

USWP Task 2 Test Results K Series Tests

USW_VEL2.WK3 Sheet F: 11/06/92

Turbulent Intensity Profile Comparisons

Sinusoidal Hill: 1:3 Slope; 20' Tree Tests				
Height Norm.	K01_full	K02_-100'	Turb.Int. (%)	Turb.Int. (%)
0.04	13.5	13.0	15.7	23.6
0.08	13.6	13.4	13.5	12.6
0.12	14.4	13.4	13.6	13.1
0.16	13.0	12.9	13.2	13.3
0.20	13.1	12.7	12.5	12.7
0.30	11.9	12.3	12.3	11.9
0.42	11.2	10.6	11.1	11.5
0.60	10.4	9.6	9.9	10.0
0.80	8.6	8.9	8.8	9.0
1.00	7.8	7.9	7.8	7.9
Ur@30.5cm =	847	859	853	869
Ur@6.1cm =	506	511	508	517
Href (cm) =	30.5	30.5	30.5	30.5

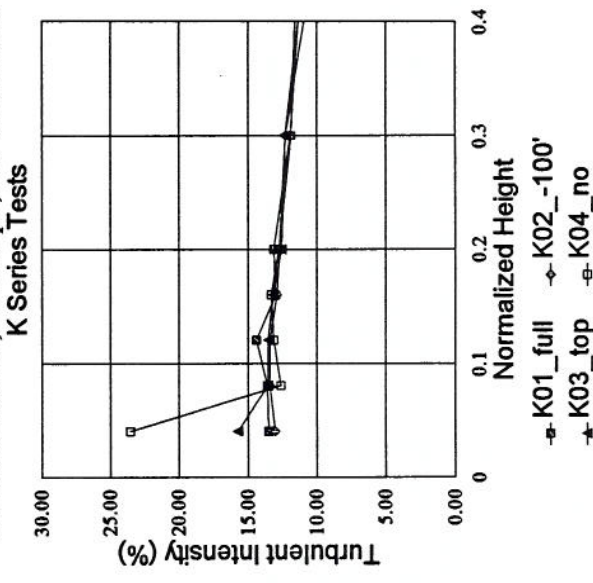
Turbulent Intensity Profile Comparisons

Sinusoidal Hill: 1:3 Slope; 40' Tree Tests				
Height Norm.	K05_full	K06_-100'	Turb.Int. (%)	Turb.Int. (%)
0.04	14.3	15.0	22.0	19.1
0.08	15.4	14.7	14.8	14.8
0.12	15.2	13.7	14.5	14.1
0.16	14.4	14.5	14.9	14.7
0.20	14.7	14.2	14.1	14.5
0.30	13.4	12.4	12.8	13.0
0.42	11.7	11.5	11.4	11.6
0.60	10.2	9.9	10.1	9.8
0.80	8.8	9.2	9.0	9.0
1.00	7.6	7.8	7.9	7.7
Ur@30.5cm =	854	848	860	853
Ur@6.1cm =	505	501	507	502
Href (cm) =	30.5	30.5	30.5	30.5

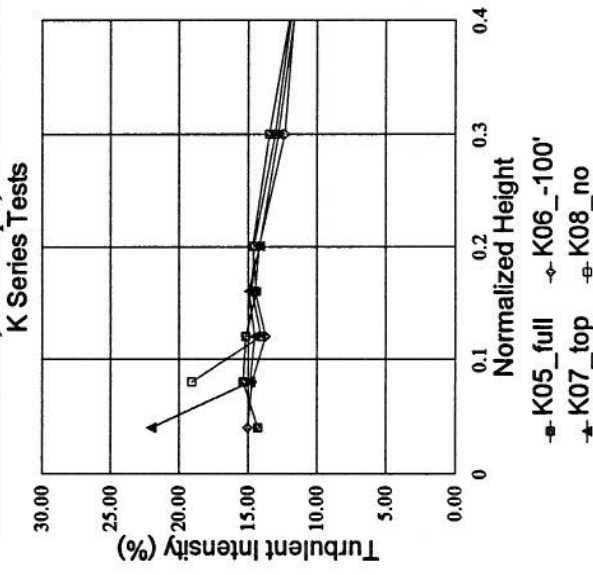
Turbulent Intensity Profile Comparisons

Sinusoidal Hill: 1:3 Slope; 60' Tree Tests				
Height Norm.	K09_full	K10_-100'	Turb.Int. (%)	Turb.Int. (%)
0.04	15.6	15.0	22.6	29.3
0.08	16.1	15.6	15.7	15.5
0.12	16.0	15.2	15.5	14.1
0.16	15.8	14.8	15.1	14.5
0.20	14.2	14.4	14.5	14.2
0.30	13.4	12.3	13.3	13.6
0.42	11.7	11.4	11.9	12.1
0.60	10.1	9.8	10.1	10.1
0.80	9.6	9.1	9.3	9.0
1.00	8.0	7.8	7.8	7.8
Ur@30.5cm =	844	838	882	853
Ur@6.1cm =	504	496	520	503
Href (cm) =	30.5	30.5	30.5	30.5

Sinusoidal Hill; 1:3 Slope; 20' Tree Tests



Sinusoidal Hill; 1:3 Slope; 40' Tree Tests



Sinusoidal Hill; 1:3 Slope; 60' Tree Tests

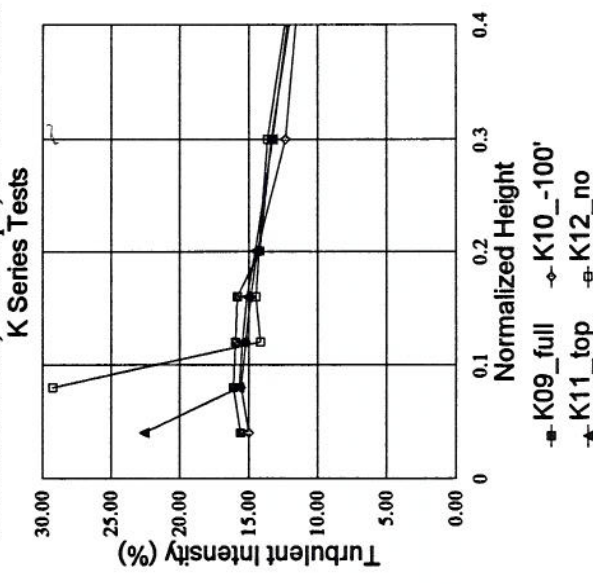


TABLE 45 Model Ridge Turbulence Profile Test Results; Sinusoidal Shape, 1:3 Slope

USWP Task 2 Test Results L Series Tests

USW_VEL0.WK3

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Velocity Profile Data

Run L01 Sinusoidal Hill: 1:5 Slope: 20' Trees: Full Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	651	13.1	848	511	1.66
2.4	674	13.3	842	513	1.64
3.7	679	12.9	850	510	1.67
4.9	687	13.5	844	498	1.69
6.1	702	13.3	850	510	1.67
9.1	722	12.1	848	506	1.68
12.9	746	11.9	846	509	1.66
18.3	785	10.1	855	505	1.69
24.4	822	8.9	856	505	1.70
30.5	855	7.7	856	508	1.68
Average =			850	508	1.67

Velocity Profile Data

Run L02 Sinusoidal Hill: 1:5 Slope: 20' Trees: -100' Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	662	13.6	866	514	1.68
2.4	679	13.4	866	517	1.68
3.7	699	13.4	864	517	1.67
4.9	700	13.5	863	518	1.67
6.1	719	13.1	861	515	1.67
9.1	741	12.4	863	511	1.69
12.9	764	10.7	858	519	1.65
18.3	795	10.2	866	517	1.68
24.4	833	9.0	858	504	1.70
30.5	864	7.8	860	515	1.67
Average =			863	515	1.68

Velocity Profile Data

Run L03 Sinusoidal Hill: 1:5 Slope: 20' Trees: Top Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	597	16.0	838	493	1.70
2.4	649	14.0	837	493	1.70
3.7	664	13.9	845	499	1.69
4.9	678	13.7	839	494	1.70
6.1	689	12.7	841	490	1.71
9.1	714	11.9	843	500	1.69
12.9	732	11.3	839	498	1.68
18.3	769	10.8	838	497	1.68
24.4	811	8.9	842	501	1.68
30.5	850	7.5	848	496	1.71
Average =			841	496	1.69

Velocity Profile Data

Run L04 Sinusoidal Hill: 1:5 Slope: 20' Trees: No Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	494	21.0	849	501	1.69
2.4	660	13.0	850	502	1.69
3.7	672	13.0	852	501	1.70
4.9	687	12.8	858	500	1.72
6.1	701	12.9	853	509	1.67
9.1	731	11.9	858	502	1.71
12.9	755	11.1	851	499	1.70
18.3	780	10.3	851	504	1.69
24.4	822	8.8	848	500	1.69
30.5	857	8.1	855	494	1.73
Average =			852	501	1.70

TABLE 46 Model Ridge Test Data; Sinusoidal Shape, 1:5 Slope, 20' Trees

USWP Task 2 Test Results L Series Tests

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Velocity Profile Data

Run L05 Sinusoidal Hill: 1:5 Slope: 40' Trees: Full Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	629	14.4	849	502	1.69
2.4	650	14.8	848	513	1.65
3.7	663	14.9	853	511	1.67
4.9	672	14.3	845	504	1.67
6.1	678	14.2	851	517	1.65
9.1	702	13.1	847	508	1.67
12.9	733	12.0	846	506	1.67
18.3	780	9.9	852	510	1.67
24.4	813	9.1	852	508	1.68
30.5	855	7.7	857	505	1.70
Average =			850	508	1.67

Velocity Profile Data

Run L07 Sinusoidal Hill: 1:5 Slope: 40' Trees: Top Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	549	19.4	842	505	1.67
2.4	620	15.4	847	499	1.70
3.7	642	14.4	848	498	1.70
4.9	669	14.7	848	496	1.71
6.1	675	14.3	849	506	1.68
9.1	707	13.0	848	496	1.71
12.9	740	11.4	847	501	1.69
18.3	774	10.0	844	506	1.67
24.4	820	9.0	852	501	1.70
30.5	852	7.8	848	495	1.71
Average =			847	500	1.69

Velocity Profile Data

Run L06 Sinusoidal Hill: 1:5 Slope: 40' Trees: -100' Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	627	14.7	855	509	1.68
2.4	650	14.8	860	510	1.69
3.7	673	14.6	857	516	1.66
4.9	686	14.3	857	510	1.68
6.1	696	13.9	856	514	1.66
9.1	726	13.0	856	511	1.67
12.9	758	11.2	858	505	1.70
18.3	791	10.0	855	507	1.69
24.4	833	9.1	861	507	1.70
30.5	863	8.0	859	511	1.68
Average =			857	510	1.68

Velocity Profile Data

Run L08 Sinusoidal Hill: 1:5 Slope: 40' Trees: No Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2					
2.4	584	17.0	838	500	1.67
3.7	655	13.8	838	487	1.72
4.9	673	13.8	842	497	1.69
6.1	666	14.2	842	504	1.67
9.1	705	13.0	844	503	1.68
12.9	738	11.4	850	499	1.70
18.3	780	10.1	848	504	1.68
24.4	816	9.0	852	499	1.71
30.5	846	7.8	851	497	1.71
Average =			845	499	1.69

TABLE 47 Model Ridge Test Data; Sinusoidal Shape, 1:5 Slope, 40' Trees

USWP Task 2 Test Results L Series Tests

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Velocity Profile Data

Run L09 Sinusoidal Hill: 1:5 Slope: 60' Trees: Full Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	614	14.9	849	522	1.63
2.4	640	15.6	850	505	1.68
3.7	651	15.4	848	503	1.69
4.9	664	15.2	848	509	1.66
6.1	672	15.1	852	511	1.67
9.1	706	13.1	849	507	1.67
12.9	737	11.7	855	506	1.69
18.3	776	10.4	854	511	1.67
24.4	810	9.0	849	501	1.70
30.5	849	7.9	854	501	1.71
Average =			851	508	1.68

Velocity Profile Data

Run L10 Sinusoidal Hill: 1:5 Slope: 60' Trees: -100' Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	603	15.7	855	514	1.66
2.4	643	15.6	855	510	1.68
3.7	663	15.6	855	501	1.71
4.9	674	14.6	855	514	1.66
6.1	696	14.3	851	511	1.66
9.1	719	13.2	856	503	1.70
12.9	753	11.7	861	510	1.69
18.3	788	10.1	860	508	1.69
24.4	828	9.0	860	500	1.72
30.5	868	7.5	864	511	1.69
Average =			857	508	1.69

Velocity Profile Data

Run L11 Sinusoidal Hill: 1:5 Slope: 60' Trees: Top Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	541	20.0	852	505	1.69
2.4	608	16.3	857	510	1.68
3.7	639	15.3	849	505	1.68
4.9	654	15.5	851	514	1.66
6.1	680	14.3	851	500	1.70
9.1	711	13.0	859	499	1.72
12.9	742	11.7	853	505	1.69
18.3	777	10.6	857	504	1.70
24.4	823	9.0	857	509	1.68
30.5	859	7.8	857	505	1.70
Average =			854	506	1.69

Velocity Profile Data

Run L12 Sinusoidal Hill: 1:5 Slope: 60' Trees: No Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2					
2.4	491	23.2	840	486	1.73
3.7	629	15.1	841	490	1.71
4.9	656	14.0	833	493	1.69
6.1	676	14.3	843	498	1.69
9.1	708	12.9	846	492	1.72
12.9	741	11.6	849	493	1.72
18.3	780	10.2	846	494	1.71
24.4	817	8.9	844	492	1.71
30.5	854	7.5	850	492	1.73
Average =			844	492	1.71

TABLE 48 Model Ridge Test Data; Sinusoidal Shape, 1:5 Slope, 60' Trees

USWP Task 2 Test Results L Series Tests

USW_VEL1.WK3

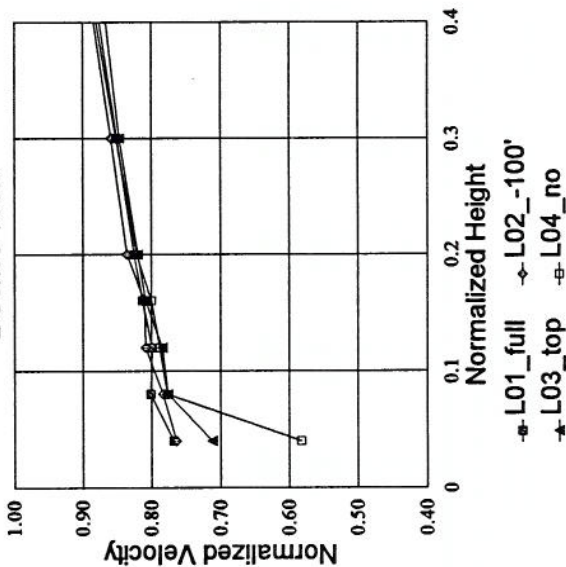
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Velocity Profile Comparisons

Sinusoidal Hill; 1:5 Slope; 20' Tree Tests									
Height	Velocity	Velocity	Velocity	Velocity	Velocity	Velocity	Velocity	Velocity	Velocity
Norm.	L01_full	L02_-100'	L03_top	Norm.	L04_top	Norm.	L04_top	Norm.	L04_no
0.04	0.77	0.76	0.71	0.71	0.58				
0.08	0.80	0.78	0.78	0.78	0.78				
0.12	0.80	0.81	0.78	0.78	0.79				
0.16	0.81	0.81	0.81	0.81	0.80				
0.20	0.83	0.84	0.82	0.82	0.82				
0.30	0.85	0.86	0.85	0.85	0.85				
0.42	0.88	0.89	0.87	0.87	0.89				
0.60	0.92	0.92	0.92	0.92	0.92				
0.80	0.96	0.97	0.96	0.96	0.97				
1.00	1.00	1.01	1.00	1.00	1.00				
Ur@30.5cm =	850	863	841	841	852				
Ur@6.1cm =	508	515	496	496	501				
Href (cm) =	30.5	30.5	30.5	30.5	30.5				

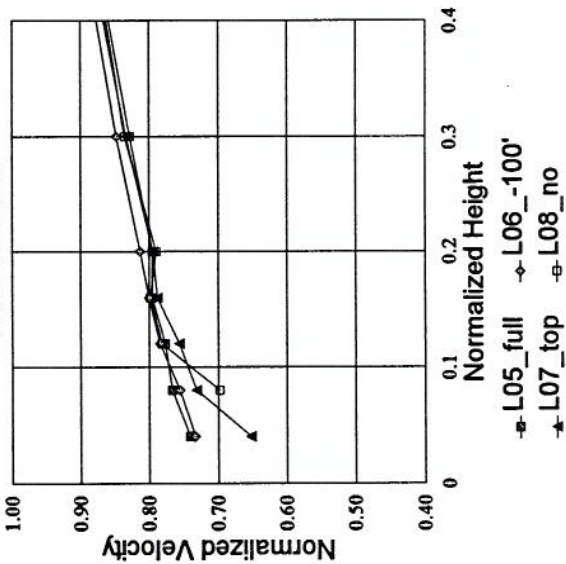
Sinusoidal Hill; 1:5 Slope; 20' Tree Tests



Velocity Profile Comparisons

Sinusoidal Hill; 1:5 Slope; 40' Tree Tests									
Height	Velocity	Velocity	Velocity	Velocity	Velocity	Velocity	Velocity	Velocity	Velocity
Norm.	L05_full	L06_-100'	L07_top	Norm.	L08_top	Norm.	L08_top	Norm.	L08_no
0.04	0.74	0.73	0.73	0.65	0.70				
0.08	0.77	0.76	0.76	0.73	0.78				
0.12	0.78	0.78	0.78	0.76	0.78				
0.16	0.80	0.80	0.80	0.79	0.80				
0.20	0.80	0.81	0.81	0.79	0.79				
0.30	0.83	0.85	0.85	0.83	0.84				
0.42	0.87	0.88	0.88	0.87	0.87				
0.60	0.92	0.92	0.92	0.92	0.92				
0.80	0.95	0.97	0.97	0.96	0.96				
1.00	1.00	1.00	1.00	1.00	0.99				
Ur@30.5cm =	850	857	847	847	845				
Ur@6.1cm =	508	510	500	500	499				
Href (cm) =	30.5	30.5	30.5	30.5	30.5				

Sinusoidal Hill; 1:5 Slope; 40' Tree Tests



Velocity Profile Comparisons

Sinusoidal Hill; 1:5 Slope; 60' Tree Tests									
Height	Velocity	Velocity	Velocity	Velocity	Velocity	Velocity	Velocity	Velocity	Velocity
Norm.	L09_full	L10_-100'	L11_top	Norm.	L12_top	Norm.	L12_top	Norm.	L12_no
0.04	0.72	0.70	0.63	0.63	0.58				
0.08	0.75	0.75	0.71	0.71	0.75				
0.12	0.77	0.78	0.75	0.75	0.79				
0.16	0.78	0.79	0.77	0.77	0.79				
0.20	0.79	0.82	0.80	0.80	0.80				
0.30	0.83	0.84	0.83	0.83	0.84				
0.42	0.86	0.87	0.87	0.87	0.87				
0.60	0.91	0.92	0.91	0.91	0.92				
0.80	0.95	0.96	0.96	0.96	0.97				
1.00	0.99	1.00	1.00	1.00	1.00				
Ur@30.5cm =	851	857	854	854	844				
Ur@6.1cm =	508	508	506	506	492				
Href (cm) =	30.5	30.5	30.5	30.5	30.5				

Sinusoidal Hill; 1:5 Slope; 60' Tree Tests

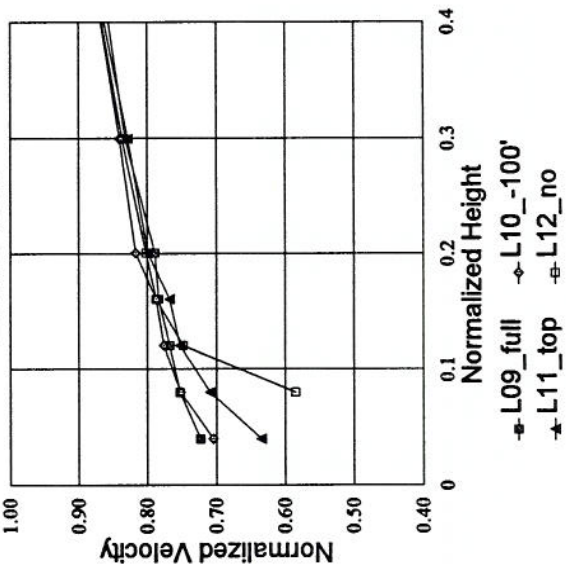


TABLE 49 Model Ridge Velocity Profile Test Results; Sinusoidal Shape, 1:5 Slope

USWP Task 2 Test Results L Series Tests

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Turbulent Intensity Profile Comparisons

Sinusoidal Hill; 1:5 Slope; 20' Tree Tests

Height Norm.	L01_full	Turb.Int. (%)	L02_-100'	Turb.Int. (%)	L03_top	Turb.Int. (%)	L04_no	Turb.Int. (%)
0.04	13.1	13.6	13.6	16.0	16.0	21.0		
0.08	13.3	13.4	13.4	14.0	14.0	13.0		
0.12	12.9	13.4	13.4	13.9	13.9	13.0		
0.16	13.5	13.5	13.5	13.7	13.7	12.8		
0.20	13.3	13.1	12.7	12.9	12.9			
0.30	12.1	12.4	11.9	11.9	11.9			
0.42	11.9	10.7	11.3	11.1	11.1			
0.60	10.1	10.2	10.8	10.3	10.3			
0.80	8.9	9.0	8.9	8.8	8.8			
1.00	7.7	7.8	7.5	8.1	8.1			
Ur@30.5cm =	850	863	841	852	852			
Ur@6.1cm =	508	515	496	501	501			
Href (cm) =	30.5	30.5	30.5	30.5	30.5			

Turbulent Intensity Profile Comparisons

Sinusoidal Hill; 1:5 Slope; 40' Tree Tests

Height Norm.	L05_full	Turb.Int. (%)	L06_-100'	Turb.Int. (%)	L07_top	Turb.Int. (%)	L08_no	Turb.Int. (%)
0.04	14.4	14.7	14.7	19.4	19.4	17.0		
0.08	14.8	14.8	14.8	15.4	15.4	13.8		
0.12	14.9	14.6	14.4	13.8	13.8			
0.16	14.3	14.3	14.3	14.7	14.7	13.8		
0.20	14.2	13.9	14.3	14.3	14.3	14.2		
0.30	13.1	13.0	13.0	13.0	13.0	13.0		
0.42	12.0	11.2	11.4	11.4	11.4	11.4		
0.60	9.9	10.0	10.0	10.1	10.1	10.1		
0.80	9.1	9.1	9.0	9.0	9.0	9.0		
1.00	7.7	8.0	7.8	7.8	7.8	7.8		
Ur@30.5cm =	850	857	847	845	845			
Ur@6.1cm =	508	510	500	499	499			
Href (cm) =	30.5	30.5	30.5	30.5	30.5			

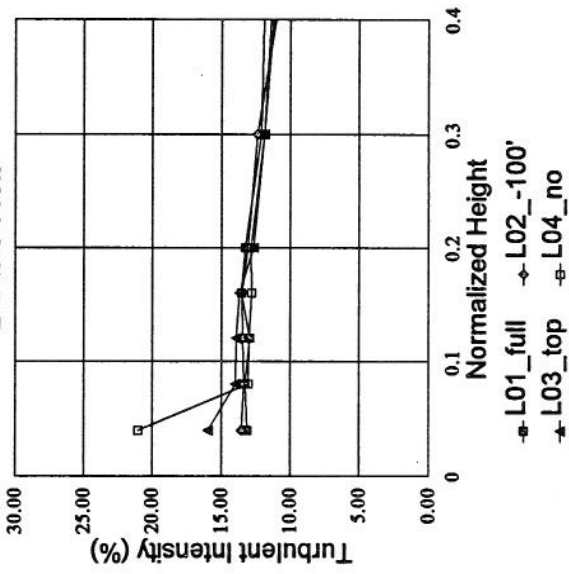
Turbulent Intensity Profile Comparisons

Sinusoidal Hill; 1:5 Slope; 60' Tree Tests

Height Norm.	L09_full	Turb.Int. (%)	L10_-100'	Turb.Int. (%)	L11_top	Turb.Int. (%)	L12_no	Turb.Int. (%)
0.04	14.9	15.7	20.0	23.2	23.2			
0.08	15.6	15.6	16.3	15.1	15.1			
0.12	15.4	15.6	15.3	14.0	14.0			
0.16	15.2	14.6	15.5	14.3	14.3			
0.20	15.1	14.3	14.3	12.9	12.9			
0.30	13.1	13.2	13.0	11.6	11.6			
0.42	11.7	11.7	11.7	10.2	10.2			
0.60	10.4	10.1	10.6	8.9	8.9			
0.80	9.0	9.0	9.0	7.5	7.5			
1.00	7.9	7.5	7.8	844	844			
Ur@30.5cm =	851	857	854	508	508			
Ur@6.1cm =	30.5	30.5	30.5	492	492			
Href (cm) =	30.5	30.5	30.5	30.5	30.5			

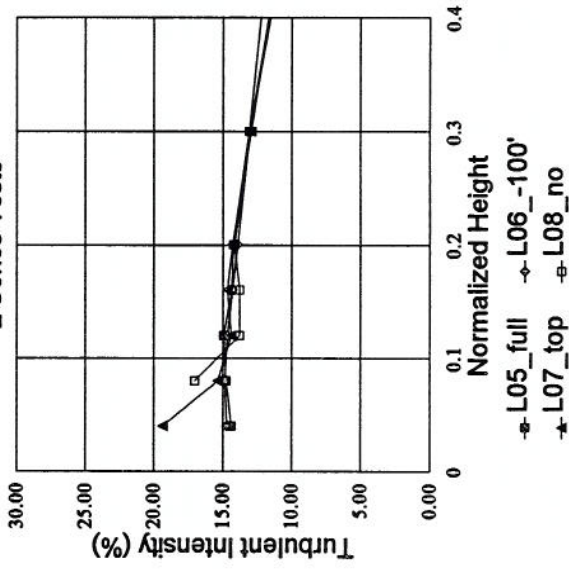
Sinusoidal Hill; 1:5 Slope; 20' Tree Tests

L Series Tests



Sinusoidal Hill; 1:5 Slope; 40' Tree Tests

L Series Tests



Sinusoidal Hill; 1:5 Slope; 60' Tree Tests

L Series Tests

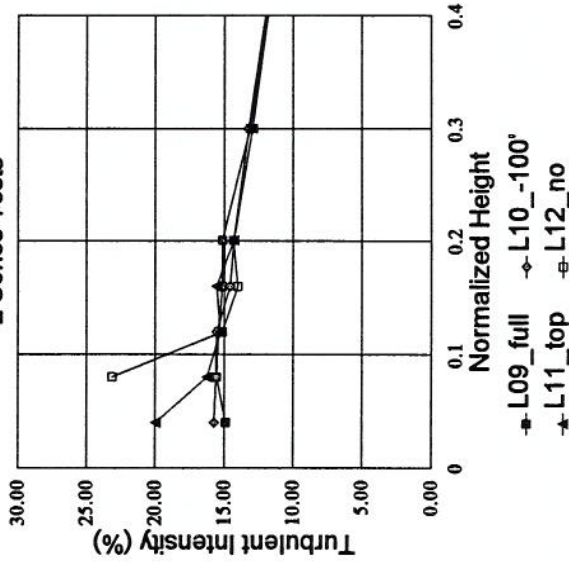


TABLE 50 Model Ridge Turbulence Profile Test Results; Sinusoidal Shape, 1:5 Slope

USWP Task 2 Test Results M Series Tests

USW_VEL0.WK3

Sheet H:

02/18/93

Velocity Profile Data

Run M01 Sinusoidal Hill: 1:10 Slope; 20' Trees: Full Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	578	15.4	850	503	1.69
2.4	635	14.1	848	508	1.67
3.7	658	13.3	842	502	1.68
4.9	673	13.6	845	508	1.66
6.1	683	13.3	848	502	1.69
9.1	708	12.5	851	504	1.69
12.9	743	11.5	850	504	1.69
18.3	780	10.3	852	503	1.70
24.4	820	9.2	850	506	1.68
30.5	862	7.8	859	508	1.69
Average =			849	505	1.68

Velocity Profile Data

Run M03 Sinusoidal Hill: 1:10 Slope; 20' Trees: Top Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	499	19.9	854	504	1.69
2.4	610	15.3	858	510	1.68
3.7	640	13.9	852	499	1.71
4.9	658	14.0	857	508	1.69
6.1	669	14.1	857	501	1.71
9.1	703	12.6	855	505	1.70
12.9	735	12.1	852	509	1.67
18.3	782	10.2	855	503	1.70
24.4	824	9.0	858	500	1.72
30.5	863	7.6	864	500	1.73
Average =			856	504	1.70

Velocity Profile Data

Run M02 Sinusoidal Hill: 1:10 Slope; 20' Trees: -100' Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	567	16.1	844	501	1.69
2.4	612	14.4	837	502	1.67
3.7	636	14.3	836	494	1.69
4.9	653	13.7	837	496	1.69
6.1	668	13.6	843	496	1.70
9.1	706	12.4	837	491	1.71
12.9	741	11.3	837	495	1.69
18.3	775	10.6	839	495	1.69
24.4	809	9.1	839	503	1.67
30.5	845	7.7	843	498	1.69
Average =			839	497	1.69

Velocity Profile Data

Run M04 Sinusoidal Hill: 1:10 Slope; 20' Trees: No Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2					
2.4	600	16.0	864	511	1.69
3.7	651	14.0	857	509	1.68
4.9	671	13.2	867	514	1.69
6.1	694	13.3	864	501	1.73
9.1	723	12.3	860	503	1.71
12.9	751	11.4	859	495	1.73
18.3	792	10.3	863	514	1.68
24.4	832	8.9	861	509	1.69
30.5	865	8.0	861	504	1.71
Average =			862	507	1.70

TABLE 51 Model Ridge Test Data; Sinusoidal Shape, 1:10 Slope, 20' Trees

USWP Task 2 Test Results M Series Tests

USW_VEL0.WK3 Sheet H: 02/18/93

Velocity Profile Data

Run M05 Sinusoidal Hill: 1:10 Slope: 40' Trees: Full Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	557	16.3	844	507	1.66
2.4	617	15.1	846	509	1.66
3.7	640	14.2	848	510	1.66
4.9	654	14.5	847	501	1.69
6.1	673	14.4	843	502	1.68
9.1	698	13.3	842	510	1.65
12.9	739	12.4	849	497	1.71
18.3	773	10.5	851	508	1.68
24.4	823	9.2	853	513	1.67
30.5	851	8.5	850	509	1.67
Average =			848	507	1.67

Velocity Profile Data

Run M06 Sinusoidal Hill: 1:10 Slope: 40' Trees: -100' Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	545	16.8	848	504	1.68
2.4	597	15.4	848	506	1.68
3.7	623	15.1	846	501	1.69
4.9	646	14.9	851	504	1.69
6.1	662	14.7	846	500	1.69
9.1	698	12.9	847	497	1.70
12.9	733	12.0	843	505	1.67
18.3	766	11.2	848	504	1.68
24.4	816	9.4	849	505	1.68
30.5	853	8.3	850	501	1.70
Average =			848	503	1.69

Velocity Profile Data

Run M07 Sinusoidal Hill: 1:10 Slope: 40' Trees: Top Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	485	20.4	836	493	1.70
2.4	558	16.9	830	485	1.71
3.7	594	15.5	834	497	1.68
4.9	620	15.1	837	506	1.65
6.1	639	14.8	830	507	1.64
9.1	670	13.9	836	498	1.68
12.9	711	11.7	830	488	1.70
18.3	755	11.0	838	495	1.69
24.4	798	9.4	832	491	1.69
30.5	842	7.8	840	489	1.72
Average =			834	495	1.69

Velocity Profile Data

Run M08 Sinusoidal Hill: 1:10 Slope: 40' Trees: No Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2					
2.4	456	26.4	859	507	1.69
3.7	598	17.0	864	508	1.70
4.9	649	14.7	863	506	1.70
6.1	666	13.7	856	499	1.72
9.1	717	12.9	864	504	1.71
12.9	741	11.9	861	509	1.69
18.3	784	10.8	859	504	1.71
24.4	825	9.0	860	508	1.69
30.5	857	8.3	860	499	1.72
Average =			861	505	1.70

TABLE 52 Model Ridge Test Data; Sinusoidal Shape, 1:10 Slope, 40' Trees

USWP Task 2 Test Results M Series Tests

USW_VEL0.WK3 Sheet H: 02/18/93

Velocity Profile Data

Run M09 Sinusoidal Hill: 1:10 Slope: 60' Trees: Full Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	570	16.1	842	501	1.68
2.4	605	14.5	847	509	1.66
3.7	625	15.0	849	507	1.68
4.9	645	14.7	848	505	1.68
6.1	660	14.1	847	511	1.66
9.1	697	13.8	847	508	1.67
12.9	736	12.2	843	490	1.72
18.3	776	10.2	843	499	1.69
24.4	814	9.2	843	506	1.67
30.5	856	8.0	851	499	1.71
Average =			846	503	1.68

Velocity Profile Data

Run M11 Sinusoidal Hill: 1:10 Slope: 60' Trees: Top Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	480	20.6	851	506	1.68
2.4	554	19.2	848	504	1.68
3.7	603	17.2	851	504	1.69
4.9	615	15.5	851	508	1.67
6.1	653	15.0	847	496	1.71
9.1	698	13.5	849	507	1.67
12.9	721	12.3	849	499	1.70
18.3	769	10.7	847	502	1.69
24.4	820	9.2	852	492	1.73
30.5	856	8.2	854	503	1.70
Average =			850	502	1.69

Velocity Profile Data

Run M10 Sinusoidal Hill: 1:10 Slope: 60' Trees: -100' Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2	534	17.4	842	511	1.65
2.4	592	16.4	847	504	1.68
3.7	624	15.3	850	510	1.66
4.9	633	15.1	850	499	1.70
6.1	657	14.5	850	508	1.67
9.1	701	13.4	851	497	1.71
12.9	726	12.5	847	507	1.67
18.3	782	10.4	850	503	1.69
24.4	817	9.6	849	502	1.69
30.5	860	8.3	858	503	1.71
Average =			849	504	1.68

Velocity Profile Data

Run M12 Sinusoidal Hill: 1:10 Slope: 60' Trees: No Cut

Height (cm)	Velocity HW (cm/s)	Turbulent Intensity (%)	Velocity @30.5cm (cm/s)	Velocity @6.1cm (cm/s)	Velocity Ratio
1.2					
2.4	414	28.3	854	504	1.69
3.7	577	18.5	856	500	1.71
4.9	635	15.2	853	498	1.71
6.1	656	14.6	852	493	1.73
9.1	699	13.4	856	503	1.70
12.9	734	12.3	853	495	1.72
18.3	780	10.6	857	499	1.72
24.4	820	9.1	856	487	1.76
30.5	859	7.8	861	502	1.72
Average =			855	498	1.72

TABLE 53 Model Ridge Test Data; Sinusoidal Shape, 1:10 Slope, 60' Trees

USWP Task 2 Test Results M Series Tests

USW_VEL1.WK3 Sheet H: 02/18/93

Velocity Profile Comparisons

Sinusoidal Hill; 1:10 Slope; 20' Tree Tests				
Height Norm.	Velocity Norm. M01_full	Velocity Norm. M02_-100'	Velocity Norm. M03_top	Velocity Norm. M04_no
0.04	0.68	0.67	0.58	0.69
0.08	0.75	0.73	0.71	0.76
0.12	0.78	0.76	0.75	0.77
0.16	0.80	0.78	0.77	0.78
0.20	0.81	0.79	0.78	0.80
0.30	0.83	0.84	0.82	0.84
0.42	0.87	0.88	0.86	0.87
0.60	0.92	0.92	0.91	0.92
0.80	0.96	0.96	0.96	0.97
1.00	1.00	1.00	1.00	1.00
Ur@30.5cm =	849	839	856	862
Ur@6.1cm =	505	497	504	507
Href (cm) =	30.5	30.5	30.5	30.5

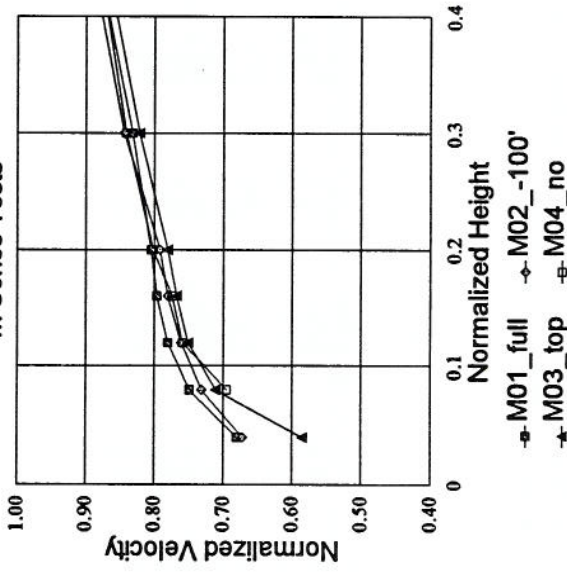
Velocity Profile Comparisons

Sinusoidal Hill; 1:10 Slope; 40' Tree Tests				
Height Norm.	Velocity Norm. M05_full	Velocity Norm. M06_-100'	Velocity Norm. M07_top	Velocity Norm. M08_no
0.04	0.66	0.64	0.58	0.53
0.08	0.73	0.70	0.67	0.69
0.12	0.75	0.74	0.71	0.75
0.16	0.77	0.76	0.74	0.78
0.20	0.80	0.78	0.77	0.80
0.30	0.83	0.82	0.80	0.83
0.42	0.87	0.87	0.86	0.86
0.60	0.91	0.90	0.90	0.91
0.80	0.96	0.96	0.96	0.96
1.00	1.00	1.00	1.00	1.00
Ur@30.5cm =	848	848	834	861
Ur@6.1cm =	507	503	495	505
Href (cm) =	30.5	30.5	30.5	30.5

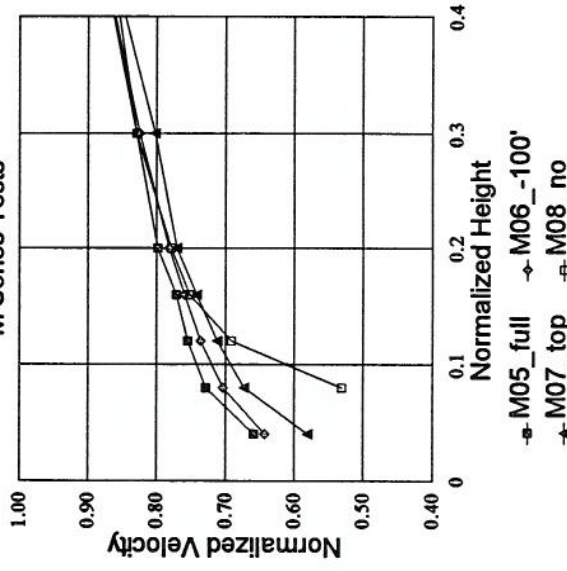
Velocity Profile Comparisons

Sinusoidal Hill; 1:10 Slope; 60' Tree Tests				
Height Norm.	Velocity Norm. M09_full	Velocity Norm. M10_-100'	Velocity Norm. M11_top	Velocity Norm. M12_no
0.04	0.68	0.63	0.56	0.48
0.08	0.71	0.70	0.65	0.67
0.12	0.74	0.73	0.71	0.74
0.16	0.76	0.74	0.72	0.77
0.20	0.78	0.77	0.77	0.82
0.30	0.82	0.82	0.82	0.86
0.42	0.87	0.86	0.85	0.91
0.60	0.92	0.92	0.91	0.96
0.80	0.97	0.96	0.96	1.00
1.00	1.01	1.00	1.00	1.00
Ur@30.5cm =	846	849	850	855
Ur@6.1cm =	503	504	502	498
Href (cm) =	30.5	30.5	30.5	30.5

Sinusoidal Hill; 1:10 Slope; 20' Tree Tests M Series Tests



Sinusoidal Hill; 1:10 Slope; 40' Tree Tests M Series Tests



Sinusoidal Hill; 1:10 Slope; 60' Tree Tests M Series Tests

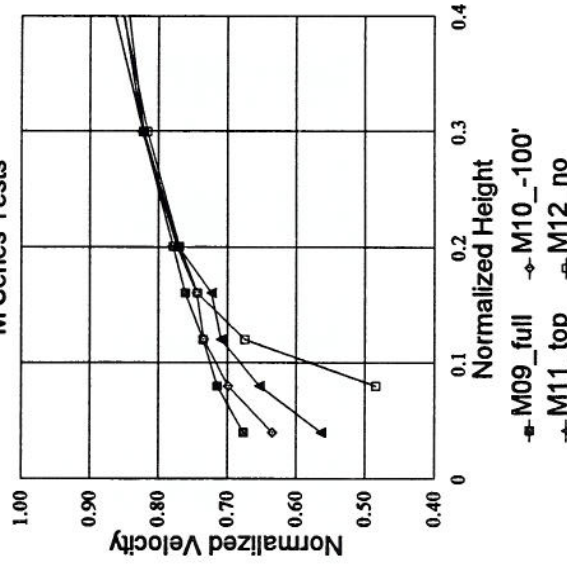


TABLE 54 Model Ridge Velocity Profile Test Results; Sinusoidal Shape, 1:10 Slope

USWP Task 2 Test Results M Series Tests

USW_VEL2.WK3

Sheet H:

11/06/92

Turbulent Intensity Profile Comparisons

Sinusoidal Hill: 1:10 Slope; 20' Tree Tests									
Height	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.
Norm.	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
M01_full	M02_-100'	M03_top	M04_no						
0.04	15.4	16.1	19.9						
0.08	14.1	14.4	15.3						
0.12	13.3	14.3	13.9						
0.16	13.6	13.7	14.0						
0.20	13.3	13.6	14.1						
0.30	12.5	12.4	12.6						
0.42	11.5	11.3	12.1						
0.60	10.3	10.6	10.2						
0.80	9.2	9.1	9.0						
1.00	7.8	7.7	7.6						
Ur@30.5cm =	849	839	856						
Ur@6.1cm =	505	497	504						
Href (cm) =	30.5	30.5	30.5						

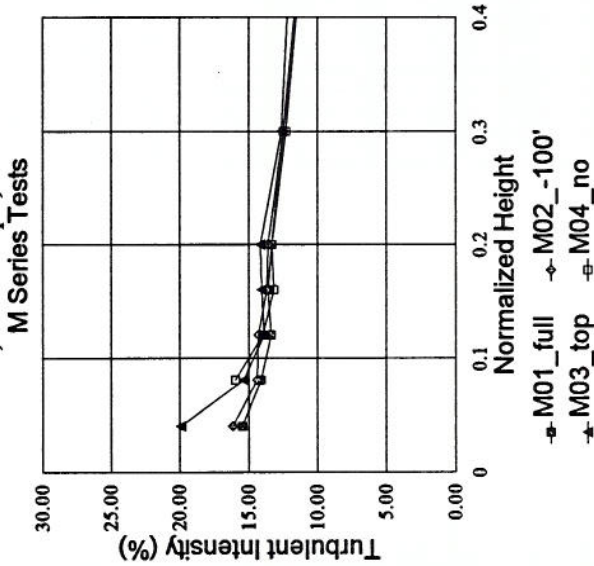
Turbulent Intensity Profile Comparisons

Sinusoidal Hill: 1:10 Slope; 40' Tree Tests									
Height	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.
Norm.	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
M05_full	M06_-100'	M07_top	M08_no						
0.04	16.3	16.8	20.4						
0.08	15.1	15.4	16.9						
0.12	14.2	15.1	15.5						
0.16	14.5	14.9	15.1						
0.20	14.4	14.7	14.8						
0.30	13.3	12.9	13.9						
0.42	12.4	12.0	11.7						
0.60	10.5	11.2	11.0						
0.80	9.2	9.4	9.4						
1.00	8.5	8.3	7.8						
Ur@30.5cm =	848	848	834						
Ur@6.1cm =	507	503	495						
Href (cm) =	30.5	30.5	30.5						

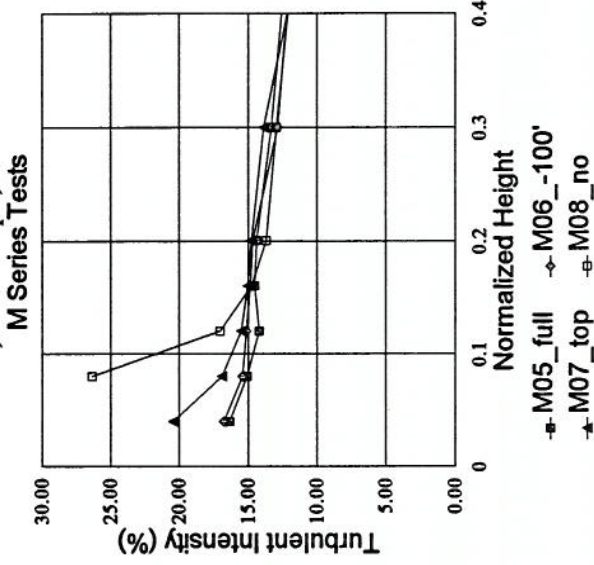
Turbulent Intensity Profile Comparisons

Sinusoidal Hill: 1:10 Slope; 60' Tree Tests									
Height	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.	Turb.Int.
Norm.	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
M09_full	M10_-100'	M11_top	M12_no						
0.04	16.1	17.4	20.6						
0.08	14.5	16.4	19.2						
0.12	15.0	15.3	17.2						
0.16	14.7	15.1	15.5						
0.20	14.1	14.5	15.0						
0.30	13.8	13.4	13.5						
0.42	12.2	12.5	12.3						
0.60	10.2	10.4	10.7						
0.80	9.2	9.6	9.2						
1.00	8.0	8.3	8.2						
Ur@30.5cm =	846	849	850						
Ur@6.1cm =	503	504	502						
Href (cm) =	30.5	30.5	30.5						

Sinusoidal Hill; 1:10 Slope; 20' Tree Tests



Sinusoidal Hill; 1:10 Slope; 40' Tree Tests



Sinusoidal Hill; 1:10 Slope; 60' Tree Tests

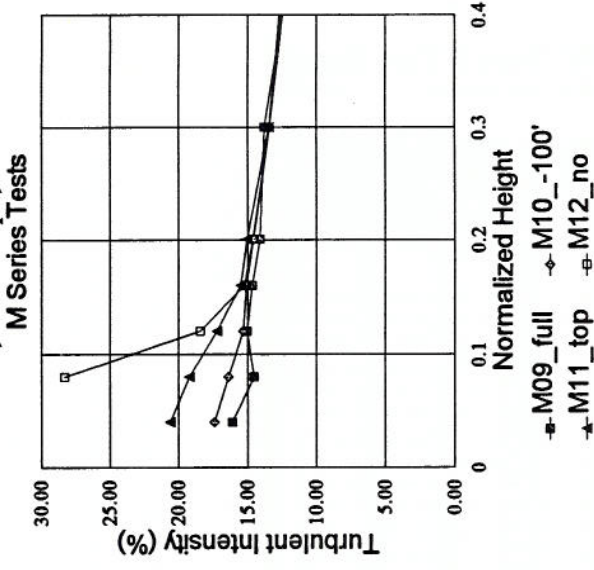


TABLE 55 Model Ridge Turbulence Profile Test Results; Sinusoidal Shape, 1:10 Slope

USWP Task 2 Test Results

USW_VEL3.WK3 Sheet A: 02/18/93

Normalized Velocity Test Results

Run No.	Hill Shape	Hill Slope	Tree Height (ft)	Clearcut Type	Measurement Height Above the Hill Crest										Upwind Ur@6.1cm (cm/s)	Profile Ur @30.5cm (cm/s)
					40 (ft)	80 (ft)	120 (ft)	160 (ft)	200 (ft)	300 (ft)	423 (ft)	600 (ft)	800 (ft)	1000 (ft)		
F01	Triang	1:2	20	full	0.70	0.71	0.73	0.75	0.78	0.82	0.86	0.91	0.96	1.00	514	864
F02	Triang	1:2	20	-100'	0.70	0.73	0.74	0.76	0.78	0.82	0.86	0.91	0.96	1.00	514	867
F03	Triang	1:2	20	top	0.73	0.75	0.76	0.79	0.80	0.83	0.88	0.91	0.97	1.01	517	877
F04	Triang	1:2	20	no	0.57	0.74	0.76	0.77	0.78	0.82	0.86	0.91	0.96	1.00	516	878
F05	Triang	1:2	40	full	0.68	0.70	0.72	0.76	0.76	0.82	0.86	0.91	0.96	1.00	516	870
F06	Triang	1:2	40	-100'	0.68	0.71	0.73	0.75	0.77	0.82	0.85	0.91	0.96	1.00	508	860
F07	Triang	1:2	40	top	0.67	0.72	0.74	0.77	0.78	0.82	0.86	0.91	0.96	1.00	516	873
F08	Triang	1:2	40	no		0.70	0.72	0.75	0.77	0.81	0.85	0.91	0.96	1.01	517	872
F09	Triang	1:2	60	full	0.67	0.69	0.71	0.74	0.76	0.82	0.86	0.91	0.96	1.00	508	859
F10	Triang	1:2	60	-100'	0.67	0.70	0.72	0.75	0.77	0.81	0.86	0.91	0.97	1.00	508	857
F11	Triang	1:2	60	top	0.65	0.70	0.73	0.76	0.79	0.82	0.87	0.91	0.97	1.00	509	862
F12	Triang	1:2	60	no		0.68	0.71	0.74	0.76	0.81	0.86	0.91	0.96	1.00	510	864
G01	Triang	1:3	20	full	0.74	0.75	0.76	0.79	0.78	0.83	0.87	0.91	0.96	1.01	510	857
G02	Triang	1:3	20	-100'	0.75	0.77	0.78	0.79	0.82	0.84	0.88	0.92	0.97	1.01	509	857
G03	Triang	1:3	20	top	0.76	0.77	0.79	0.80	0.81	0.85	0.88	0.92	0.97	1.01	514	867
G04	Triang	1:3	20	no	0.70	0.75	0.77	0.78	0.80	0.84	0.87	0.92	0.97	1.01	510	866
G05	Triang	1:3	40	full	0.73	0.74	0.75	0.77	0.80	0.83	0.87	0.91	0.97	1.01	507	860
G06	Triang	1:3	40	-100'	0.74	0.77	0.77	0.79	0.81	0.85	0.88	0.93	0.98	1.02	504	855
G07	Triang	1:3	40	top	0.70	0.75	0.77	0.80	0.80	0.85	0.88	0.93	0.98	1.01	498	851
G08	Triang	1:3	40	no		0.72	0.74	0.76	0.79	0.83	0.88	0.92	0.98	1.01	501	851
G09	Triang	1:3	60	full	0.71	0.71	0.73	0.77	0.78	0.82	0.87	0.91	0.97	1.01	506	859
G10	Triang	1:3	60	-100'		0.72	0.75	0.77	0.80	0.83	0.87	0.92	0.96	1.00	507	861
G11	Triang	1:3	60	top	0.67	0.72	0.74	0.76	0.79	0.82	0.87	0.91	0.96	1.00	501	855
G12	Triang	1:3	60	no		0.69	0.73	0.74	0.77	0.81	0.86	0.91	0.96	1.00	502	856
H01	Triang	1:5	20	full	0.79	0.79	0.80	0.82	0.83	0.87	0.88	0.92	0.97	1.00	505	854
H02	Triang	1:5	20	-100'	0.76	0.79	0.80	0.81	0.83	0.85	0.88	0.92	0.97	1.01	504	848
H03	Triang	1:5	20	top	0.71	0.76	0.77	0.79	0.80	0.85	0.88	0.92	0.97	1.00	509	864
H04	Triang	1:5	20	no	0.63	0.75	0.76	0.79	0.80	0.83	0.88	0.92	0.96	1.00	506	861
H05	Triang	1:5	40	full	0.77	0.77	0.78	0.79	0.81	0.85	0.87	0.92	0.96	1.00	501	844
H06	Triang	1:5	40	-100'	0.74	0.76	0.77	0.80	0.80	0.83	0.86	0.91	0.95	1.00	508	861
H07	Triang	1:5	40	top	0.62	0.72	0.75	0.77	0.79	0.81	0.87	0.91	0.96	1.00	502	856
H08	Triang	1:5	40	no		0.70	0.75	0.77	0.80	0.84	0.87	0.92	0.97	1.00	496	853
H09	Triang	1:5	60	full	0.72	0.75	0.78	0.78	0.80	0.84	0.88	0.92	0.96	1.01	505	858
H10	Triang	1:5	60	-100'	0.72	0.73	0.76	0.78	0.79	0.82	0.86	0.91	0.96	1.00	504	855
H11	Triang	1:5	60	top	0.62	0.69	0.73	0.75	0.76	0.80	0.87	0.91	0.96	1.00	505	851
H12	Triang	1:5	60	no		0.69	0.74	0.76	0.77	0.83	0.86	0.91	0.97	1.00	497	846
I01	Triang	1:10	20	full	0.75	0.78	0.79	0.79	0.80	0.84	0.87	0.91	0.96	1.00	510	854
I02	Triang	1:10	20	-100'	0.72	0.75	0.78	0.79	0.81	0.84	0.87	0.92	0.96	1.00	510	852
I03	Triang	1:10	20	top	0.62	0.72	0.75	0.76	0.79	0.82	0.86	0.91	0.96	1.00	509	862
I04	Triang	1:10	20	no	0.51	0.72	0.76	0.79	0.79	0.84	0.86	0.91	0.96	1.00	506	857
I05	Triang	1:10	40	full	0.72	0.76	0.77	0.78	0.80	0.83	0.88	0.93	0.97	1.01	504	856
I06	Triang	1:10	40	-100'	0.71	0.73	0.76	0.78	0.79	0.84	0.88	0.92	0.97	1.01	506	860
I07	Triang	1:10	40	top	0.57	0.66	0.72	0.75	0.76	0.82	0.87	0.91	0.97	1.01	499	847
I08	Triang	1:10	40	no		0.65	0.73	0.77	0.79	0.84	0.88	0.93	0.97	1.01	505	856
I09	Triang	1:10	60	full	0.72	0.74	0.76	0.77	0.79	0.83	0.86	0.92	0.97	1.01	504	857
I10	Triang	1:10	60	-100'	0.69	0.72	0.73	0.77	0.77	0.82	0.87	0.92	0.97	1.01	504	849
I11	Triang	1:10	60	top	0.57	0.65	0.71	0.73	0.76	0.81	0.85	0.91	0.97	1.01	500	844
I12	Triang	1:10	60	no		0.59	0.70	0.76	0.78	0.82	0.87	0.92	0.97	1.01	508	866

TABLE 56 Model Ridge Normalized Velocity Profile Comparisons; Triangular Shape

USWP Task 2 Test Results

USW_VEL3.WK3 Sheet A: 02/18/93

Normalized Velocity Test Results

Run No.	Hill Shape	Hill Slope	Tree Height (ft)	Clearcut Type	Measurement Height Above the Hill Crest										Upwind Ur @ 6.1 cm (cm/s)	Profile Ur @ 30.5 cm (cm/s)
					40 (ft)	80 (ft)	120 (ft)	160 (ft)	200 (ft)	300 (ft)	423 (ft)	600 (ft)	800 (ft)	1000 (ft)		
J01	Sine	1:2	20	full	0.79	0.78	0.79	0.80	0.81	0.83	0.88	0.92	0.97	1.00	500	843
J02	Sine	1:2	20	-100'	0.76	0.79	0.79	0.80	0.80	0.84	0.87	0.92	0.97	1.00	507	855
J03	Sine	1:2	20	top	0.77	0.78	0.79	0.81	0.83	0.85	0.89	0.93	0.97	1.01	508	859
J04	Sine	1:2	20	no	0.72	0.76	0.77	0.78	0.80	0.84	0.86	0.91	0.97	1.00	506	857
J05	Sine	1:2	40	full	0.76	0.75	0.77	0.78	0.81	0.84	0.87	0.92	0.97	1.01	510	865
J06	Sine	1:2	40	-100'	0.75	0.77	0.78	0.79	0.81	0.84	0.87	0.93	0.97	1.01	512	864
J07	Sine	1:2	40	top	0.68	0.74	0.77	0.78	0.81	0.84	0.88	0.92	0.97	1.01	509	858
J08	Sine	1:2	40	no		0.73	0.74	0.76	0.78	0.81	0.85	0.91	0.97	1.01	501	854
J09	Sine	1:2	60	full	0.75	0.75	0.76	0.78	0.79	0.82	0.87	0.92	0.96	1.00	502	853
J10	Sine	1:2	60	-100'	0.76	0.77	0.77	0.79	0.80	0.84	0.88	0.93	0.97	1.01	502	853
J11	Sine	1:2	60	top	0.63	0.73	0.76	0.77	0.79	0.83	0.87	0.91	0.96	1.01	496	847
J12	Sine	1:2	60	no		0.71	0.73	0.75	0.76	0.82	0.87	0.91	0.96	1.00	496	851
K01	Sine	1:3	20	full	0.77	0.80	0.80	0.82	0.82	0.85	0.87	0.91	0.97	1.01	506	847
K02	Sine	1:3	20	-100'	0.83	0.83	0.83	0.83	0.83	0.86	0.90	0.93	0.97	1.00	511	859
K03	Sine	1:3	20	top	0.74	0.79	0.79	0.80	0.83	0.84	0.88	0.92	0.96	1.00	508	853
K04	Sine	1:3	20	no	0.55	0.78	0.79	0.80	0.81	0.84	0.86	0.91	0.96	0.99	517	869
K05	Sine	1:3	40	full	0.75	0.75	0.78	0.79	0.81	0.84	0.88	0.92	0.97	1.01	505	854
K06	Sine	1:3	40	-100'	0.78	0.79	0.81	0.82	0.82	0.85	0.88	0.93	0.97	1.01	501	848
K07	Sine	1:3	40	top	0.60	0.75	0.77	0.79	0.80	0.83	0.87	0.92	0.97	1.00	507	860
K08	Sine	1:3	40	no		0.67	0.74	0.76	0.80	0.82	0.87	0.92	0.96	1.00	502	853
K09	Sine	1:3	60	full	0.74	0.75	0.75	0.77	0.80	0.84	0.87	0.91	0.96	1.00	504	844
K10	Sine	1:3	60	-100'	0.77	0.77	0.78	0.80	0.81	0.86	0.88	0.92	0.97	1.01	496	838
K11	Sine	1:3	60	top	0.57	0.74	0.75	0.78	0.79	0.83	0.86	0.92	0.96	1.00	520	882
K12	Sine	1:3	60	no		0.50	0.74	0.77	0.78	0.83	0.86	0.92	0.96	1.00	503	853
L01	Sine	1:5	20	full	0.77	0.80	0.80	0.81	0.83	0.85	0.88	0.92	0.96	1.00	508	850
L02	Sine	1:5	20	-100'	0.76	0.78	0.81	0.81	0.84	0.86	0.89	0.92	0.97	1.01	515	863
L03	Sine	1:5	20	top	0.71	0.78	0.78	0.81	0.82	0.85	0.87	0.92	0.96	1.00	496	841
L04	Sine	1:5	20	no	0.58	0.78	0.79	0.80	0.82	0.85	0.89	0.92	0.97	1.00	501	852
L05	Sine	1:5	40	full	0.74	0.77	0.78	0.80	0.80	0.83	0.87	0.92	0.95	1.00	508	850
L06	Sine	1:5	40	-100'	0.73	0.76	0.78	0.80	0.81	0.85	0.88	0.92	0.97	1.00	510	857
L07	Sine	1:5	40	top	0.65	0.73	0.76	0.79	0.79	0.83	0.87	0.92	0.96	1.00	500	847
L08	Sine	1:5	40	no		0.70	0.78	0.80	0.79	0.84	0.87	0.92	0.96	0.99	499	845
L09	Sine	1:5	60	full	0.72	0.75	0.77	0.78	0.79	0.83	0.86	0.91	0.95	0.99	508	851
L10	Sine	1:5	60	-100'	0.70	0.75	0.78	0.79	0.82	0.84	0.87	0.92	0.96	1.00	508	857
L11	Sine	1:5	60	top	0.63	0.71	0.75	0.77	0.80	0.83	0.87	0.91	0.96	1.00	506	854
L12	Sine	1:5	60	no		0.58	0.75	0.79	0.80	0.84	0.87	0.92	0.97	1.00	492	844
M01	Sine	1:10	20	full	0.68	0.75	0.78	0.80	0.81	0.83	0.87	0.92	0.96	1.00	505	849
M02	Sine	1:10	20	-100'	0.67	0.73	0.76	0.78	0.79	0.84	0.88	0.92	0.96	1.00	497	839
M03	Sine	1:10	20	top	0.58	0.71	0.75	0.77	0.78	0.82	0.86	0.91	0.96	1.00	504	856
M04	Sine	1:10	20	no		0.69	0.76	0.77	0.80	0.84	0.87	0.92	0.97	1.00	507	862
M05	Sine	1:10	40	full	0.66	0.73	0.75	0.77	0.80	0.83	0.87	0.91	0.96	1.00	507	848
M06	Sine	1:10	40	-100'	0.64	0.70	0.74	0.76	0.78	0.82	0.87	0.90	0.96	1.00	503	848
M07	Sine	1:10	40	top	0.58	0.67	0.71	0.74	0.77	0.80	0.86	0.90	0.96	1.00	495	834
M08	Sine	1:10	40	no		0.53	0.69	0.75	0.78	0.83	0.86	0.91	0.96	1.00	505	861
M09	Sine	1:10	60	full	0.68	0.71	0.74	0.76	0.78	0.82	0.87	0.92	0.97	1.01	503	846
M10	Sine	1:10	60	-100'	0.63	0.70	0.73	0.74	0.77	0.82	0.86	0.92	0.96	1.00	504	849
M11	Sine	1:10	60	top	0.56	0.65	0.71	0.72	0.77	0.82	0.85	0.91	0.96	1.00	502	850
M12	Sine	1:10	60	no		0.48	0.67	0.74	0.77	0.82	0.86	0.91	0.96	1.00	498	855
Average (all tests) =															506	856

Run No.	Hill Shape	Hill Slope	Tree Height (ft)	Clearcut Type	Measurement Height Above the Ground Level										Upwind Ur @ 6.1 cm (cm/s)	Profile Ur @ 30.5 cm (cm/s)
					40 (ft)	80 (ft)	120 (ft)	160 (ft)	200 (ft)	300 (ft)	423 (ft)	600 (ft)	800 (ft)	1000 (ft)		
C01	No Hill	-	0	all		0.46	0.54	0.62	0.65	0.72	0.80	0.87	0.94	1.00	530	827
C02	No Hill	-	0	all	0.56	0.63	0.66	0.69	0.71	0.77	0.81	0.89	0.95	1.00	521	819
C03	No Hill	-	20	no	0.35	0.51	0.59	0.65	0.68	0.74	0.81	0.88	0.95	1.00	510	806
C04	No Hill	-	40	no		0.40	0.52	0.59	0.64	0.73	0.80	0.87	0.95	0.99	498	794
C05	No Hill	-	60	no		0.34	0.47	0.56	0.62	0.71	0.79	0.88	0.94	1.01	518	822

Note: Run C01 was at - 200 cm upwind

TABLE 57 Model Ridge Normalized Velocity Profile Comparisons; Sinusoidal Shape

USWP Task 2 Test Results

USW_VEL3.WK3 Sheet B:

02/18/93

Fractional Speedup Factor Test Results (percent values)

Run No.	Hill Shape	Hill Slope	Tree Height (ft)	Clearcut Type	Measurement Height Above the Hill Crest									
					40 (ft)	80 (ft)	120 (ft)	160 (ft)	200 (ft)	300 (ft)	423 (ft)	600 (ft)	800 (ft)	1000 (ft)
F01	Triang	1:2	20	full	117	47	32	24	22	17	13	10	8	6
F02	Triang	1:2	20	-100'	118	52	34	26	22	17	13	10	8	7
F03	Triang	1:2	20	top	127	57	39	31	26	19	16	11	9	7
F04	Triang	1:2	20	no	77	55	38	28	23	19	15	12	9	8
F05	Triang	1:2	40	full		83	45	37	25	19	14	11	8	6
F06	Triang	1:2	40	-100'		86	48	35	27	19	13	11	8	7
F07	Triang	1:2	40	top		88	50	39	29	19	14	11	8	7
F08	Triang	1:2	40	no		84	46	35	27	17	13	11	8	7
F09	Triang	1:2	60	full		114	60	40	31	23	16	10	8	6
F10	Triang	1:2	60	-100'		115	64	41	32	22	15	10	8	5
F11	Triang	1:2	60	top		118	65	43	36	24	18	10	9	6
F12	Triang	1:2	60	no		110	62	39	31	22	16	10	8	6
G01	Triang	1:3	20	full	127	55	37	30	23	19	15	11	8	7
G02	Triang	1:3	20	-100'	130	59	40	30	28	20	16	12	9	7
G03	Triang	1:3	20	top	135	60	43	33	27	22	16	11	9	8
G04	Triang	1:3	20	no	119	57	40	30	27	22	16	12	10	8
G05	Triang	1:3	40	full		94	53	41	32	21	16	12	9	9
G06	Triang	1:3	40	-100'		102	57	43	35	24	18	14	10	9
G07	Triang	1:3	40	top		100	58	47	34	25	18	15	11	9
G08	Triang	1:3	40	no		89	51	39	31	21	17	14	10	9
G09	Triang	1:3	60	full		122	66	45	35	23	17	11	9	7
G10	Triang	1:3	60	-100'		123	70	45	38	25	18	12	9	7
G11	Triang	1:3	60	top		123	69	45	37	24	18	12	10	7
G12	Triang	1:3	60	no		116	66	41	34	23	16	11	9	6
H01	Triang	1:5	20	full	146	64	45	36	31	25	16	12	10	7
H02	Triang	1:5	20	-100'	135	65	44	33	30	21	16	12	9	7
H03	Triang	1:5	20	top	122	60	40	32	27	22	16	12	9	7
H04	Triang	1:5	20	no	98	57	39	31	27	20	17	12	9	7
H05	Triang	1:5	40	full		101	57	43	33	23	15	12	7	6
H06	Triang	1:5	40	-100'		100	56	45	33	21	15	12	7	7
H07	Triang	1:5	40	top		91	54	40	31	20	17	13	9	8
H08	Triang	1:5	40	no		86	55	42	34	24	18	14	11	9
H09	Triang	1:5	60	full		134	76	49	39	26	19	11	9	7
H10	Triang	1:5	60	-100'		127	73	47	38	23	16	11	9	6
H11	Triang	1:5	60	top		114	65	42	31	20	16	10	8	6
H12	Triang	1:5	60	no		115	69	44	35	25	16	11	10	6
I01	Triang	1:10	20	full	130	60	42	30	25	19	14	10	7	6
I02	Triang	1:10	20	-100'	122	54	40	29	26	19	13	11	8	5
I03	Triang	1:10	20	top	92	50	36	26	24	18	14	10	8	6
I04	Triang	1:10	20	no	59	50	39	31	25	21	14	11	9	7
I05	Triang	1:10	40	full		100	57	43	32	22	18	14	9	9
I06	Triang	1:10	40	-100'		93	55	42	31	22	18	14	10	8
I07	Triang	1:10	40	top		74	45	37	26	20	16	12	9	8
I08	Triang	1:10	40	no		72	49	40	31	22	17	14	9	8
I09	Triang	1:10	60	full		130	72	47	37	25	16	12	10	7
I10	Triang	1:10	60	-100'		122	66	44	33	23	17	12	9	6
I11	Triang	1:10	60	top		101	60	38	31	22	15	10	9	6
I12	Triang	1:10	60	no		85	61	45	36	24	18	13	10	7

TABLE 58 Model Ridge Fractional Speed Up Profile Comparisons; Triangular Shape

USWP Task 2 Test Results

USW_VEL3.WK3 Sheet B:

02/18/93

Fractional Speedup Factor Test Results (percent values)

Run No.	Hill Shape	Hill Slope	Tree Height (ft)	Clearcut Type	Measurement Height Above the Hill Crest									
					40 (ft)	80 (ft)	120 (ft)	160 (ft)	200 (ft)	300 (ft)	423 (ft)	600 (ft)	800 (ft)	1000 (ft)
J01	Sine	1:2	20	full	144	63	43	32	28	19	15	11	9	7
J02	Sine	1:2	20	-100'	135	63	42	32	26	20	15	11	9	7
J03	Sine	1:2	20	top	137	63	44	34	30	23	17	13	10	7
J04	Sine	1:2	20	no	123	59	40	30	26	21	15	11	10	7
J05	Sine	1:2	40	full		98	57	42	34	23	16	13	9	8
J06	Sine	1:2	40	-100'		102	57	43	33	21	15	13	8	7
J07	Sine	1:2	40	top		94	55	41	33	22	16	12	8	8
J08	Sine	1:2	40	no		94	51	38	30	19	14	12	9	9
J09	Sine	1:2	60	full		134	73	47	38	25	18	12	9	6
J10	Sine	1:2	60	-100'		140	75	50	39	26	19	13	10	7
J11	Sine	1:2	60	top		129	73	47	38	27	19	11	10	8
J12	Sine	1:2	60	no		124	69	43	33	25	18	12	10	8
K01	Sine	1:3	20	full	138	65	43	35	28	21	14	10	8	6
K02	Sine	1:3	20	-100'	156	72	49	37	30	22	18	13	9	6
K03	Sine	1:3	20	top	128	64	43	32	30	20	16	11	8	6
K04	Sine	1:3	20	no	71	61	42	32	27	20	13	11	7	5
K05	Sine	1:3	40	full		98	58	44	33	22	17	12	8	8
K06	Sine	1:3	40	-100'		109	65	49	35	24	17	14	9	8
K07	Sine	1:3	40	top		97	56	43	33	22	17	13	9	8
K08	Sine	1:3	40	no		76	51	39	32	20	16	13	8	7
K09	Sine	1:3	60	full		129	69	43	36	26	16	9	7	5
K10	Sine	1:3	60	-100'		139	76	50	40	29	18	12	9	7
K11	Sine	1:3	60	top		130	71	47	37	26	16	12	8	6
K12	Sine	1:3	60	no		55	69	45	35	25	16	12	9	6
L01	Sine	1:5	20	full	136	65	43	33	29	21	16	11	7	5
L02	Sine	1:5	20	-100'	135	62	45	33	31	22	17	11	9	6
L03	Sine	1:5	20	top	121	62	42	34	30	22	16	12	9	7
L04	Sine	1:5	20	no	82	63	43	33	30	23	18	12	10	7
L05	Sine	1:5	40	full		99	56	42	30	19	14	11	6	5
L06	Sine	1:5	40	-100'		97	58	44	33	23	17	12	8	7
L07	Sine	1:5	40	top		93	53	43	31	22	16	12	8	7
L08	Sine	1:5	40	no		84	58	45	31	22	16	13	8	6
L09	Sine	1:5	60	full		131	72	47	35	24	15	9	7	4
L10	Sine	1:5	60	-100'		132	75	48	41	26	17	11	8	6
L11	Sine	1:5	60	top		119	70	45	38	24	17	10	8	6
L12	Sine	1:5	60	no		83	72	50	40	28	19	13	11	8
M01	Sine	1:10	20	full	110	55	41	31	26	19	15	11	8	6
M02	Sine	1:10	20	-100'	108	52	38	29	25	21	17	12	9	7
M03	Sine	1:10	20	top	82	49	37	28	24	19	15	12	9	7
M04	Sine	1:10	20	no		46	38	29	27	22	16	12	10	8
M05	Sine	1:10	40	full		89	51	38	30	19	14	10	7	6
M06	Sine	1:10	40	-100'		84	49	37	29	20	15	10	8	7
M07	Sine	1:10	40	top		76	44	34	27	16	14	10	7	7
M08	Sine	1:10	40	no		41	41	37	30	22	15	13	8	7
M09	Sine	1:10	60	full		120	66	43	34	23	17	11	8	6
M10	Sine	1:10	60	-100'		115	66	40	33	23	15	11	8	6
M11	Sine	1:10	60	top		102	61	36	33	24	14	10	9	6
M12	Sine	1:10	60	no		52	55	43	35	25	17	12	10	7

TABLE 59 Model Ridge Fractional Speed Up Profile Comparisons; Sinusoidal Shape

FIGURES

200' Ridge Height (field units)
61mm (model scale)
1:10 Plot:Model scale

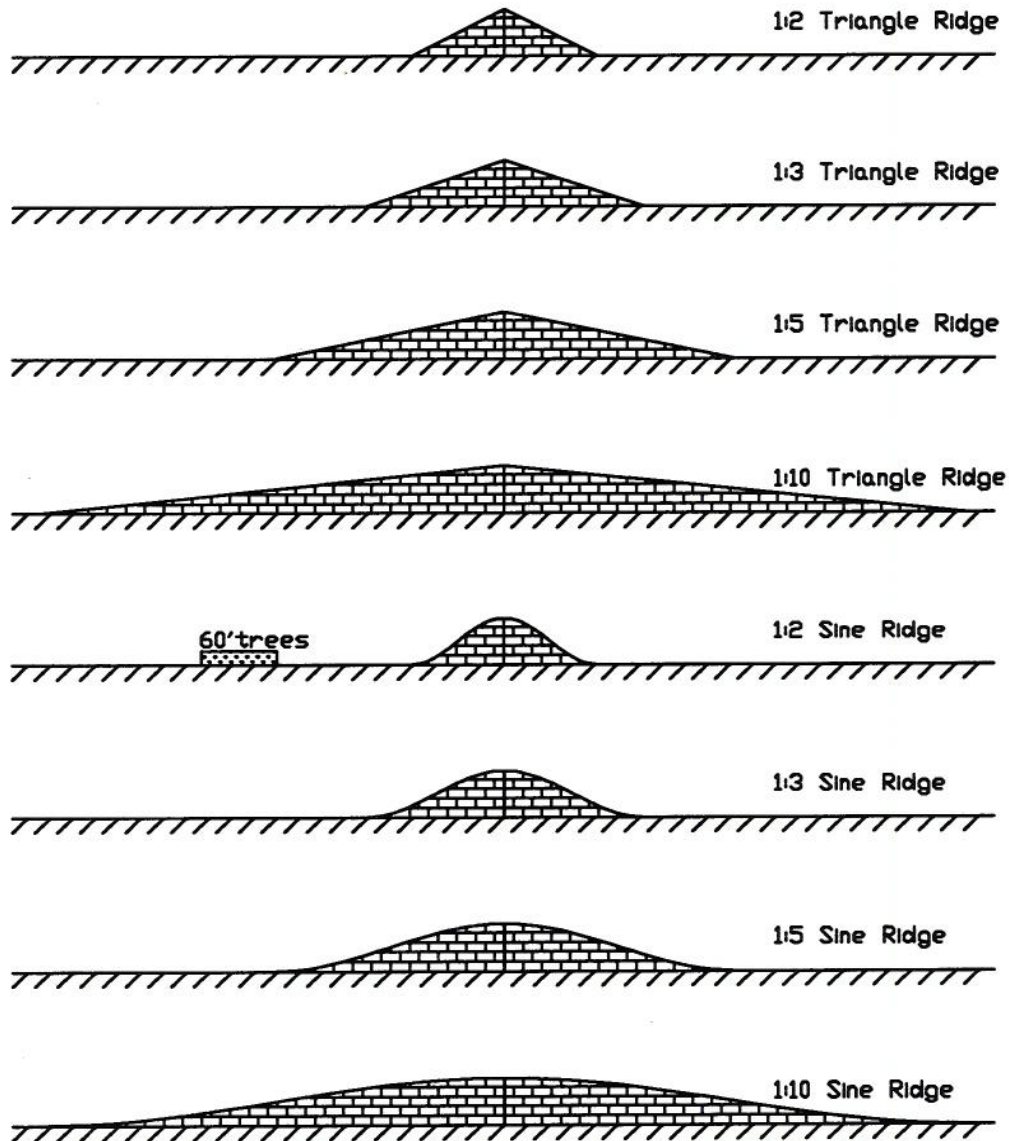


FIGURE 1 Model Ridge Cross-Sectional Profiles



FIGURE 2 *Model Forest Matting For 60, 40 And 20 Foot High Trees*

1:3 Sine Ridge

200' Ridge Height (field units)

61mm " " (model scale)

1:5 Plot:Model scale

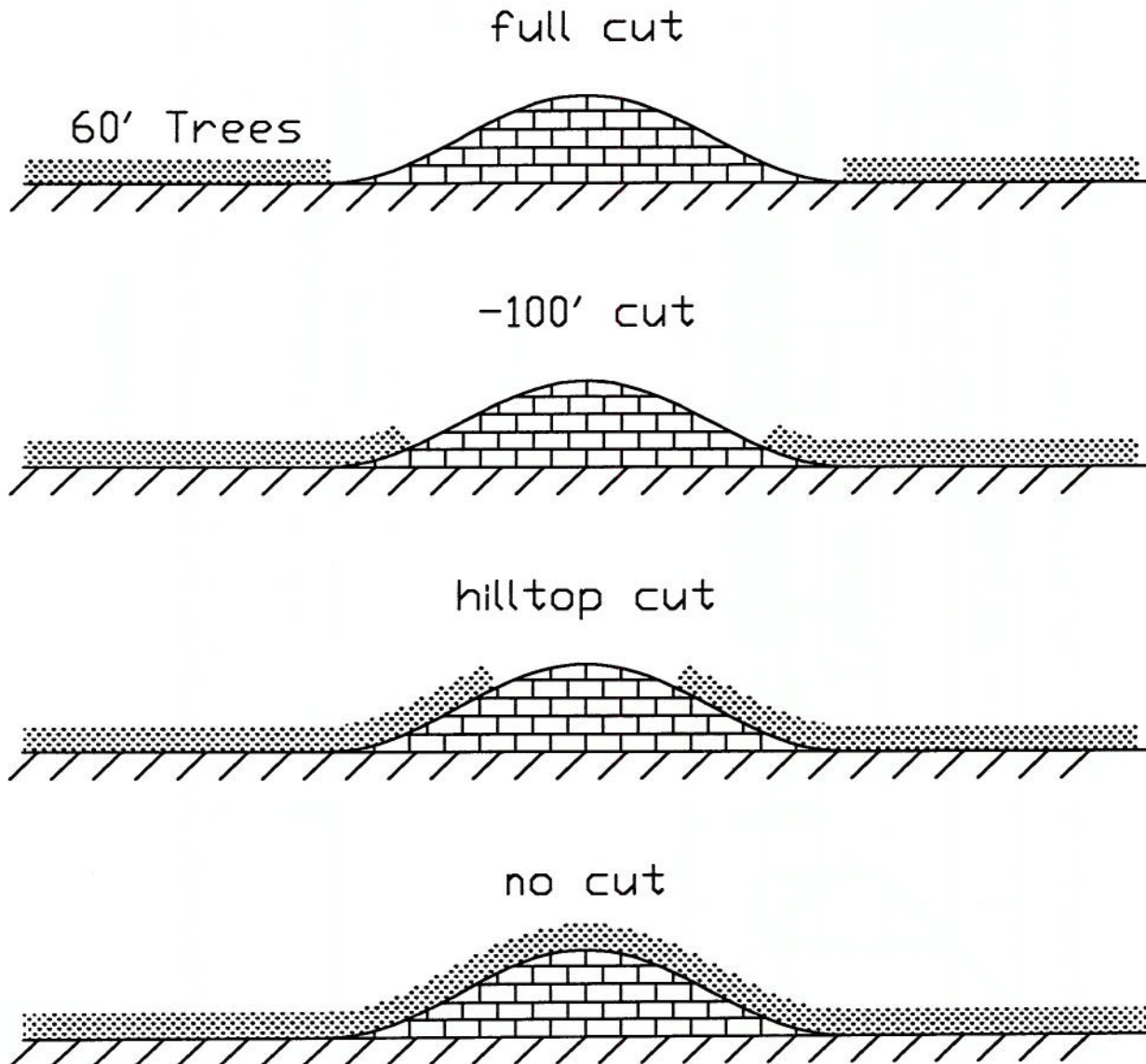


FIGURE 3 Model Forest Clearings For 60' Trees On 1:3 Slope Sine Ridge

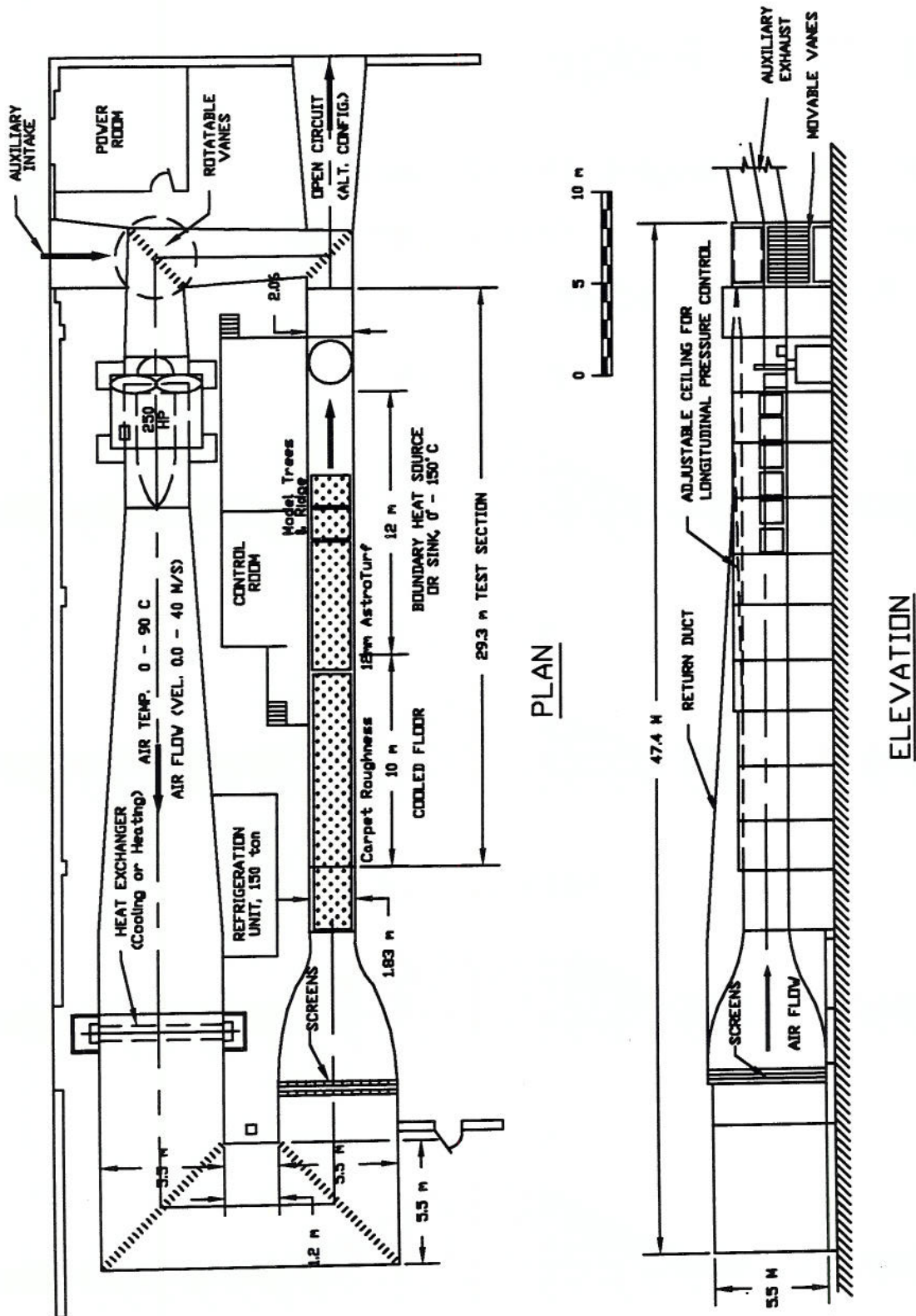


FIGURE 4 Meteorological Wind Tunnel Facility

USWP Task 2 Test Results

USW_VEL4.WK3

Sheet C:

02/18/93

Percent Power Decrease Over Full Clearcut Option Test Results

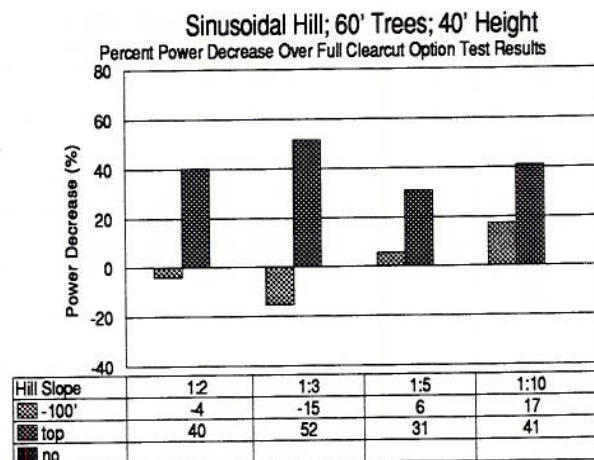
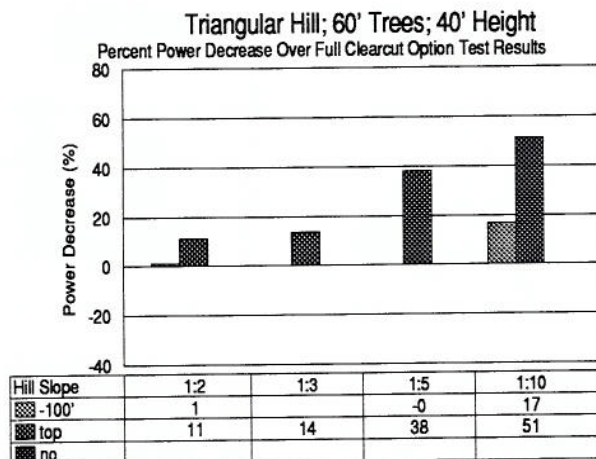
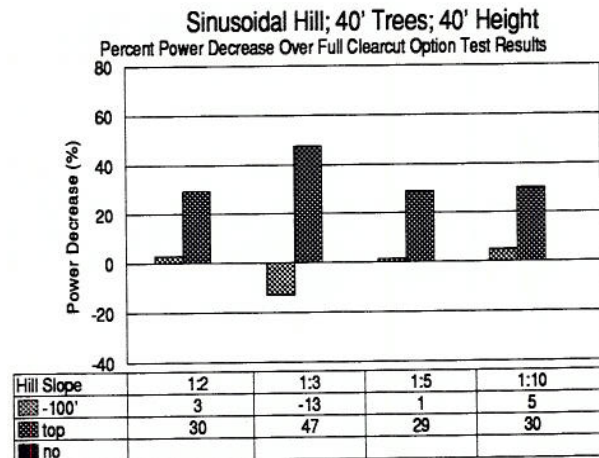
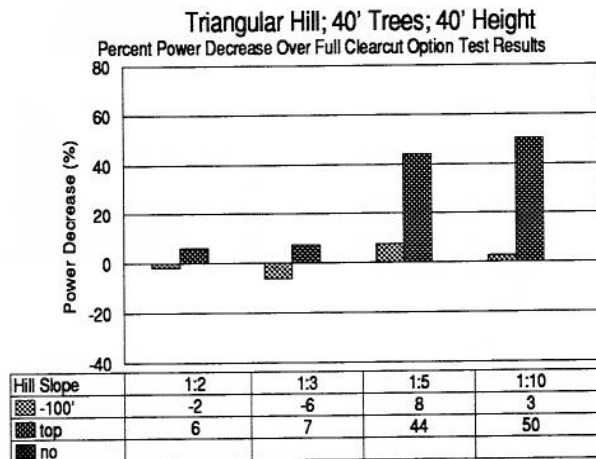
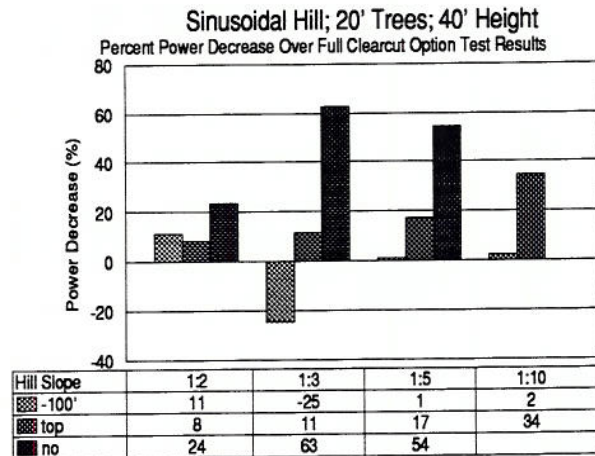
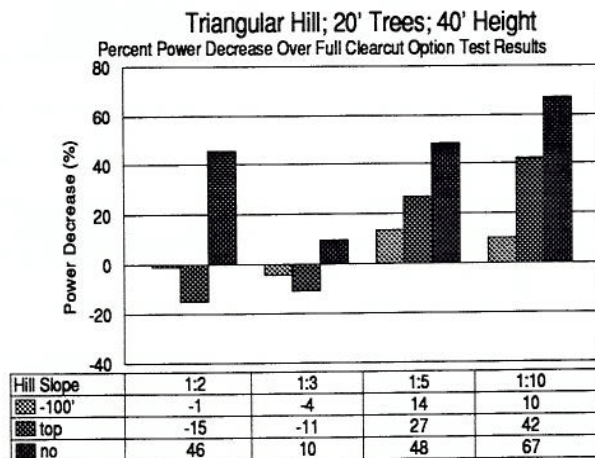


FIGURE 5 Model Ridge Percent Power Decrease Comparisons; 40' Measurement Height

USWP Task 2 Test Results

USW_VEL4.WK3

Sheet B:

02/18/93

Percent Power Decrease Over Full Clearcut Option Test Results

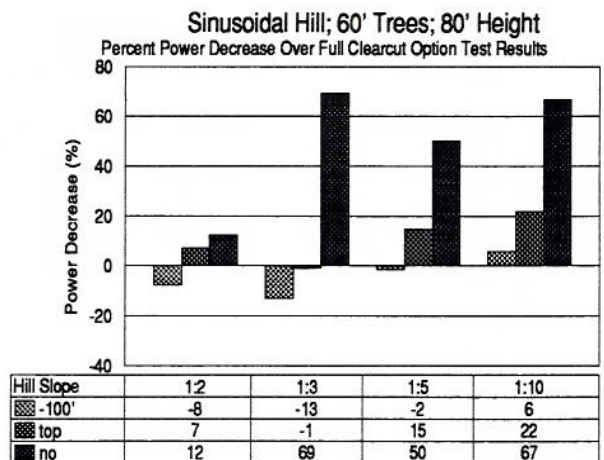
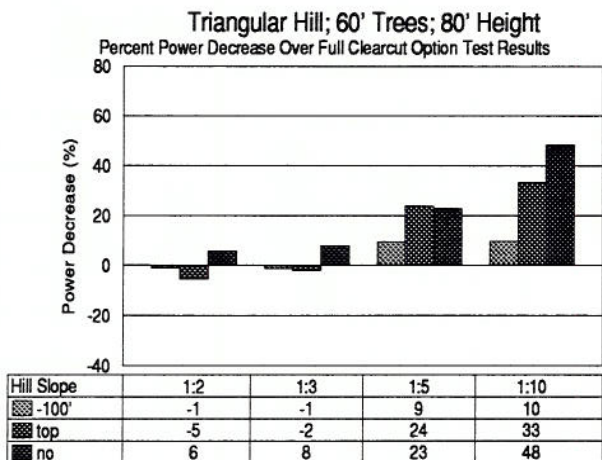
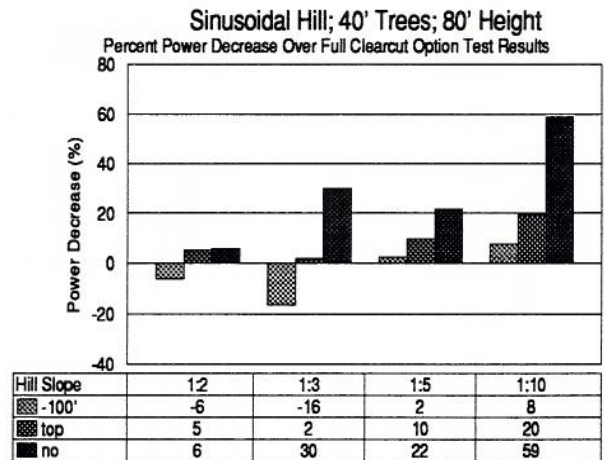
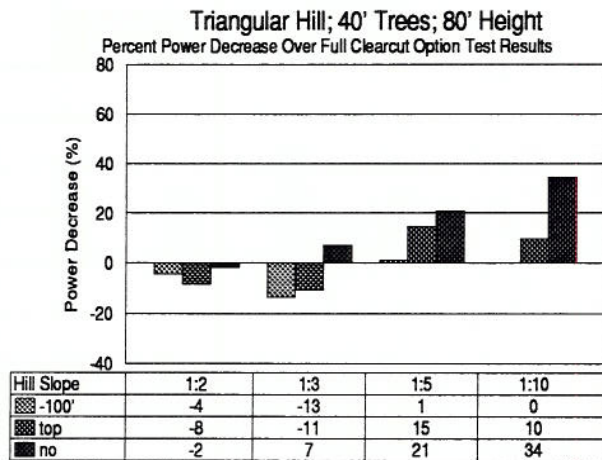
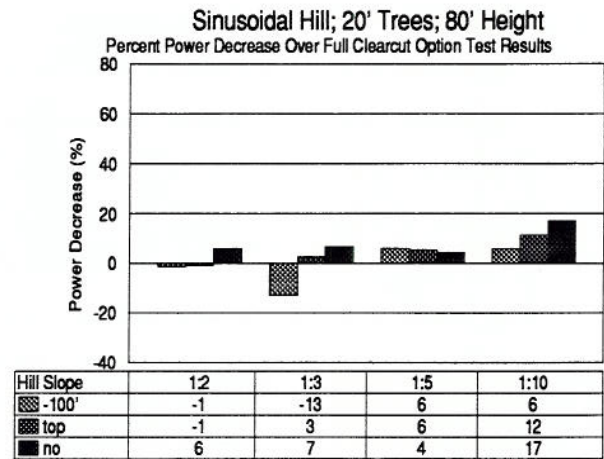
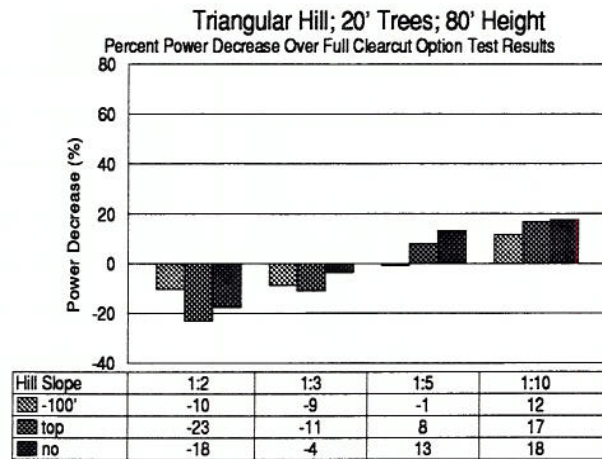


FIGURE 6 Model Ridge Percent Power Decrease Comparisons; 80' Measurement Height

USWP Task 2 Test Results

USW_VEL4.WK3

Sheet D:

02/18/93

Percent Power Decrease Over Full Clearcut Option Test Results

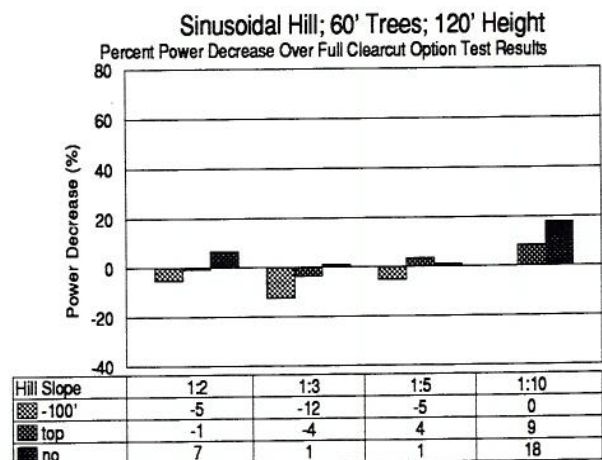
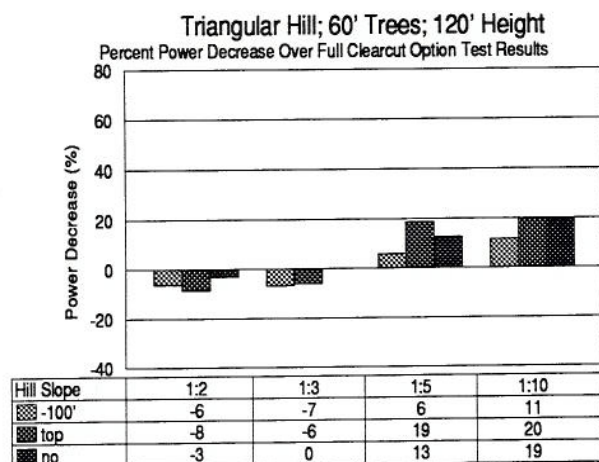
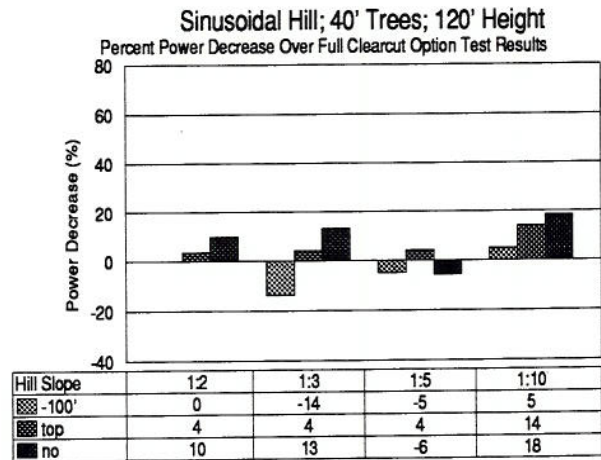
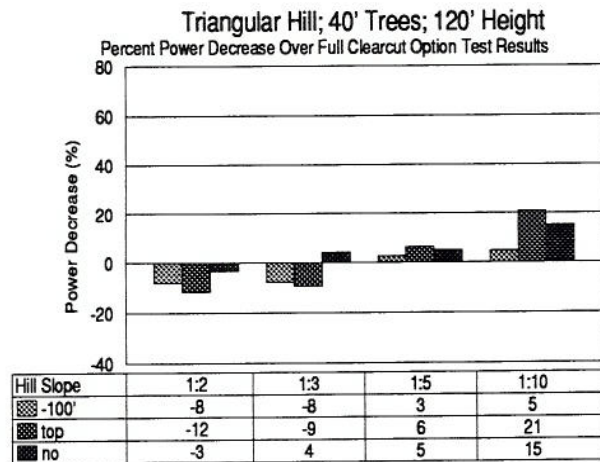
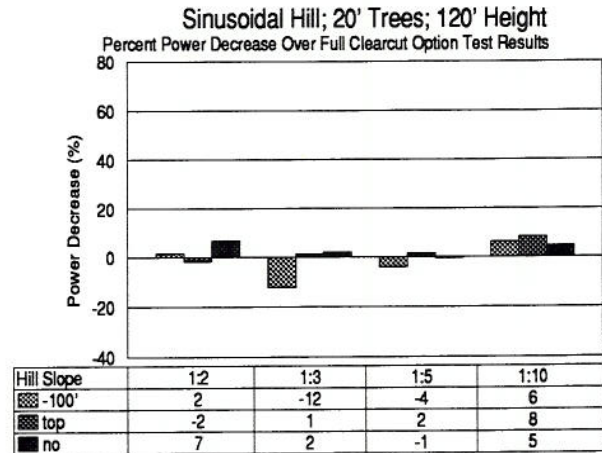
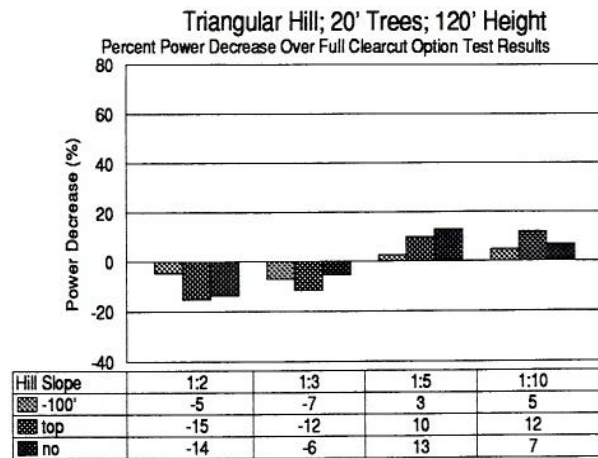


FIGURE 7 Model Ridge Percent Power Decrease Comparisons; 120' Measurement Height

