

PRELIMINARY STAND BASAL AREA ESTIMATES FOR COASTAL DOUGLAS-FIR INFECTED WITH PHELLINUS ROOT ROT

MINISTRY OF FORESTS

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CONTRACTOR

The following tables and plots of basal area for Coastal Douglas-fir infected with *Phellinus* root rot were compiled from simulations with the model TASS-ROTSIM, described in the report "Incorporation of *Phellinus* root rot impacts in the tree and stand simulator (TASS)", Ministry of Forests, Research Branch Contract #49782, March 31, 1991, by W.J. Bloomberg.

Tables and plots of volume and stocking are contained in the report 'Preliminary yield tables for Coastal Douglas-fir infected with *Phellinus* root rot', Ministry of Forests, Research Branch contract #69198, June 10 31, 1991, by W.J. Bloomberg. Basal area tables and plots were compiled using the methods described in the above report.

Outputs are as follows:

- 1) Tables of basal area/hectare by stand age for site indices 25, 30, and 35 (representing poor, medium, and good sites) at initial planting densities of 500, 1000, 1500, and 2000 stems/ha for five disease classes.
- 2) Plots of basal area/ha over stand age by site index, stocking level, and disease class.
- 3) Plots of impact of disease on basal area, expressed as percentage of healthy.

Preliminary Stand Basal Area Estimates

PRELIMINARY BASAL AREA TABLES FOR COASTAL DOUGLAS-FIR INFECTED WITH ROOT ROT

Root rot classes: V.L.= very light, L.= light, M.= moderate, H.=heavy, V.H.= very heavy

See report for explanation of classification method.

SITE INDEX 25 INITIAL STOCKING 500 STEMS/HA												
AGE	SQ. METERS PER HECTARE						PERCENT OF HEALTHY STAND					
	NIL	V.L.	L.	M.	H.	V.H	V.L.	L.	M.	H.	V.H	
10	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0	100.0	100.0	
20	4.1	4.1	4.1	4.0	3.9	3.9	99.2	98.9	97.9	95.7	93.9	
30	14.5	14.4	14.4	14.2	14.0	13.8	99.6	99.4	97.8	96.7	95.3	
40	25.4	25.2	25.2	24.8	24.4	24.0	99.4	99.1	97.7	96.2	94.6	
50	34.3	34.1	34.0	33.6	33.0	32.5	99.4	99.1	97.9	96.3	94.7	
60	41.8	41.5	41.5	41.0	40.2	39.6	99.4	99.2	98.1	96.2	94.6	
70	48.1	47.8	47.7	47.2	46.1	45.2	99.4	99.2	98.7	96.0	95.0	
80	53.3	53.0	52.9	52.3	50.8	49.7	99.4	99.2	98.7	95.8	94.5	
90	57.6	57.3	57.2	56.6	54.1	52.5	99.5	99.2	98.8	95.0	93.1	

SITE INDEX 25 INITIAL STOCKING 1000 STEMS/HA												
AGE	SQ. METERS PER HECTARE						PERCENT OF HEALTHY STAND					
	NIL	V.L.	L.	M.	H.	V.H	V.L.	L.	M.	H.	V.H	
10	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0	100.0	100.0	
20	7.1	7.1	7.1	6.5	6.8	6.7	99.6	99.4	98.1	95.7	93.8	
30	20.8	20.6	20.6	19.3	19.9	19.4	99.2	98.9	97.5	95.6	93.4	
40	32.5	32.3	32.2	30.4	31.3	30.8	99.4	99.2	98.5	96.4	94.8	
50	42.0	41.7	41.5	39.4	40.5	39.8	99.3	98.9	98.3	96.4	94.6	
60	49.6	49.1	48.9	46.7	47.5	46.5	99.0	98.6	98.2	95.7	93.7	
70	55.7	55.0	54.6	52.5	52.6	51.3	98.7	98.1	97.8	95.3	93.7	
80	60.7	59.4	58.8	57.6	54.8	52.3	97.8	96.9	96.5	93.1	89.6	
90	64.6	62.3	61.3	61.7	54.7	50.4	96.4	94.9	94.0	89.9	83.9	

Preliminary Stand Basal Area Estimates

PRELIMINARY BASAL AREA TABLES FOR COASTAL DOUGLAS-FIR INFECTED WITH ROOT ROT

Root rot classes: V.L.= very light, L.= light, M.= moderate, H.=heavy, V.H. very heavy
See report for explanation of classification method.

SITE INDEX 25 INITIAL STOCKING 1500 STEMS/HA

<u>SQ. METERS PER HECTARE</u>							<u>PERCENT OF HEALTHY STAND</u>				
AGE	NIL	V.L.	L.	M.	H.	V.H	V.L.	L.	M.	H.	V.H
10	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0	100.0	100.0
20	10.0	10.0	10.0	9.9	9.6	9.5	99.7	99.6	98.6	96.5	95.0
30	25.0	24.9	24.9	24.7	24.2	23.8	99.8	99.7	98.7	96.7	95.3
40	37.1	37.1	37.1	36.7	36.1	35.8	99.9	99.9	98.9	97.4	96.5
50	46.3	46.2	46.2	45.7	45.0	44.5	99.9	99.8	98.7	97.3	96.1
60	53.3	53.2	53.2	52.3	51.5	50.7	99.8	99.8	98.2	96.6	95.1
70	58.1	57.9	57.9	56.6	55.6	54.4	99.7	99.6	98.5	95.7	94.7
80	61.4	61.0	60.9	58.4	56.8	54.7	99.4	99.1	97.1	93.5	91.3
90	63.1	61.9	61.4	57.3	54.4	50.7	98.1	97.3	94.0	89.7	85.0

SITE INDEX 25 INITIAL STOCKING 2000 STEMS/HA

<u>SQ. METERS PER HECTARE</u>							<u>PERCENT OF HEALTHY STAND</u>				
AGE	NIL	V.L.	L.	M.	H.	V.H	V.L.	L.	M.	H.	V.H
10	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0	100.0	100.0
20	11.8	11.8	11.9	11.8	11.5	11.5	100.0	100.0	99.7	97.7	97.4
30	27.5	27.4	27.4	27.1	26.6	26.2	99.8	99.7	98.6	96.7	95.2
40	39.6	39.5	39.5	39.1	38.4	37.9	99.8	99.7	98.8	97.0	95.7
50	48.5	48.4	48.4	48.1	47.1	46.6	99.9	99.9	99.1	97.2	96.1
60	55.0	54.9	54.9	54.4	53.2	52.4	99.9	99.9	98.9	96.6	95.3
70	58.0	57.9	57.9	57.2	54.8	53.5	99.9	99.8	99.3	95.4	93.8
80	59.4	58.8	58.6	57.2	52.9	50.4	99.0	98.7	97.5	92.3	88.6
90	60.4	58.8	58.2	55.7	48.2	43.1	97.3	96.3	94.2	87.1	79.3

Preliminary Stand Basal Area Estimates

PRELIMINARY BASAL AREA TABLES FOR COASTAL DOUGLAS-FIR INFECTED WITH ROOT ROT

Root rot classes: V.L.= very light, L.= light, M.= moderate, H.=heavy,
See report for explanation of classification method.

SITE INDEX 30 INITIAL STOCKING 500 STEMS/HA

AGE	SQ. METERS PER HECTARE						PERCENT OF HEALTHY STAND				
	NIL	V.L.	L.	M.	H.	V.H	V.L.	L.	M.	H.	V.H
10	0.1	0.1	0.1	0.1	0.1	0.1	100.0	100.0	100.0	100.0	100.0
20	6.5	6.5	6.5	6.5	6.3	6.3	100.0	100.0	100.5	97.2	97.1
30	20.8	20.2	20.8	20.6	20.1	20.0	99.7	99.7	99.3	97.0	96.1
50	44.7	44.6	44.2	44.5	43.5	43.2	99.9	99.9	99.6	97.3	96.6
60	53.8	53.6	53.6	53.1	51.9	51.1	99.7	99.5	98.6	96.4	95.0
70	61.1	60.9	60.8	60.2	59.3	58.3	99.6	99.5	98.5	95.7	94.7
80	67.0	66.4	66.0	65.0	63.6	61.4	99.2	98.5	97.0	93.8	91.1
90	71.9	71.0	70.2	68.2	66.8	63.8	98.7	97.6	94.9	92.0	88.3

SITE INDEX 30 INITIAL STOCKING 1000 STEMS/HA

AGE	SQ. METERS PER HECTARE						PERCENT OF HEALTHY STAND				
	NIL	V.L.	L.	M.	H.	V.H	V.L.	L.	M.	H.	V.H
10	0.1	0.1	0.1	0.1	0.1	0.1	100.0	100.0	100.0	100.0	100.0
20	11.1	11.1	11.1	10.9	10.8	10.6	99.7	99.6	98.1	96.8	95.5
30	28.0	27.9	27.8	27.3	24.9	26.4	99.6	99.4	97.5	95.9	94.2
40	42.1	41.8	41.6	40.8	40.1	39.2	99.3	98.9	97.0	95.3	93.2
50	53.3	52.8	52.6	51.4	50.3	48.9	99.1	98.7	96.4	94.3	91.8
60	62.1	61.2	60.7	58.7	57.1	54.5	90.5	97.8	94.4	91.9	87.7
70	67.9	66.5	65.6	63.8	61.7	58.3	97.9	96.6	94.0	90.9	85.9
80	71.6	68.8	66.9	63.8	60.4	54.1	96.1	93.5	89.2	84.4	75.6
90	73.3	68.5	65.5	60.5	54.9	44.9	93.4	89.3	82.6	75.0	61.3

Preliminary Stand Basal Area Estimates

PRELIMINARY BASAL AREA TABLES FOR COASTAL DOUGLAS-FIR INFECTED WITH ROOT ROT

Root rot classes: V.L.= very, light, L.= light, M.= moderate, H.=heavy, V.H.= very heavy
See report for explanation of classification method.

SITE INDEX 30 INITIAL STOCKING 1500 STEMS/HA

<u>SQ. METERS PER HECTARE</u>							<u>PERCENT OF HEALTHY STAND</u>				
AGE	NIL	V.L.	L.	M.	H.	V.H	V.L.	L.	M.	H.	V.H
10	0.2	0.2	0.2	0.2	0.2	0.2	100.0	100.0	100.0	100.0	100.0
20	14.5	14.5	14.5	14.5	14.1	13.9	100.0	100.0	100.0	97.3	96.1
30	32.3	32.3	32.3	32.2	31.4	31.0	99.9	99.9	99.7	97.2	959.0
40	45.9	45.9	45.9	45.8	44.8	44.3	100.0	100.0	99.9	97.5	96.6
50	56.1	56.0	56.0	55.8	54.2	53.4	99.9	99.8	99.5	96.6	95.2
60	62.7	62.5	62.3	61.8	58.8	57.0	99.6	99.4	98.5	93.7	90.9
70	64.9	64.5	64.4	63.9	61.6	59.2	99.4	99.2	98.4	94.9	91.2
80	65.5	64.8	64.4	63.5	60.1	56.4	98.9	98.3	96.9	91.8	86.1
90	65.8	64.8	64.5	62.9	57.9	52.6	98.5	98.0	95.7	87.9	79.9

SITE INDEX 30 INITIAL STOCKING 2000 STEMS/HA

<u>SQ. METERS PER HECTARE</u>							<u>PERCENT OF HEALTHY STAND</u>				
AGE	NIL	V.L.	L.	M.	H.	V.H	V.L.	L.	M.	H.	V.H
10	0.2	0.2	0.2	0.2	0.2	0.2	100.0	100.0	100.0	100.0	100.0
20	16.8	16.7	16.6	16.5	16.1	15.7	99.4	99.1	98.0	95.9	93.7
30	34.8	34.7	34.7	34.3	33.7	33.2	99.7	99.7	98.5	96.7	95.5
40	48.2	48.1	48.1	47.6	46.8	46.4	99.8	99.8	98.8	97.2	96.2
50	56.4	56.3	56.3	55.6	54.9	54.5	99.8	99.9	98.5	97.3	96.6
60	60.0	59.5	59.3	57.7	56.7	55.4	99.2	98.9	96.1	94.5	92.3
70	61.8	60.8	60.2	58.6	57.2	55.0	98.4	97.5	94.9	92.6	88.9
80	63.0	60.4	59.0	56.3	53.5	48.7	95.9	93.7	89.3	84.9	77.3
90	64.0	59.3	56.5	52.3	48.0	39.9	92.6	88.4	81.7	75.0	62.4

PRELIMINARY BASAL AREA TABLES FOR COASTAL DOUGLAS-FIR INFECTED WITH ROOT ROT

Root rot classes: V.L.= very light, L.= light, M.= moderate, H.=heavy, V.H.= very heavy
See report for explanation of classification method.

SITE INDEX 35 INITIAL STOCKING 500 STEMS/HA

<u>SQ. METERS PER HECTARE</u>							<u>PERCENT OF HEALTHY STAND</u>				
AGE	NIL	V.L.	L.	M.	H.	V.H	V.L.	L.	M.	H.	V.H
10	0.3	0.3	0.3	0.3	0.3	0.2	100.0	100.0	100.0	85.4	79.2
20	10.1	10.0	10.0	9.9	9.7	9.5	99.4	99.1	97.8	96.1	94.4
30	27.8	27.6	27.5	27.2	26.7	26.2	99.3	99.1	97.9	95.9	94.2
40	43.2	43.0	42.9	42.6	41.8	41.1	99.6	99.4	98.6	96.7	95.2
50	56.2	56.0	55.8	55.4	54.3	53.5	99.6	99.4	98.6	96.6	95.1
60	66.5	66.2	66.1	64.8	63.7	62.5	99.6	99.4	97.4	95.8	94.0
70	73.8	73.8	73.8	72.9	71.7	70.4	100.0	100.1	98.8	97.2	95.4
80	79.1	79.4	79.5	78.1	76.8	75.4	100.4	100.5	98.7	97.1	95.3
90	83.1	83.7	83.9	81.2	80.0	78.5	100.7	101.0	97.7	96.3	94.5

SITE INDEX 35 INITIAL STOCKING 1000 STEMS/HA

<u>SQ. METERS PER HECTARE</u>							<u>PERCENT OF HEALTHY STAND</u>				
AGE	NIL	V.L.	L.	M.	H.	V.H	V.L.	L.	M.	H.	V.H
10	0.5	0.5	0.5	0.5	0.5	0.5	100.0	100.0	100.0	100.0	100.0
20	15.6	15.6	15.6	15.4	15.2	15.0	98.5	97.2	96.0	99.8	99.7
30	35.0	34.9	34.8	34.5	33.9	33.4	98.4	96.8	95.4	99.6	99.5
40	50.9	50.6	50.4	49.9	48.9	48.0	98.1	96.0	94.4	99.3	99.1
50	63.4	62.5	62.0	60.4	59.1	56.6	95.3	93.2	89.4	98.6	97.8
60	70.8	69.3	68.3	65.1	63.5	58.9	91.9	89.7	83.1	97.8	96.4
70	73.7	70.8	68.8	66.4	64.2	59.1	90.1	87.1	80.2	96.1	93.4
80	75.5	70.4	67.1	63.5	59.7	51.2	84.1	79.1	67.8	93.3	88.9
90	76.6	68.6	63.4	57.8	52.4	39.6	75.5	68.4	51.6	89.5	82.7

Preliminary Stand Basal Area Estimates

PRELIMINARY BASAL AREA TABLES FOR COASTAL DOUGLAS-FIR INFECTED WITH ROOT ROT

Root rot classes: V.L.= very light, L.= light, M.= moderate, H.= heavy, V.H.= very heavy
See report for explanation of classification method.

SITE INDEX 35 INITIAL STOCKING 1500 STEMS/HA

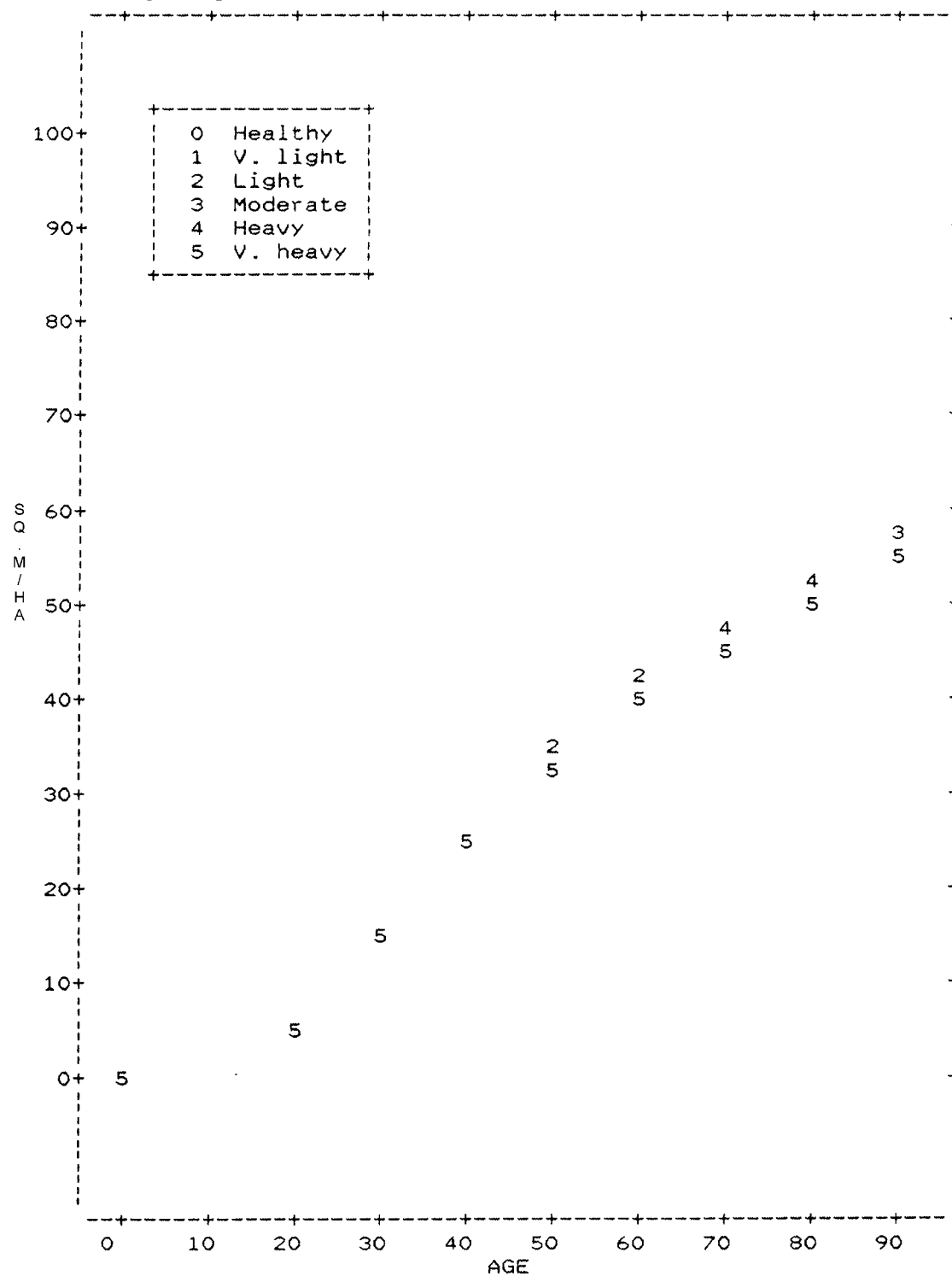
SQ. METERS PER HECTARE							PERCENT OF HEALTHY STAND				
AGE	NIL	V.L.	L.	M.	H.	V.H.	V.L.	L.	M.	H.	V.H.
10	0.80	0.80	0.80	0.80	0.80	0.70	100.00	100.00	100.00	94.50	92.20
20	19.60	19.50	19.50	19.30	18.90	18.50	99.50	99.30	98.40	96.20	94.60
30	39.50	39.40	39.30	38.90	38.20	37.70	99.70	99.60	98.60	96.70	95.40
40	54.40	54.30	54.30	53.70	52.50	51.90	99.80	99.70	98.60	96.60	95.40
50	62.50	62.7	62.80	62.00	60.10	59.20	100.30	100.40	99.20	96.10	94.7
60	65.40	65.40	65.30	63.60	60.90	58.80	100.00	99.90	97.30	93.10	89.90
70	67.00	66.70	66.30	64.40	62.00	58.80	99.50	98.90	96.20	92.60	87.80
80	68.60	67.50	66.50	63.10	59.9	54.50	98.40	96.90	92.00	87.30	79.50
90	69.70	67.00	65.00	60.10	55.10	46.7	96.10	93.30	86.20	79.10	66.90

SITE INDEX 35 INITIAL STOCKING 2000 STEMS/HA

SQ. METERS PER HECTARE							PERCENT OF HEALTHY STAND				
AGE	NIL	V.L.	L.	M.	H.	V.H.	V.L.	L.	M.	H.	V.H.
10	1.0	1.0	1.0	1.0	1.0	1.0	100.0	100.0	100.0	100.0	100.0
20	22.1	22.0	22.0	21.8	21.4	21.0	99.7	99.6	98.8	96.6	95.2
30	42.0	41.8	41.8	41.4	40.6	40.0	99.6	99.5	98.5	96.7	95.2
40	55.5	55.4	55.4	54.9	54.2	53.8	99.8	99.8	98.9	97.7	97.0
50	60.5	60.0	59.7	58.6	57.6	55.9	99.1	98.6	96.9	95.1	92.5
60	62.0	61.5	61.2	59.8	57.5	55.3	99.1	98.7	96.5	92.8	89.2
70	64.5	63.1	62.3	60.2	58.2	54.7	97.9	96.5	93.3	90.2	84.9
80	66.2	63.0	61.0	57.8	54.6	48.5	95.2	92.2	87.4	82.5	73.3
90	68.6	63.4	60.1	55.8	51.7	42.9	92.4	87.6	81.4	75.4	62.5

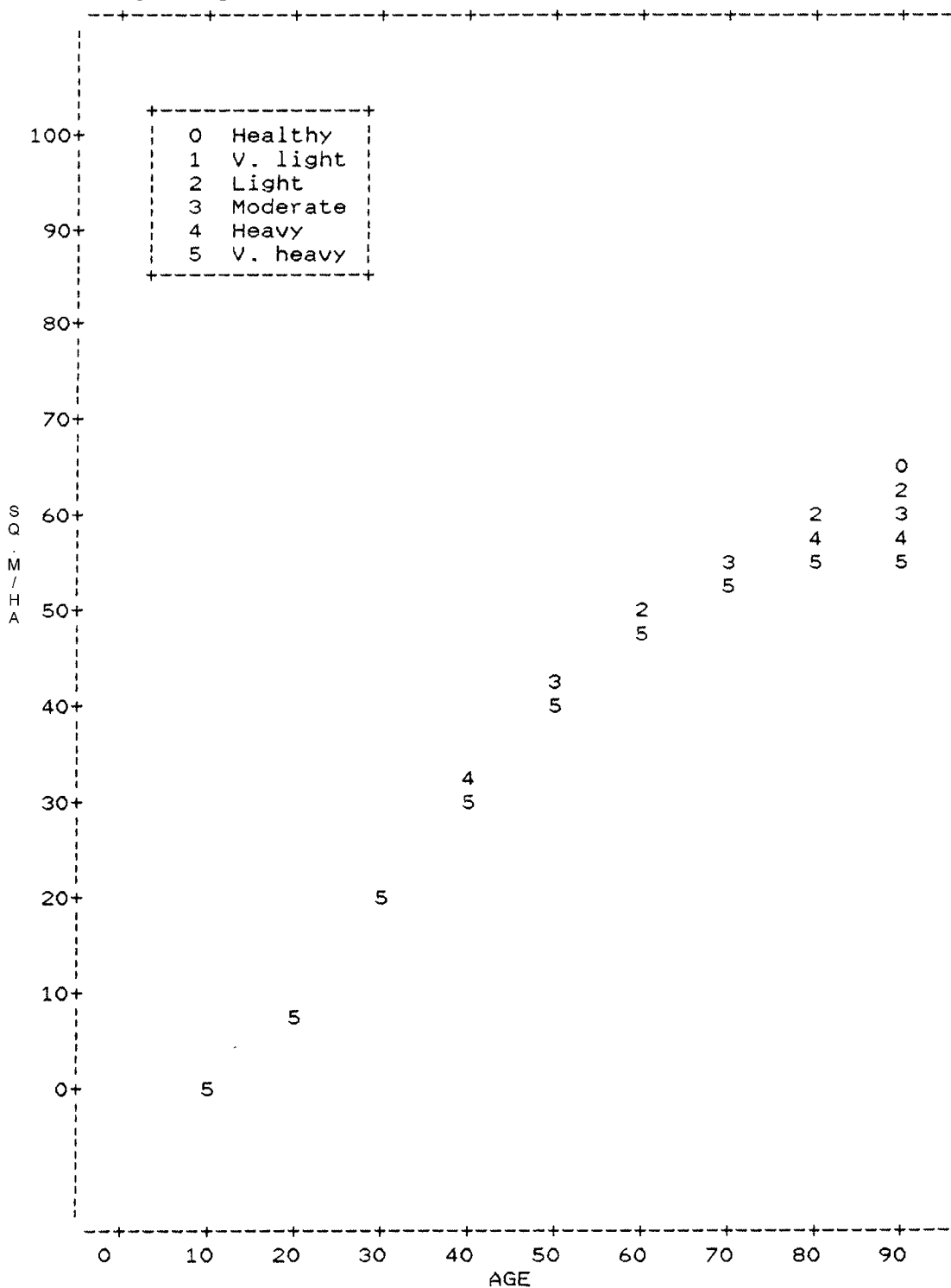
BASAL AREA OF DOUGLAS-FIR INFECTED WITH ROOT ROT

Initial Stocking 500 sph, Site Index 25



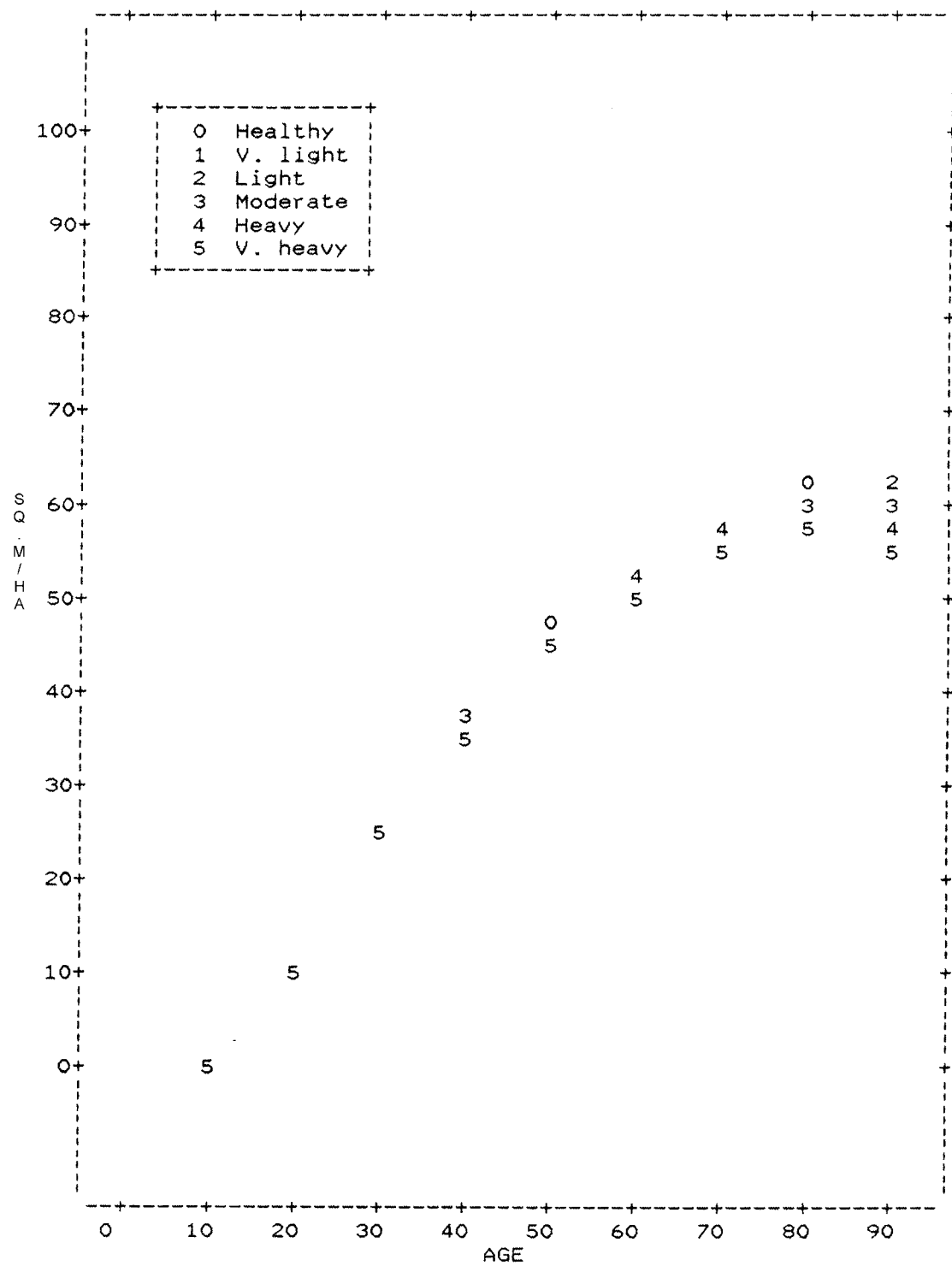
BASAL AREA OF DOUGLAS-FIR INFECTED WITH ROOT ROT

Initial Stocking 1000 sph, Site Index 25



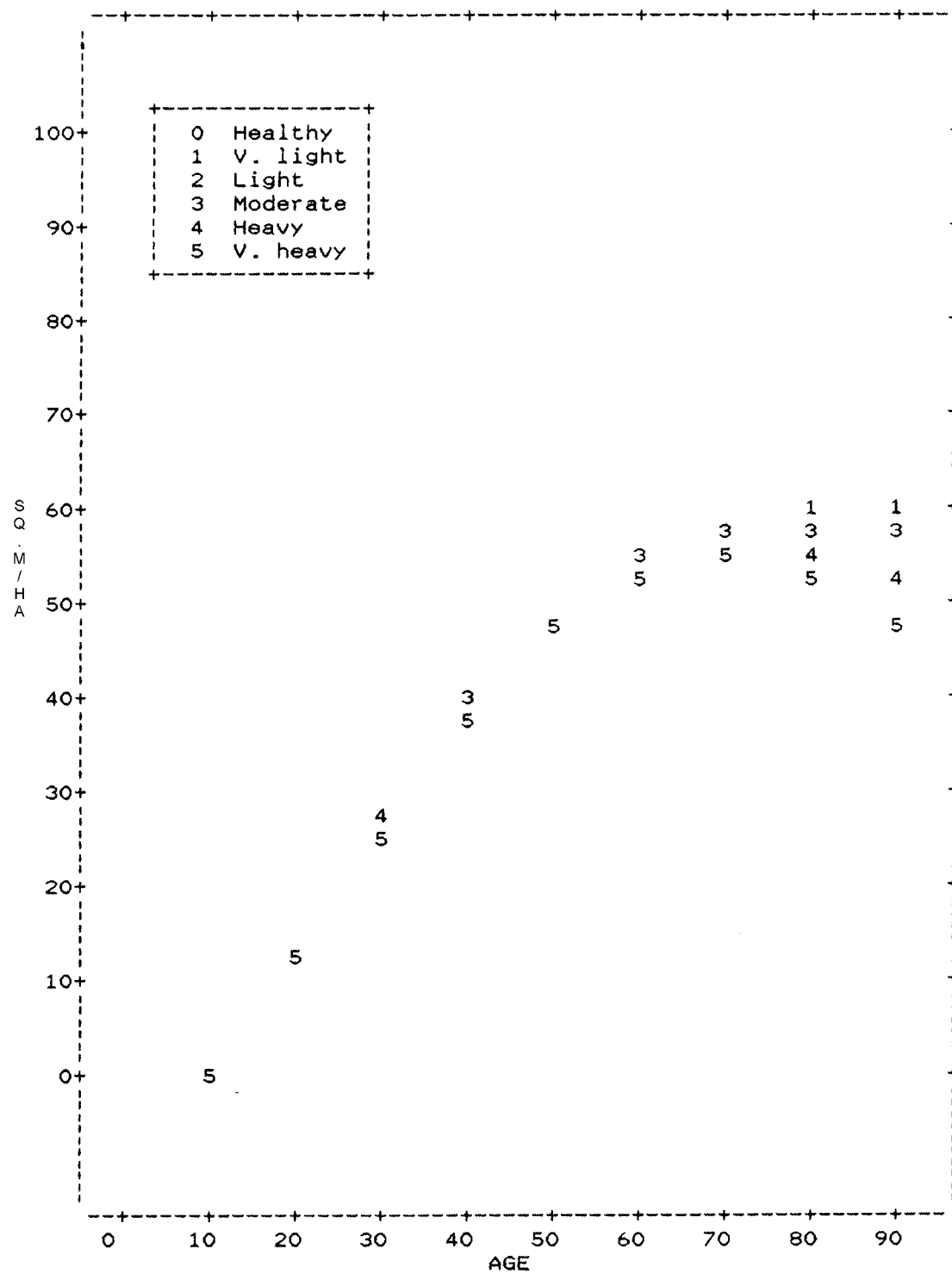
BASAL AREA OF DOUGLAS-FIR INFECTED WITH ROOT ROT

Initial Stocking 1500 sph, Site Index 25



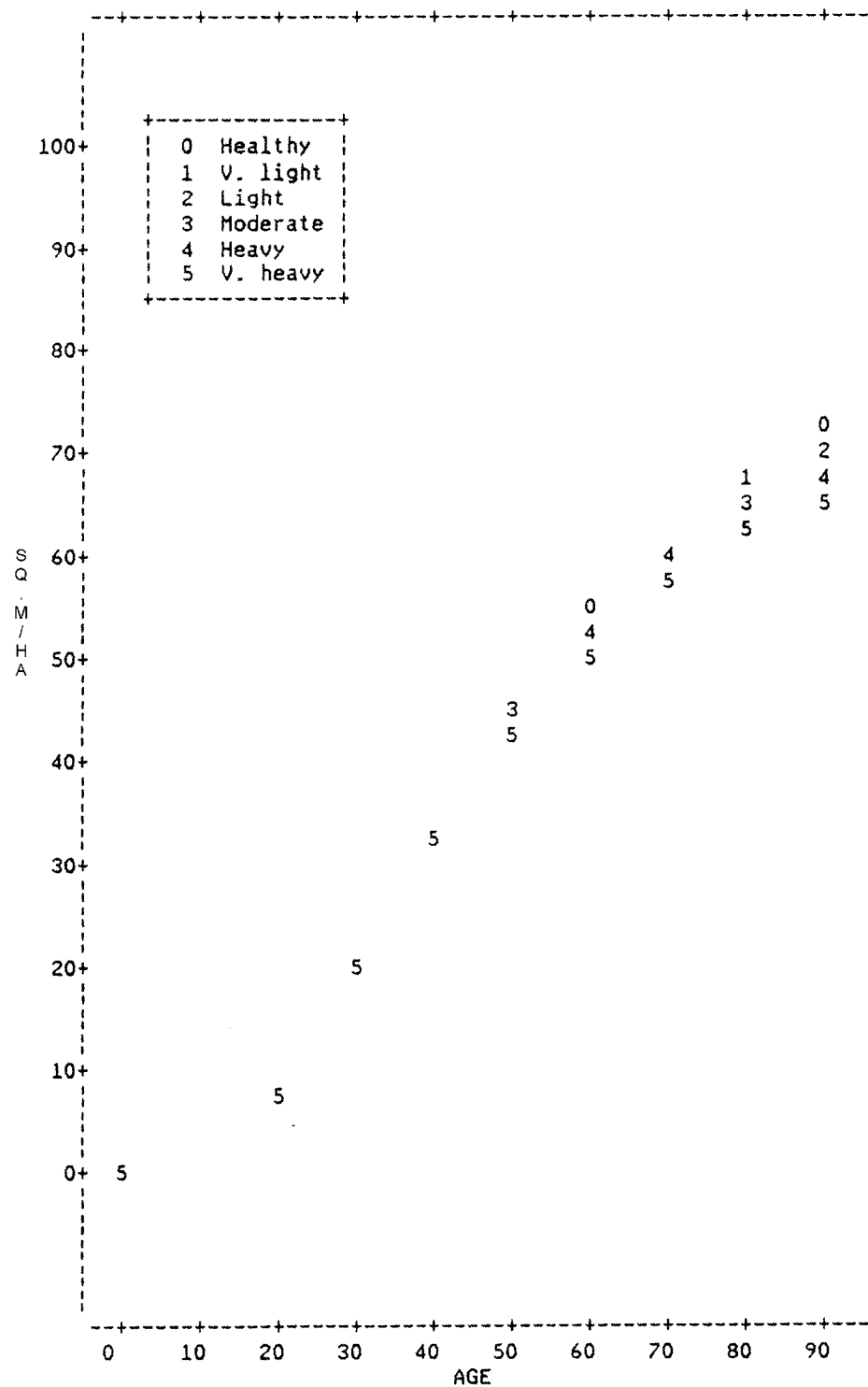
BASAL AREA OF DOUGLAS-FIR INFECTED WITH ROOT ROT

Initial Stocking 2000 sph, Site Index 25



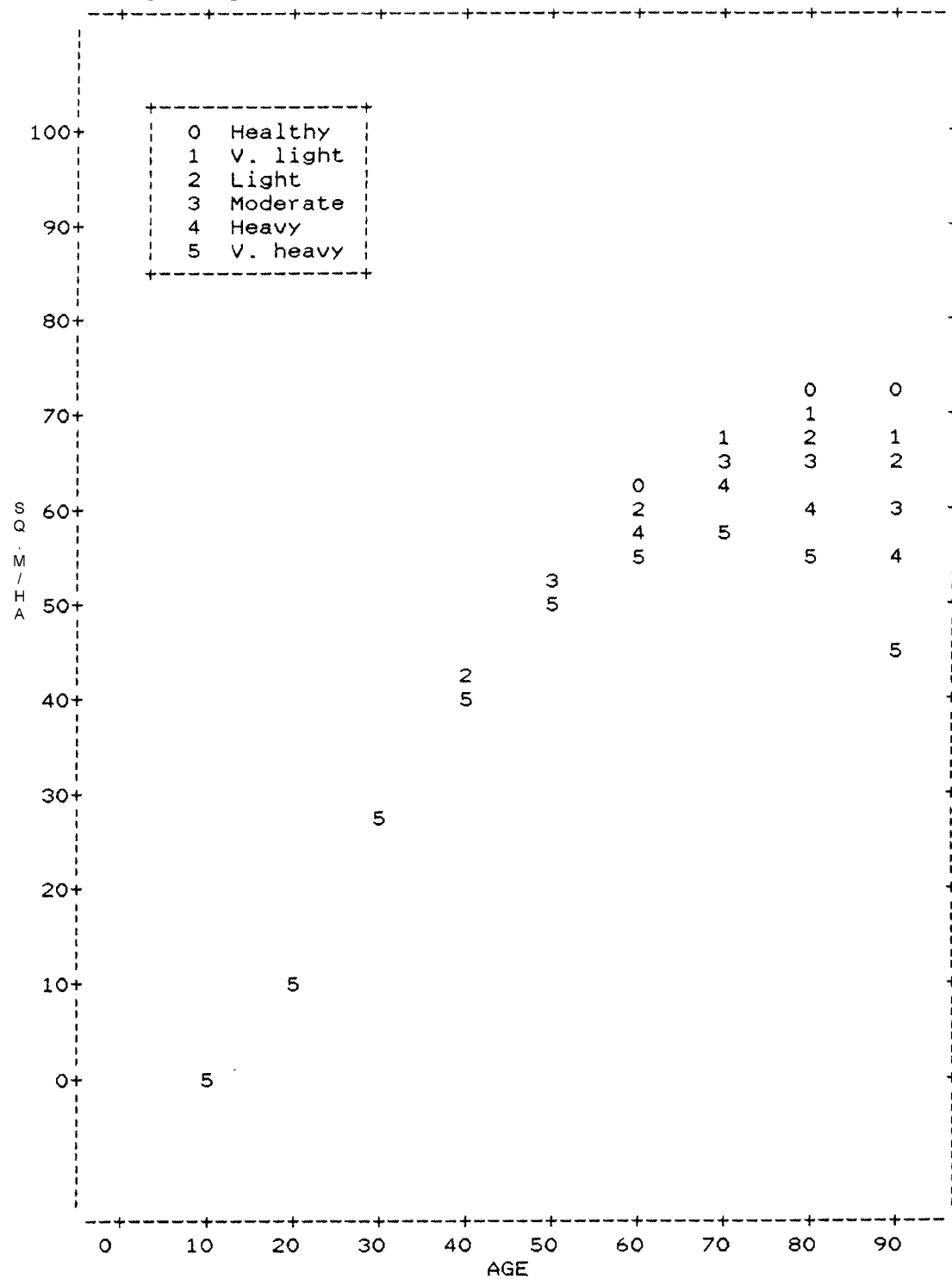
BASAL AREA OF DOUGLAS-FIR INFECTED WITH ROOT ROT

Initial Stocking 500 sph, Site Index 30



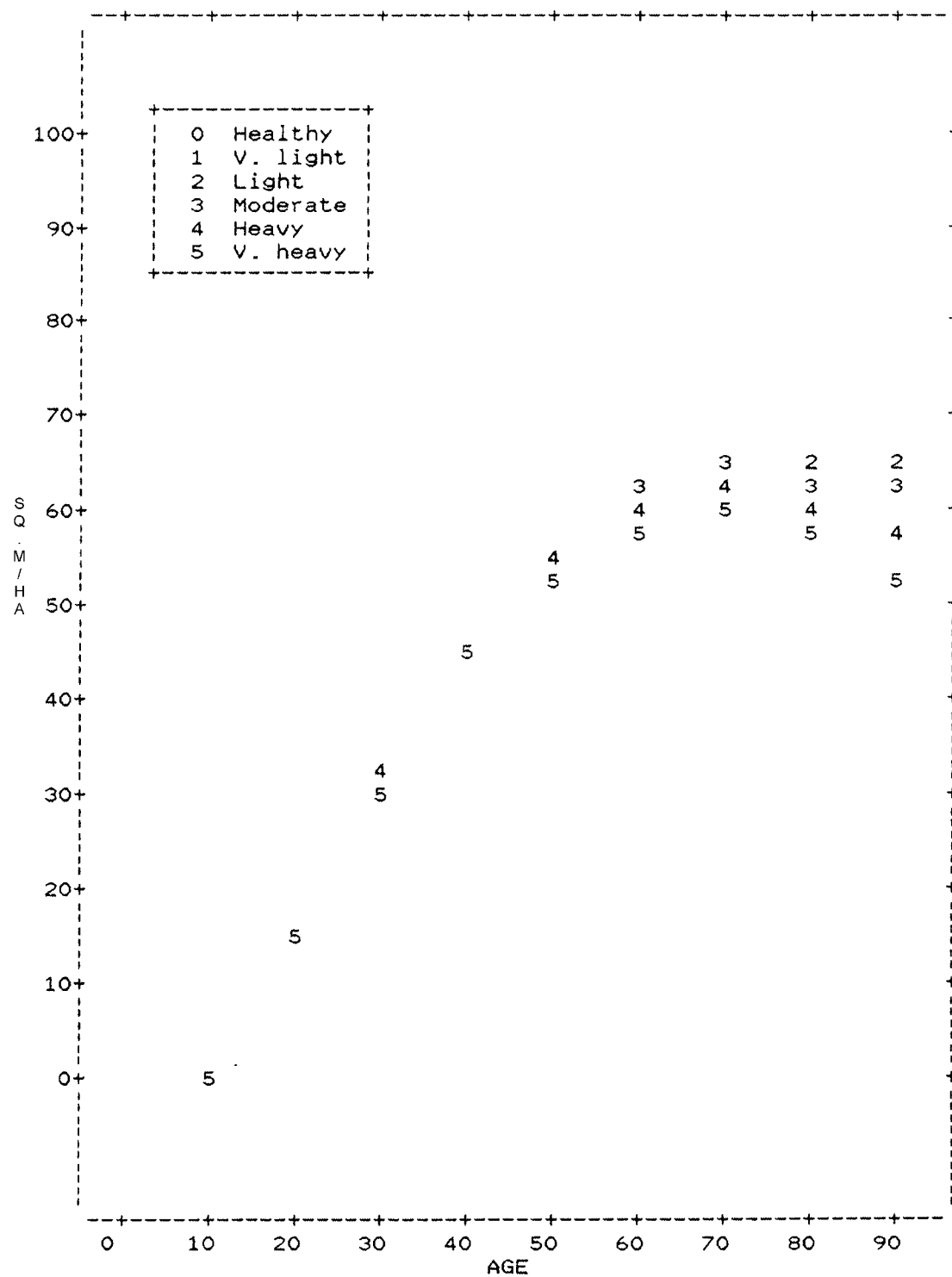
BASAL AREA OF DOUGLAS-FIR INFECTED WITH ROOT ROT

Initial Stocking 1000 sph, Site Index 30



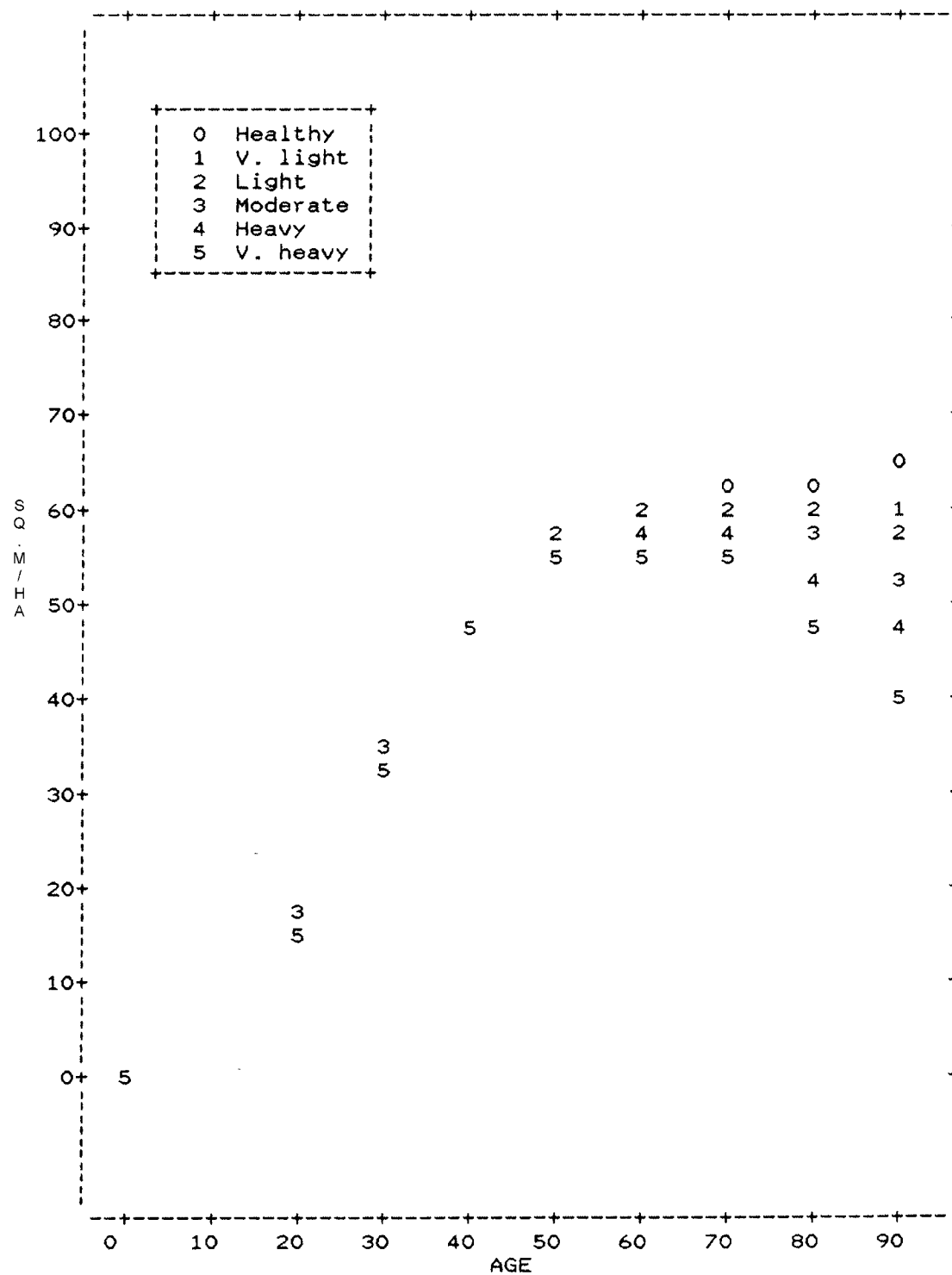
BASAL AREA OF DOUGLAS-FIR INFECTED WITH ROOT ROT

Initial Stocking 1500 sph, Site Index 30



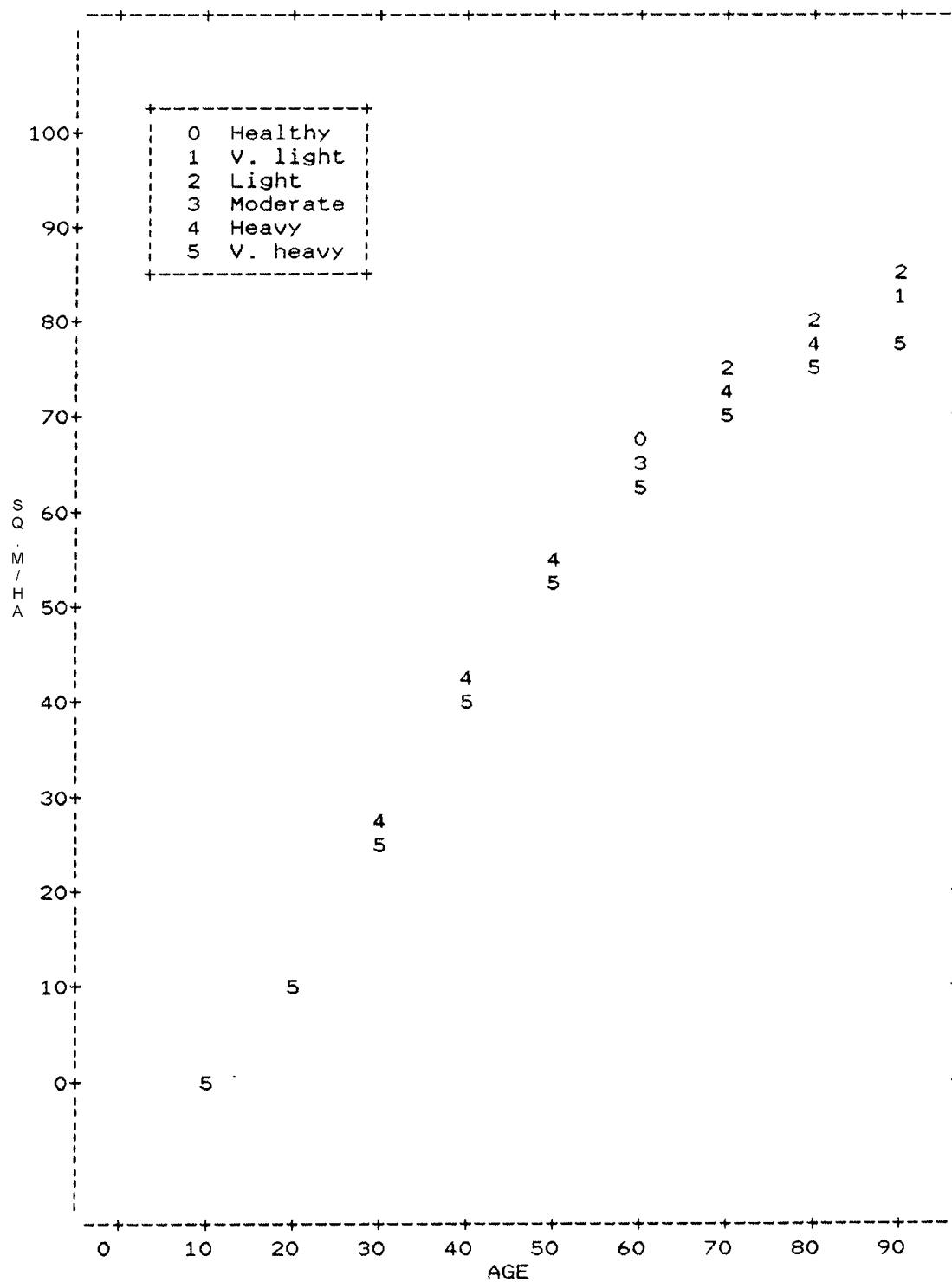
BASAL AREA OF DOUGLAS-FIR INFECTED WITH ROOT ROT

Initial Stocking 2000 sph, Site Index 30



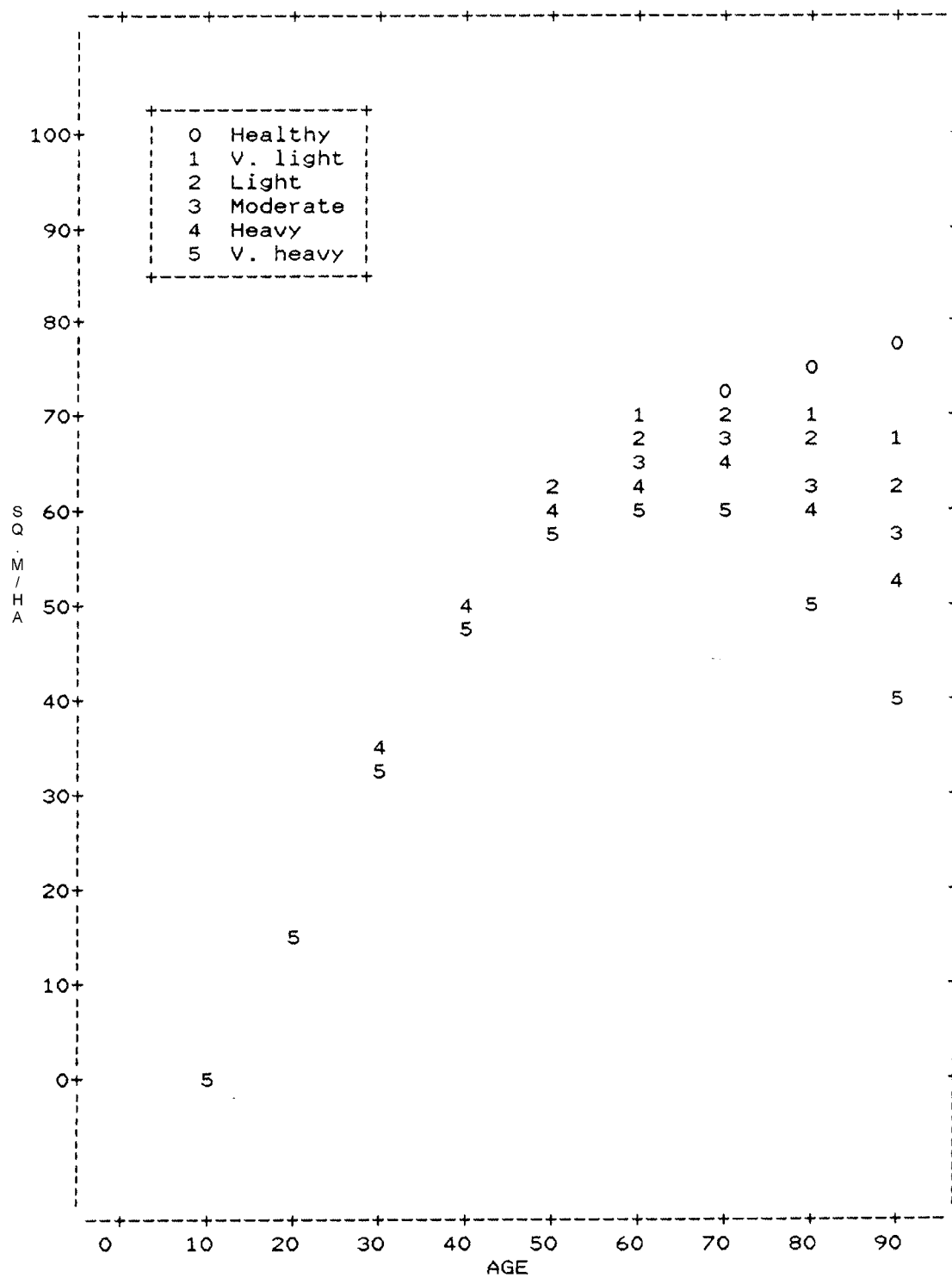
BASAL AREA OF DOUGLAS-FIR INFECTED WITH ROOT ROT

Initial Stocking 500 sph, Site Index 35



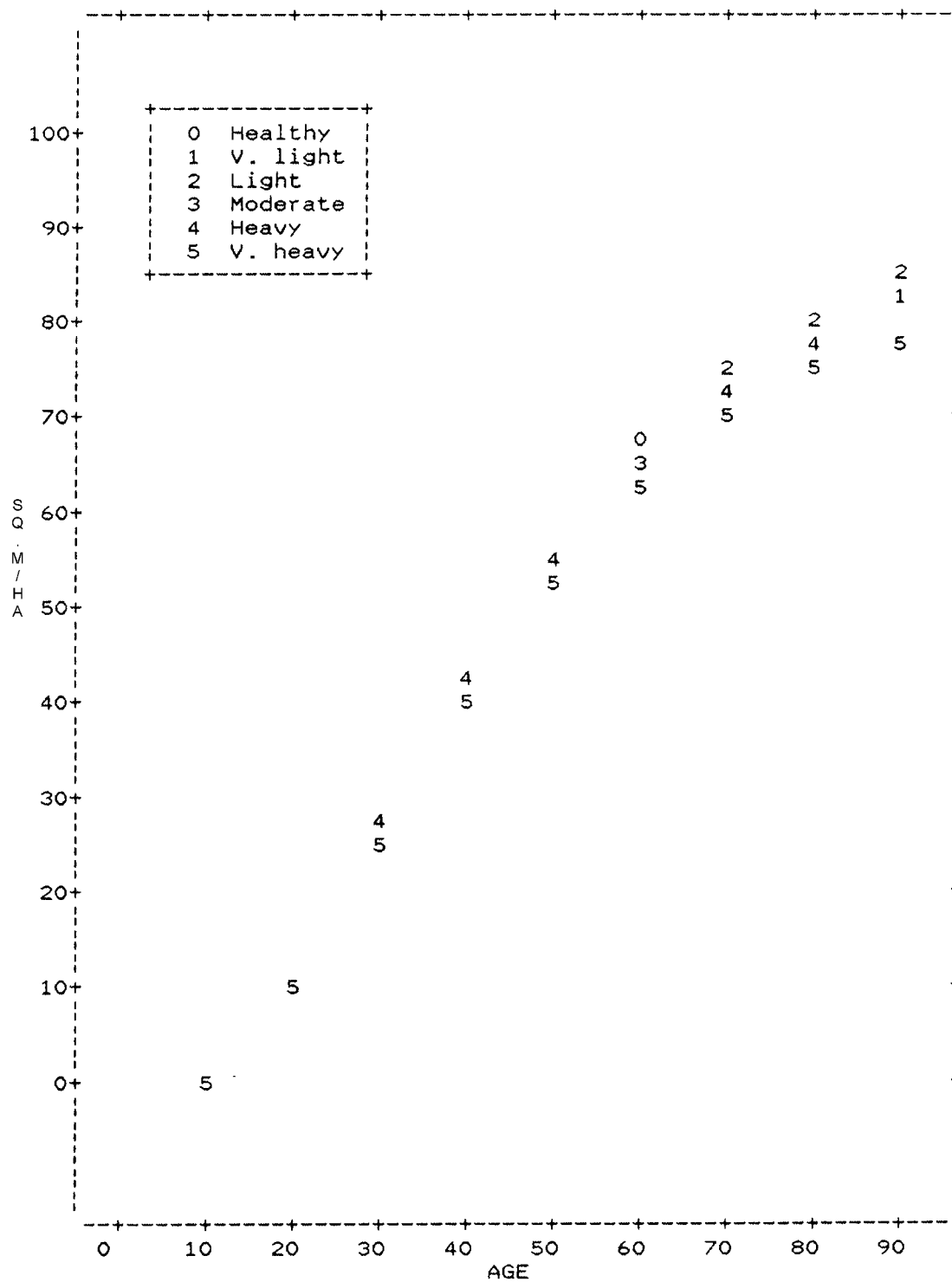
BASAL AREA OF DOUGLAS-FIR INFECTED WITH ROOT ROT

Initial Stocking 1000 sph, Site Index 35



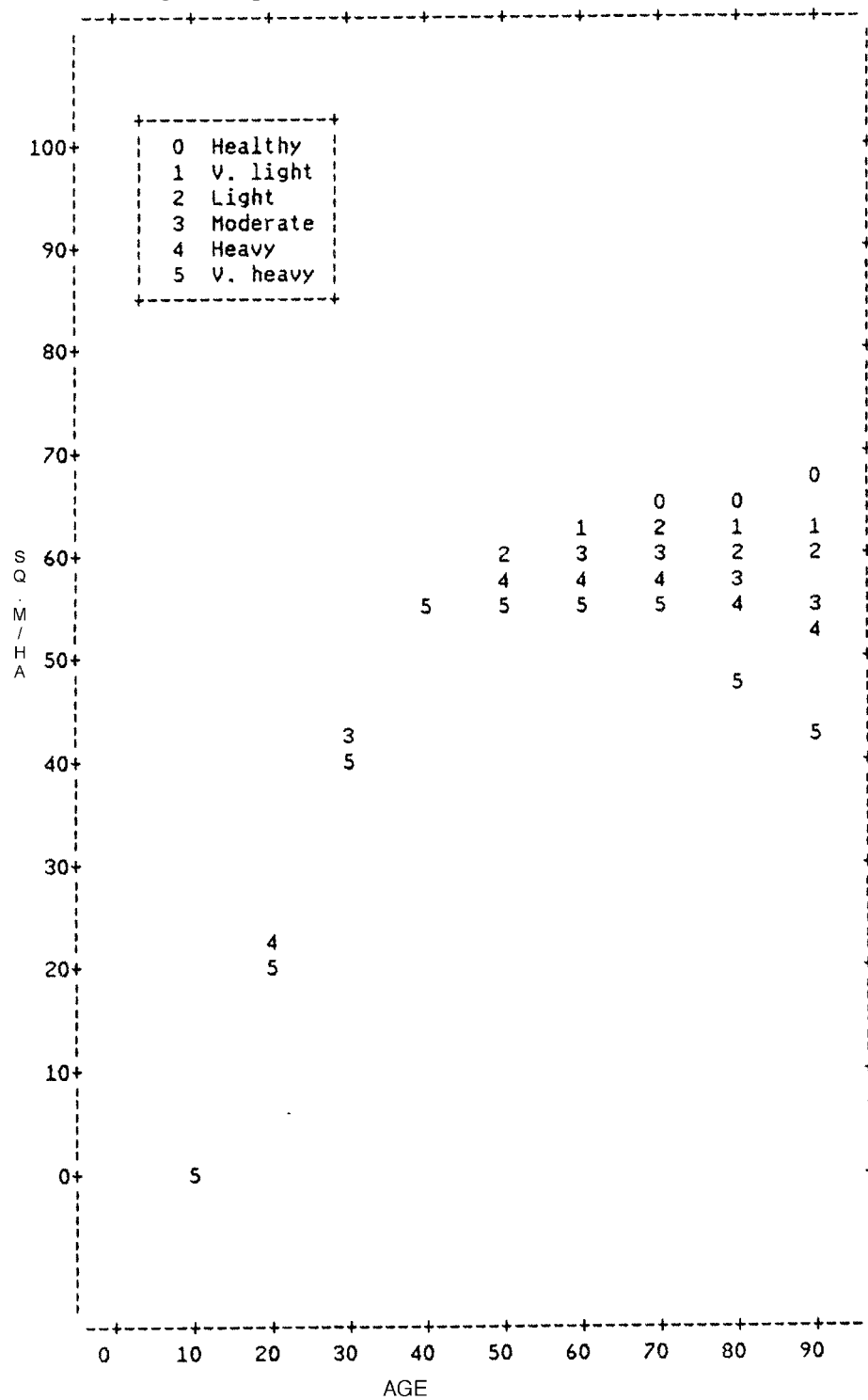
BASAL AREA OF DOUGLAS-FIR INFECTED WITH ROOT ROT

Initial Stocking 1500 sph, Site Index 35



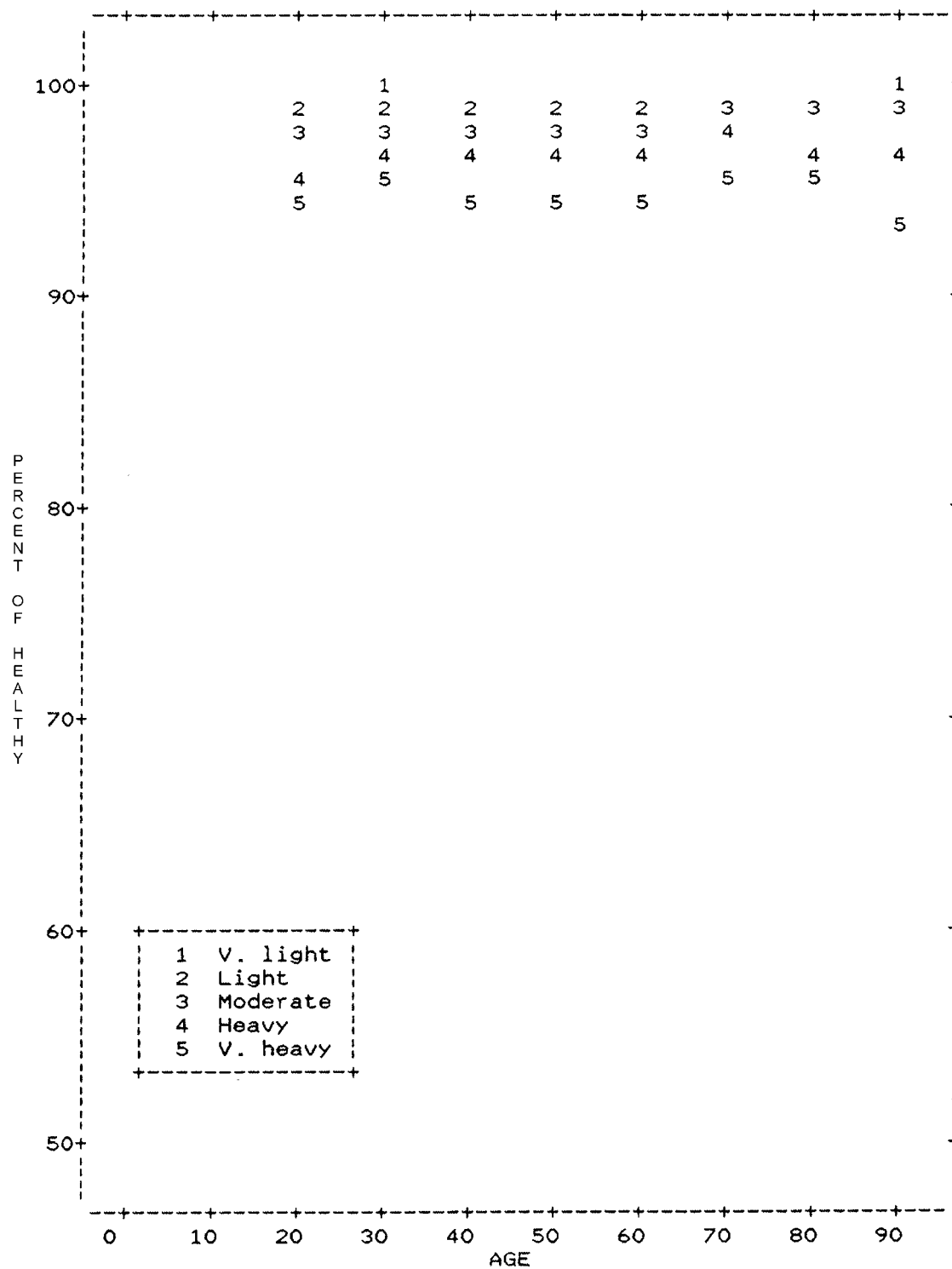
BASAL AREA OF DOUGLAS-FIR INFECTED WITH ROOT ROT

Initial Stocking 2000 sph, Site Index 35



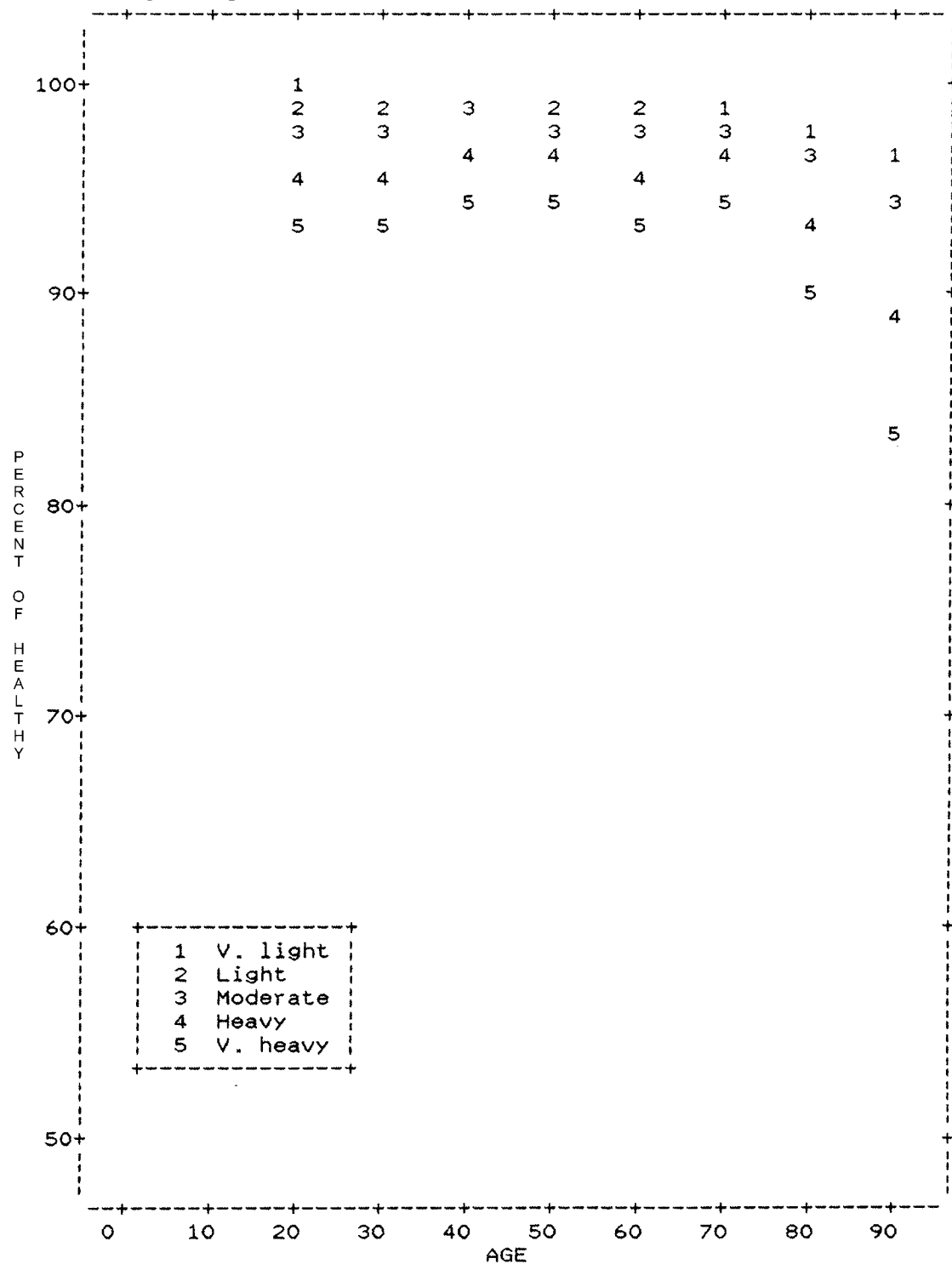
IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 500 sph, Site Index 25



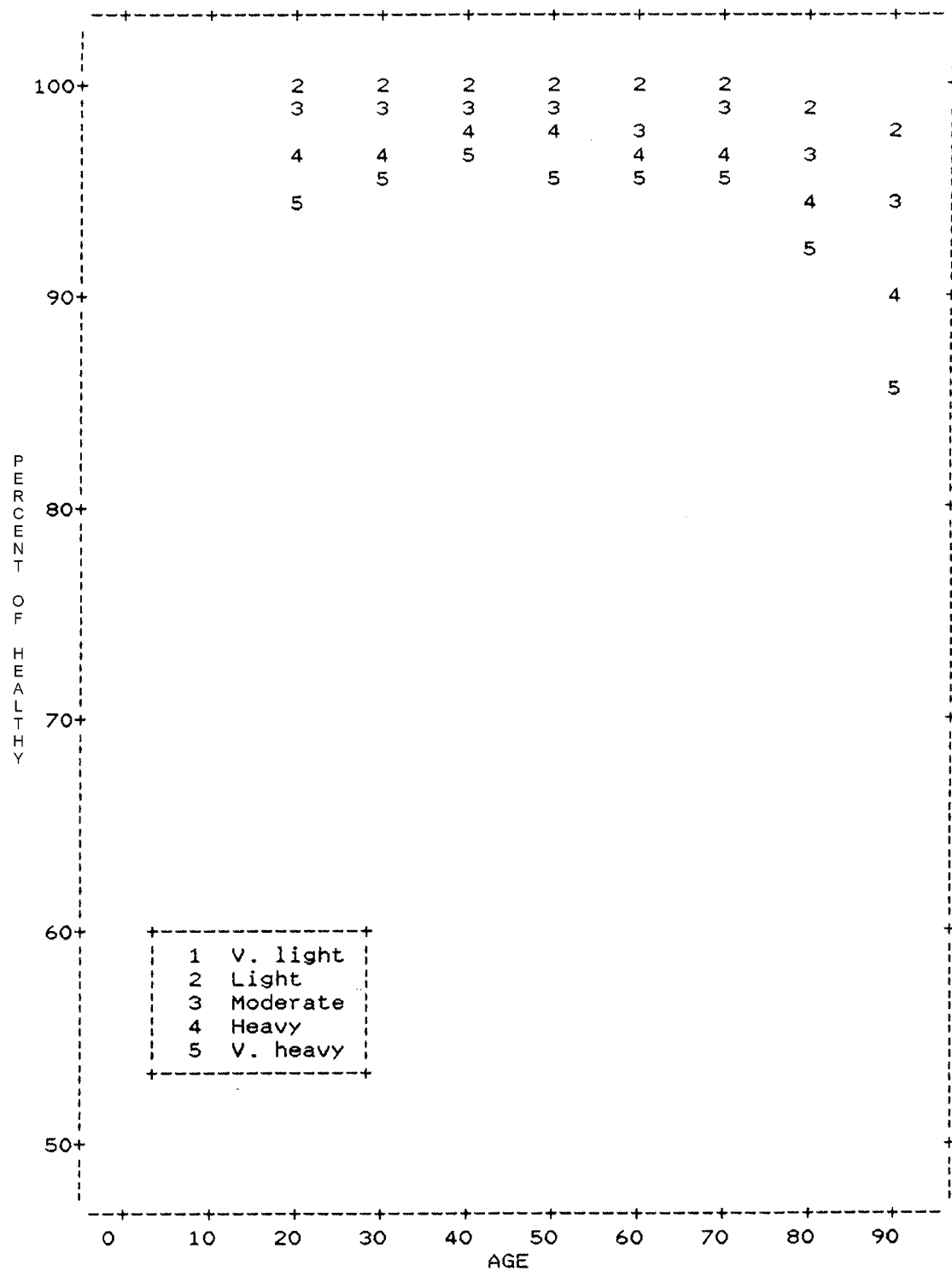
IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 1000 sph, Site Index 25



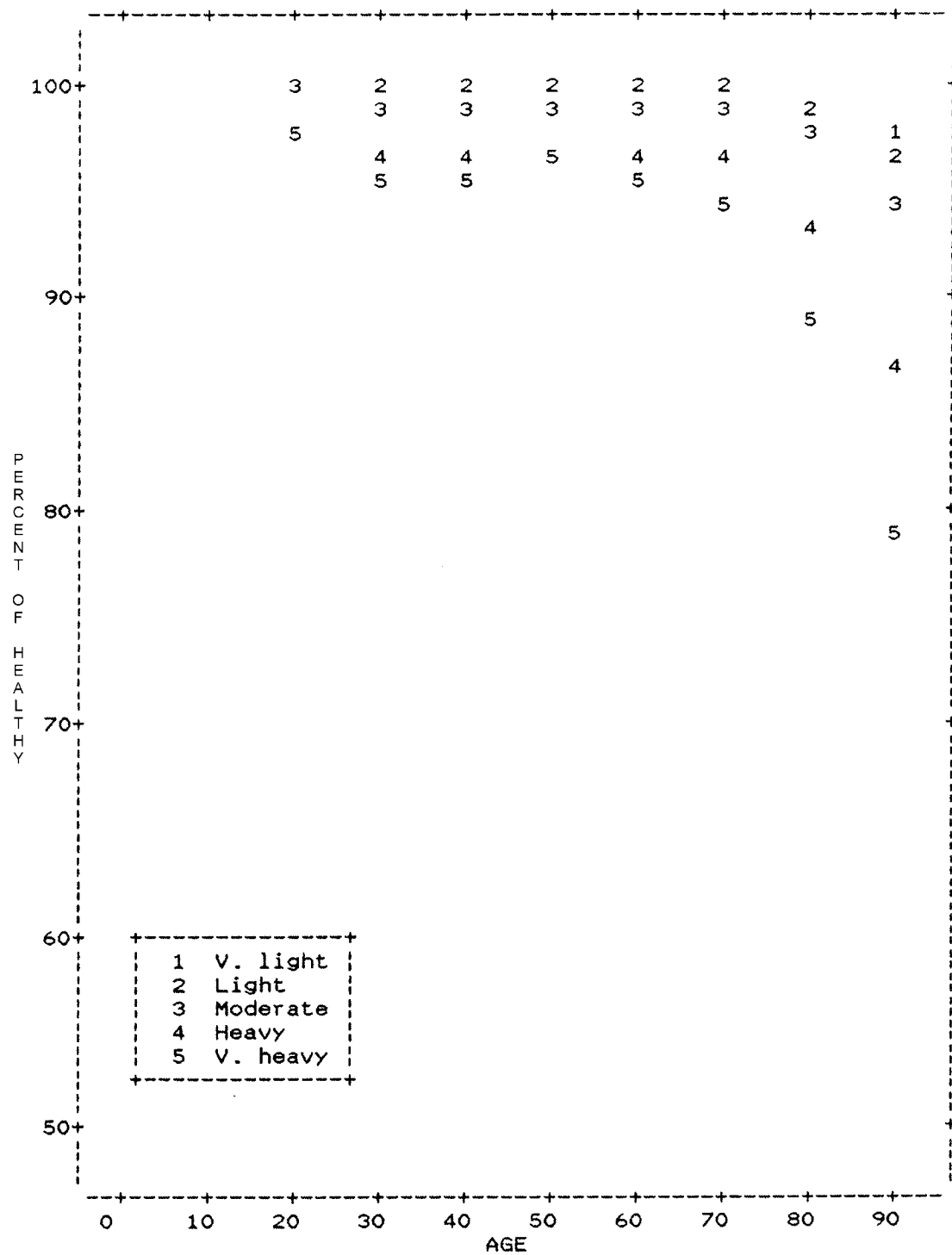
IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 1500 sph, Site Index 25



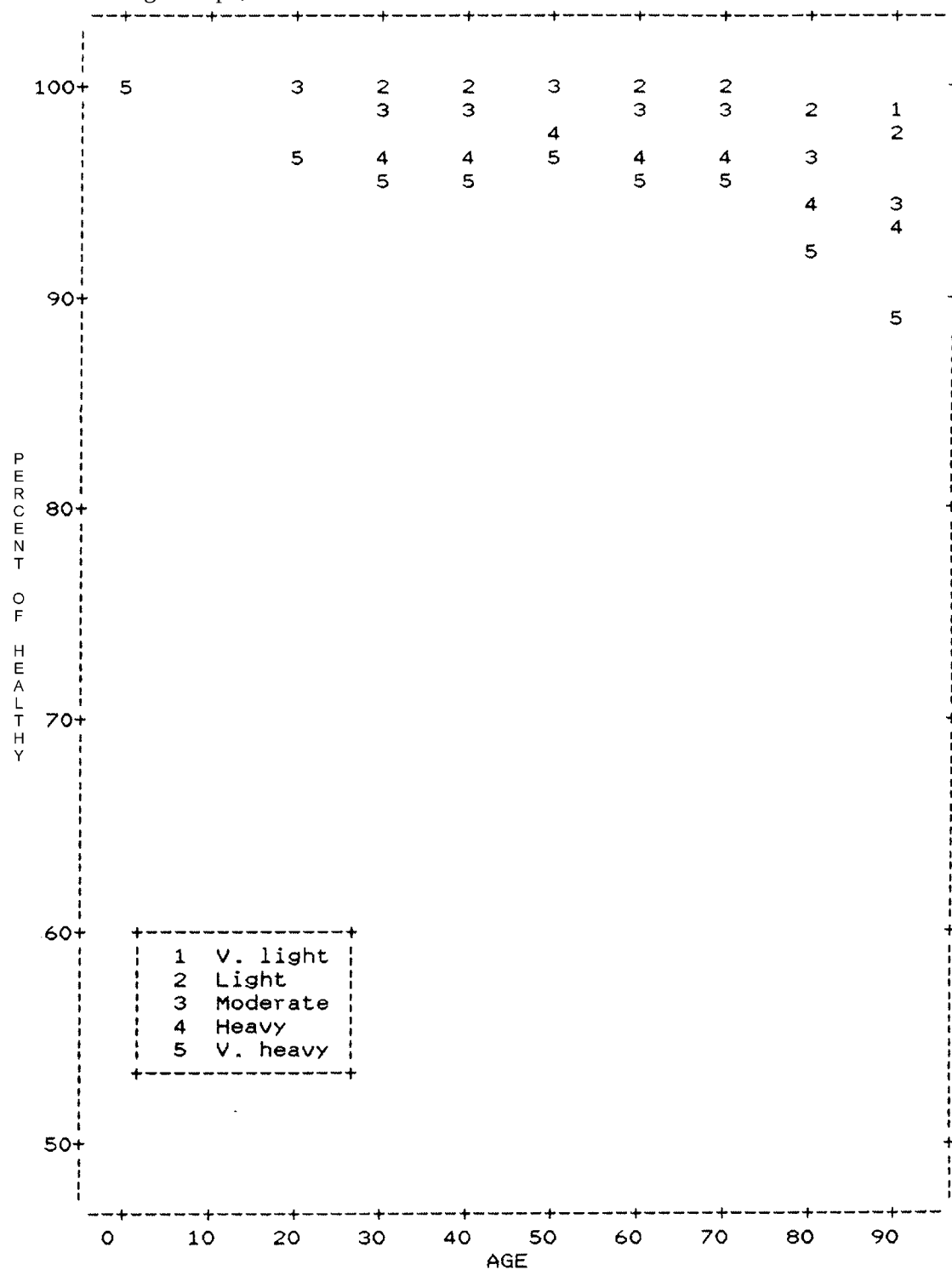
IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 2000 sph, Site Index 25



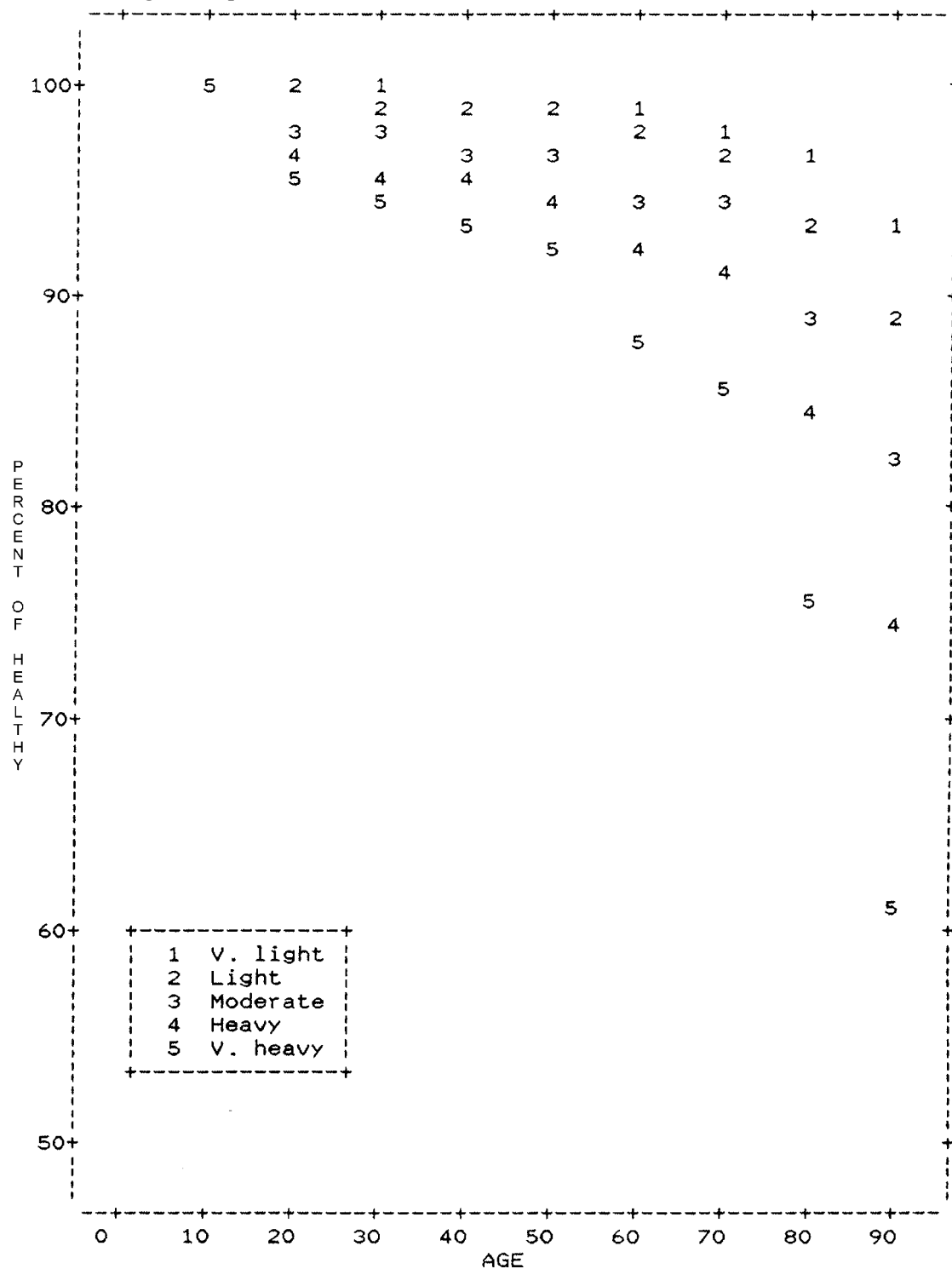
IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 500 sph, Site Index 30



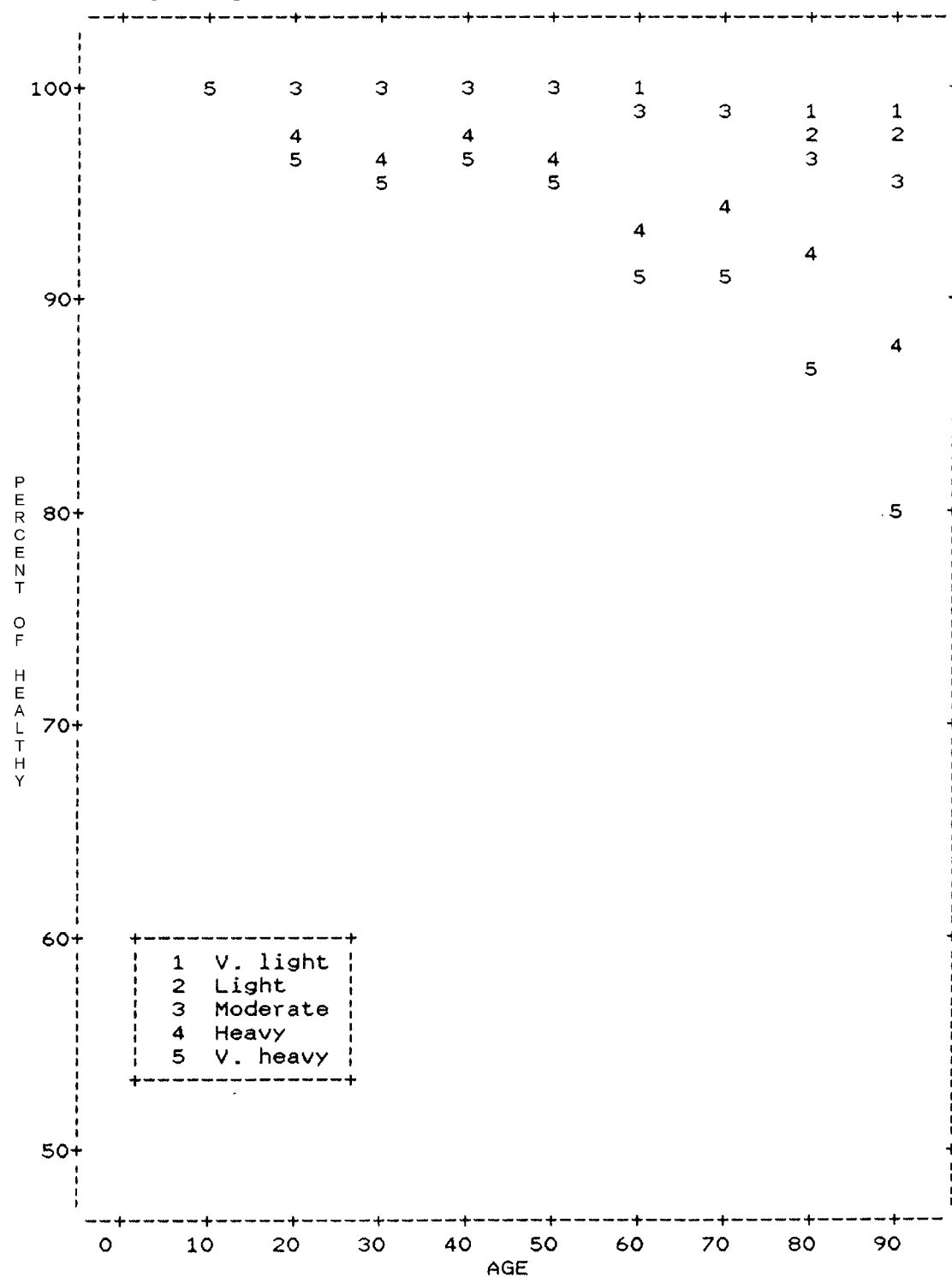
IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 1000 sph, Site Index 30



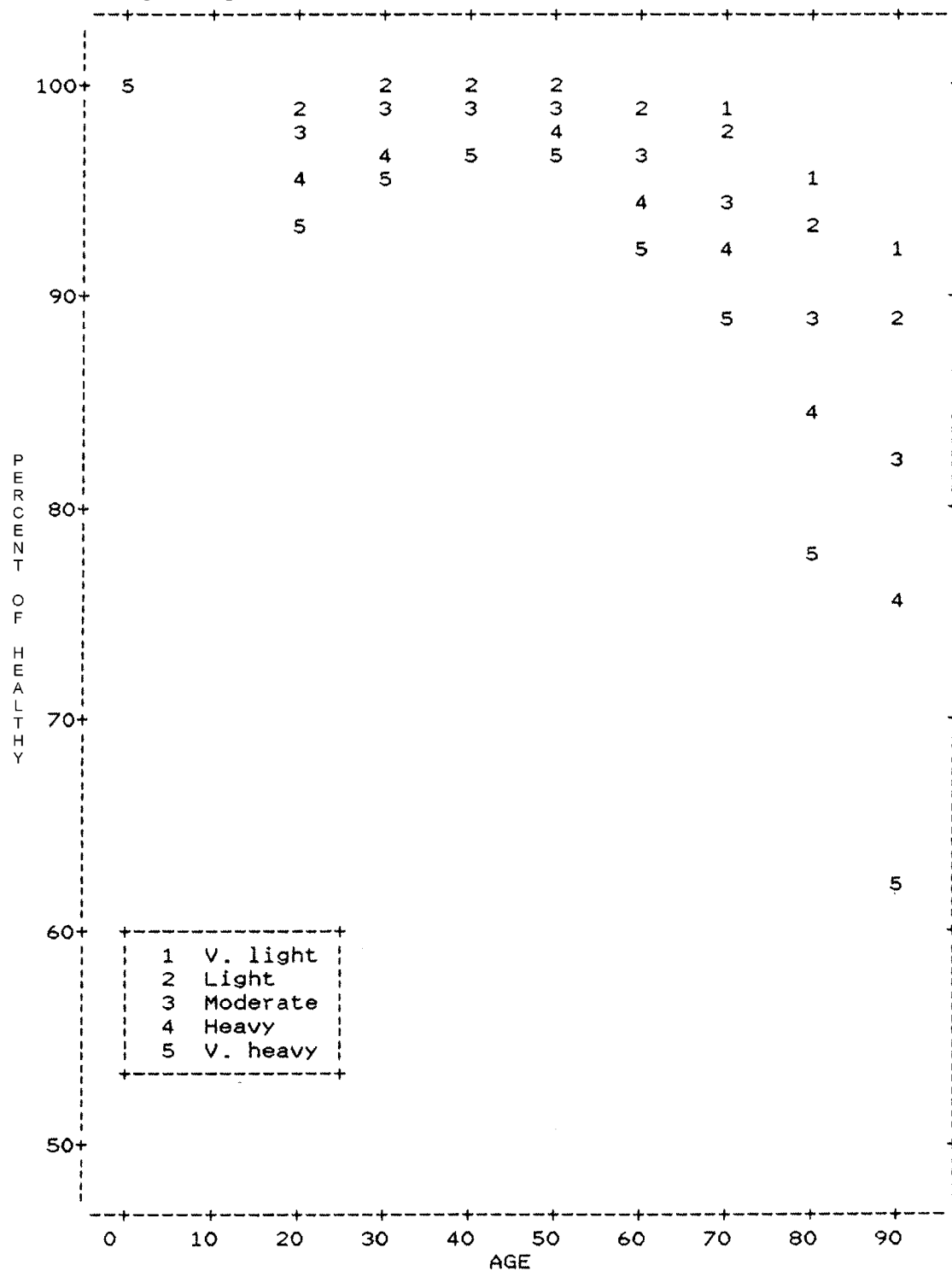
IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 1500 sph, Site Index 30



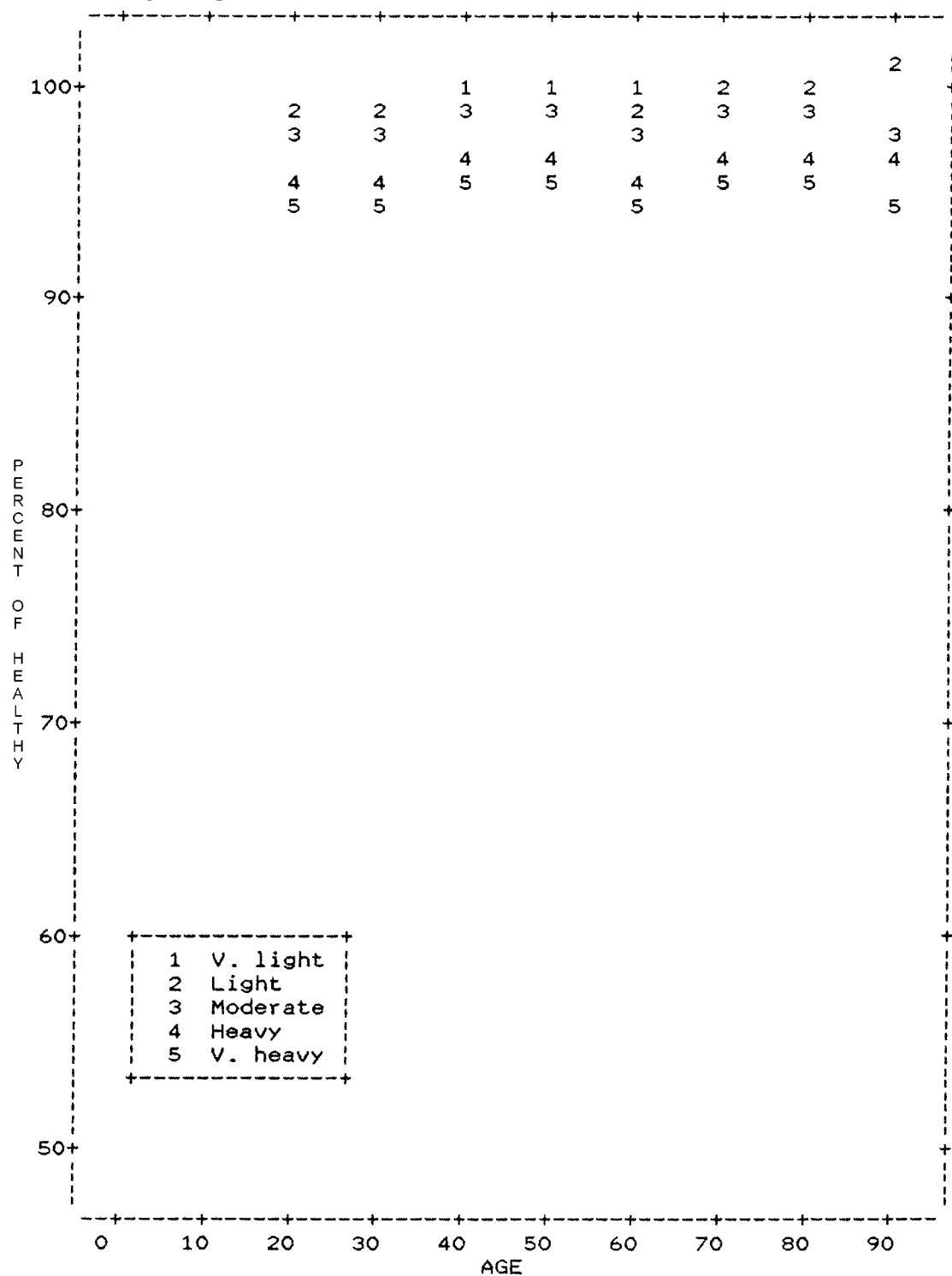
IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 2000 sph, Site Index 30



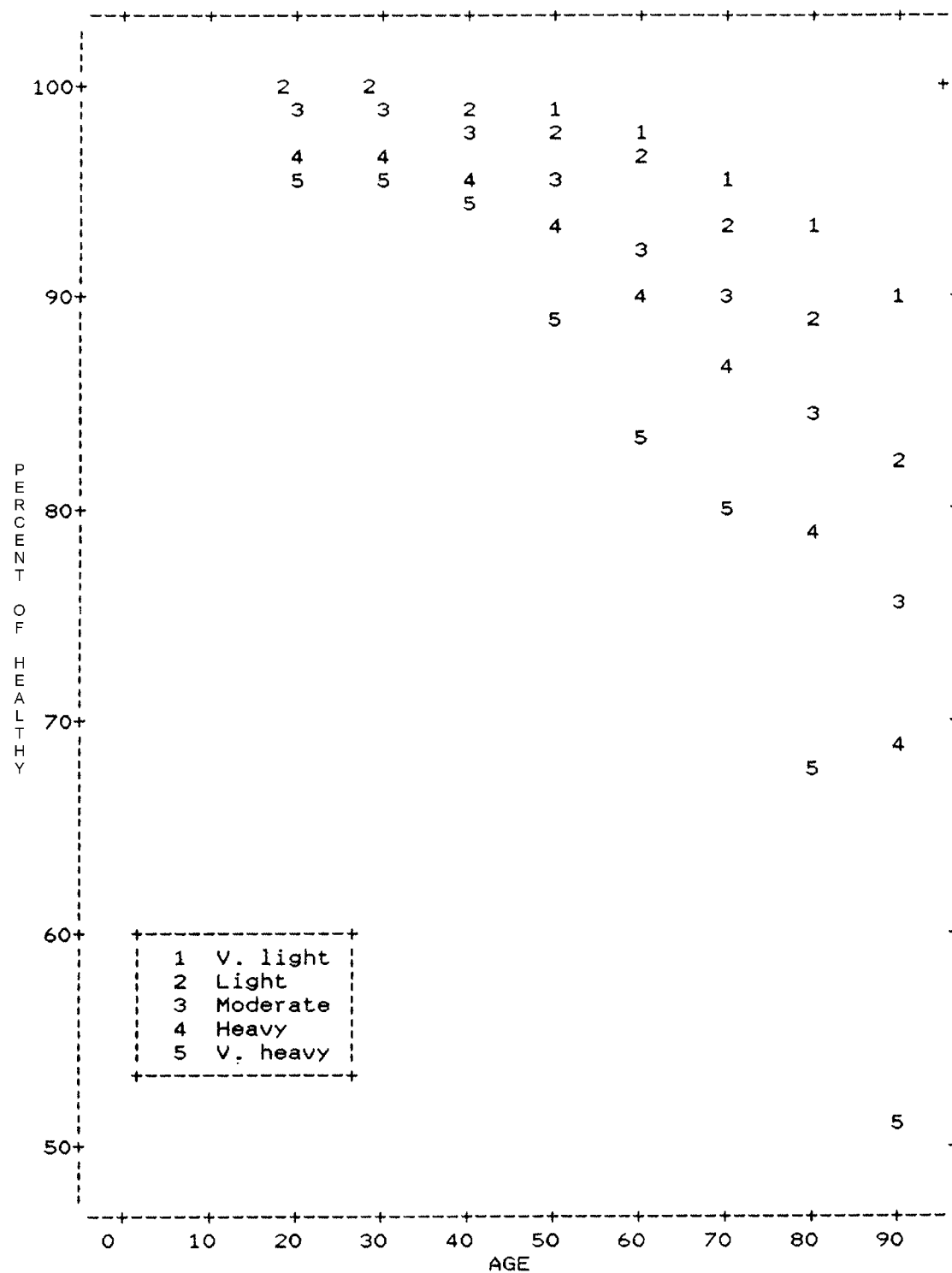
IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 500 sph, Site Index 35



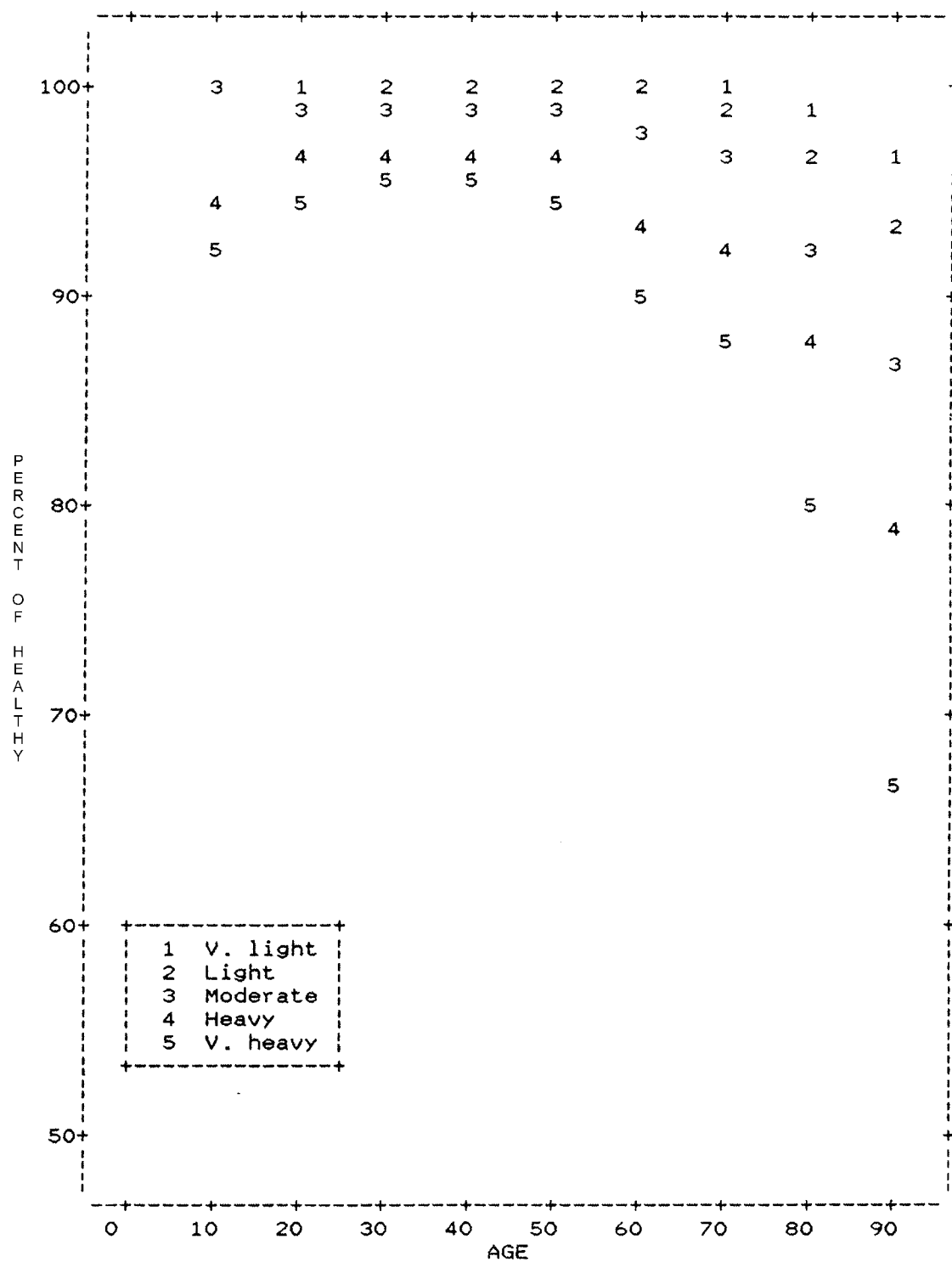
IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 1000 sph, Site Index 35



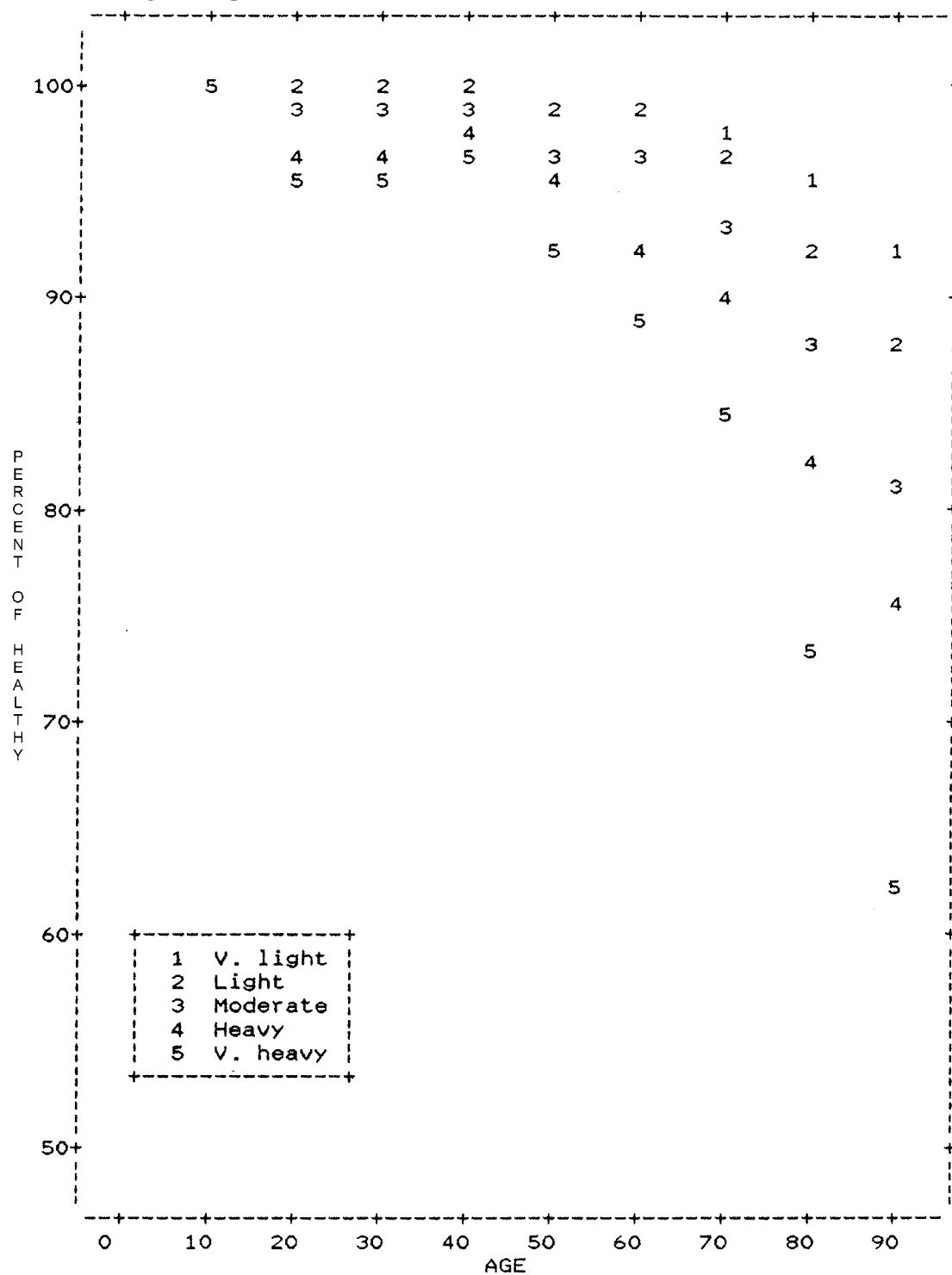
IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 1500 sph, Site Index 35



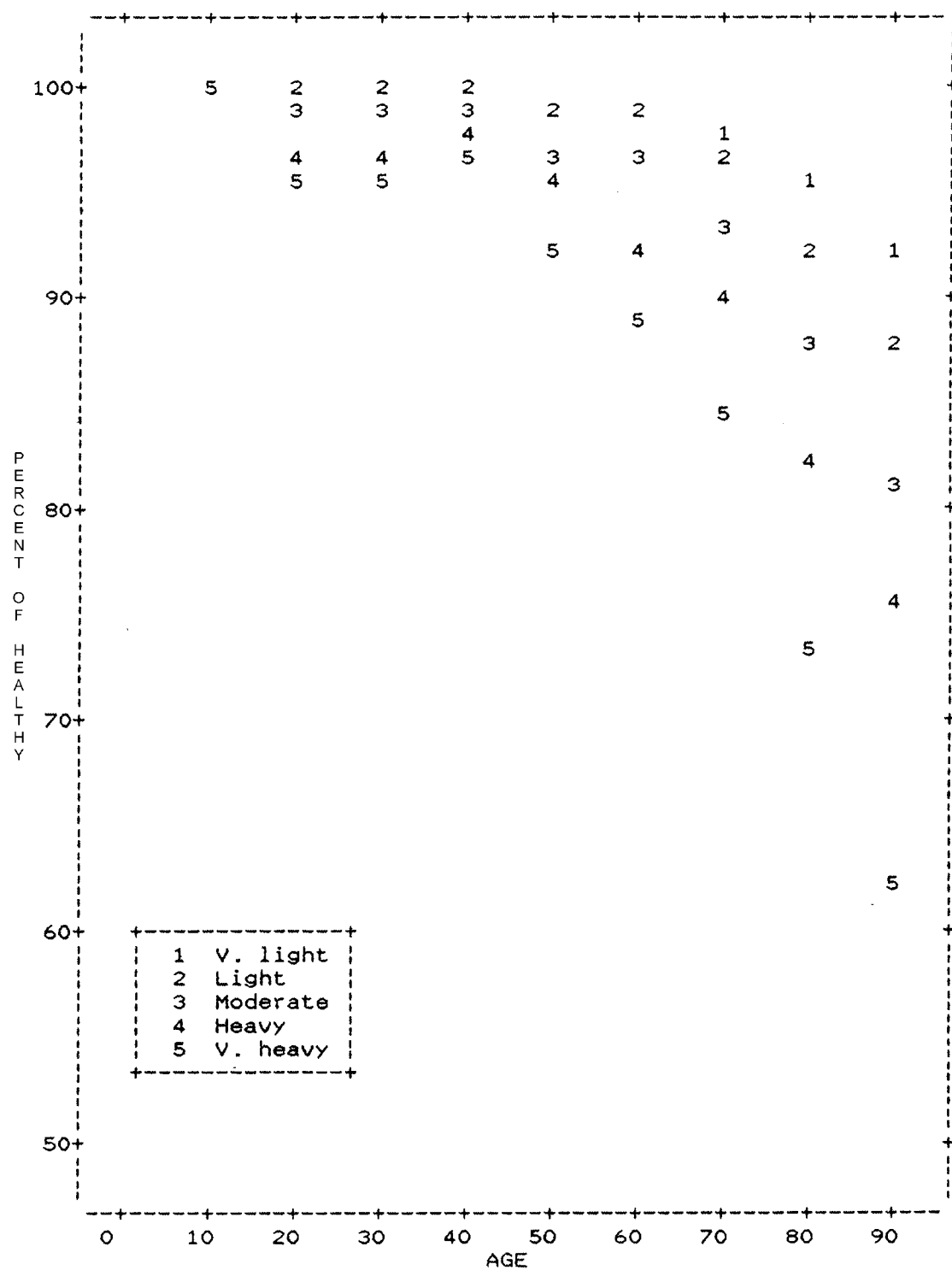
IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 2000 sph, Site Index 35



IMPACT OF ROOT ROT ON DOUGLAS-FIR BASAL AREA

Initial Stocking 2000 sph, Site Index 35



Preliminary Stand Basal Area Estimates