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POTENTIAL FOR LARCH CASEBEARER DEFOLIATION IN THE NORTHERN REGION -- 1972

by

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The larch casebearer *Coleophora laricella* (Hbn.) is now established throughout all western larch stands in Region 1. Population levels have begun to fluctuate in some of the older infested stands; however, it is still on the increase in more recently invaded territory. During the past 2 years work was begun to develop a method to forecast defoliation and to follow trends of the larch casebearer (Ciesla and Bousfield 1971).1/2/

The purpose of these evaluations was to establish the relationship between the overwintering population and subsequent defoliation for prediction purposes.

METHODS

A series of 53 western larch stands, containing trees 30 to 60 feet high were resampled in the fall of 1971. Population estimates were obtained by taking four branch samples from each of the 10 trees.

1/ Ciesla, W. M., and W. E. Bousfield. 1971. Potential for defoliation of western larch by the larch casebearer in the Northern Region--1971. USDA, Forest Service, Division of State and Private Forestry. Report 71-2.

2/ Ciesla, W. M., and W. E. Bousfield. 1971. Forecasting casebearer defoliation in the Northern Region--Progress Report. USDA, Forest Service, Division of State and Private Forestry. Report 71-33.

One hundred spur shoots were examined on each branch and the number of overwintering casebearer recorded. Acceptable standard errors have been obtained by using this technique (Ciesla and Bousfield 1971).[1/]

Defoliation for 1972 was predicted by a linear regression model developed from the 1970-71 overwintering population and subsequent defoliation (Ciesla and Bousfield 1971).[2/]

RESULTS

Larch casebearer defoliation in 1972 will be about the same level as was in 1971 (Table 1). Populations still remain quite high on portions of the Clearwater, Coeur d'Alene, and Kaniksu National Forests in Idaho and the Colville National Forest in Washington. Populations have increased on the Flathead National Forest and moderate defoliation is predicted for several areas where the overwintering population was sampled. Negligible to light defoliation is expected for the Kootenai National Forest except for areas that border the Idaho line. Negligible to light defoliation is also predicted for the Lolo National Forest except for the Evaro area where it is predicted to be light.

Heavy to severe defoliation is expected for the area near the Falls Ranger Station on the Kaniksu National Forest. In this area the casebearer caused severe defoliation resulting in branch dieback and tree killing prior to 1967. Since that time the populations have been low and many of the trees were showing signs of recovery. Another sequence of heavy defoliation will no doubt set the trees back.

We plan to continue these evaluations to provide basic information on the trend and fluctuations of the larch casebearer population on selected areas in Region 1.

Table 1.--Overwintering larch casebearer population density--1971.

National Forest	Overwintering casebearer per 100 spur shoots-1971			Predicted[a] defoliation 1972	Defoliation[b] trend
Colville					
Jared	57.83	±	6.01[c]	light	static
Tiger Hill	61.62	±	7.59	light to moderate	static
Clearwater					
Colgate	0.65	±	0.13	negligible to light	static
Pack Bridge	2.02	±	.28	negligible to light	static
Eagle Creek	31.35	±	2.73	light	static
Green Flat	31.92	±	2.27	light	static
Weippe	39.72	±	6.00	light	static
Browns Creek	168.67	±	9.51	heavy	increase
Snake Creek	64.42	±	7.14	light to moderate	decline
Cardiff	46.37	±	4.74	light	decline
Flathead					
Sun Valley	22.94	±	2.13	light	static
Striker	3.57	±	.58	negligible to light	static
Stillwater	26.97	±	2.56	light	static
Whitefish	79.12	±	6.60	moderate	increase
Columbia Falls	103.00	±	6.76	moderate	increase
Lakeside	90.20	±	9.75	moderate	increase
Polson	35.65	±	3.29	light	static
Finley Point	29.05	±	4.08	light	static
Bigfork	163.17	±	11.80	heavy	static
Swan Lake	91.52	±	6.87	moderate	static
Kaniksu					
Sasheen	114.75	±	11.16	moderate	static
Locke	45.70	±	3.35	light	static
Falls	236.75	±	19.63	heavy to severe	increase
Coolin	69.70	±	5.70	light to moderate	increase
Priest Lake	31.25	±	3.10	light	static

a/ Predicted defoliation was based on regression line computed from 1970-71 population defoliation relationship.

b/ Change from 1971 defoliation.

c/ ± 1 SE

Table 1.--Overwintering larch casebearer population density--1971 con.

National Forest	Overwintering casebearer per 100 spur shoots-1971			Predicted defoliation 1972	Defoliation trend
Kaniksu con.					
Garfield Bay	68.52	±	7.48	light to moderate	decline
Blacktail	65.85	±	8.79	light to moderate	static
Bayview	145.85	±	19.39	heavy	increase
Gold Creek	159.0	±	6.46	heavy	static
Ruby Creek	111.72	±	6.40	moderate	static
Smith Lake	48.02	±	4.68	light	static
Moyie	115.6	±	10.93	moderate	decline
Trestle Creek	90.65	±	7.37	moderate	decline
Hope	54.87	±	5.39	light	static
Clark Fork	60.82	±	5.88	light	
Trout Creek	1.22	±	.21	negligible to light	static
Kootenai					
State Line	82.92	±	9.68	moderate	increase
Lake Creek	37.28	±	3.82	light	static
Kootenai Falls	55.41	±	5.99	light	static
Rainy Creek	35.8	±	3.84	light	static
Libby Creek	4.20	±	.48	negligible to light	static
Thompson Lakes	1.47	±	.27	negligible to light	static
Lolo					
Evaro	48.35	±	3.32	light	static
St. Regis	.52	±	.18	negligible to light	static
Rainbow Lake	1.60	±	.22	negligible to light	static
Thompson Falls	.35	±	.098	negligible to light	static
St. Joe					
Vista Point	133.97	±	10.28	moderate to heavy	increase
Collins Creek	122.40	±	10.78	moderate to heavy	increase
Boville	182.00	±	10.31	heavy	increase
Elk River	105.87	±	12.31	moderate	decrease
Deep Creek	36.80	±	6.29	light	decrease