

VIRGINIA DIVISION OF FORESTRY  
FOREST PEST SURVEY REPORT  
March 1973

SPB damage  
figures (1972)

GENERAL

Spring weather, which appeared to be making a faster-than-usual break in mid-March, slowed down considerably thereafter with the advent of a series of cool, wet days. Our usual indication of earlier-than-usual spring weather, the Virginia pine sawfly (N. pratti pratti) began hatching in the Culpeper area on April 4 this year, about normal for this insect. Incidentally, the expected defoliation from this pine pest is predicted to be much reduced overall this year in Virginia, with the only area of MODERATE to HEAVY defoliation (50-100%) expected in the northern edge of A. P. Hill Military Reservation (Caroline Co.).

With the absence of any firm indication of the presence of the gypsy moth in Virginia (VDAC egg-mass surveys were negative in all male-moth catch areas), the only other hardwood defoliator of current concern (egg surveys conducted by VDF in Jan.-Feb. 1973) is the oak leaf tier (Croesia albicoma). This insect is expected to cause HEAVY defoliation in one area in Smythe County, several in western Highland County, where it will remove 50-100% of newly emerging leaves. Elsewhere in several other areas in western Highland, Bath and in Smythe Counties MODERATE defoliation is expected (30-50%). An aerial defoliation survey for gypsy moth is planned again this year in early July in cooperation with the USFS.

Attached you will find a report of ozone damage in a severely affected area in western Rockingham County. Plots were established and read with the assistance of District Forester Tom Elliott (Staunton, Virginia).

The Southern pine beetle epidemic which began its upswing in August 1972, has damaged an estimated 12 million board feet and 72,000 cords (including isolation strip) of pine timber in the central and southern piedmont to date (April 1, 1973). Table 1 (attached) gives a breakdown by County. Salvage to date has been limited to 30% due to excessively wet soils. The current outbreak extends from Virginia southward to Georgia and Alabama and westward to Texas, and constitutes the worst in many years in the southeast.

Pales weevils are currently active: fresh damage and actively feeding weevils noted on loblolly pine seedlings in cut-over area on April 18, 1973 in Accomac County. This pest will continue to feed actively through May.

A single adult of the red-headed pine sawfly noted on a loblolly sapling on Assateague Island, Accomac County, Virginia on April 18.

The looper caterpillar, feeding extensively on American holly, <sup>late</sup> last summer in the counties of Westmoreland, Prince George, Northumberland and Hanover, was identified by the USDA as Thysanopyga intractata (Walker). It may be a problem again this year.

The collapse of pine looper populations last summer is reflected in low adult moth populations on the Eastern Shore in mid-April (as adults first begin emergence). Morris placed sticky traps baited with wax moth pupae (kindly provided by the VDAC) in areas where the exotic gypsy moth parasite Brachymeria intermedia had been released by the VDAC on the Eastern Shore in 1972. These traps will be recovered after 8 days in the field and returned for evaluation. Attempts to collect pine looper pupa in the same release area met with no success due to extremely low current populations of this insect. (NOTE: Brachymeria will attack pupae of the pine looper also and might provide a suitable alternate host for this parasite). This project is an attempt to determine if the released parasites have become established.

no Brachymeria recovered.

The Virginia Department of Agriculture and Commerce (VDAC) is aiming to lab-rear enough Brachymeria intermedia adults for release in 75 sites in northern Virginia, Eastern Shore and Norfolk area by early July. Additional releases are planned by the VDF in forested areas infested with the oak leaf tier complex in western Virginia, hoping these pupae parasites will become established well before the gypsy moth arrives. Limited numbers of B. intermedia will be available from USDA sources for the releases planned by the VDF.

#### CURRENT PROJECTS UNDERWAY

(1) Greenhouse evaluation of selected crosses from the loblolly pine seed orchard at New Kent Forestry Center to test their resistance to the root rot Fomes annosus. Artman has about 360 potted 1-0 seedlings, each bearing a short piece of FA-infected beech branchwood tied to its stem.

(2) Artman has continued his evaluation of the antagonistic fungus Peniophora gigantea with plots established in late November 1972. Use of inoculated wood disks placed directly on the stump is under investigation, since only limited past success with the fungus in the chain lubricating oil has been experienced.

(3) Outplanting of loblolly and white pine seedling inoculated with two beneficial mycorrhizal fungi have been established on coal spoil banks in southwest Virginia and in the piedmont. This cooperative project (with Don Marx, USFS, Athens, Georgia) will attempt to determine if pre-inoculation of the roots will increase seedling growth and survival on spoil banks and in open fields.

(4) A regional cooperative project to test GARDONA and THIMET for control of cone and seed insects is underway in the southeast with a hoped-for fourteen cooperative seed orchards involved.

(5) The Virginia General Assembly appropriated \$60,000 for fiscal year 1974 so that the VDF could begin a modest insect parasite rearing program for gypsy moth control. At the moment, we are waiting to find out if we can secure the Piedmont Fruit Research Laboratory (VPI Experiment Station) for use in this project. A used mobile camper has been purchased for use in the New Jersey parasite collection trip this summer, when Artman and Copony will spend 5 weeks in June and July. Three summertime employees will be employed (two in Charlottesville, one on Eastern Shore under guidance of Dick Hoffmaster of VPI & SU's Truck and Ornamental Research Station at Painter (Accomack County). These personnel will collect lepidopterous pests of agronomic crops and forest trees, rearing the collected insects to determine their insect parasites. This will give us (and VPI & SU entomologists) an idea of what exotic gypsy moth parasites might already be established in Virginia and what native parasites are active and which might assist in gypsy moth control in the future.

Included with this report is a copy of the work by Copony on the second year of assessment of the Frontalure-cacodylic acid method of control of the southern pine beetle in small spot infestations. In 1972 we shifted our major emphasis to earlier treatment of shortleaf pine in the piedmont, but were partially stymied by the unexpected decline of beetle populations. In 1973 additional tests will be conducted during the summer (rather than spring treatments of earlier years) on the Cumberland State Forest in connection with an attempt to completely control the southern pine beetle on a large portion of the forest. Hopefully, we can answer the question as to whether "catching these spots when they are small" in mid-summer will indeed control increasing populations.

REPORTS FROM FOREST DISTRICTS - Coastal Plains:

A few new spot infestations of southern pine beetles (up to 15 acres in size) continue to be reported, in King William, Virginia Beach and Nansemond Counties.

Pine tip moth reported still in pupal stage April 4 in Isle of Wight and Nansemond County. NOTE: First emergence of overwintering stage as adults expected in late April, with larvae present during first week in May.

Rainfall for March: Portsmouth - 5.68 inches; Accomac - 4.81; Tappahannock - 2.27; Gloucester - 4.27.

Piedmont:

Mice damaged young loblolly pines in a 25-acre tract in Patrick County, causing "moderate" loss in spots.

Turpentine beetles noted causing moderate damage on 1/2 acre shortleaf pines in Campbell County - reported as active in many spots (1-3 trees) in Lunenburg County.

Evidence of Pine webworm activity noted in all loblolly pine planting in Lunenburg County (10-50% infestation).

Bagworm infestations widespread on ornamentals, junipers and cedar in Campbell County.

Littleleaf disease of shortleaf pine noted in numerous spots in Lunenburg County.

Twig girdlers notably evident on hickory and persimmon, Lunenburg County.

Rainfall: Salem - 6.2; Martinsville - 5.91; Charlottesville - 4.41; Fairfax - 5.70 inches; Lunenburg - 3.55 inches.

OTHER REPORTS

A continuous monitoring of the pine looper infestations (Lambdaia athasaria pellucidaria) in Virginia involves annual collections of the overwintering pupae for defoliation prediction efforts and to determine parasite effectiveness and identification. Pupae collected in winter 1972-73 from a number of different sampling spots in coastal Virginia counties showed an increase in total parasitism (see Table 2 below) compared to collections in 1971 and 1972, but the limited number of pupae collected severely limits any conclusion as to the overall impact of parasites on the reduction of populations expected in spring 1973.

TABLE 2: PINE LOOPER (Lambdaia athasaria pellucidaria)  
PUPAL COLLECTIONS FROM EASTERN VIRGINIA

Date of Collection	Pupae Collected No.	Emerging Adults		Unknown Pupal Mortality		Parasitism by Diptera		Parasitism by Hymenoptera	
		No.	%	No.	%	No.	%	No.	%
Feb. 10, 1971	400	163	40.8	187	46.7	20	5.0	30	7.5
Feb. 10, 1972	1135	799	70.4	227	20.0	53	4.7	56	4.9
Jan. 22, 1973	137	91	66.4	15	11.0	24	17.5	7	5.1

*Apparently, some larvae could not emerge after pupae hatched, decimated pupae 12 Feb, 1973 - Va. slightly after pupae already emerged to 2/28/73.*

1/ Includes fully formed moths which did not emerge.

2/ Deopalpus hirsutus

3/ Parasite

	Percent		
	1971	1972	1973
<u>Itoplectes conquisitor</u>	.5	1.2	0
<u>Cratichneumon subfilatus</u>	4.8	1.9	4.4
<u>C. pseudovinnulus</u>	2.0	.8	.7
<u>Melanichneumon zebratus</u>	.2	.6	0
<u>Coccygominus aequalis</u>	0	.2	0
<u>C. annulipes</u>	0	.1	0
<u>Polytribax pallescens</u>	0	.1	0
Total	7.5	4.9	5.1

*On State + private land*

TABLE 1: Bark Beetle Damage in Central Piedmont Virginia  
1972-73<sup>3/</sup> (to April 15, 1973)

County	Damage (Including Isolation Strip)		No. Spot Infestations	Salvage % to Date	
	MBF	Cords		April 15	May 15
Pittsylvania	2,101.0	2,060	96	30% (timber; 5% cordwood)	
Albemarle	39.0	50	11	100	
Fluvanna	99.3	272	17	70	
Amelia	660.0	5,026	248	30	30
Amherst	-	430	21	20	40
Appomattox	240.0	2,550	135	30	30
Bedford	50.0	115	5	20	58
Buckingham 2/	550.0	12,823	225	55	40
Campbell	1,753.0	4,025	210	35	20
Charlotte	1,764.0	1,702	178	15	20
Cumberland 2/	253.0	11,431	311	18	40
Lunenburg	805.0	4,557	161	40	35
Nottoway	127.0	1,765	74	35	42
Prince Edward 2/	62.0	6,585	306	32	
State Forests	1,062.0	11,350	423	30	
Charles City	-	50	7	43	
Chesterfield 2/	775.0	223	27	33	
Goochland	1,306.0	3,615	62	25	
Hanover	41.0	20	4	0	
New Kent	-	25	3	33	
Powhatan	50.0	3,280	113	17	
Surry	-	-	12 (singles)	-	
Sussex	40.0	-	14	40	
Halifax	<u>136.5</u>	<u>166</u>	<u>19</u>	<u>85</u>	
Totals:	11,913.8	72,120	2,682	30%	

1/ Does not include a number of small spot infestations (1-4 trees).

2/ Does not include State Forest lands in these counties.

3/ Does not include salvage of 1682 MB bft on Federal land (SW, TJ + Lee Forests) reports thru Feb 1973

*C. L. Morris*  
C. L. Morris, Chief  
Insect & Disease Investigations

VIRGINIA DIVISION OF FORESTRY  
FOREST PEST SURVEY REPORT  
April 1973

GENERAL

Southern Pine Bark Beetle epidemic prognosis: heavy April rainfall (5.3+ inches in Farmville area), lower than normal salvage through May 1973, coupled with higher than normal overwintering survival in brood trees, portends potential trouble. Based on past experience, I fully expect an epidemic which will surpass last year's record damage in Virginia, with the area involved expanding beyond the central piedmont into the coastal plain by late 1973. With such anticipation, we will make every attempt to begin aerial surveys in late June when trees attacked by the overwintering brood which emerged in early May will begin turning color. Salvage efforts on these small spot infestations will begin as soon as possible thereafter.

The Virginia Division of Forestry has applied for a \$9,500 bark beetle control grant from the USFS to help to meet this expected increase in bark beetle activity.

(1/2 funded by USFS until Dec 73 when 2nd 1/2 provided)

Copony is continuing his evaluation of the Frontalure-Cacodylic acid method for controlling the southern pine beetle on the Cumberland State Forest (Cumberland County) this spring. First reports indicate a high incidence of attack in May on the trap trees by the overwintering brood. Morris will continue ~~the~~ test with summer broods of the insect in July as a part of a "total clean-up" effort on that 15,000 acre State Forest with the assistance of a NASA aerial photo flight in late June or early July followed by an intensive effort to locate and treat all small spot infestations by salvage, felling and spraying or Frontalure treatment; objective: to determine if an intensified program of total spot treatment can prevent an epidemic outbreak.

Correction: A typographical error in our bark beetle salvage figures (included in the March 73 Pest Report) should be corrected to read "Pittsylvania County: 5% cord wood salvaged; 30% board footage salvaged".

Better soil moisture conditions has allowed a speed-up of bark beetle salvage logging so that by May 15 there was an overall increase of almost 10% compared to that reported on April 1.

GYPSY MOTH:

The Virginia Department of Agriculture and Commerce is increasing its parasite rearing efforts to provide 75 colonies of Brachymeria intermedia (a pupal parasite) for release in selected areas in northern Virginia, Norfolk and on the Eastern Shore where male moths were caught in 1972. In addition, they are planning to add three new gypsy moth parasites to their lab-rearing efforts (Compsilura concinnata, Palexorista sp. and Pimpla spp.) all of which are larval parasites of the gypsy moth.

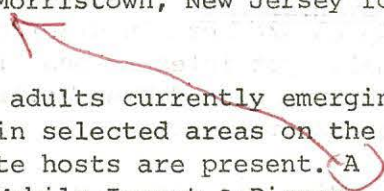
The VDF is anticipating obtaining at least a major portion of VPI & SU's Piedmont Fruit Lab in Charlottesville for use in future rearing of selected gypsy moth parasites in cooperation with the VDAC.

Artman and Copony are poised for a June 1 departure to Morristown, New Jersey for their annual gypsy moth parasite collection trip.

Blepharina (Sturmia) Seutellata and Parasetigena agilis adults currently emerging from last year's collection are being released (5 to date) in selected areas on the Eastern Shore and piedmont Virginia where potential alternate hosts are present. A 20.5 foot travel trailer (affectionately known as the "VDF Mobile Insect & Disease Research Laboratory") will make their 5-week stay reasonably comfortable.

TRUCK

locations



Gypsy moth trapping by the USDA in Virginia will be limited this year to cooperative arrangements as to the Virginia Chapter of the National Campers and Hikers Association (1300 traps) in selected areas in Northern and Eastern Virginia, some 500 traps to the Division of Forestry and additional random trapping by the VDAC in the southwestern counties. Severt and Blevins will also assist in the cooperative trapping in several southwestern counties in June.

The annual in-service training meeting for new employees was held in three districts in early May, thru the efforts of the District Foresters involved, an excellent turnout of industry foresters mainly from Chesapeake Corporation, plus representatives of A. P. Hill Military Reservation and a few County Agents.

The Fall cankerworm which developed epidemic populations over an eventual 1500 acres on Bull Run Mountain (Prince William and Fauquier Counties) in 1970, is again on the upswing in the same general area (generally beyond the spray area of 1970). A second outbreak was noted in Clarke County in the foothills of the Blue Ridge close to the Clarke-Loudoun County line between Routes 7 and 50. Aerial surveys to delineate the area of moderate-severe defoliation are scheduled for May 30. Annual egg and larval collections in the Bull Run infestation since the spray program has indicated a high rate of both egg and larval parasite activity and bird predation in the sprayed area, hence the concern as to why the infestation suddenly blossomed in 1973. Sticky bands will be installed in both areas of infestation this fall.

An evaluation of the effectiveness of GARDONA insecticide as a dip for pales weevil control is currently underway (this insecticide is being used experimentally on a fairly large scale under VDF supervision) to test its effectiveness under operational conditions in the Spring 1973 planting. An additional test including another promising insecticide dip, DURSBAN, was installed on the Cumberland State Forest this Spring, but damage was considerably less severe than expected.

Status of other spring I & D problems in Virginia - Needle cast (Hypoderma lethale) on loblolly pine: as widespread and as evident as usual; noted as more noticeable in Amelia/Amherst Counties.

Needle rust: reported as more prevalent than usual in the Tappahannock District.

Anthracnose of Sycamore: Moderately severe in northern piedmont; extremely severe in western counties of the State.

Virginia pine sawfly: Defoliation somewhat less than predicted due to the cool, wet spring we are experiencing. Larval activity completed by mid-May in most areas.

Eastern Tent Caterpillar: Remains at high populations over much of the State again this year. Mentioned by Districts as noticeable in Mathews, Gloucester, Chesterfield, Albemarle, Orange, Culpeper, Lunenburg, Bedford and Shenandoah Counties.

Light in Stafford and King and Queen and Floyd, Pittsylvania Counties and throughout D-1 (Waverly). A number of nests in the piedmont area have been collected to determine the parasite complex.

#### RESPOND FROM FOREST DISTRICTS:

Coastal Plain: A scattering of new spot infestations of the southern pine beetle (up to 3/4 acre in size) noted in Hanover (11) and Caroline (11) Counties. Occasional small spot infestations (1-3 trees) of black turpentine beetles reported in Nansemond, Chesapeake, and King William. One Ips beetle infestation (12 trees) recorded Lancaster County.

Virginia pine sawfly activity (larvae) noted in occasional spots in Caroline, Richmond, King & Queen, Westmoreland, Prince George and Henrico Counties.

Pales weevil damage recorded as severe in one location Southampton County, one in Accomac County.

Aphids on white pine "light" on one group of 5 trees in Caroline County and on 3 trees Virginia Beach.

Pine looper adults noted on 2 stands loblolly pine in Richmond County.

Rainfall for April: Gloucester-3.95 inches; Sandston-4.80; Waverly-3.81; Portsmouth-4.35, Accomac-4.81, Tappahannock-5.72, King William - 4.60.

PIEDMONT: Southern Pine beetle activity reported in Louisa (2 spots, 0.1; 17 acres), Pittsylvania (5 spots 0.1 - 1.0 acres), Halifax (6 spots, 1/4, 3/4 acre) and in other scattered locations. Active salvage efforts continue in the central, southern and eastern piedmont with 95% of the landowners now contacted.

To date, no striking upswing of turpentine beetle or Ips beetle activity noted; these insects will be an increasing problem later in the summer of 1973, having built up goodly populations in SPB killed trees.

Pine webworm activity continues to increase: reports of damage received from widely scattered loblolly, shortleaf and Virginia pine plantations throughout the piedmont and specifically in Lunenburg & Nottoway (5-10% infestation) and in Culpeper County.

Pine spittlebug evidence similar to that of last spring; reported as general in Orange and Culpeper Counties on loblolly and Virginia and shortleaf pines.

Evergreen bagworms noted as widespread and heavy on E. red cedar in Fauquier County.

Aphids noted widespread on white pine in Henry and Patrick Counties and on a group of several trees in Amelia and Nottoway County and Bedford County.

Littleleaf symptoms noted in one stand of shortleaf in groups of 1-5 trees in Charlotte County. NOTE: Both soil moisture excess or deficient appears to aggravate littleleaf disease symptoms.

Atropelis tingens recognized as causing twig dieback on several shortleaf pine in one location of Fluvanna County.

Mice caused severe injury to a 25-acre 1972 planting of loblolly pine in one location of Madison County.

The holly looper suspected as causing damage to 20 acres of American holly at one location of Prince William County.

Cankers of unknown origin reported as infecting 20 hemlocks at one location in Loudoun County; Dutch elm disease apparently responsible for loss of single tree in Brandy (Culpeper County); Twig girdles on Hickory and Persimmon noted scattered locations in Lunenburg/Nottoway County.

Rainfall: Spotsylvania - 5.79; Lunenburg - 5.35; Farmville - 5.89; Charlottesville - 4.03; Louisa - 6.33.

Mountain: Aphids active on one individual white pine at one location in Augusta County; also on small individual groups of white pine in Roanoke, Botetourt, Floyd and Roanoke Counties.

Nectria canker severe on 30 acre stand of black walnut in Craig County (99% of trees with several bole cankers each).

Spider mites causing partial defoliation on 2 spruces in Winchester (Frederick County).

Mouse damage "severe" in 5 plantings of white and loblolly pine in Highland and Augusta Counties, also in 3 plantations in Rockingham County.

The pecan case bearer causing moderate damage to buds and new twigs in a 1-acre stand of young black walnut in Washington County (this insect has caused extensive branching of black walnut in plantations and young natural stands in southwest Virginia for the past several years). Frost also was responsible for some leaf and tw. dieback on walnut in several locations in Wise and Lee County.

Other pests noted: cankers on scarlet oak (Augusta), black knot on sweet cherry in Augusta County, E. Gall Rust fruiting on Virginia pine in Augusta County.

Rainfall: Salem-5.23 inches; Martinsville - 5.43; Abingdon - 1.36.

OTHER REPORTS:

Bill Sheads, Forester in Fairfax, recently completed an estimate of timber damage resulting from an April tornado in central Fairfax County. He reports an irregular path of destruction about 1½ miles long, 200-300' wide, with the major damage in a 100-foot wide center of the swath, where complete destruction occurred in saw timber and pole-sized pine and hardwood pine.

Total damage was estimated at 145 M board feet and 100 cords. Pine timber suffered most of the damage.

A PSILID FLY (Chyliza annulipes) - Virginia - Twenty-six puparia collected from under pitch tubes on Pinus virginiana (Virginia pine) in Smyth County, January 16, 1973, by J. Severt. Puparia held in laboratory until adults emerged January 30. Determined by G. C. Steyskal. (Copony). Species known from North America only by record from Massachusetts dated 1920 and one from Virginia, the source of which is unknown. Larvae of the family Psilidae are phytophagous, living in roots and stems of plants and under bark of trees, gaining access through wounds. Known wild hosts in North America are Lupinus, Pinus, and Ulmus, and in Europe, Carex, Juncus, Noettia, Orobanche Scabiosa, and Spiraea. Adults rest on foliage and herbage, mostly in shady situations. Psila rosae (carrot rust fly) is the most injurious species in the Family. (PPQ).



C. L. Morris, Chief

Insect & Disease Investigations

May 30, 1973

VIRGINIA DIVISION OF FORESTRY  
FOREST PEST SURVEY REPORT  
May-June-July, 1973

GENERAL

Southern Pine Bark Beetle: A preliminary aerial survey of the central piedmont by C. L. Morris on June 25, 1973 showed a decided potential for bark beetle increase during late summer this year. District 4 (Farmville) has completed additional survey flights in the counties of Cumberland (64 new spot infestations), Buckingham (104), Appomattox (36), Campbell (40) Charlotte (98) and Nottoway (8). Prince Edward, Bedford, and Lunenburg Counties will be flown in the immediate future. Overall estimate of salvage-control to date is 50% (range 30-65%).

Air survey reports from D-8 indicate a potentially serious SPB problem area in 3 areas (Ivor, Vicksville and Sebrell) where much of the problem appears to be on the lands owned by Gray Lumber Company, Union Camp and the Bain Estate. On the Eastern Shore, an August survey showed only one additional active spot infestation. Brief aerial observations in Nansemond and Isle of Wight Counties indicated no problem as of July 1. In District 1, Surry, Sussex and Prince George Counties were surveyed in mid-July. In Sussex, suspected bark beetle activity was noted only in the Littleton and Homeville areas. In Surry, a number of 4-5 tree spots were located and will be monitored for any additional spread. In Halifax County, an early August flight showed scattered spot infestations over much of the county (the problem was mainly in the northwest in 1972).

District estimates of salvage to the end of July, 1973 (50% of the damaged timber) is 36,000 cords and 6,000 MBF.

A report from the three Virginia State Forests, located in the center of the epidemic, shows the following total cut because of bark beetle damage in fiscal year 1973.

Cumberland State Forest:	4,800 cords stumpage valued at \$ 26,112.00	
	520 MBF	25,632.00
Prince Edward State Forest	3,970 cords	21,595.00
	366.5 MBF	14,235.00
Appomattox-Buckingham SF	4,703 cords	25,590.00
	1,155 MBF	42,192.00
TOTAL		<u>\$155,356.00</u>

The USFS has funded half of the \$9,100 bark beetle suppression project requested for fiscal year 1974. A telephone report from the Asheville Zone Office Forest Pest Management, indicates funding for I & D survey work in Virginia in 1973-74 will not be cut.

An all-out effort to control the SPBB on the southern end of the Cumberland State Forest (Cumberland County) has been underway for three weeks. One interesting development: spots ground checked during the period are either "going strong" with a large number of new infested trees (these are essentially the larger unsalvaged spots from last year) or are totally inactive (the small 1-3 tree spots, of late last summer and fall). NASA's aerial photographer's flight of July 6th was totally successful, enabling us to pick up single trees from the imagery for ground check and treatment as needed.

Gypsy Moth: Trapping results are filtering in from APHIS (USDA) and the VDAC. Several potential "hot spots" have been pinpointed. Mathews County (10 traps with 55 moths); Accomac-Northampton (106 traps, 157 moths); Virginia Beach (22 traps, 50 moths). Final results will not be available until mid-September. Mr. Matheny (State Entomologist) reports a summary to date of catches in the Northern Neck as 573 moths in 309 traps. \* 10/1 at 22/100 (10/1) 2 moths cut about 10/10/73 (9/1) 1-tree

The VDF assisted the USDA (APHIS) in putting up traps on a grid pattern in Smyth and Grayson Counties (2 weeks in June). In addition, VDF District personnel randomly placed 700 traps in all districts.

The 4-week effort on parasite collection in New Jersey by Artman and Copony yielded an excellent return on the exotic fly Compsilura concinnata (4,500 adults were released in the central piedmont and on the Eastern Shore in the past 3 weeks), together with an estimated 2,100 puparia of two other exotic flies, Blepharina scutellata and Parasetigena agilis. These latter two parasites must be kept over winter for release next spring.

3,800 parasites of the gypsy moth pupa, Brachymeria intermedia, supplied through the courtesy of ARS (USDA) were released in cankerworm defoliated areas and oak leaf tier defoliated areas throughout the State in June. An additional 6,000 will be released in late August.

A 2-year lease has been obtained on VPI & SU's Piedmont Fruit Lab at Charlottesville for use in establishing a gypsy moth parasite rearing lab. Extensive renovations are underway to completely air condition the building and install humidity control. It is anticipated that limited rearing of selected exotic gypsy moth parasites will begin this winter.

An aerial survey for gypsy moth defoliation was conducted during the last week in June in Northern Virginia and Northern Neck and the Eastern Shore Counties. The USFS supplied plane and pilot, VDF supplied two observers. No suspicious areas were noted.

An aerial survey for oak leaf tier (Croesia albicomana) damage was conducted by Severt and Blevins in early July. The following tabulation indicates results in the southwest counties.

TOPO GRID	COUNTY	ACRES BY % DEFOLIATION		
		20-25	30-40	50-60
Troutdale	Smyth	188	973	0
Wytheville		2,498	0	0
Chatham Hill		220	418	369
Rocky Gap	Bland	667	0	0
Bland		518	0	0
Bastian		1,212	0	0
Crockett	Wythe	69	0	0
Big Bend		1,734	0	0
Atkins		1,359	3,109	0
Hayters Gap	Washington	825 <sup>1/</sup>	0	0
Totals .....		825 (O.S); 8,465 (O.L.T.)	4,500 (O.L.T.)	369 (O.L.T.)
Grand Total .....		13,334 (O.L.T.); 825 (O.S.)		

✓ Ozone Damage to white pine is evident again this year over many of the mountain counties (moderate to severe in Floyd County). A tree noted in Charlottesville area exhibiting typical symptoms during the third week in June (somewhat earlier than usual).

Pales weevil: With the able assistance of District personnel in Districts 4, 9 and 2, we evaluated the operational approach to dipping pine seedlings

1/ Oak Sawfly; all other Oak Leaf Tier.

in GARDONA this past spring. A copy of that report is appended. The USFS is also conducting extensive tests for the south with several insecticides, including GARDONA, and in a preliminary report received recently indicated that their tests this year were more erratic than last. DURSBAN and GARDONA insecticides still look promising. One reason for the test is to seek registration for the most effective as a substitute for Aldrin, the only insecticide currently registered for seedling dips for weevil control.

Other Defoliators: 2,000 acres of mixed oak-woodland was defoliated by the fall cankerworm in the Bull Run Mountains (Prince William County) and another 2,000 acres in Clarke County. VDF Sherwood has established several tree mortality plots in the Clarke County infestations. Bagworm "epidemic" over District 8 (Portsmouth).

Locust Leaf Miner: Browning and defoliation by the locust leaf miner in black locust is extremely widespread this year in the Blue Ridge and southwest counties of the State (Nelson County South). Also reported as widespread (but light) in Richmond and Westmoreland, Fairfax, Madison and Greene, Bedford and Amherst Counties.

The red-headed pine sawfly is again the cause of concern in loblolly pine plantations on Glatfelter Pulpwood Company lands on the Eastern Shore of Delaware and Maryland. Some 500 acres (much in cut-over hardwood areas planted to pine) were involved in late June (large larvae June 22). Average defoliation was reported by GPC personnel as 50% and some control spraying was carried out. Other light damage from red-headed pine sawfly reported from Rockingham (4 locations), Bedford (3 locations), Rockbridge (2), Prince William (1) and Madison (2). Also Waverly (1) and Mecklenburg (1).

A native sawfly (N. taedae taedae) which feeds on mature loblolly pine, more noticeable this past spring in several bayside counties, particularly in Gloucester and Mathews. This sawfly was locally epidemic in the same general area in early 1950's.

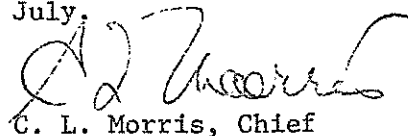
Jap beetle populations somewhat heavier than normal in some areas this year. Large numbers first noted Charlottesville area 6-25-73.

Fall Webworm on various hardwoods becoming noticeable (3/4 grown larvae at Cumberland SF on 8-6). Reported as noticeable in Floyd, Patrick, Henry, Montgomery, Botetourt, Franklin and Richmond Counties.

The green-striped maple worm noted as general and countywide on distribution in Richmond County.

Oak Wilt: A survey in the counties of Washington, Lee and Scott was conducted in early July and five single tree spot infestations treated in Washington County. In mid-July an abbreviated survey in the counties of Augusta, Rockingham and Shenandoah Counties was conducted.

In the latter survey, hickory, suffering from severe infestation of gall aphid and general decline, were commonly mistaken for oak wilt suspects. Only a few suspect areas were treated in the northern survey; the survey team reported fewer spots than usual in the counties flown. A single (old) spot infestation in Wythe County was re-treated by District personnel in July.



C. L. Morris, Chief  
Insect & Disease Investigations

VIRGINIA DIVISION OF FORESTRY  
FOREST PEST SURVEY REPORT  
August 1973

GENERAL:

Updating the most recent efforts by district personnel in late August in their aerial detection surveys for the southern pine beetle, the following additional surveys were completed since the previous Pest Survey Report (number of spot infestations plotted):

Eastern Shore - 12 (incl. 9 1-tree spots)  
Amherst - several (ground)  
Amelia - 107  
Bedford - 3 (ground)  
Campbell- 23 (additional)  
Lunenburg-65  
Pr. Edward-63  
Pittsylvania - 55

A survey of the three piedmont state forests on September 5 showed: Appomattox-Buckingham - 93 spots; Cumberland - 84; Prince Edward - 42.

The concerted effort to control the SPB on the southern portion (8,000 acres) of the Cumberland State Forest (with the valiant help of State Forest personnel and 25-30 pulpwood cutting crews) continues. An evaluation of the usefulness of the "Frontalure"-cacodylic acid method is small spot control on the Cumberland State Forest is to be evaluated during the last week in September. Tests of this approach in Spring 1973 look very promising.

An aerial survey (of Essex, King and Queen and Caroline Counties) indicated no beetle infestations there.

The fall webworm was decidedly more evident on a variety of hardwood hosts this year throughout Virginia, particularly in the mountain areas of the State. Concern by National Park personnel on the Skyline Drive invoked discussion of possible spray operations. In Southwest Virginia, a survey conducted by District 5 personnel in Pulaski County (Hiwassee Area) showed 28 infested trees per mile of roadside survey (both sides) with 1 to 23 webs per tree (average 4 per tree). Percent defoliation ranged from 1 - 60% (average 12%). Along one mile of road <sup>along foot hills of</sup> on the Blue Ridge 35 trees were infested, averaging 11 webs per tree (range 1-40); defoliation ranged from 2 - 100% (average 33%). In the Southwest, Grayson and Carroll Counties were also heavily infested, as was Highland, Montgomery, Giles, Roanoke, Franklin, and Patrick and Henry Counties.

\* Floyd Co: 1/2 mi. SW intersection Rts. 726 + 605 (both sides, to 100' into woods) VDF Grid 185-483  
Locust leaf miner was also more severe and widespread this year than usual, particularly in the western third of the State.

Ozone damage to white pine was not as widespread as the past two summers, but reported from Floyd, Rockbridge.

Other defoliators more in evidence than usual this summer include the pale tussock (throughout Floyd County); walking stick (several 1-2 acre spots in Fauquier Co.); orange-striped oakworm (northern piedmont as small scattered colonies on oak); datanas (Amelia and Lunenburg); yellow-necked caterpillar (Bedford Co.). John Wiedhass (VPI & SU Extension Entomology) reports tussock moth larvae presence (Probably white marked) widespread in Clifton Forge area (Allegheny County) and Douthat State Park (South Bath County) and along portions of the Blue Ridge Parkway.

Gypsy Moth: As of September 15, 1973, 700 male moths had been caught and identified by the USDA in Virginia. (219 were caught last year with about 23,000 traps versus 3000-4000 traps this year.) The following table (courtesy Herb Smith, APHIS (USDA) Roanoke) gives the summary to date. Additional trap reports are outstanding, particularly in the northern part of the State, where the National Campers and Hikers assisted in the trapping program.

The large number of moths trapped this year in Northumberland and Mathews brings up the possibility of blow-in from the Eastern Shore or southern Maryland, since so few were caught there last year.

POSITIVE 1973 GYPSY MOTH FINDS

COUNTY	VDF FINDS		TOTAL FOR STATE	
	NO. TRAPS	NO. MOTHS	NO. TRAPS	NO. MOTHS
Accomack	9	20	183	300
Arlington			3	4
Augusta			1	1
Botetourt			1	1
Dinwiddie	1	1	1	1
Fairfax			5	10
Frederick			4	6
Gloucester	2	2	5	5
Hampton			5	12
Hanover			1	1
Isle of Wight			3	3
King and Queen			1	1
Lancaster	1	1	4	4
Mathews	3	11	13	66
Mecklenburg			1	1
Middlesex			6	12
Nansemond			2	2
Norfolk			6	26
Northampton	3	7	65	95
Northumberland	5	27	17	56
Prince William	1	1	1	1
Richmond	1	1	1	1
Rockingham	1	2	6	14
Patrick	1	1	1	1
Smyth			11	14
Southampton			1	1
Stafford	1	2	1	2
Virginia Beach			27	57
Westmoreland	1	1	1	1
Wythe			1	1
TOTAL	30	77	378	700

Numbers are cumulative-total for State includes VDF finds. - September 12, 1973

In an attempt to determine if some of the 1972 VDF-VDAC releases of the exotic gypsy moth pupal parasite Brachymeria intermedia, had become established, Morris placed a single standard dixie-cup trap coated with tanglefoot and baited with wax moth pupae (the alternate host upon which B. intermedia is reared in the lab) in seven locations in early March in Highland, Bath, Allegheny Counties, and in fifteen locations on the Eastern Shore (Accomac, Northampton Counties) in mid-April, and one location in Richmond County in early June. These traps were collected 8-10 days later and checked for

1700  
Total  
764(?)

possible attack by the pupal parasite. No traps were positive.

REPORTS FROM FOREST DISTRICTS:

Coastal Plains

Thus far this year no startling upswing of southern pine beetle has been reported in the coastal plain counties, although scattered active spot infestations continue to be reported. New spots during August include Southampton County (15 spots,  $\frac{1}{4}$  -  $\frac{1}{2}$  acre); Chesterfield (2, .3 acres); Henrico (1, 2 acres); Hanover (2, 5 trees); Surry (several 1-tree -  $\frac{1}{4}$  acre); Halifax (general infestation, spots to 1 acre); Sussex (central part of county, up to 3 acres) and King William (2, 30 trees).

Small (1-3 tree) spots of pine mortality due to Ips park beetles and turpentine beetles now being reported in Gloucester, Spotsylvania, and Halifax Counties (Ips) and in Mecklenburg, Chesterfield and King and Queen Counties (turpentine beetles).

Presence of red-headed pine sawfly larvae noted on single Norway Spruce in Stafford County (confirmed on Norway Spruce also in Albemarle County) and in Mecklenburg County (few trees each place).

Nantucket pine tip moth reported as widespread and more severe than usual throughout District 8 (Portsmouth).

A root rot of loblolly pine reported as causing mortality of 50% of the trees in spots as large as 1 acre in one location in Chesterfield County.

Fall webworms noted as "widespread" but not increased over last year in Portsmouth District. Webworm activity reported as "general" over District 1 (Waverly) with partial defoliation resulting.

Miscellaneous - Dutch elm disease (1 tree, Halifax County); "oak worms" on single willow oak, Halifax County; Datana caterpillars on 10 oaks causing some defoliation, 1 location in Chesapeake County.

Rainfall: Portsmouth - 7.47"; Sandston - 4.34"; Waverly - 3.74"; Tappahannock - 3.08"; Bowling Green 9.78"; Gloucester - 4.93".

Piedmont:

Southern pine beetle (see GENERAL). Additional spot infestations reported from Pittsylvania County (3 spots, 3 trees to 3 acres).

Ips bark beetles noted active in scattered individual Virginia pines in Bedford County; in Louisa County (2 spots to 0.1 acre); Fairfax (several to several trees in size). Turpentine beetles in loblolly pine reported 5 locations (1-3 trees) in Lunenburg County.

Miscellaneous pests: Red-headed pine sawfly on scattered loblolly pines on one location in Bedford County; Bagworm numerous on several hosts in Bedford County, aphids numerous on beech in Bedford County; oak leaf spots (oak leaf blister) widespread in Bedford County; anthracnose widespread (some defoliation) in Amherst County.

Rainfall: Amherst - 1.94"; Farmville - 3.36"; Charlottesville - 5.02"; Culpeper - 7.38".

Mountain: (see "GENERAL" for webworm summary)

Southern pine beetle reported active in numerous spots of short leaf and Virginia pine 1/10 - 1/2 acre in size in Southeast Rockbridge (USFS lands).

Ips bark beetles identified as killing 3-4 Virginia pines in 2 locations in Frederick County.

White pine weevil noted damaging white pine (single trees throughout Frederick and Clarke Counties.

Miscellaneous pests: Anthraxnose noted moderately severe on maples in Shenandoah County; Dutch elm disease responsible for killing 3 trees in Frederick and Clarke Counties; Nantucket pine tip moth "severe" in one loblolly plantation in Augusta County; pine sawfly larvae causing light defoliation 5-6 loblolly pines in Frederick County.


Rainfall: Pulaski County - 1.9"; Salem - 3.18"; Staunton - 2.98"; Abingdon - 4.39"; Wytheville - 3.25".

#### OTHER REPORTS

Sam Alexander, Ph. D. candidate for a degree in Forest Pathology under the tutelage of Dr. John Skelly at VPI & SU; is putting the finishing touches on his dissertation "Edaphic Factors Associated with the Incidence and Severity of Fomes annosus in Loblolly Pine Plantations" (in Virginia). The Division of Forestry has assisted Sam throughout his two year study in various ways, including overnight facilities in his major study area in the Parker plantation in D-9, construction materials and records of past VDF studies. In return, we received valuable information on certain soil factors which influence spread and severity of an important root rot pathogen.

Sam found that the size of pores in the soil appeared to be the major factor in determining degree of infection (allowing spores of Fomes annosus to percolate readily deep into the soil); that a root isolation method was more indicative of individual tree infection than the increment core method; and that growth loss caused by infection of living residual trees may be much more severe than thought earlier.

The Division plans continued cooperation with VPI & SU on further growth loss investigations.

  
C. L. Morris, Chief  
Insect & Disease Investigations

CLM:ar  
September 26, 1973

VIRGINIA DIVISION OF FORESTRY  
Forest Pest Survey Report  
September 1973

GENERAL

Southern pine beetle activity continues relatively static, with some localized increases in occasional counties. An example of the trends in beetle population in the Piedmont from late 1972 through September 1973 (new spot infestations) is given below (District 4 survey figures):

County	Spots per flight			
	Fall 1972	January 1973	July 1973	September 1973
Amelia	139	109	107	80 (actually 67 (oct))
Amherst	21	*	*	25
Appomattox	70	65	36	45
Bedford	5	*	**3	**1
Buckingham	117	108	104	54
Campbell	58	152	63	120 (est) (actually 120 (oct))
Charlotte	75	103	98	52
Cumberland	156	155	64	38
Lunenburg	74	87	65	140
Nottoway	54	24	8	45
Prince Edward	131	175	63	50

- \* Activity insufficient to justify flight
- \*\* Ground observation only

On the Cumberland State Forest (15,000 acres), where a concerted attempt to control all spot infestations (with 30 small pulpwood crews) has been continuing since July 1973, a total of 29 new spot infestations (3 trees to 0.25 acres) were located on an air survey flight on October 12; this is a marked reduction in total spot infestations over previous surveys (little change in number of new spots over past surveys) and reflects the intensive salvage effort and the relatively static current conditions of the southern pine beetle populations.

An October 4 flight by District personnel over Sussex County (Coastal Plain) showed an increase in the number of spot infestations in the Waverly area; some spots appeared one acre or more in size.

A September 27 air survey in Chesterfield County (by District 2 personnel) showed 12 spot infestations averaging 0.1 acre per spot. Powhatan and Goochland Counties are reportedly the most severely infested in District 2. (with last survey in spring 73)

The field evaluation of summer treatments of small (1-3 brood trees) and moderate-sized (20-30 trees) spot infestations of the southern pine beetle with Frontalure-cacodylic acid was completed in September. None of the spots treated in August showed the kind of effective control experienced with the Spring (early May) treatments. The synthetic attractant was effective in drawing beetles from brood trees to the general area of the trap trees but attack on the trap trees was minimal and many additional nearby green trees were heavily attacked. The problem apparently is twofold: too rapid deterioration of poisoned trap trees in mid-summer and the overly-rapid volatilization of the frontalure at high summer temperatures. In this regard, we were pleased to learn that the USFS's Southern Forest Experiment Station is planning to evaluate frontalure and two other newly reported attractants for control of the southern pine beetle; the VDF is planning no additional tests next year.

This past summer three students (2 in Charlottesville, one in Accomac County, Eastern Shore) collected various lepidopterous larvae to rear and identify the parasite complex they harbored. A total of 201 individual collections were made (129 on Eastern Shore, 72 in Charlottesville) ranging in size from a single caterpillar to several hundred/collection in the case of the eastern tent and the fall webworm. Host caterpillar numbers were estimated at 2,464 (Shore) and 7,843 (Charlottesville); 2,166 parasites emerged from the collections (multiple emergence/host caterpillar, particularly Apanteles sp., swelled this emergence total). Copony is currently involved in separating and pinning adult parasite specimens for the trip to Washington, D.C. for assistance by the USDA in identification. There is no current indication that the exotic gypsy moth parasite, Compsilura concinnata, was recovered in this effort, although we expected it might be commonly present on the Eastern Shore.

#### REPORTS FROM FOREST DISTRICTS

##### Coastal Plain

New southern pine beetle spot infestations noted in King William County (2 spots, 3,15 trees); Caroline County (3 spots, 13-20 trees); Southampton (4 spots, 10-20 trees); Sussex (numerous spots, 1 acre +); Westmoreland (several to 6 trees); Gloucester (1 spot, 5 trees); Chesterfield (12 spots, 0.1 acre avg.).

Ips bark beetles active in loblolly yard trees (30% infested) in Waverly; noted killing pond pine in one 5-tree spot in Chesapeake County; two spot infestations (1-2 trees) in Gloucester County (loblolly and Virginia pine).

Turpentine beetles seasonally (normally) active in King George (2 spots, 3-10 trees); King and Queen, Gloucester, Northumberland (single spots, 1-4 trees each).

Miscellaneous pests: Nantucket pine tip moth damage "severe" in one 10-acre loblolly planting in James City County; reported as widespread and infesting 99% of loblolly pine plantations in District 8; causing moderate damage in one loblolly plantation in Northumberland County. Bagworm widespread in District 8; Fomes annosus causing death of 5 loblolly pines in two tracts in Nansemond County; responsible for death of a single red cedar in Gloucester County. Borers in white oak (25% of 10 trees in one location dead), Isle of Wight County; unknown cause of death to single fir in Mecklenburg County; leaf tier evident on single yellow poplar in Essex County; elm twig girdler active in 2 trees at one location in Caroline County.

Rainfall for September: Tappahannock - 4.21 inches; Gloucester - 1.62; Waverly - 3.18; Portsmouth - 1.86; Sandston - 2.02.

##### Piedmont

Southern Pine Beetle activity noted in Halifax County (5 spots, 0.1 to 1 acre); Killing Virginia, Shortleaf in four locations in Louisa County (.1 acre) and (1-2 trees several locations in Culpeper County (see also "GENERAL" for conditions in the Central Piedmont epidemic area).

Turpentine beetles active (1 spot, 10 shortleaf killed) in Halifax County; reported as numerous in individual trees in Lunenburg County following lightning strikes and logging damage; also in Campbell County (2 yard trees).

Red-headed pine sawfly larvae noted on several white pine (Fauquier County); over 12 acres (light) on loblolly pine in Rappahannock County; on several scotch pine in Fluvanna County.

Pine tip moth active in nearly all young seedlings of shortleaf and loblolly in Lunenburg County; numerous in Virginia and loblolly seedlings in Bedford County (moderate damage).

Fall webworm more numerous than usual on sourwood, hickory and persimmon in Lunenburg County; scattered throughout Orange County reported as heavy throughout District 4 (Farmville).

Orange-striped oakworm noted at 2 locations (few red oaks each) in Amherst County (minor damage).

Miscellaneous pests: Aphids active on white pine shade trees in several locations in Bedford and widespread on yard trees in Campbell County; Mimosa webworm common in Orange County; drought injury symptoms evident in occasional patches of oak one stand Nelson County; ozone damage suspected damaging 10 white pine one location in Greene County. Littleleaf symptoms evident in Virginia pine several locations in Culpeper County. Lightning damage high on pines and oaks, Lunenburg County.

Rainfall: Louisa-3.79; Charlottesville - 1.29; Prince William - 3.0; Farmville - 4.18.

#### Mountain

Southern pine beetle responsible for killing two Virginia pines at one location in Franklin County.

Ips bark beetles noted killing single tree in Roanoke County. White pine weevil damage evident in many plantations in Montgomery and Pulaski Counties (20-40% attack); aphids on white pine causing foliar discoloration several locations in Montgomery County; bagworms causing 50% defoliation on 1/4 acre in 2 white pine plantations in Pulaski County.

Fall webworm on Black walnut, hickory, cherry and blackgum in Montgomery, Pulaski, Giles, Floyd, and Franklin Counties resulting in 20-100% defoliation; common on oak in Highland and Augusta Counties and on hickory in Bath, Rockbridge County, and in cherry in Frederick and Clarke Counties.

Red-headed pine sawfly causing noticeable defoliation on several Virginia pines in Patrick and Floyd Counties; a single white pine defoliated in Franklin County; causing defoliation to loblolly pine in three locations in Shenandoah County; on few loblolly, Virginia and shortleaf in Wise, Lee, Wythe and Russell Counties.

Miscellaneous pests: Oak Skeletonizer on red oak one location (25% defoliation) Montgomery County; leaf spots on red oaks numerous in Bedford County; Pine tip moth severely infesting loblolly pine in 6 locations in Rockingham County; scattered damage to shortleaf and Virginia pines in Wythe County; Pine webworm noted active as larvae on scattered loblolly pine seedlings in Frederick County; Locustleaf miner causing browning in black locust in large number of spots in Frederick and Clarke Counties. Mimosa webworm noted on mimosa and honey locust in Wytheville (Wythe County).

Rainfall: Salem - 1.7 inches; Pulaski - 2.4; Staunton - 1.53 inches; Abingdon - 2.43; Wytheville - 2.04.

#### OTHER REPORTS

Gerald Jacques, U. S. F. S., Hot Springs, reports infection by the twig and branch-cankering fungus Valsa (Cytospora) kunzei (Prob. var. piceae) on natural red spruce

along Sapling Ridge, South of Virginia Route 642, Highland County. Many trees affected but no serious damage to date.

The West Virginia Department of Agriculture, which conducts the only annual large-scale oak wilt control program, reports that as of September 20, 1973, 2,508 individual infected trees had been treated (which appears to be about average for their program).

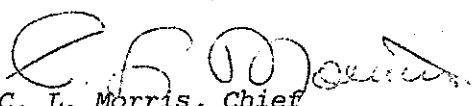
A report from VDF Forester Bashore dated 9-19-73 following an examination of holly severely damaged by the holly looper (Thysanopyga intractata) last year in Northumberland and Lancaster Counties indicates very little damage present this year.

Bark beetle salvage figures for September 1973 (including in some cases the volume removed as the result of clearcutting several tracts due to extensive beetle infestations in Goochland and Powhatan Counties) are given below:

Southern Pine Beetle Salvage (estimated by VDF Districts)  
September 1973

District	County	MBF	Standard Cords
1	Sussex	400	0
	Halifax	20	100
2	Charles City	6	10
	Goochland	246	347
	New Kent	5	40
	Powhatan	80	353
3	Fluvanna	0	4
	Louisa	0	10
	Nelson	0	365
4	Amelia	0	20
	Appomattox	4	40
	Bedford	22	75
	Buckingham	0	460
	Campbell	58	120
	Charlotte	125	95
	<del>Henrico</del> Cumberland	0	1,475
	Lunenburg	0	10
	Nottoway	0	10
Prince Edward	0	720	
5	Pittsylvania	200	200
8	Southampton	53	220
	Nansemond	100	0
State Forests	Cumberland	9	1,867
	Appomattox-Buckingham	107	358
	Prince Edward	131	118
	Pocohontas	83	167
TOTALS		1,649 M	7,184

October 19, 1973

  
 C. L. Morris, Chief  
 Insect & Disease Investigations

VIRGINIA DIVISION OF FORESTRY  
FOREST PEST SURVEY REPORT  
October 1973

GENERAL:

Southern Pine Beetle populations have exploded over the past several months in a number of the southern states, particularly Georgia and South Carolina. In Virginia, beetle activity intensified in all counties (more so in the southern edge of the epidemic area) in the past month but certainly not to the stage of October 1972. Aerial survey flights have been suspended until late December.

The "all-out" control effort on the Cumberland State Forest continues with 30 small pulpwood crews still playing "catch-up". A report of 11-23-73 indicates that progress has reached a point where some of the small crews may be released in the near future. In December a comparative air survey over the Forest compared with adjacent private land is scheduled to evaluate the effectiveness of our past summer's effort.

Estimated salvage on bark-beetle killed timber in October totaled 4,764 standard cords and 850 M board feet.

An aerial survey in Fluvanna County in early October located 41 new spot infestations (only 2 large ones, the rest under one acre); a total of 53 spots remain to be salvaged in Fluvanna. In Amherst, an October survey by District personnel yielded 25 new spot infestations.

The evaluation of the use of the Frontalure-cacodylic acid method in controlling southern pine beetle on the Cumberland State Forest is attached. Our test confirms earlier observations in Virginia and Texas that the summer use of the synthetic attractant is less than satisfactory. Additional work needs to be done on reducing the rate of volatilization and extending the attractiveness of the treated trap trees during hot summer weather. Hopefully the Southern Forest Experiment Station (USFS) will work on this problem in the future; the VDF does not plan any further evaluation until some of these problems are worked out. Earlier work by VDF on use of the synthetic attractant in the spring shows real promise for control of SPB in small spot infestations.

Biological control of Fomes annosus;

For the past several years, Artman has been working with the fungus Peniophora gigantea as a possible biological control agent against Fomes annosus. This past year rather than using spores in the chain saw oil, 2 small pine discs (approximately 1½" x 1-1/3") colonized with Peniophora gigantea were placed on stump top when trees were felled during thinning operations. No discs were placed on stumps in check plots. After 10 months in the two plots isolations from stumps on the untreated plots showed 6% and 13% natural infection by P. gigantea; isolation from stumps in the treatment plots yielded 69% and 83% colonization by P. gigantea. The disc method has many advantages over the "spore-in-oil" technique and a man can easily carry enough discs in a bag on his belt for a day's felling.

P. gigantea remained alive in the discs for approximately 8 months.

Gypsy Moth:

The Virginia Department of Agriculture and Commerce is currently conducting on-the-ground egg-mass searches in Hungry Mother State Park (Smythe County) and on the Eastern Shore (Accomac County), with no positive results to date. There is a strong

suspicion that Hungry Mother may be infested, however.

Male-moth traps in the western two counties of Maryland (placed on 3-mile grid in Garratt and Allegheny Counties) recovered no male moths. Very few were caught this year in adjacent counties in West Virginia, also. In Virginia, a total of 4,960 traps were put out this past summer; 64,000 traps were placed nationwide.

Several egg masses of the gypsy moth were found in Winston-Salem, North Carolina this fall; this is the first positive indication of potential infestation in North Carolina, although moderate numbers of male gypsy moth have been caught for two successive years on the outer banks (and also in Southeast Virginia in adjacent areas).

Renovation on the biological control lab of the VDF (for rearing parasites of the gypsy moth) is well on its way to completion; we hope to begin operations in December on a small scale. Ed Robertson (State Forests) has assisted us in building 15 cages for the beginning rearing effort.

#### REPORT FROM FOREST DISTRICTS

##### Coastal Plain:

Southern pine beetle (new activity) reported in Sussex (several spots to 2 acres), Brunswick (1 spot, 1/50 acre); Powhatan (1 spot, 2 acres) and Charles City County (1 spot, 1 acre). Ips beetles noted in District 8 (5 spots, 1-5 trees) and Chesapeake. Turpentine beetles show seasonal increase in Brunswick (1 tree); Halifax (1 tree); Chesterfield (2 spots to 4 trees); Mathews (single) and King and Queen (8-tree spot). More reports this year than usual on aphids on white pine (Halifax, Waverly, Chesterfield) - damage negligible, however. Pine needle scale noted on scattered loblolly pine yard trees in Waverly (slight damage).

Fomes annosus responsible for killing 8 loblolly pines at one location in King William County.

Rainfall: Tappahannock - 3.32; Spotsylvania - 2.40; Waverly - 1.80; Sandston - 3.13; Portsmouth - 1.32; Eastern Shore - 2.74.

##### Piedmont:

Southern Pine Beetle reported in Halifax (7 new spots to one acre); in Prince Edward County (4 spots to 4 acres); Bedford (1 spot 0.1 acre); Louisa (few spots to 0.5 acre); Fluvanna (53 spots to 1 acre yet to be salvaged).

Ips beetles noted active on single shortleaf pine in Halifax County and in Spotsylvania County (3 trees); in Bedford (3 spots, singles).

Turpentine beetles noted very active in E. Lunenburg County and Nottoway County following cutting.

Pine webworm activity very noticeable in loblolly pine in Lunenburg County, especially in plantations.

Aphids on white pine reported on single location Fauquier County; larvae of white pine sawfly noted on single white pine in Orange County; "pitch flow disease" evidently responsible for death of single white pine in Campbell County.

Fall webworm still active in larval stage in Bedford County on sourwood in numerous locations.

Miscellaneous pests: Cytospora canker suspected as killing one Norway Spruce in Campbell County; needle cast on several loblolly yard trees in Prince Edward County.

Rainfall: Charlottesville - 5.60; Louisa - 5.28; Fairfax - 2.94; Farmville - 2.82; Victoria - 1.8.

Mountain:

No Reports.

OTHER REPORTS

Ed Rountree (District 2) reports that industrial grade Borax for use in stump treatment for control of Fomes annosus can be obtained at \$9.95 per hundredweight from: Industrial Chemicals, Inc., 302 S. 7th Street, Richmond, Virginia.

Morris was honored in October by the Virginia Wildlife Federation as the "Forest Conservationist of the Year in Virginia". The recognition was based on past and current work on biological control of forest pests in Virginia.

Morris, currently chairman of the National Gypsy Moth Advisory Council, has been quite busy the past year in critiquing the research activities of the USDA on the gypsy moth. The major effort has been aimed at getting more user input into the planning of forest insect research. The annual meeting of the Council will be held in Beltsville, Maryland on February 6, 1974 at which time a critical analysis of the research (past and future) is scheduled.

This is the last formal pest survey report of the season. Special appreciation is registered to the excellent cooperation of VDF personnel for their assistance in the monthly survey this past season.



C. L. Morris, Chief  
Insect & Disease Investigations

CLM:ar  
November 23, 1973