

PESTICIDE USE
IN BRITISH COLUMBIA FORESTRY
1985

by
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FOREWORD

"Pesticide Use in British Columbia Forestry, 1985" is the fifth internal report on annual pesticide use resulting from a cooperative survey project established in 1981 by the B.C. Council of Forest Industries, the B.C. Ministry of Forests and Lands and the B.C. Ministry of Environment. Information used to generate this report is now an annual requirement by the Ministry of Environment (Pesticide Control Branch) of all pesticide use permit holders. Data included represents all B.C. forest companies and B.C. Forest Service pesticide use permits which were active in 1985. Summarized in tables and illustrated graphically, information presented includes amounts of each pesticide used and respective areas treated; areas treated by control purpose and method of application; areas actually treated compared to areas scheduled for treatment by pesticide; reasons for pesticide use permit non-utilization, as well as herbicide and insecticide use trends from 1975 - 1985.

INTRODUCTION

"Pesticide use in British Columbia Forestry, 1985" represents the fifth report of its kind utilizing the B.C. Forest Service internal report format. Future reports on pesticide use in B.C. forestry are expected to take a public information leaflet format.

It succeeds internal reports PM-PB-8, PM-PB-11, PM-PB-13, and PM-PB-19 on pesticide use in British Columbia Forestry for the years 1981, 1982, 1983, and 1984 respectively.

All five reports were generated through a cooperative project by the B.C. Council of Forest Industries, the B.C. Ministry of Environment (Pesticide Control Branch) and the B.C. Ministry of Forests and Lands to establish annual records of actual pesticide applications to B.C. forest and rangeland.

Since 1983 the B.C. Ministry of Environment, Pesticide Control Branch, has required pesticide use permit holders to submit follow-up data on all actual permits each year. This report, similar to the 1982 and 1983 reports, was generated from such data, which is summarized and illustrated in tables, graphs, and includes the following information:

- (1) Numbers of 1984 pesticide use permits issued; implemented, cancelled and appealed.

- (2) Environmental Appeal Board decisions on all appealed permits.
- (3) Total hectares of forest land treated with pesticides.
- (4) Total kilograms of pesticide active ingredient applied to forest land.
- (5) Total hectares of forest land treated with pesticide by control purpose - e.g. conifer release, pre-commercial thinning, insect control;
- (6) Total hectares of forest land treated with pesticides by method of treatment - e.g. tree injection methods, aerial helicopter spray;
- (7) Total hectares of forest land treated with pesticides by forest region - e.g. Prince George, Nelson, Kamloops.

The above mentioned data is further differentiated by:

- (i) User - B.C. Forest Service, B.C. forest industry or a combination of both.
- (ii) Pesticide used - e.g. 2,4-D amine, glyphosate;
- (iii) Type of pesticide - herbicide, fungicide, or insecticide;
- (iv) Project type - research or operational.

Other graphical comparisons include:

- (1) Areas scheduled for pesticide treatments compared to areas actually treated;
- (2) Reasons for pesticide use permit cancellations by area affected;
- (3) Total areas of forest land treated with herbicides and insecticides by the B.C. Forest Service and B.C. forest industry, 1975-1985.

FORESTRY PESTICIDE USE INFORMATION SYSTEMS

A computerized pesticide use information system was developed in 1984 by the Ministry of Environment, Pesticide Control Branch, to assist in their permit approval and tracking process.

Information, stored on the ENV1 VAX computer, consists of items marked on the Ministry of Environment, Pesticide use permit application and follow-up report (Figures 1 and 2). This computer is capable of being accessed by local and remote terminals.

The main objectives of this pesticide information system is to provide permit information to forestry pesticide users on a daily basis, and to generate summaries on overall pesticide use for Protection Branch reports and requests from individuals involved in forestry.

Figure 1. REVISED (1984) PESTICIDE USE PERMIT APPLICATION CODED
FOR ENVI VAX COMPUTERIZED PESTICIDE INFORMATION SYSTEM

		Province of British Columbia		Ministry of Environment		Pesticide Control Branch 810 Blanshard Street		Victoria, British Columbia V8V 1X5 Telephone: (604) 387-4321	
<h2 style="margin: 0;">PESTICIDE USE PERMIT APPLICATION</h2>									
Seven completed copies of this form and maps are required along with one copy of the map on the reverse side of this form. Shaded areas are for Pesticide Control Branch use only. For complete instructions refer to Guide to Applicants.									
1. Name of Applicant				Applicants File No.			Application No.		
Address							Date Received		
				Tel. No.			M of E Region		Ref. to BCPCC
2. Name of Contractor				Pest Control Service Lic. No.			Comment Due		
Address							Tel. No.		
3. Permit Category Applied for		Use		Special Use					
4. a. Pesticide Trade Name		b. Active Ingredient (common name)		a.1. Code	c. P.C.P. No.	d. Application Rate (kg a.i./ha)	e. Treatment Area (ha)	f. Quantity (kg a.i.)	
Additional Information									
5. Target Species									
6. Purpose								Purpose Code	
7. a. Nearest Town									
b. Specific Location								NTS Map Ref.	
8. Application Method								Method Code	
9. Commencement Date		Yr.	Mo.	Day	Completion Date	Yr.	Mo.	Day	
10. Aquatic Information		a. 10 metre pesticide-free zone to be maintained on all water bodies and wells			Yes	No			
b. Distance to nearest domestic water intake or well									
c. Additional information									
11. Land Ownership		Public		Private		12. For Special Use Permit Applications		Yes	No
						a. Research outline submitted			
13. Name of Project Supervisor						Date			
Tel. No.						b. Research report to be submitted by			
						c. Federal authorization for unregistered use			
						Attached		To be provided prior to use	
Pesticide Applicator Certificate No.				Category of Certification					
14. Signature of Applicant				Title				Date of Application	
Authorization: The above pesticide use is authorized subject to the <i>Pesticide Control Act</i> and the additional conditions listed on the covering page. Permit is not valid unless signed by Administrator.									
_____ Administrator, Pesticide Control Act				_____ Date					

ENV 2112

Figure 2. 1985 FOLLOW-UP FORM ISSUED TO FOREST PESTICIDE USE PERMIT HOLDERS BY THE B.C. PESTICIDE CONTROL BRANCH

	Province of British Columbia	Ministry of Environment	Pesticide Control Branch 810 Blanshard Street Victoria British Columbia V8V 1X5 Telephone: 387-4321
---	---------------------------------	----------------------------	--

Pesticide Use Follow-up Report

1985

To Permit Holder:

Re: Actual Pesticide Use Under Permit

Please complete and return this form prior to December 31, 1985.

Pesticide Use in 1985 Under Permit No. _____

Pesticide	Quantity of Active Ingredient Used (kg)	Area Treated (ha)
		Total area: _____

STAND INFORMATION (if applicable, refer to back for explanation of terms)

Type Identity _____

Treated Stand Type Label:

1. Species & % _____
2. Average Age _____
3. Average Height (m) _____
4. Average dbh & Range (cm) _____
5. Site Class _____
6. Crown Closure (%) _____
7. Stems/ha _____

Height of Target Species (m) _____

If no work was conducted under this permit in 1985 please give reason.

☐ If no future pesticide use will be conducted under this permit please check here.

_____ Signature	_____ Title	_____ Date
--------------------	----------------	---------------

RESULTS OF THE 1985 B.C. FORESTRY PESTICIDE USE SURVEY

Results of the 1985 pesticide use survey are summarized in tables and graphs on the following pages.

A total of 558 forestry pesticide use permits were issued in 1985, compared to 313 in 1984, representing a 58 percent increase. Only 31 percent, however, were actually implemented by the permit holders. Most of the 588 permits were valid for three years. Fifty one percent (286 permits) were cancelled or postponed by the permit holders, and 100 or 18 percent were cancelled by the Pesticide Control Branch at the request of the permit holders. (Table I).

Twenty-seven permits were appealed in 1985. None of the appealed permits were cancelled as a result of Environmental Appeal Board decisions, but 12 were amended. (Table II).

Fifty-nine percent or 27 800 hectares were actually treated with pesticides out of 46 811 hectares scheduled for treatment in 1985.¹ Of the reasons given for the non-utilization of pesticide use permits, 3 879 hectares were not treated because of funding or manpower problems, 3 902 hectares were not treated because of postponement, 1 158 hectares were not treated because of technical problems, and 512 hectares were not treated because the projects

¹ Areas scheduled for treatment were calculated from all permits known to be active in 1985, including those from previous years. Areas in multiple year permits were divided by the number of years involved to arrive at the approximate number of hectares to be treated in 1985.

had been completed in previous years and/or cancelled by the Pesticide Control Branch. (Figure 9).

Total area treated with herbicides almost doubled from 13 893 hectares in 1984 to 27 151 hectares in 1985. This continues a doubling trend since 1983.

The herbicides 2,4-D amine/ester and glyphosate were the two major pesticides utilized by foresters. Glyphosate was applied to 19 730 hectares or 71 percent of B.C. forests treated with pesticides, and 2,4-D amine/ester to 6 155 hectares or 22 percent (Table III, Figure 3).

In terms of weight of active ingredient applied, the three most commonly used pesticides were glyphosate (12 296 kg active ingredient), 2,4-D amine/ester (7 511 kg active ingredient) and picloram (457 kg active ingredient). (Table III, Figure 4).

Most 1985 pesticide use projects were located in the Vancouver, and Prince George Forest Regions with, respectively, 11 230, and 12 753 hectares treated with pesticides (Table IV, Figure 5).

Stand tending operations involving vegetation management remained in 1985, as in previous years, the most common purpose of forestry pesticide use.

Herbicide applications for conifer release were made to 11 186 hectares. This was an increase from 1984 of 3 711 hectares.

Other types of stand tending operations using herbicides also increased from 1984 by 8 510 hectares. In 1985 brushing and weeding, site preparation, seed tree control and site rehabilitation involved a total of 13 776 hectares. Right-of-way maintenance and rangeland noxious weed control together accounted for 2 087 hectares, while insect, fungus and deer control involved for 751 hectares treated with other types of pesticides. The use of MSMA for bark beetle control, involving individual "trap trees" dispersed over large areas, accounted for approximately 612 hectares. (Tables V and VI, Figure 6.)

Tree injection or cut surface treatments employing such equipment as brush saws, injectors and spot guns, were used on 15 604 hectares. Backpack sprayers and vehicle mounted spray booms or nozzles were used to apply pesticides to respectively, 2 802 hectares and 2 097 hectares. Aerial, helicopter, and fixed wing, spray applications involved respectively 6 462 hectares and 562 hectares of forest land. This area was more than twice as large as that treated aurally in 1984 (Table VII, Figure 7).

TABLE I. THE FATE OF 1985 PESTICIDE USE PERMITS ISSUED
BY THE B. C. PESTICIDE CONTROL BRANCH, MINISTRY OF ENVIRONMENT

	B.C. FOREST SERVICE (%)		FOREST INDUSTRY (%)		TOTAL (%)	
PERMITS ISSUED (TOTAL)	299	(100)	259	(100)	558	(100)
PERMITS IMPLEMENTED BY HOLDER	98	(33)	74	(29)	172	(31)
PERMITS CANCELLED OR POSTPONED BY HOLDER	154	(51)	132	(51)	286	(51)
PERMITS CANCELLED BY THE PESTICIDE CONTROL BRANCH	47	(16)	53	(20)	100	(18)

TABLE II. THE FATE OF APPEALED 1985 PESTICIDE USE PERMITS
AS DETERMINED BY THE B.C. ENVIRONMENTAL APPEAL BOARD

	B.C. FOREST SERVICE	FOREST INDUSTRY	TOTAL
PERMITS APPEALED	17	10	27
APPEALED PERMITS CANCELLED/REVOKED	0	0	0
APPEALED PERMITS AMENDED	11	1	12
APPEALED PERMITS SUPPORTED	6	9	15
APPEALS WITHDRAWN	0	0	0

TABLE III. SUMMARY OF PESTICIDE USE¹, 1985

PESTICIDE	B.C. FOREST SERVICE				FOREST INDUSTRY			
	ha treated		kg a.i. used		ha treated		kg a.i. used	
	OP ²	RES ³	OP	RES	OP	RES	OP	RES
amitrole ⁴	0.0	0.0	0.0	0.004				
ammonia					0.8	0.0	0.009	0.0
asulam	10.0	0.0	14.0	0.0				
benomyl	0.0	0.004	0.0	0.2				
B.t.					0.0	8.1	0.0	243.0 BIU ⁵
BBR2					0.0	0.2	0.0	0.05
carbaryl					0.1	0.0	8.9	0.0
chlorothalonil	0.0	0.004	0.0	0.1				
DFTM ⁶ virus	0.0	0.001	0.0	0.001				
dicamba					0.0	2.0	0.0	0.5
dichlobenil ⁷	0.0	0.0	0.0	0.007				
dimethoate	0.0	0.008	0.0	0.01				
dodine	0.0	0.002	0.0	0.02				
ferbam	0.0	0.005	0.0	0.09				
fosamine					28.0	0.0	108.0	0.0
furadan	0.0	0.003	0.0	1.0				
glyphosate	5433.5	0.0	6317.0	0.0	14295.8	0.6	5979.2	0.001
hexazinone	178.7	1.4	26.2	4.2	32.6	0.9	55.1	0.0
mancozeb	0.0	0.004	0.0	0.5	0.0	0.5	0.0	0.8
MCPA ⁸	0.0	0.0	0.0	0.001	0.0	2.0	0.0	5.0
MSMA	610.8	1.0	21.2	0.4	80.0	0.2	296.0	2.6

1. Data presented includes pesticides applied to rangeland administered by the B.C. Forest Service.

2. Operational Projects.

3. Research/Special Use Projects.

5. BIU - Billion International Units

6. DFTM = Douglas-fir tussock moth.

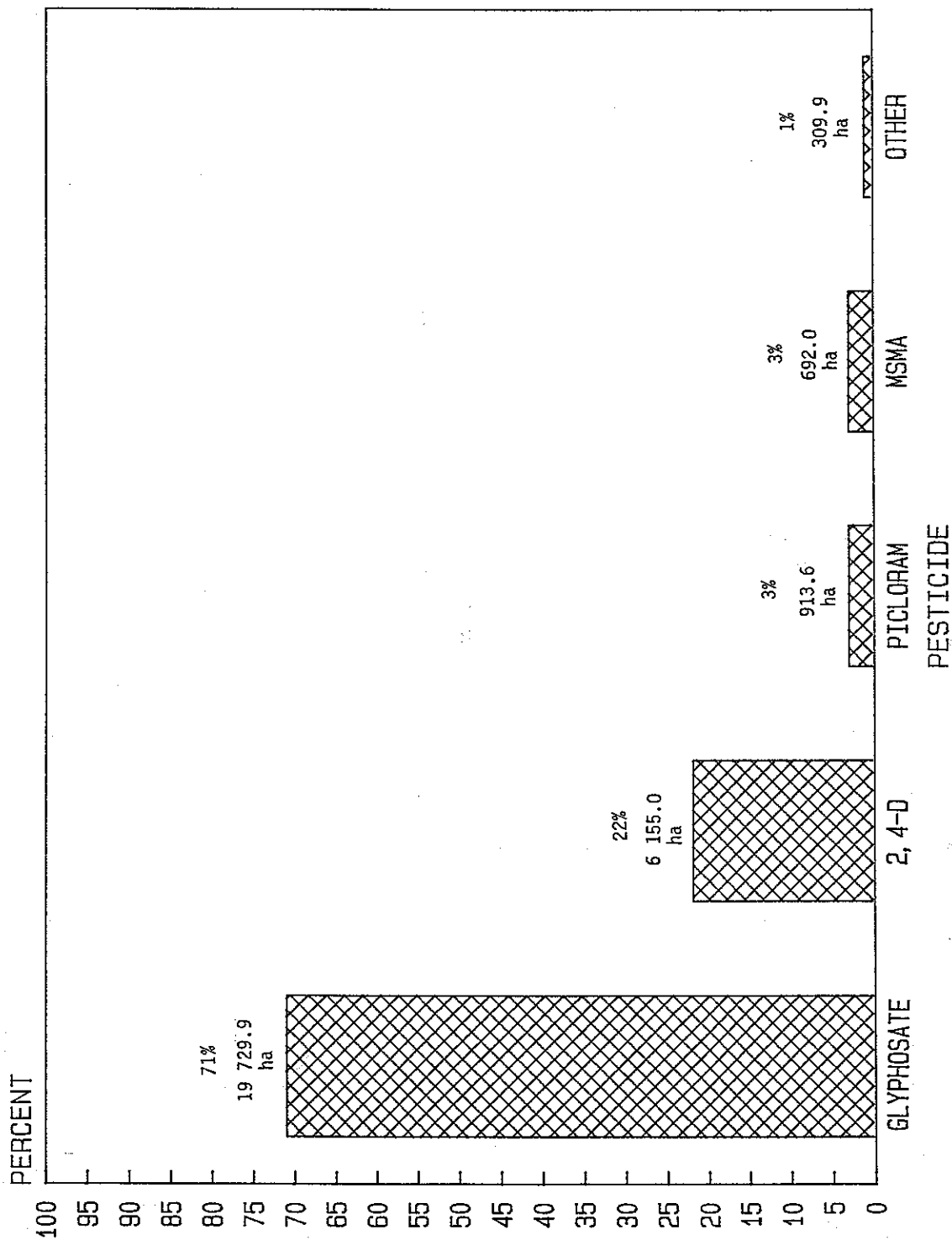
4, 7, & 8. Areas treated were so small as to be insignificant

TABLE III. SUMMARY OF PESTICIDE USE¹, 1985

PESTICIDE	B.C. FOREST SERVICE				FOREST INDUSTRY			
	ha treated		kg a.i. used		ha treated		kg a.i. used	
	OP ²	RES ³	OP	RES	OP	RES	OP	RES
mecoprop					0.0	2.0	0.0	7.5
metalaxyl					0.0	0.1	0.0	0.5
metsulfuron					0.0	0.2	0.0	0.02
mineral oil	0.0	0.002	0.0	0.3				
napropamid					0.0	0.05	0.0	0.2
norpine					0.0	0.2	0.0	0.05
oxydemeton -methyl	0.0	0.01	0.0	1.0				
picloram	913.6	0.0	457.4	0.0				
prometryne	0.0	13.0	0.0	7.6				
putrescent egg solids	10.0	0.0	5.0	0.0				
rotenone					17.6	0.0	9.4	0.0
sulfometuron					0.0	0.2	0.0	0.01
triadimefon	0.0	0.002	0.0	0.01				
triclopyr					0.0	1.2	0.0	7.0
2,4-D	1 468.0	0.0	1 699.0	0.0	4 665.0	22.0	5 795.0	17.0

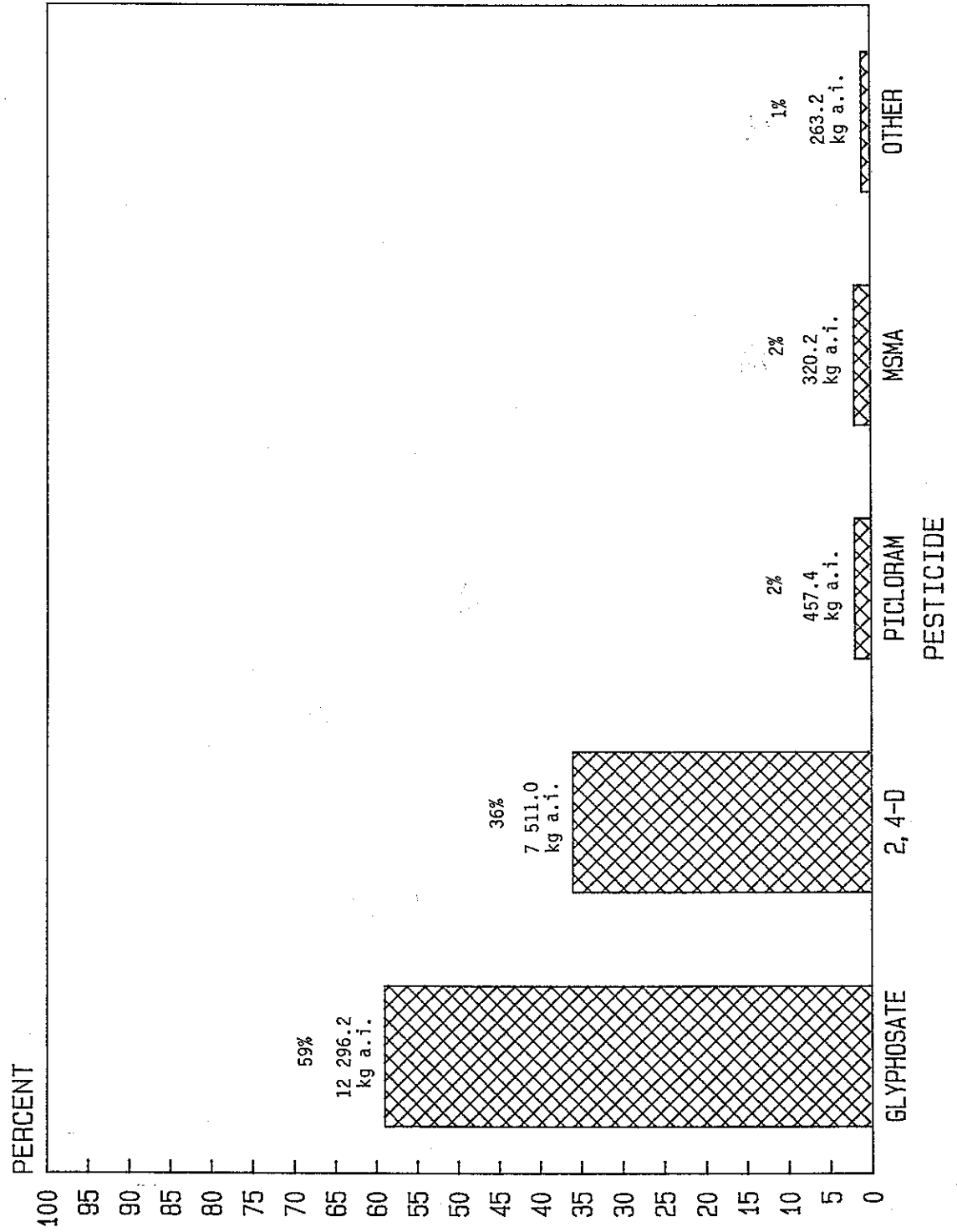
1. Data presented includes pesticides applied to rangeland administered by the B.C. Forest Service.
2. Operational Projects.
3. Research/Special Use Projects.

FIGURE 3. PERCENT PESTICIDE USE BY AREA TREATED, 1985¹



¹ B.C. FOREST SERVICE & B.C. FOREST INDUSTRY COMBINED

FIGURE 4. PERCENT PESTICIDE USE BY WEIGHT OF ACTIVE INGREDIENT, 1985¹



¹ B.C. FOREST SERVICE & B.C. FOREST INDUSTRY COMBINED

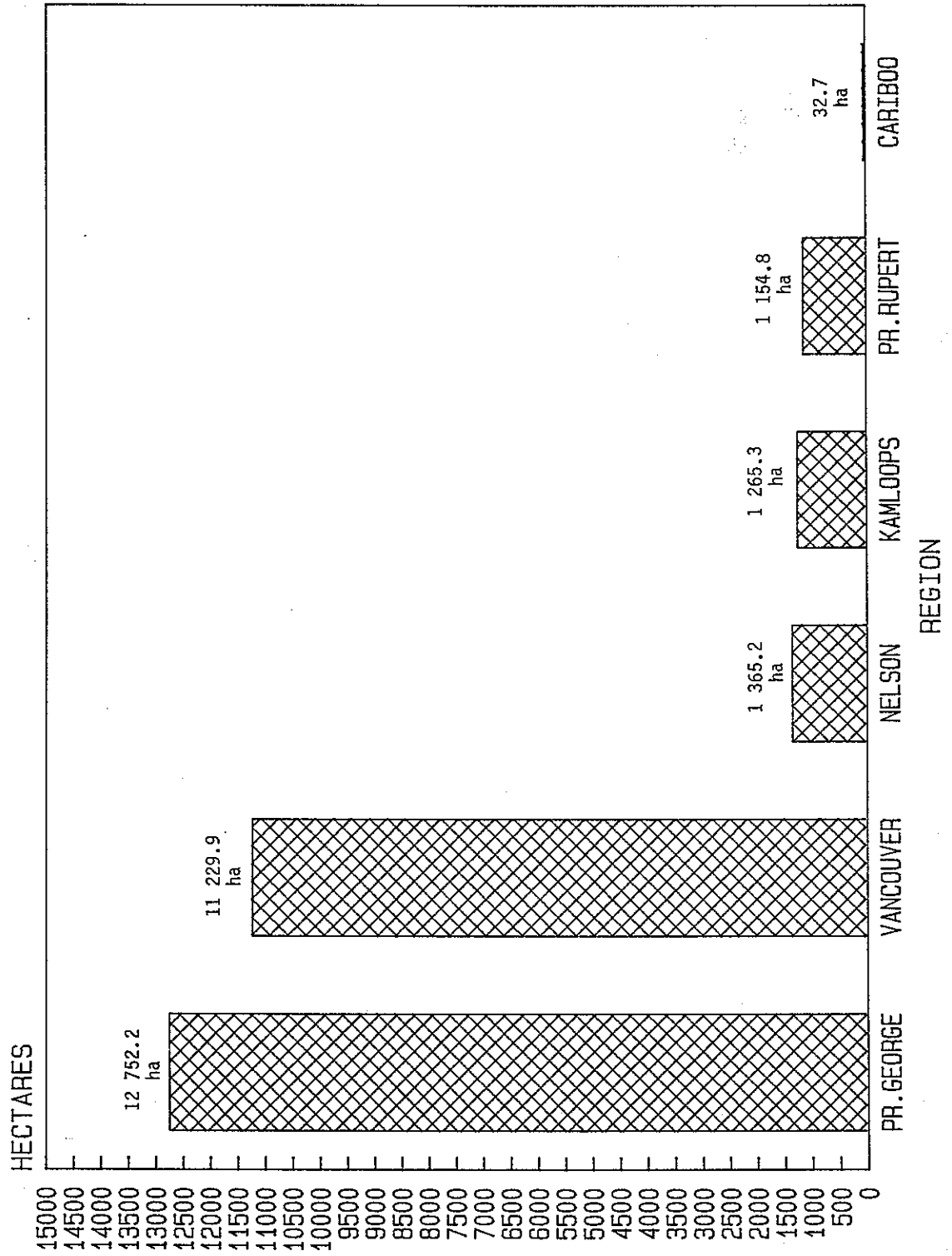
TABLE IV. SUMMARY OF PESTICIDE USE
BY FOREST REGION, 1985

FOREST REGION	PESTICIDES	B.C. FOREST SERVICE ha treated	FOREST INDUSTRY ha treated
VANCOUVER	ammonia		0.8
	asulam	10.0	
	benomyl	0.004	
	B.t.		8.1
	DFTM virus	0.001	
	dicamba		2.0
	dodine	0.002	
	fosamine		28.0
	glyphosate	2 284.1	3 527.0
	hexazinone	2.0	10.9
	mancozeb	0.004	
	MCPA		2.0
	mecroprop		2.0
	mineral oil	0.002	
	MSMA		80.0
	prometryne	6.5	
	putrescent egg solids	10.0	
	sulfometuron		0.1
	triclopyr		1.2
	2,4-D	1 437.8	3 817.4
PRINCE RUPERT	glyphosate	556.7	365.9
	hexazinone	177.0	20.4
	prometryne	3.25	
	2,4-D	30.2	1.3
PRINCE GEORGE	dimethoate	0.008	
	furadan	0.003	
	glyphosate	2 134.6	9 714.8
	hexazinone	0.6	0.3
	metasulfuron		0.2
	MSMA	1.0	
	oxydemeton-methyl	0.011	
	picloram	29.4	
	prometryne	3.25	
	sulfometuron		0.1
	2,4-D		868.3
KAMLOOPS	carbaryl		0.1
	chlorothalonil	0.004	
	ferbam	0.005	
	glyphosate	457.3	
	hexazinone	1.0	

TABLE IV. SUMMARY OF PESTICIDE USE
BY FOREST REGION, 1985

FOREST REGION	PESTICIDES	B.C. FOREST SERVICE ha treated	FOREST INDUSTRY ha treated
KAMLOOPS con't	mancozeb		0.5
	metalaxyl		0.1
	MSMA	110.8	0.2
	napropamide		0.05
	picloram	677.6	
	rotenone		17.6
	triadimefon	0.002	
NELSON	glyphosate		688.7
	hexazinone		1.4
	MSMA	500.0	
	picloram	175.1	
CARIBOO	BBR2		0.2
	glyphosate	0.8	
	norpine		0.2
	picloram	31.5	

FIGURE 5. AREA TREATED WITH PESTICIDES BY FOREST REGION, 1985¹



¹ B.C. FOREST SERVICE & B.C. FOREST INDUSTRY COMBINED

TABLE V. HERBICIDE USE BY CONTROL PURPOSE, 1985

PURPOSE	HERBICIDES	B.C. FOREST SERVICE		FOREST INDUSTRY	
		ha treated	kg a.i. used	ha treated	kg a.i. used
BRUSHING AND WEEDING	asulam	10.0	14.0		
	glyphosate	843.7	789.0	2 327.9	484.0
	hexazinone	1.6	4.3	0.4	2.0
	2,4-D	135.0	139.0	941.0	245.5
CONIFER RELEASE	glyphosate	2 878.6	3 633.2	4 177.6	4 333.4
	hexazinone	178.1	25.2	31.3	52.9
	metsulfuron			0.2	0.02
	sulfometuron			0.2	0.01
	triclopyr			1.2	7.0
	2,4-D	1 301.8	1 508.6	2 617.4	2 624.8
CONIFER THINNING	glyphosate			0.6	0.001
	MSMA			80.0	296.0
NURSERY WEED CONTROL	amitrole	0.0	0.004		
	dicamba			2.0	0.5
	dichlobenil	0.0	0.007		
	dodine	0.002	0.02		
	MCPA	0.0	0.001	2.0	5.0
	mecoprop			2.0	7.5
	napropamide			0.05	0.2
	prometryne	13.0	7.6		
	2,4-D			2.0	5.0

TABLE V. HERBICIDE USE BY CONTROL PURPOSE, 1985

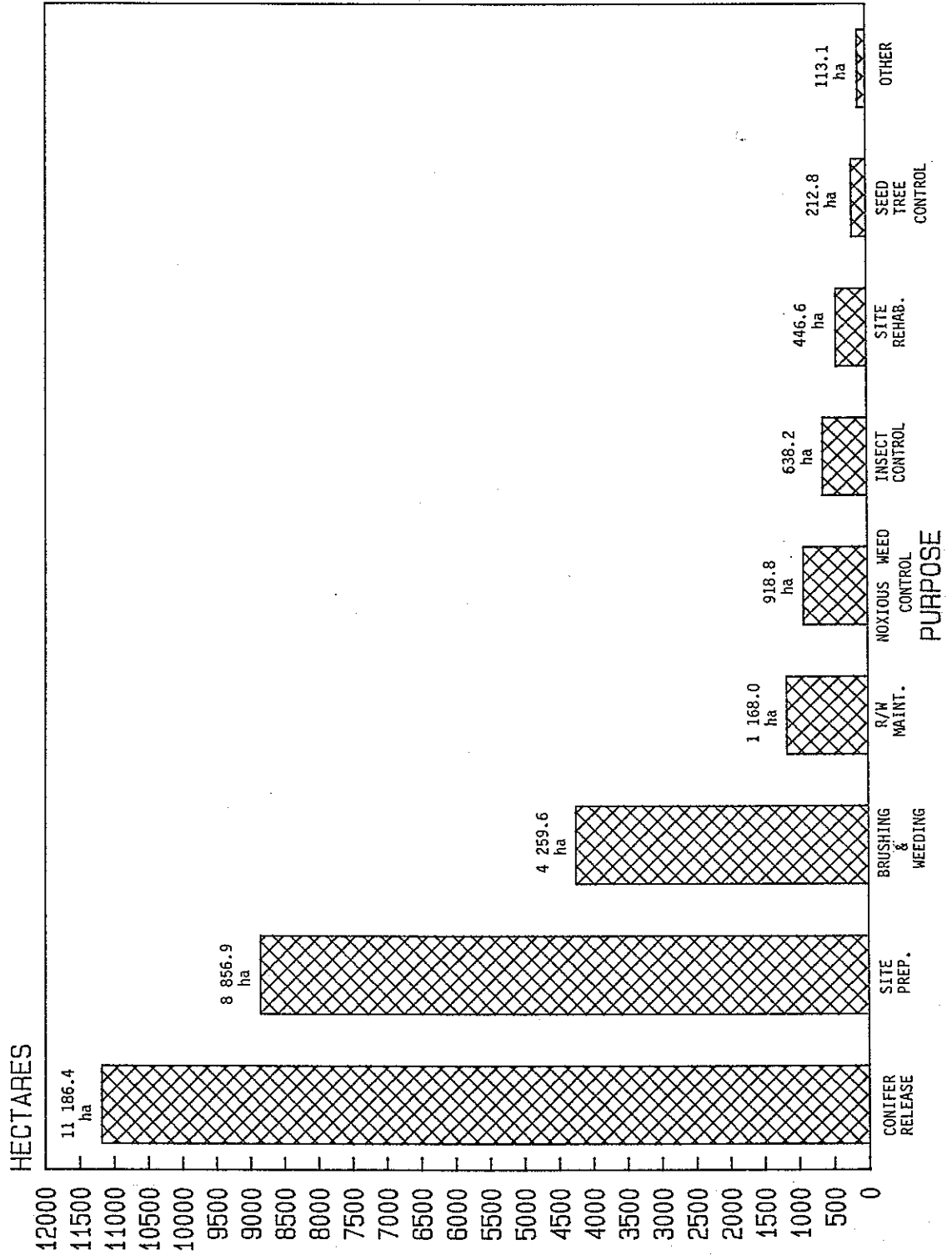
PURPOSE	HERBICIDES USED	B.C. FOREST ha treated	SERVICE kg a.i. used	FOREST INDUSTRY ha treated	kg a.i. used
RANGELAND NOXIOUS WEED CONTROL	glyphosate picloram	5.2 913.6	1.4 457.4		
RIGHT-OF-WAY MAINTENANCE	glyphosate fosamine 2,4-D			325.0 28.0 815.0	564.0 108.0 1 944.0
SITE PREPARATION	glyphosate hexazinone 2,4-D	1 576.0 0.4 12.2	1 621.9 0.9 22.0	7 265.6 1.4 1.3	585.6 0.03 2.5
SITE REHABILITATION	glyphosate 2,4-D	129.9	269.7	8.3 308.4	1.8 988.6
WEED SEED TREE CONTROL	glyphosate hexazinone 2,4-D			191.4 0.4 2.0	12.2 0.2 1.5

TABLE VI. INSECTICIDE AND OTHER TYPES OF PESTICIDE
USE BY CONTROL PURPOSE, 1985

PURPOSE	INSECTICIDES AND OTHER PESTICIDES	B.C. FOREST SERVICE		FOREST INDUSTRY	
		ha treated	kg a.i. used	ha treated	kg a.i. used
FUNGUS CONTROL	benomyl	0.004	0.2		
	chlorothalonil	0.004	0.1		
	ferbam	0.005	0.09		
	mancozeb	0.004	0.5	0.5	0.8
	metalaxyl			0.1	0.5
	triadimefon	0.002	0.01		
INSECT CONTROL (FOREST & FOREST NURSERY)	BBR2			0.2	0.05
	B.t.			8.1	243.0 BIU ²
	carbaryl			0.1	8.9
	dimethoate	0.008	0.01		
	DFTM ¹ virus	0.001	0.001		
	furadan	0.003	1.0		
	mineral oil	0.002	0.3		
	MSMA	611.8	21.6	0.2	2.6
	norpine			0.2	0.05
	oxydemeton-methyl	0.01	1.0		
	rotenone			17.6	9.4
VERTEBRATE CONTROL	ammonia			0.8	0.009
	putrescent egg solids	10.0	5.0		

1. DFTM = Douglas-fir tussock moth
2. BIU = Billion International Units

FIGURE 6. SUMMARY OF THE PURPOSE OF PESTICIDE USE BY AREA TREATED, 1985¹



¹ B.C. FOREST SERVICE & B.C. FOREST INDUSTRY COMBINED

TABLE VII. PESTICIDE USE BY METHOD OF APPLICATION, 1985

METHOD OF APPLICATION	PESTICIDES USED	B.C. FOREST SERVICE ha treated	FOREST INDUSTRY ha treated
AERIAL SPRAY HELICOPTER	glyphosate 2,4-D amine	3 011.5 118.0	3 023.9 308.4
AERIAL SPRAY FIXED WING	B.t. glyphosate		8.1 554.0
BACKPACK/KNAPSACK SPRAYER	ammonia BBR2 carbaryl chlorothalonil DFTM virus dimethoate dodine ferbam furadan glyphosate hexazinone metsulfuron mineral oil MSMA norpine oxydemeton-methyl picloram putrescent egg solids sufometuron triclopyr 2,4-D	 0.002 0.001 0.008 0.002 0.005 0.003 1 432.7 2.0 0.002 16.0 0.01 2.0 10.0 253.2	0.8 0.2 0.1 679.3 1.8 0.2 0.2 0.2 0.2 1.2 402.0
TREE INJECTION/ CUT SURFACE TREATMENTS ¹	glyphosate hexazinone MSMA 2,4-D	534.7 176.8 595.8 1 096.8	9 528.7 2.3 80.0 3 589.1

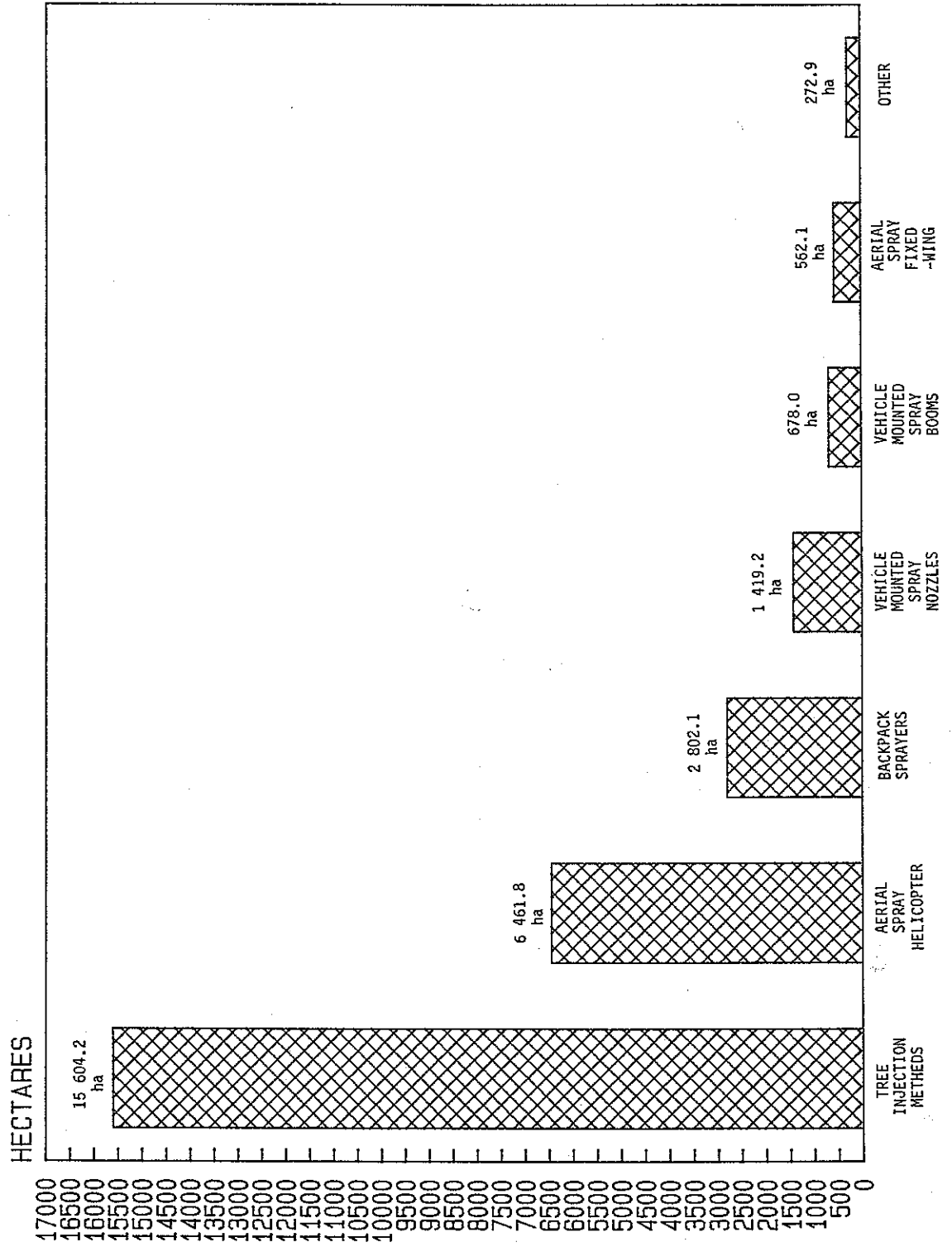
1. Involves hack and squirt, frill and squirt and cut stump treatments. May employ brush saws, injectors, spot guns, etc.

TABLE VII. PESTICIDE USE BY METHOD OF APPLICATION, 1985

METHOD OF APPLICATION	PESTICIDES USED	B.C. FOREST SERVICE ha treated	FOREST INDUSTRY ha treated
VEHICLE MOUNTED SPRAY BOOMS ²	dicamba		2.0
	fosamine		28.0
	glyphosate	217.0	270.5
	mancozeb		0.5
	MCPA		2.0
	mecoprop		2.0
	metalaxyl		0.1
	napropamide		0.05
	picloram	765.1	
	prometryne	13.0	
	2,4-D		119.0
VEHICLE MOUNTED SPRAY NOZZLES ³	asulam	10.0	
	benomyl	0.004	
	chlorothalonil	0.002	
	glyphosate	208.3	152.0
	mancozeb	0.004	
	picloram	146.5	
	triadimefon	0.002	
	2,4-D		161.2
OTHER	glyphosate	29.4	87.9
	hexazinone	1.1	29.6
	rotenone		17.6
	2,4-D		107.3

2. Any fixed system which involves a boom with one or more nozzles attached to create a continuous broadcast spray. (Source: Ministry of Environment, Pesticide Control Branch).
3. Any system which involves tank, hose and nozzle. Nozzle is hand held and can be selectively directed. (Source: Ministry of Environment, Pesticide Control Branch)

FIGURE 7. SUMMARY OF METHODS OF PESTICIDE APPLICATION BY AREA TREATED, 1985¹

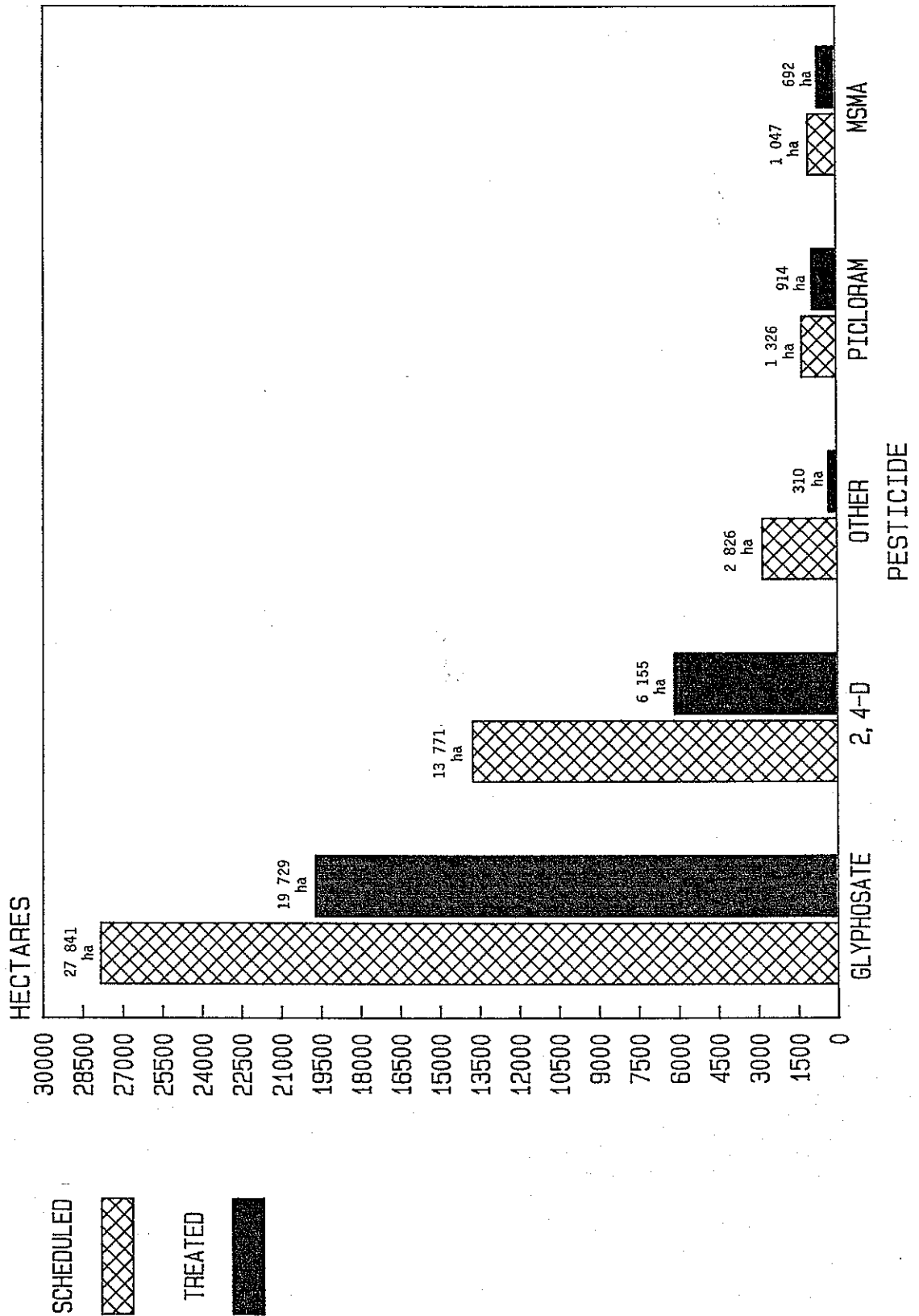


¹ B.C. FOREST SERVICE & B.C. FOREST INDUSTRY COMBINED

TABLE VIII. COMPARISON OF AREAS SCHEDULED
FOR PESTICIDE TREATMENT WITH AREAS ACTUALLY TREATED, 1985

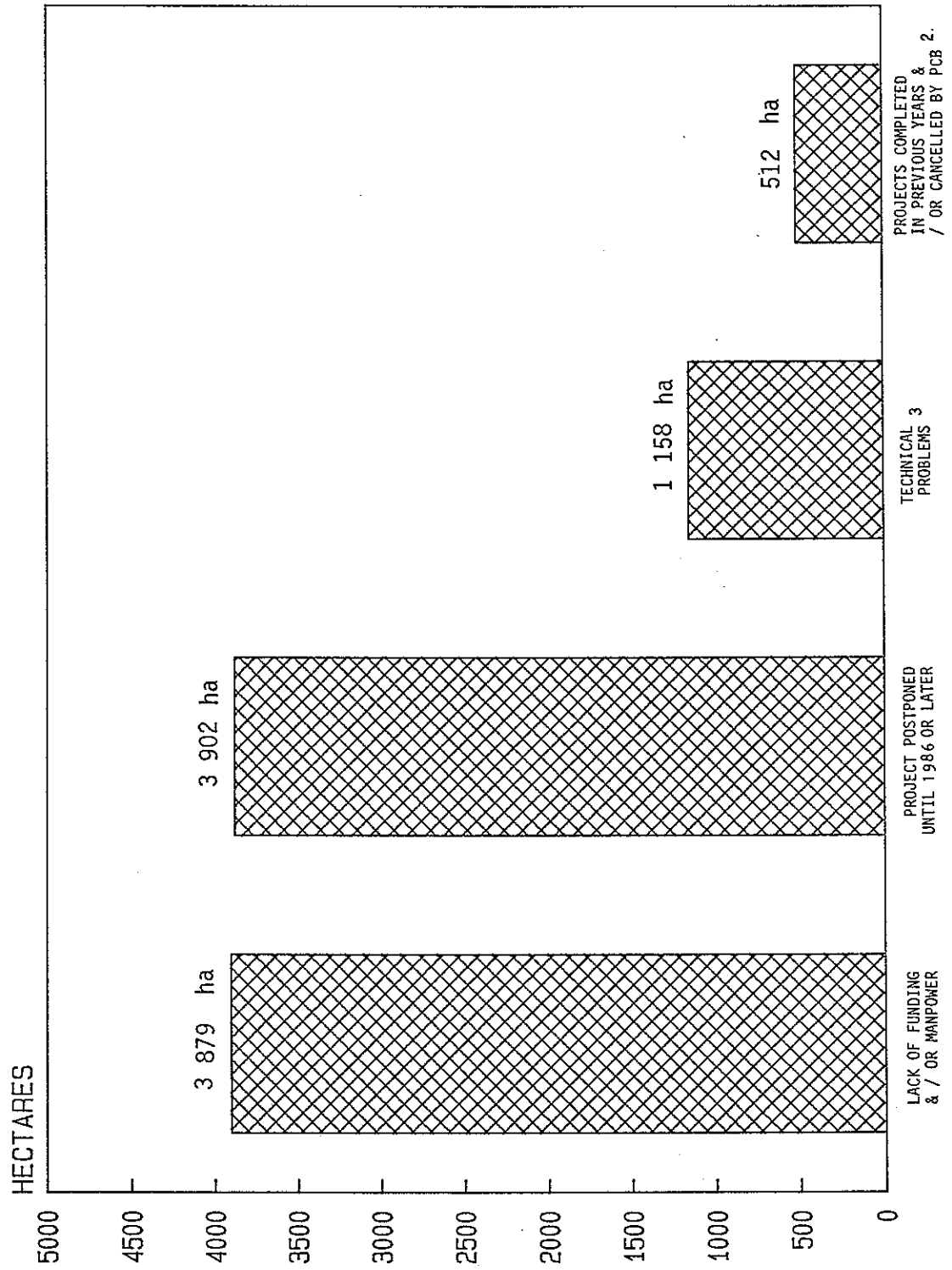
PESTICIDE	B.C. FOREST SERVICE		FOREST INDUSTRY	
	Hectares scheduled for treatment	Hectares actually treated	Hectares scheduled for treatment	Hectares actually treated
glyphosate	7 232.0	5 433.0	20 609.0	14 296.0
MSMA	674.0	612.0	373.0	80.0
picloram	1 315.0	914.0	11.0	0.0
2,4-D	3 668.0	1 468.0	10 103.0	4 687.0
others	715.0	213.0	2111.0	97.0
Totals	13 604.0	8 640.0	33 207.0	19 160.0

FIGURE 8. COMPARISON OF AREA SCHEDULED FOR PESTICIDE TREATMENTS
WITH AREA ACTUALLY TREATED, 1985¹



¹ B.C. FOREST SERVICE & B.C. FOREST INDUSTRY COMBINED

FIGURE 9. REASONS FOR PESTICIDE USE PERMIT NON-UTILIZATION BY AREA AFFECTED, 1985¹



1. B.C. FOREST SERVICE & B.C. FOREST INDUSTRY COMBINED.
2. P.C.B.-PESTICIDE CONTROL BRANCH, B.C. MINISTRY OF ENVIRONMENT.
3. INCLUDES ADVERSE WEATHER, EQUIPMENT PROBLEMS, ETC.

TABLE IX. TOTAL HECTARES OF LAND TREATED WITH HERBICIDES AND INSECTICIDES
FOR FORESTRY PURPOSES
1975 - 1985

YEAR	B.C. FOREST SERVICE HERB.	INSECT.	FOREST INDUSTRY HERB.	INSECT.	TOTALS HERB.	INSECT.
1975	500.0	25 430.0	5 787.0	0.0	6 287.0	25 430.0 ¹
1976	343.0	20.0	3 381.0	0.0	3 724.0	20.0
1977	798.0	0.0	4 899.0	0.0	5 697.0	0.0
1978	1 347.0	223.0	3 065.0	0.0	4 412.0	223.0
1979	2 256.0	64.0	1 840.0	0.0	4 096.0	64.0
1980	1 614.0	1.0	3 412.0	70.0	5 026.0	71.0
1981	2 361.0	134.0	4 232.0	0.4	6 593.0	134.0
1982	2 630.0	786.0	1 636.0	0.002	4 266.0	786.0
1983	2 586.0	807.0	3 595.0	5.0	6 181.0	812.0
1984	6 184.0	199.0	7 709.0	33.0	13 893.0	232.0
1985	8 018.0	612.0	19 133.0	26.0	27 151.0	638.0

¹ Most of this area represents operational trials to control the Douglas-fir Tussock moth which were carried out as part of an international control and research program involving the B.C. Forest Service, Canadian Forestry Service, and the USDA Forest Service.

FIGURE 10. TOTAL HECTARES OF LAND TREATED WITH HERBICIDES FOR FORESTRY PURPOSES,
1975-1985

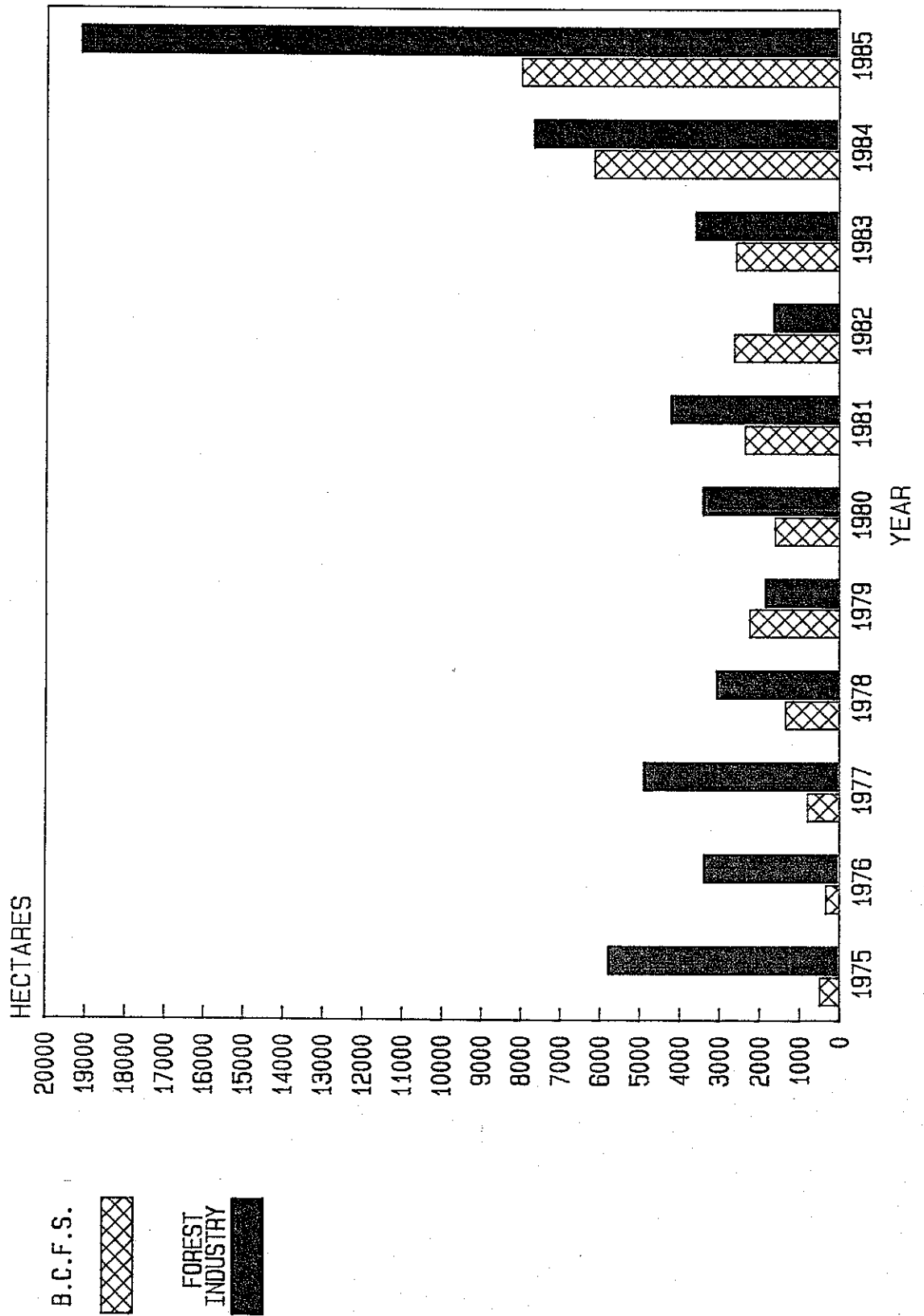
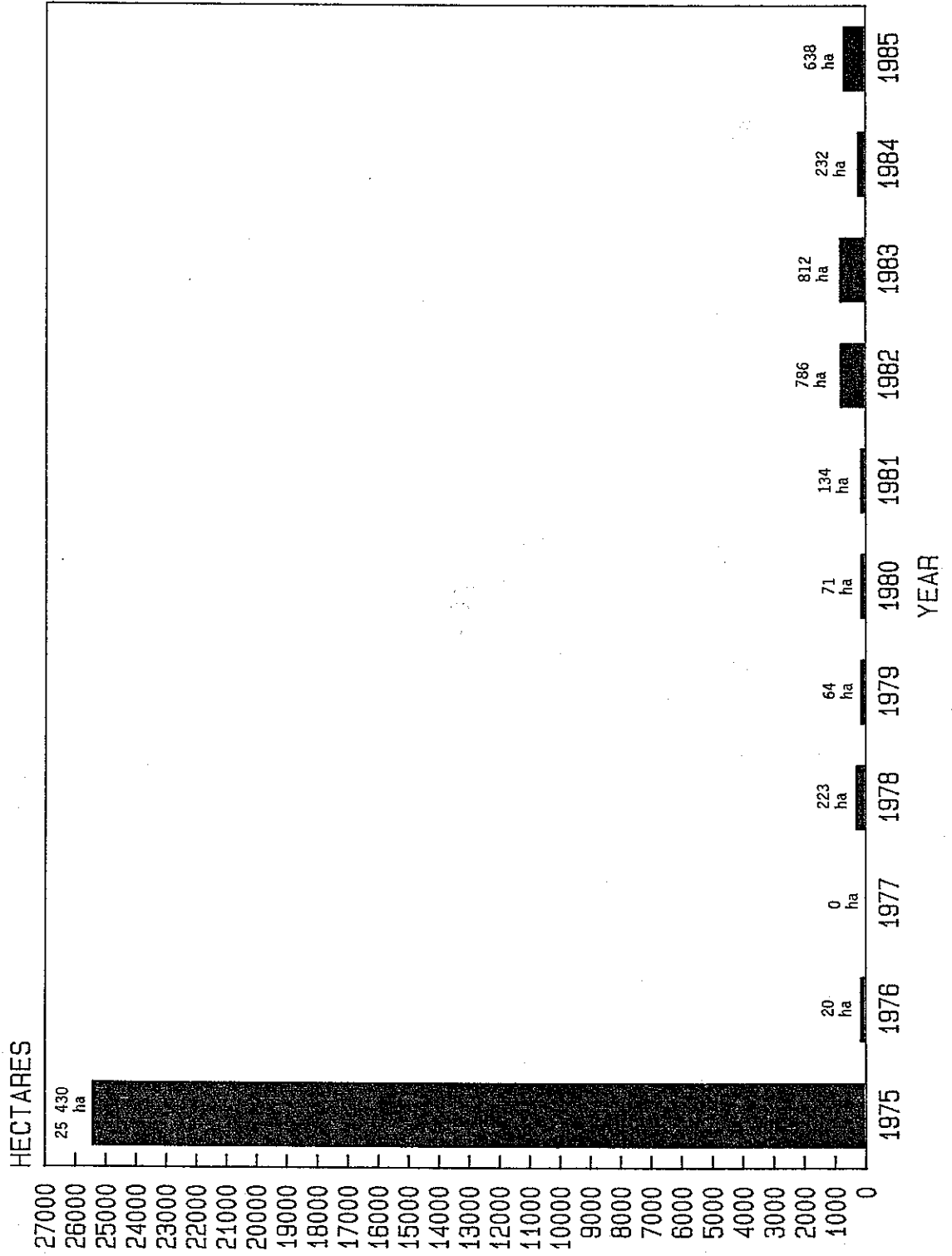


FIGURE 11. TOTAL HECTARES OF LAND TREATED WITH INSECTICIDES FOR FORESTRY PURPOSES,
1975-1985¹



¹ B.C. FOREST SERVICE & B.C. FOREST INDUSTRY COMBINED

DISCUSSION AND CONCLUSIONS

The application of herbicides in B.C. forestry continues to expand at a rapid rate. Although the overall area treated with herbicides stayed approximately the same in the period between 1975 and 1983 (increasing or decreasing by one or two thousand hectares a year), it has more than quadrupled since 1983. The 27 151 hectares treated with herbicides in 1985, however, still represents only a fraction of the 49 000 ha of forest land added each year to the inventory of brush sites in the provinces following harvesting. In addition, there are 2.9 million hectares of backlog brush on forest sites in the province.²

It should also be mentioned here that many 1985 herbicide use projects were impeded (i.e. cancelled or postponed) because of a record breaking forest fire season which diverted a great deal of manpower and funds.

² Boateng, Jacob O. 1984. Estimates of Forest Brush Problems in British Columbia. BCMF-SH-R84001 B.C. Ministry of Forests, Silviculture Branch

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