

1979  
FOREST PEST CONDITIONS  
IN OREGON AND WASHINGTON

COMPILED BY

FOREST INSECT AND DISEASE MANAGEMENT  
USDA FOREST SERVICE

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OREGON STATE DEPARTMENT OF FORESTRY

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PRESENTED AT THE  
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USDA FOREST SERVICE  
PACIFIC NORTHWEST REGION  
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## INSECT CONDITIONS IN BRIEF - 1979

In 1979, losses from bark beetles decreased in Oregon and Washington by about 38 percent. Although defoliation by spruce budworms continues, there appears to be no substantial increase in commercial losses. Summaries of the infestations are shown in Table 1-3.

MOUNTAIN PINE BEETLE - This bark beetle continues to be the most destructive forest insect in the Pacific Northwest. Acres of infestation decreased in Oregon by 680,000 acres (48%). In Washington, a slight decrease was also observed. The large mountain pine beetle outbreak in northeastern Oregon continues to cause heavy losses on the Umatilla National Forest, even though the center core area of the outbreak has been declining for the past 2 years.

DOUGLAS-FIR BEETLE - Activity decreased in Oregon and Washington by about 9,000 acres. Most of the tree killing occurred on the Umatilla and Wallowa-Whitman National Forests in Oregon and on the Umatilla, Okanogan, and Colville National Forests in Washington.

A noted increase in activity is occurring in the spruce budworm defoliated stands in the North Cascades National Park.

PINE ENGRAVER BEETLE - Activity decreased by about 94 percent. The sharp decline in tree mortality is attributed to increased precipitation in the Pacific Northwest in 1978.

WESTERN PINE BEETLE - Tree mortality decreased sharply in Oregon (61%) but almost doubled in Washington. Major losses occurred on the Winema, Fremont, and Malheur National Forest and adjacent State and private lands in Oregon and the Yakima Indian Reservation in Washington.

FIR ENGRAVER - Tree mortality, usually associated with root disease decreased sharply in Oregon and slightly declined in Washington. This decline is probably attributable to increased precipitation during the spring and summer of 1978.

SPRUCE BUDWORM - Defoliation observed in the Pacific Northwest slightly increased in Oregon and Washington. The outbreaks in the Okanogan Valley in northeast Washington continue to increase in intensity and size. The outbreak on the remainder of the Okanogan and the Wenatchee National Forests has continued to decline since it was sprayed in 1977. Acres of defoliation on the Warm Springs Indian Reservation more than doubled this year. The Bureau of Indian Affairs, in cooperation with the U.S. Forest Service, treated 34,440 acres with SEVIN® 4 oil at the rate of 1 pound AI per acre during June and July. Mortality rate was 96 percent on treated plots in the 14-day period following treatment.

DOUGLAS-FIR TUSSOCK MOTH - Activity subsided in the Pacific Northwest. Defoliation monitoring plots indicate populations on the Winema National Forest in Oregon and the Wenatchee and Colville National Forests in Washington. No visible defoliation was reported this year.

OTHER - A looper, possibly the larch looper, defoliated 45,000 acres of western larch and other conifers on the Colville National Forest and adjacent State and private lands. Specimens were collected and are in rearing to determine the insect species.

Forest Disease Conditions  
in Oregon and Washington in 1979

Winter drying of conifers was the most spectacular damaging agent in western Oregon and Washington in 1979. Portions of the east side were also affected. Strong winds lasting for several days, accompanied by cold temperatures and lack of snow caused many trees to lose moisture quicker than it could be replaced. Affected trees suffered foliage burning and some top and branch dieback. Forest nurseries were particularly hard hit. Douglas-fir suffered the most damage. Red belt caused by a similar phenomenon was observed in Okanogan County, Washington.

In general, the incidence of foliage diseases was considerably lower in 1979 than in 1978. Maple leaf blight was much less evident in 1979. Elytroderma needle blight of ponderosa pine is increasing in intensity in local areas in Crook County Oregon and Ferry County Washington. Swiss needlecast caused by *Phaeocryptopus gaumanni* is increasing on Douglas-fir Christmas trees in Thurston and Mason Counties in Washington. Some Swiss needlecast has been found on forest trees, but damage is negligible.

Black stain root disease caused by *Verticicladiella wagnerii* was found on numerous dead and dying ponderosa and lodgepole pines in Deschutes County. This represents the first report of this disease on these two species in Oregon. Black stain was found on Douglas-firs in several new locations in Oregon and Washington.

The incidence of dwarf mistletoes remains unchanged.

The greatest concern many Oregon and Washington forest pathologists have is what appears to be a definite increase in the incidence of root diseases. Some of the increase can be attributed to better detection and awareness of root diseases by foresters, thereby discovering long standing infection centers. This does not explain all the increase. Root diseases appear to be increasing as the result of forest management activities. Based upon surveys in western Oregon, we estimate 5 percent of the Douglas-fir type is out of production because of laminated root rot. Locally, this can reach much higher. A U.S. Forest Service evaluation of western hemlock found that 26 percent of the trees in thinned stands contained *Fomes annosus*. In unthinned stands, 13 percent were infected. Decay volume lost amounted to 2.2 percent in thinned and 3.4 percent in unthinned stands. Stands ranged in age from 40 to 120 years. Although we are lacking data, the root disease problem in true fir stands is beginning to look alarming. Root rots caused by *Phellinus weirii*, *Fomes annosus*, and *Armillaria mellea* are all being found in true fir types. They are frequently found together. Most of the serious root rot infections in true firs appears to be occurring in areas which have had repeated partial cuts.

A U.S. Forest Service survey of advanced white fir regeneration was conducted over eastern Oregon and Washington in 1979. Twenty-three stands were examined. Data from 13 stands show 52 percent of the trees left after thinning were wounded. Decay was associated with 51 percent of the wounds. In wounded trees, 2.4 percent of the cubic foot volume was lost to decay.

Dutch elm disease was not reported in any additional Washington counties. Walla Walla remains the only county to have the disease. There have been no new reported findings in Oregon.

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TABLE 1.--SUMMARY OF 1979 FOREST INSECT EPIDEMIC INFESTATIONS  
IN OREGON AND WASHINGTON

INSECT SPECIES	OREGON TOTAL OF INFESTATION CENTERS		WASHINGTON TOTAL OF INFESTATION CENTERS		REGIONAL TOTAL OF INFESTATION CENTERS	
	NUMBER	ACRES	NUMBER	ACRES	NUMBER	ACRES
SAW FLIES	5	1190	0	0	5	1190
SPRUCE BUDWORM	8	28590	297	378070	305	406660
MARCH LOOPER <sup>1/</sup>	0	0	37	44900	37	44900
TOTAL DEFOLIATOR	13	29780	334	422970	347	452750
BALSAM WOOLLY APHID	2	360	14	2450	16	2810
SPRUCE APHID	3	190	11	1750	14	1940
TOTAL SUCKING INSECT	5	550	25	4200	30	4750
DOUGLAS-FIR BEETLE	361	21880	298	15600	659	37480
DOUGLAS-FIR ENGRAVER	1	30	0	0	1	30
ENGELMANN SPRUCE BEETLE	2	90	5	600	7	690
FIR ENGRAVER	253	14740	180	10970	433	25710
FLATHEADED WOODBORER	21	990	1	50	22	1040
MOUNTAIN PINE BEETLE	4064	1100840	1109	124870	5173	1225710
OREGON PINE IPS	230	13440	86	8250	325	21690
WESTERN PINE BEETLE	982	89260	277	21540	1259	110800
TOTAL BARK BEETLE	5923	1241250	1956	181900	7879	1423150
BEAR	60	3760	210	21580	270	25340
WINTER DAMAGE	28	5180	94	28290	122	33470
TOTAL OTHER DAMAGE	88	8940	304	49870	392	58810
TOTAL FOR ALL DAMAGE	6029	1280520	2619	658940	8648	1939460

<sup>1/</sup> Determination of this species has not been completed at this date.

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TABLE 2.--SUMMARY OF 1979 FOREST EPIDEMIC INFESTATIONS  
IN OREGON AND WASHINGTON  
FOR ALL BARK BEETLE DAMAGE EXCLUDING OREGON PINE IPS

INSECT SPECIES	INFESTATION CENTERS		NUMBER OF TREES	AVG VOL PER TREE MBF	VOLUME MBF
	NUMBER	ACRES			
DOUGLAS-FIR BEETLE, EAST SIDE OF	277	18070	6620	.549	3636.900
DOUGLAS-FIR BEETLE, WEST SIDE OF	84	3810	1020	1.490	1519.600
DOUGLAS-FIR ENGRAVER	1	30	5	.060	.300
ENGELMANN SPRUCE BEETLE	2	90	25	.252	6.300
FIR ENGRAVER	253	14740	7363	.300	2255.100
FLATHEADED WOODBORER	21	990	115	.060	6.900
MTN PINE BEETLE, PONDEROSA PINE	1827	362770	380402	.170	66792.400
MTN PINE BEETLE, SUGAR PINE	21	710	125	.790	99.800
MTN PINE BEETLE, W. WHITE PINE	156	9640	5585	.437	2441.400
MTN PINE BEETLE, LODGEPOLE PINE	2055	726850	1339705	.069	92993.500
MTN PINE BEETLE, WHITERARK PINE	5	870	630	.070	44.100
WESTERN PINE BEETLE	982	89240	10524	.778	8189.000
TOTAL OREGON	5684	1227810	1752119	.101	177985.300
DOUGLAS-FIR BEETLE, EAST SIDE OF	266	14250	6434	.548	3530.800
DOUGLAS-FIR BEETLE, WEST SIDE OF	32	1350	235	.760	180.800
ENGELMANN SPRUCE BEETLE	5	600	555	.250	138.800
FIR ENGRAVER	180	10970	5982	.260	1571.500
FLATHEADED WOODBORER	1	50	20	.060	1.200
MTN PINE BEETLE, PONDEROSA PINE	483	37810	18799	.050	994.400
MTN PINE BEETLE, W. WHITE PINE	514	60830	45121	.450	20470.100
MTN PINE BEETLE, LODGEPOLE PINE	108	26050	43445	.070	3042.000
MTN PINE BEETLE, WHITERARK PINE	4	180	65	.070	4.600
WESTERN PINE BEETLE	277	21560	2457	.549	1351.200
TOTAL WASHINGTON	1870	173650	123113	.254	31285.400
TOTAL FOR REGION	7554	1401460	1875232	.111	209270.700

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TABLE 3.--SUMMARY OF 1979 BARK BEETLE INFESTATIONS BY OWNERSHIPS

IN OREGON AND WASHINGTON

(EXCLUDING IPS)

INSECT SPECIES	FOREST SERVICE (COM. FOR. LANDS)		OTHER FEDERAL (BLM. & BIA)		DEDICATED LANDS (WILD. & NAT. PARKS)		STATE AND PRIVATE LANDS		TOTAL ALL FORST. LANDS	
	ACRES	MRF	ACRES	MRF	ACRES	MRF	ACRES	MRF	ACRES	MRF
DOUGLAS-FIR BEETLE, EAST SIDE DF	12070	2684.6	120	14.3	1670	402.0	4210	536.0	18070	7636.9
DOUGLAS-FIR BEETLE, WEST SIDE DF	2540	1182.0	40	7.8	790	204.8	440	145.0	3810	1519.6
DOUGLAS-FIR ENGRAVER	0	0.0	0	0.0	30	3	0	0.0	30	3
ENGELMANN SPRUCE BEETLE	90	6.3	0	0.0	0	0.0	0	0.0	90	6.3
FIR ENGRAVER	9600	1657.4	390	40.5	790	41.9	3960	515.3	14740	2255.1
FLATHEADED WOODBORER	60	6	0	0.0	0	0.0	930	6.3	990	6.9
MTN PINE BEETLE, PONDEROSA PINE	246750	40441.1	6610	657.4	2410	703.8	107000	25390.1	362770	66792.4
MTN PINE BEETLE, SUGAR PINE	560	81.7	0	0.0	20	2.5	130	15.6	710	99.8
MTN PINE BEETLE, W. WHITE PINE	4970	682.9	1120	163.8	2850	1477.0	700	117.7	9640	2441.4
MTN PINE BEETLE, LODGEPOLE PINE	593830	74480.0	6260	463.8	20660	2032.2	106100	16017.5	726850	92993.5
MTN PINE BEETLE, WHITEBARK PINE	870	44.1	0	0.0	0	0.0	0	0.0	870	44.1
WESTERN PINE BEETLE	70280	6140.5	5070	485.4	1030	63.7	12860	1519.4	89240	8189.0
TOTAL OREGON	941620	127381.2	19610	1813.0	30250	4528.2	236330	44262.9	1227810	177985.3
DOUGLAS-FIR BEETLE, EAST SIDE DF	6120	1313.2	890	146.4	3080	1281.8	4160	789.4	14250	3530.8
DOUGLAS-FIR BEETLE, WEST SIDE DF	90	26.6	0	0.0	330	31.5	930	122.7	1350	180.8
ENGELMANN SPRUCE BEETLE	470	76.3	0	0.0	130	62.5	0	0.0	600	138.8
FIR ENGRAVER	5320	592.1	2030	603.5	770	178.6	2850	197.3	10970	1571.5
FLATHEADED WOODBORER	50	1.2	0	0.0	0	0.0	0	0.0	50	1.2
MTN PINE BEETLE, PONDEROSA PINE	7270	205.8	6640	189.2	460	24.6	23440	574.8	37810	994.4
MTN PINE BEETLE, W. WHITE PINE	42640	16452.2	2900	1210.9	10510	2049.7	4780	757.3	60830	20470.1
MTN PINE BEETLE, LODGEPOLE PINE	18940	2623.8	3200	134.7	130	5.6	3780	277.9	26050	3042.0
MTN PINE BEETLE, WHITEBARK PINE	30	7	0	0.0	40	1.1	110	2.8	180	4.6
WESTERN PINE BEETLE	5860	390.4	7940	531.9	140	22.1	7620	406.8	21560	1351.2
TOTAL WASHINGTON	86790	21682.3	23600	2816.6	15590	3657.5	47670	3129.0	173650	31285.4
TOTAL FOR REGION	1028410	149063.5	43210	4629.6	45840	8185.7	284000	47391.9	1401460	209270.7







