46.20	46.10	46.17
8/25/2007	45.24	45.43	44.96	44.96	45.01
8/26/2007	44.17	44.42	43.80	43.58	43.77
8/27/2007	43.68	43.55	42.92	42.93	43.04
8/28/2007	44.50	45.29	45.11	44.88	45.01
8/29/2007	45.31	46.51	46.42	46.34	46.38
8/30/2007	42.35	43.40	42.92	42.68	42.60
8/31/2007	41.78	43.32	43.21	43.09	42.67
9/1/2007	43.91	45.43	45.04	44.88	45.08
9/2/2007	44.59	44.87	44.46	44.48	44.49

Table 17. Minimum hourly relative humidity (%) on 1 August, 2007, at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

hour	cut	edge	50'	100'	interior
12:00 AM	45.77	44.67	44.94	44.38	44.05
1:00 AM	45.09	44.76	44.96	44.40	44.12
2:00 AM	45.13	44.55	45.24	44.42	44.23
3:00 AM	45.32	44.64	45.21	44.57	44.28
4:00 AM	45.31	44.98	45.38	44.64	44.18
5:00 AM	44.74	44.93	45.17	44.92	44.45
6:00 AM	44.91	44.79	45.55	44.81	44.56
7:00 AM	44.85	45.12	45.65	45.03	44.62
8:00 AM	45.72	45.22	45.47	45.03	44.67
9:00 AM	45.09	45.21	45.68	44.75	44.75
10:00 AM	46.33	45.29	45.80	45.11	44.88
11:00 AM	45.77	45.39	45.78	45.09	44.89
12:00 PM	46.51	45.41	45.72	45.14	44.83
1:00 PM	45.01	45.35	45.68	45.31	45.04
2:00 PM	45.23	45.46	45.98	45.42	45.03
3:00 PM	46.62	45.47	45.88	45.20	44.97
4:00 PM	45.40	45.48	46.00	45.31	44.98
5:00 PM	45.97	45.75	46.07	45.46	45.02
6:00 PM	47.36	45.75	46.03	45.59	45.42
7:00 PM	45.84	45.88	46.11	45.81	45.43
8:00 PM	46.37	45.99	46.45	45.85	45.41
9:00 PM	47.54	45.95	46.29	45.88	45.43
10:00 PM	45.67	45.73	46.20	45.70	45.26
11:00 PM	46.27	45.78	46.22	45.81	45.39

Table 18. Maximum daily relative humidity (%) at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

date	cut	edge	50'	100'	interior
7/25/2007	53.77	54.43	54.26	54.20	54.21
7/26/2007	53.53	54.22	53.91	54.21	53.79
7/27/2007	51.54	52.26	51.79	51.76	51.81
7/28/2007	49.13	49.50	49.08	48.90	49.10
7/29/2007	46.86	47.01	46.64	46.50	46.37
7/30/2007	45.88	45.57	44.90	44.96	44.99
7/31/2007	46.20	45.78	45.26	45.20	45.14
8/1/2007	47.74	47.37	46.93	46.90	46.81
8/2/2007	47.58	46.79	46.64	46.34	46.30
8/3/2007	41.90	40.92	40.50	40.56	40.30
8/4/2007	39.25	38.20	37.84	38.00	37.70
8/5/2007	38.24	36.94	36.64	36.59	36.44
8/6/2007	37.56	36.49	35.97	36.18	35.61
8/7/2007	39.92	38.79	38.51	38.50	38.53
8/8/2007	41.35	40.85	40.73	41.05	40.68
8/9/2007	42.02	41.73	41.54	41.63	41.35
8/10/2007	42.19	41.51	41.39	41.38	41.20
8/11/2007	43.01	42.60	42.13	42.04	41.93
8/12/2007	44.24	43.69	43.66	43.51	43.69
8/13/2007	44.98	44.56	44.18	44.65	44.57
8/14/2007	45.80	45.07	45.05	45.22	45.22
8/15/2007	46.70	46.43	46.50	46.67	46.38
8/16/2007	47.51	47.08	46.86	46.91	46.88
8/17/2007	46.78	46.51	46.13	46.50	46.09
8/18/2007	46.86	46.79	46.86	46.91	46.52
8/19/2007	48.24	47.94	48.01	47.71	47.75
8/20/2007	48.23	47.65	47.58	47.55	47.39
8/21/2007	49.53	49.29	49.15	49.23	49.54
8/22/2007	50.98	51.48	51.37	51.37	51.46
8/23/2007	51.54	52.05	52.07	52.01	52.17
8/24/2007	50.02	51.20	51.01	51.22	50.89
8/25/2007	49.61	50.78	50.94	50.74	50.82
8/26/2007	48.57	49.44	49.01	49.14	49.26
8/27/2007	47.92	48.02	48.15	48.18	48.11
8/28/2007	47.52	47.87	47.72	47.79	47.96
8/29/2007	47.67	48.87	48.58	48.67	48.68
8/30/2007	47.26	48.79	48.87	48.74	48.76
8/31/2007	46.37	47.94	47.64	47.78	47.68
9/1/2007	47.94	48.51	49.22	50.03	49.25
9/2/2007	48.86	48.59	48.72	48.91	48.80

Table 19. Maximum hourly relative humidity (%) on 1 August, 2007, at five locations along a transect from a cut area into the interior of a forest. Data were averaged across nine sites in the Medford District, BLM.

hour	cut	edge	50'	100'	interior
12:00 AM	46.81	45.79	45.38	45.13	45.21
1:00 AM	47.11	45.75	45.33	45.21	45.26
2:00 AM	46.92	45.92	45.62	45.12	45.07
3:00 AM	46.98	45.90	45.63	45.39	45.04
4:00 AM	46.99	46.14	45.72	45.30	45.21
5:00 AM	47.39	46.07	45.73	45.61	45.59
6:00 AM	47.28	46.21	45.89	45.51	45.81
7:00 AM	47.50	46.35	46.08	45.77	46.04
8:00 AM	47.38	46.30	45.80	45.78	45.64
9:00 AM	47.53	46.43	45.99	45.47	45.79
10:00 AM	47.33	46.27	46.18	45.90	45.69
11:00 AM	47.48	46.38	46.15	45.78	45.76
12:00 PM	47.46	46.32	46.18	45.90	45.84
1:00 PM	47.67	46.60	46.14	45.99	45.89
2:00 PM	47.73	46.59	46.27	46.12	46.10
3:00 PM	47.74	46.58	46.43	46.03	45.91
4:00 PM	47.98	46.90	46.48	46.03	46.04
5:00 PM	47.83	46.80	46.32	46.08	45.84
6:00 PM	47.72	46.87	46.31	46.25	46.43
7:00 PM	47.98	47.02	46.53	46.47	46.22
8:00 PM	48.23	46.98	46.80	46.47	46.22
9:00 PM	47.98	46.84	46.60	46.51	46.57
10:00 PM	48.20	46.82	46.53	46.38	46.54
11:00 PM	48.03	46.74	46.48	46.51	46.26