INSECT DISEASE REPORT
USDA FOREST SERVICE/NORTHERN REGION

Report No. 73-24

5200
October 1973

POTENTIAL FOR DEFOLIATION BY PINE BUTTERFLY IN THE BITTERROOT AND MISSOULA VALLEYS, MONTANA IN 1974

by

Hubert E. Meyer[1/] and William M. Ciesla[2/]

The pine butterfly, *Neophasia menapia* (Felder and Felder) reached epidemic levels in Ravalli and Missoula Counties in 1969 (Ciesla et al., 1971) and has caused varying levels of defoliation over 40,000 acres since that time. Each year the extent of defoliation and potential for future damage has been evaluated by personnel of the Forest Insect and Disease Branch. This was done by a survey of egg populations and associated tree defoliation at selected sites throughout the infestation area each fall (Bousfield and Dewey 1972).

METHODS

Egg numbers were counted and recorded as to viable and damaged or otherwise nonviable eggs, and defoliation levels of associated branches were measured and recorded on 17 sample plots according to the procedure described by Bousfield and Ciesla in 1971. The degree of defoliation for the next season can be predicted by the percent of normal foliage remaining available for feeding and the egg numbers (potential larvae) present.

1/ Biological technician, USDA Forest Service, Region 1, Division of State and Private Forestry, Missoula, Montana.

2/ Entomologist, USDA Forest Service, Region 1, Division of State and Private Forestry, Missoula, Montana.

RESULTS

Table 1 shows mean viable 1973 egg counts and a comparison to previous years of high levels. It can be readily seen that egg counts are comparatively low as would be expected in the beginning or end of a normal outbreak. Defoliation levels are all moderate or less, indicating nearly 2 full years' growth of needles will be available for 1974 feeding. It is predicted that very little defoliation will occur in the Bitterroot and Missoula Valleys during 1974.

Table 1.--Mean viable pine butterfly egg counts for 1970-1973, and 1973 defoliation guide.

Area	1970	1971	1972	1973	1973 defoliation levels
Bitterroot NF					
Skalkaho A	7.78	28.26	8.75	*	*
Skalkaho B	*	*	3.81	0.30	2
Burnt Fork	3.32	*	19.98	.78	0
Antrim Point	0	*	12.16	.23	1
Upper Antrim	*	*	*	9.75	1
Lost Horse Creek	7.58	33.87	12.60	.73	0
Roaring Lion Creek	8.22	32.53	7.93	1.42	0
Blodgett	41.68	33.01	21.10	1.13	1
Cow Creek	46.54	54.11	36.57	1.72	2
Sheafman Creek	*	25.88	28.36	1.13	2
Fred Burr Creek	5.64	21.45	17.54	*	*
Big Creek	34.76	50.91	20.10	1.67	2
St. Mary's Peak Road	*	*	9.83	.60	2
Bass Creek	46.96	30.06	7.13	.30	1
Sweeney Creek	*	*	10.81	.18	1
Carlton Creek	6.56	37.38	19.90	.95	1
Lolo NF					
Mormon Peak Road	14.94	40.30	15.06	2.72	1
Rattlesnake	16.00	34.45	13.18	3.13	1
Grant Creek	22.02	44.73	10.24	*	*
Edith Creek	0	1.68	1.08	0	0

*Not sampled year indicated.

REFERENCES CITED

Bousfield, W. E., and J. E. Dewey, 1972. An evaluation of the pine butterfly outbreak in the Bitterroot and Missoula area. USDA Forest Serv., Northern Reg., Div. State & Priv. Forestry, Missoula, Montana 59801, report no. I-72-12.

Ciesla, W. M., W. E. Bousfield, and H. E. Meyer, 1971. Potential for pine butterfly defoliation on the Bitterroot and Lolo National Forests, Montana, 1971. USDA, Forest Serv., Northern Reg., Div. State and Priv. Forestry, Missoula, Montana 59801, report no. 71-2.