PCNFCS

NORMAN FILE CREATION SYSTEM

PC VERSION

TECHNICAL MANUAL

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Written By
KEVIN R LINDQUIST
FOREST COMPUTER CONSULTING
CHAPLEAU, ONTARIO

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INTRODUCTION

The PCNFCS Technical Manual is a supplement to the PCNFCS User's Manual directed towards the program manager / distributor. The manual contains distribution instructions, procedure descriptions and a guide to program source code.

This manual should be stored with the source code files should program modification be required at some point in the future.

1.0 PCNFCS DIRECTORIES & FILES

The PCNFCS program operates across three directories under the main PCNFCS directory:

1. PROGRAM - contains the PCNFCS.EXE compiled program file, data reference files and data file templates,

2. DATA - contains all of the data files which are created and / or modified throughout the life of the program, and

3. REPORTS - contains all text reports which are written to file from the program and all volumetric model file sets which are exported by the program.

Several files are copied to both the PCNFCS\PROGRAM and PCNFCS\DATA directories during the install procedure. These files are mandatory ie. the program will not function without them. The data files are in dBASE IV format (.DBF extension) and many carry index production files identified by the .MDX extension. All files are listed below with index tags for the production files. File structures can be found in Appendix I.

1.1 DATA DIRECTORY

Aggregation Files

AGG_HEAD.DBF
AGG_ONE.DBF
AGG_ONE.MDX
(Index on NAME+STR(STRATA1,2) tag NAMESTR1)
AGG_TWO.DBF
AGG_TWO.MDX
(Index on NAME+STR(STRATA2,4) tag NAMESTR2)

Definition Files

FORMANMU.DBF
FORMANMU.MDX
(Index on MU tag MU)
LEDGER1.DBF
LEDGER1.MDX
(Index on LEDGERNAME tag LEDGER)
WILDLIFE.DBF
WILDLIFE.MDX
(Index on WILDNAME tag WILD)
VOLSETUP.DBF

1.2 PROGRAM DIRECTORY

File Structure Templates

AGGTEMP.DBF
CLASS.DBF
COST.DBF
FUTURE.DBF
PRESENT.DBF
PROD.DBF
PURE.DBF
SCXR.DBF
STANF.DBF
STANFERR.DBF
NOR_COST.DBF
NOR_CLAS.DBF
NOR_MIX.DBF
FOR_COST.DBF
FOR_CLAS.DBF
FOR_MIX.DBF
FCP_COST.DBF
FCP_CLAS.DBF
FCP_MIX.DBF

Data Reference Files

HEIGHT.DBF
HEIGHT.MDX
(Index on WG+SC tag WGSC)
WGCODE.DBF
WGCODE.MDX
(Index on CODE tag CODE)
(Index on WG tag WG)

2.0 SOURCE CODE FILES

The source code for the PCNFCS program is written entirely in Borland's dBASE IV version 2.0. Borland's dBASE Compiler for DOS was used to compile and link the source code into the PCNFCS.EXE program file.

The source code is written in several program or procedural files (*.PRG extension). Each file contains procedures which perform specific tasks (similar to functions in C language). These procedures begin with the PROCEDURE command followed by the name of the procedure and end with a RETURN statement. The procedures are called with the DO command ie. DO MAIN:

```
PROCEDURE MAIN

    lines of code containing dBASE commands and functions


RETURN
```

There are a total of 11 source code files:

1. PCNFCS.PRG,
2. FILECHK.PRG,
3. FORMANMU.PRG,
4. AGGCLASS.PRG,
5. FEDIT.PRG,
6. YIELD.PRG,
7. REPORTS1.PRG,
8. REPORTS2.PRG,
9. REPORTS3.PRG,
10. EXPORT.PRG, and
11. HELP.PRG.

The relationship between the PCNFCS program and source code can best be shown by identifying the file and main procedure associated with each menu option. As is shown in Tables 1 - 6, some procedures accept arguments which are passed using the WITH command.

The PCNFCS.PRG source code file contains the main menu and controls the calling of procedures to perform menu options. All code for the file and procedure relationships shown in Tables 1 - 6 is in the PCNFCS.PRG file.

Table 1. File Check & Preparation Procedure Calls.

MENU OPTION	SOURCE FILE	MAIN PROCEDURE
IMPORT STANF ASCII FILE	FILECHK.PRG	FILECHK WITH "IMPORT"
STANF ERROR CHECK	FILECHK.PRG	FILECHK WITH "CHECK"
EXPORT STANF .DBF FILE	FILECHK.PRG	FILECHK WITH "EXPORT"
EDIT STANF FILE	FILECHK.PRG	FILECHK WITH "EDIT"
APPLY FORMAN MU WORKING CIRCLE	FORMANMU.PRG	FORMANMU

Table 2. Aggregation Input / Run Procedure Calls.

MENU OPTION	SOURCE FILE	MAIN PROCEDURE
INPUT/EDIT AGGREGATION CRITERIA	AGGCLASS.PRG	AGGINPUT
RUN FOREST CLASS AGGREGATION	AGGCLASS.PRG	CLASS

Table 3. File Edit Procedure Calls.

MENU OPTION	SOURCE FILE	MAIN PROCEDURE
FOREST CLASS FILE	FEDIT.PRG	ECLASS
PRESENT YIELD CURVES	FEDIT.PRG	ECURVE WITH "PRESENT"
FUTURE YIELD CURVES	FEDIT.PRG	ECURVE WITH "FUTURE"
PRODUCT PERCENT TABLE	FEDIT.PRG	EREF WITH "PROD"
SITECLASS X-REFERENCE	FEDIT.PRG	EREF WITH "SCXR"
PURE SPECIES YIELD CURVE	FEDIT.PRG	EREF WITH "PURE"

Table 4. Yield Curve Development Procedure Calls.

MENU OPTION	SOURCE FILE	MAIN PROCEDURE
SILVICULTURE CARD INPUT	YIELD.PRG	SILVCARD WITH "EDIT"
VOLUME SETUP FILE	YIELD.PRG	VOLSETUP
RUN YIELD CURVE DEVELOPMENT	YIELD.PRG	GOYIELD

Table 5. Reports Procedure Calls.

MENU OPTION	SOURCE FILE	MAIN PROCEDURE
TABLE 4.8.? (.48?)	REPORTS1.PRG	TABLE48
TABLE 4.9 (.T49)	REPORTS1.PRG	TABLE49 WITH "REGULAR"
TABLE 4.9 Supplement (.S49)	REPORTS1.PRG	TABLE49 WITH "SUPPLEMENT"
LEDGER 1 (.LED)	REPORTS2.PRG	LEDGER1
WILDLIFE (.WLD)	REPORTS2.PRG	WILDLIFE
CLASS ID LISTING (.CIL)	REPORTS1.PRG	CLASSID
FOREST CLASS STAND LISTING (.CST)	REPORTS1.PRG	CLSTAND
CLASS ID VOL/HA (.CV1)	REPORTS1.PRG	VOLUME WITH "HA"
CLASS ID VOLUME TOTAL (.CV2)	REPORTS1.PRG	VOLUME WITH "TOTAL"
REFERENCE FILE LISTING (.TXT)	REPORTS1.PRG	REF_REPO
SILVICULTURE CARDS (.SIL)	YIELD.PRG	SILVCARD WITH "REPORT"
TABLE 4.17 - MAP, AGE & STD (.17?)	REPORTS3.PRG	TABLE417
FOREST UNIT YIELD CURVE (.FUY)	REPORTS3.PRG	FOR_UNIT
FORMANMU DEFINITION REPORT (.FMU)	REPORTS3.PRG	FMUREPORT

Table 6. Norman / Forman Export Procedure Calls.

MENU OPTION	SOURCE FILE	MAIN PROCEDURE
EXPORT TO NORMAN FILES	EXPORT.PRG	EXPORT WITH "NORMAN"
EXPORT TO FORMAN CP FILES	EXPORT.PRG	EXPORT WITH "FORMANCP"
EXPORT TO FORMAN 2.1 FILES	EXPORT.PRG	EXPORT WITH "FORMAN 2.1"

3.0 MAKEDISK.EXE

The PCNFCS program requires two high density (1.2 or 1.44 meg) diskettes to store the installation package. The distribution of this package is done from the PCNFCS\TEMP directory (on the distributor's computer only). This directory contains all PCNFCS files and two batch files for transferring the program to diskettes. The files contained in the PCNFCS\TEMP directory are as follows:

PCNFCS.EXE,
PROGRAM.ZIP,
DATA.ZIP,
INSTALL.EXE,
MAKEDISK.BAT,
DRIVE.BAT,
PKUNZIP.EXE,
DJOIN.EXE, and
DSPLIT.EXE.

The two batch files MAKEDISK.BAT and DRIVE.BAT (Appendix II) control the transferring of the PCNFCS program. To start the program transfer process, the distributor need only type "MAKEDISK" from the PCNFCS\TEMP directory. The program prompts the distributor to enter "DRIVE A" or "DRIVE B" and to insert the correct disks in the drive. The entire process takes a few minutes. Each disk should be properly identified by disk number before distribution.

4.0 PCNFCS CALCULATIONS

4.1 HEIGHT GROWTH

During the forest class aggregation process, heights are "grown" to the year provided by the user (AGGYEAR) if the aggyear is different than the year of update (YR_UPDATE) on file. The equation used is as follows:

$$NEWHT = P * e^{(A + (B * (AGGYEAR - YR\_ORIGIN)^C))}$$

where: A, B & C are height variables from HEIGHT.DBF

and: if (YR_UPDATE-YR_ORIGIN) < 20

$$P = 1$$

else if (YR_UPDATE-YR_ORIGIN) ≥ 20

$$P = \frac{ORIGINAL\ HEIGHT}{e^{(A + (B * (YR\_UPDATE - YR\_ORIGIN)^C))}}$$

The contents of the HEIGHT.DBF file which contains the variables A, B & C by working group and siteclass are listed in Appendix III.

4.2 VOLUME CALCULATIONS

The volume calculations in the PCNFCS program are identical for forest classes, present and future curve sets and Table 4.17. The three steps used in determining volume are as follows:

Step 1: determine species siteclass

- if it is a non-working group species, use the siteclass x-reference table to determine siteclass

Step 2: retrieve table volume

- use the pure species yield table to look up species, siteclass and age
- volumes must be extrapolated between 10 year age classes for forest classes and Table 4.17

Step 3: calculate volume

$$Volume = table\ volume * stocking * \frac{composition}{10}$$

APPENDIX 1

DATA FILE STRUCTURES

Structure for database: AGG_HEAD.DBF

Field	Field Name	Type	Width	Dec	Index
1	NAME	Character	6		N
2	MU	Character	3		N
3	YR	Numeric	4		N
4	AGE_CLASS	Numeric	2		N
5	WC	Character	1		N
6	SC	Character	1		N
7	STK	Character	1		N
8	FU	Character	1		N
** Total **			20		

Structure for database: AGG_ONE.DBF

Field	Field Name	Type	Width	Dec	Index
1	NAME	Character	6		N
2	STRATA1	Numeric	2		N
3	OWNTYP	Character	7		N
** Total **			16		

Structure for database: AGG_TWO.DBF

Field	Field Name	Type	Width	Dec	Index
1	NAME	Character	6		N
2	STRATA2	Numeric	4		N
3	WGSCSTK	Character	18		N
4	CARD_NO	Numeric	3		N
** Total **			32		

Structure for database: FORMANMU.DBF

Field	Field Name	Type	Width	Dec	Index
1	MU	Character	3		Y
2	FMU	Numeric	2		N
3	PART	Character	1		N
4	LABEL	Character	5		N
5	DEF_NAME	Character	24		N
6	DEF_TYPE	Character	1		N
7	DEF_WID	Numeric	2		N
8	DEF_MIN	Character	9		N
9	DEF_MAX	Character	9		N
** Total **			57		

APPENDIX I (continued)

Structure for database: LEDGER1.DBF

Field	Field Name	Type	Width	Dec	Index
1	LEDGERNAME	Character	8		N
2	MU	Character	3		N
3	WC	Character	1		N
4	FMU	Numeric	2		N
5	TWP	Character	7		N
6	MS	Character	9		N
7	YRUP	Numeric	3		N
8	OWN1	Character	1		N
9	OWN2	Character	1		N
10	OWN3	Character	1		N
11	ST_MIN	Numeric	2		N
12	ST_MAX	Numeric	2		N
13	WG1	Character	2		N
14	WG2	Character	2		N
15	WG3	Character	2		N
16	WG4	Character	2		N
17	SC1	Character	1		N
18	SC2	Character	1		N
19	SC3	Character	1		N
20	SC4	Character	1		N
21	SC5	Character	1		N
22	STK_MIN	Numeric	3	1	N
23	STK_MAX	Numeric	3	1	N
24	AGE_MIN	Numeric	3		N
25	AGE_MAX	Numeric	3		N
26	HT_MIN	Numeric	4	1	N
27	HT_MAX	Numeric	4	1	N
28	STD_MIN	Numeric	4		N
29	STD_MAX	Numeric	4		N
30	ACT_MIN	Character	2		N
31	ACT_MAX	Character	2		N
** Total **			86		

Structure for database: VOLSETUP.DBF

Field	Field Name	Type	Width	Dec	Index
1	NAME	Character	6		N
2	PURE_FILE	Character	8		N
3	PROD_FILE	Character	8		N
4	SCXR_FILE	Character	8		N
5	PRIMARY	Character	20		N
6	SECONDARY	Character	20		N
7	PRODUCT	Character	20		N
** Total **			91		

APPENDIX I (continued)

Structure for database: WILDLIFE.DBF

Field	Field Name	Type	Width	Dec	Index
1	WILDNAME	Character	8		N
2	MU	Character	3		N
3	WC	Character	1		N
4	FMU	Numeric	2		N
5	TWP	Character	7		N
6	MS	Character	9		N
7	OWN1	Character	1		N
8	OWN2	Character	1		N
9	OWN3	Character	1		N
10	ST_MIN	Numeric	2		N
11	ST_MAX	Numeric	2		N
12	SPEC1	Character	2		N
13	SPEC2	Character	2		N
14	SPEC3	Character	2		N
15	SPEC4	Character	2		N
16	SP1_MIN	Numeric	2		N
17	SP1_MAX	Numeric	2		N
18	SP2_MIN	Numeric	2		N
19	SP2_MAX	Numeric	2		N
20	SP3_MIN	Numeric	2		N
21	SP3_MAX	Numeric	2		N
22	SP4_MIN	Numeric	2		N
23	SP4_MAX	Numeric	2		N
24	AND	Character	1		N
25	OR	Character	1		N
26	SUM	Character	1		N
27	SC1	Character	1		N
28	SC2	Character	1		N
29	SC3	Character	1		N
30	SC4	Character	1		N
31	SC5	Character	1		N
32	AREA_MIN	Numeric	5		N
33	AREA_MAX	Numeric	5		N
34	ACT_MIN	Character	2		N
35	ACT_MAX	Character	2		N
36	STK_MIN	Numeric	3	1	N
37	STK_MAX	Numeric	3	1	N
38	AGE_MIN	Numeric	3		N
39	AGE_MAX	Numeric	3		N
40	HT_MIN	Numeric	4	1	N
41	HT_MAX	Numeric	4	1	N
42	YRUP	Numeric	3		N
** Total **			107		

APPENDIX I (continued)

Structure for database: AGGTEMP.DBF

Field	Field Name	Type	Width	Dec	Index
1	NUM	Character	3		N
2	WG1	Character	2		N
3	WG2	Character	2		N
4	WG3	Character	2		N
5	WG4	Character	2		N
6	SC1	Character	1		N
7	SC2	Character	1		N
8	SC3	Character	1		N
9	SC4	Character	1		N
10	STK1	Numeric	3	1	N
11	STK2	Numeric	3	1	N
** Total **			22		

Structure for database: CLASS.DBF

Field	Field Name	Type	Width	Dec	Index
1	CLASS_ID	Numeric	4		N
2	NAME	Character	6		N
3	STRATA1	Numeric	2		N
4	STRATA2	Numeric	4		N
5	FORMANMU	Numeric	2		N
6	STANDS	Numeric	6		N
7	AREA	Numeric	10		N
8	AGEFORMAN	Numeric	3		N
9	HEIGHT	Numeric	4	1	N
10	STOCKING	Numeric	3	1	N
11	SC_AVG	Character	1		N
12	SC_ALL	Character	5		N
13	STAND_TYPE	Numeric	2		N
14	SB	Numeric	5	2	N
15	SW	Numeric	5	2	N
16	PJ	Numeric	5	2	N
17	BF	Numeric	5	2	N
18	CE	Numeric	5	2	N
19	PW	Numeric	5	2	N
20	PR	Numeric	5	2	N
21	PO	Numeric	5	2	N
22	BW	Numeric	5	2	N
23	OH	Numeric	5	2	N
24	OC	Numeric	5	2	N
25	SB_VOL	Numeric	7	2	N
26	SW_VOL	Numeric	7	2	N
27	PJ_VOL	Numeric	7	2	N
28	BF_VOL	Numeric	7	2	N
29	CE_VOL	Numeric	7	2	N
30	PW_VOL	Numeric	7	2	N
31	PR_VOL	Numeric	7	2	N
32	PO_VOL	Numeric	7	2	N
33	BW_VOL	Numeric	7	2	N

APPENDIX I (continued)

34	OH_VOL	Numeric	7	2	N
35	OC_VOL	Numeric	7	2	N
36	CROWN	Numeric	3		N
** Total **			188		

Structure for database: FUTURE.DBF

Field	Field Name	Type	Width	Dec	Index
1	FC_ID	Numeric	4		N
2	FC_TYPE	Character	9		N
3	PRIORITY	Numeric	4		N
4	TIME_REF	Numeric	3		N
5	SPP_COMP	Character	40		N
6	STK	Numeric	3	1	N
7	SC	Character	1		N
8	PLT_CRV	Logical	1		N
9	PRI_10	Numeric	7	2	N
10	PRI_20	Numeric	7	2	N
11	PRI_30	Numeric	7	2	N
12	PRI_40	Numeric	7	2	N
13	PRI_50	Numeric	7	2	N
14	PRI_60	Numeric	7	2	N
15	PRI_70	Numeric	7	2	N
16	PRI_80	Numeric	7	2	N
17	PRI_90	Numeric	7	2	N
18	PRI_100	Numeric	7	2	N
19	PRI_110	Numeric	7	2	N
20	PRI_120	Numeric	7	2	N
21	PRI_130	Numeric	7	2	N
22	PRI_140	Numeric	7	2	N
23	PRI_150	Numeric	7	2	N
24	PRI_160	Numeric	7	2	N
25	PRI_170	Numeric	7	2	N
26	PRI_180	Numeric	7	2	N
27	PRI_190	Numeric	7	2	N
28	PRI_200	Numeric	7	2	N
29	SEC_10	Numeric	7	2	N
30	SEC_20	Numeric	7	2	N
31	SEC_30	Numeric	7	2	N
32	SEC_40	Numeric	7	2	N
33	SEC_50	Numeric	7	2	N
34	SEC_60	Numeric	7	2	N
35	SEC_70	Numeric	7	2	N
36	SEC_80	Numeric	7	2	N
37	SEC_90	Numeric	7	2	N
38	SEC_100	Numeric	7	2	N
39	SEC_110	Numeric	7	2	N
40	SEC_120	Numeric	7	2	N
41	SEC_130	Numeric	7	2	N
42	SEC_140	Numeric	7	2	N
43	SEC_150	Numeric	7	2	N

APPENDIX I (continued)

44	SEC_160	Numeric	7	2	N
45	SEC_170	Numeric	7	2	N
46	SEC_180	Numeric	7	2	N
47	SEC_190	Numeric	7	2	N
48	SEC_200	Numeric	7	2	N
49	PRD_10	Numeric	7	2	N
50	PRD_20	Numeric	7	2	N
51	PRD_30	Numeric	7	2	N
52	PRD_40	Numeric	7	2	N
53	PRD_50	Numeric	7	2	N
54	PRD_60	Numeric	7	2	N
55	PRD_70	Numeric	7	2	N
56	PRD_80	Numeric	7	2	N
57	PRD_90	Numeric	7	2	N
58	PRD_100	Numeric	7	2	N
59	PRD_110	Numeric	7	2	N
60	PRD_120	Numeric	7	2	N
61	PRD_130	Numeric	7	2	N
62	PRD_140	Numeric	7	2	N
63	PRD_150	Numeric	7	2	N
64	PRD_160	Numeric	7	2	N
65	PRD_170	Numeric	7	2	N
66	PRD_180	Numeric	7	2	N
67	PRD_190	Numeric	7	2	N
68	PRD_200	Numeric	7	2	N
69	TOT_10	Numeric	7	2	N
70	TOT_20	Numeric	7	2	N
71	TOT_30	Numeric	7	2	N
72	TOT_40	Numeric	7	2	N
73	TOT_50	Numeric	7	2	N
74	TOT_60	Numeric	7	2	N
75	TOT_70	Numeric	7	2	N
76	TOT_80	Numeric	7	2	N
77	TOT_90	Numeric	7	2	N
78	TOT_100	Numeric	7	2	N
79	TOT_110	Numeric	7	2	N
80	TOT_120	Numeric	7	2	N
81	TOT_130	Numeric	7	2	N
82	TOT_140	Numeric	7	2	N
83	TOT_150	Numeric	7	2	N
84	TOT_160	Numeric	7	2	N
85	TOT_170	Numeric	7	2	N
86	TOT_180	Numeric	7	2	N
87	TOT_190	Numeric	7	2	N
88	TOT_200	Numeric	7	2	N
89	OP_MINAGE	Numeric	3		N
90	OP_MAXAGE	Numeric	3		N
91	OPERABLEF	Numeric	4		N
92	OPERABLEL	Numeric	4		N
93	YFACTOR	Numeric	3		N
94	SPACEATRIB	Numeric	3		N

APPENDIX I (continued)

95	CARD_NO	Numeric	3		N
** Total **			649		

Structure for database: PRESENT.DBF

Field	Field Name	Type	Width	Dec	Index
1	CLASS_ID	Numeric	4		N
2	PRI_10	Numeric	7	2	N
3	PRI_20	Numeric	7	2	N
4	PRI_30	Numeric	7	2	N
5	PRI_40	Numeric	7	2	N
6	PRI_50	Numeric	7	2	N
7	PRI_60	Numeric	7	2	N
8	PRI_70	Numeric	7	2	N
9	PRI_80	Numeric	7	2	N
10	PRI_90	Numeric	7	2	N
11	PRI_100	Numeric	7	2	N
12	PRI_110	Numeric	7	2	N
13	PRI_120	Numeric	7	2	N
14	PRI_130	Numeric	7	2	N
15	PRI_140	Numeric	7	2	N
16	PRI_150	Numeric	7	2	N
17	PRI_160	Numeric	7	2	N
18	PRI_170	Numeric	7	2	N
19	PRI_180	Numeric	7	2	N
20	PRI_190	Numeric	7	2	N
21	PRI_200	Numeric	7	2	N
22	SEC_10	Numeric	7	2	N
23	SEC_20	Numeric	7	2	N
24	SEC_30	Numeric	7	2	N
25	SEC_40	Numeric	7	2	N
26	SEC_50	Numeric	7	2	N
27	SEC_60	Numeric	7	2	N
28	SEC_70	Numeric	7	2	N
29	SEC_80	Numeric	7	2	N
30	SEC_90	Numeric	7	2	N
31	SEC_100	Numeric	7	2	N
32	SEC_110	Numeric	7	2	N
33	SEC_120	Numeric	7	2	N
34	SEC_130	Numeric	7	2	N
35	SEC_140	Numeric	7	2	N
36	SEC_150	Numeric	7	2	N
37	SEC_160	Numeric	7	2	N
38	SEC_170	Numeric	7	2	N
39	SEC_180	Numeric	7	2	N
40	SEC_190	Numeric	7	2	N
41	SEC_200	Numeric	7	2	N
42	PRD_10	Numeric	7	2	N
43	PRD_20	Numeric	7	2	N
44	PRD_30	Numeric	7	2	N
45	PRD_40	Numeric	7	2	N

APPENDIX I (continued)

46	PRD_50	Numeric	7	2	N
47	PRD_60	Numeric	7	2	N
48	PRD_70	Numeric	7	2	N
49	PRD_80	Numeric	7	2	N
50	PRD_90	Numeric	7	2	N
51	PRD_100	Numeric	7	2	N
52	PRD_110	Numeric	7	2	N
53	PRD_120	Numeric	7	2	N
54	PRD_130	Numeric	7	2	N
55	PRD_140	Numeric	7	2	N
56	PRD_150	Numeric	7	2	N
57	PRD_160	Numeric	7	2	N
58	PRD_170	Numeric	7	2	N
59	PRD_180	Numeric	7	2	N
60	PRD_190	Numeric	7	2	N
61	PRD_200	Numeric	7	2	N
62	TOT_10	Numeric	7	2	N
63	TOT_20	Numeric	7	2	N
64	TOT_30	Numeric	7	2	N
65	TOT_40	Numeric	7	2	N
66	TOT_50	Numeric	7	2	N
67	TOT_60	Numeric	7	2	N
68	TOT_70	Numeric	7	2	N
69	TOT_80	Numeric	7	2	N
70	TOT_90	Numeric	7	2	N
71	TOT_100	Numeric	7	2	N
72	TOT_110	Numeric	7	2	N
73	TOT_120	Numeric	7	2	N
74	TOT_130	Numeric	7	2	N
75	TOT_140	Numeric	7	2	N
76	TOT_150	Numeric	7	2	N
77	TOT_160	Numeric	7	2	N
78	TOT_170	Numeric	7	2	N
79	TOT_180	Numeric	7	2	N
80	TOT_190	Numeric	7	2	N
81	TOT_200	Numeric	7	2	N
82	OP_MINAGE	Numeric	3		N
83	OP_MAXAGE	Numeric	3		N
84	OPERABLEF	Numeric	4		N
85	OPERABLEL	Numeric	4		N
86	YFACTOR	Numeric	3		N
87	SPACEATRIB	Numeric	3		N
** Total **			585		

APPENDIX I (continued)

Structure for database: SCXR.DBF

Field	Field Name	Type	Width	Dec	Index
1	WRK_GRP	Character	2		N
2	SITECLASS	Character	1		N
3	SB	Character	1		N
4	SW	Character	1		N
5	PJ	Character	1		N
6	BF	Character	1		N
7	CE	Character	1		N
8	PW	Character	1		N
9	PR	Character	1		N
10	PO	Character	1		N
11	BW	Character	1		N
12	OH	Character	1		N
13	OC	Character	1		N
** Total **			15		

Structure for database: STANF.DBF

Field	Field Name	Type	Width	Dec	Index
1	MU	Character	3		N
2	WC	Character	1		N
3	WC_STATUS	Character	1		N
4	MS	Character	9		N
5	TWP	Character	7		N
6	DISKETTE	Character	6		N
7	TRANS_DATE	Character	6		N
8	STAND	Numeric	4		N
9	STAND_SUFF	Numeric	1		N
10	WG	Character	2		N
11	WG_XCEP_IN	Numeric	1		N
12	STAND_TYPE	Numeric	2		N
13	STAND_AREA	Numeric	4		N
14	OWNERSHIP	Character	1		N
15	LOCATION	Character	2		N
16	YR_ORIGIN	Numeric	3		N
17	YR_UPDATE	Numeric	3		N
18	SPP_VERS	Character	1		N
19	HT	Numeric	4	1	N
20	STOCKING	Numeric	4	1	N
21	SITE_CLASS	Character	1		N
22	SPP_COMP	Character	40		N
23	ACT_CODE	Character	2		N
24	ACT_DATE	Character	6		N
25	FORMANMU	Numeric	2		N
** Total **			117		

APPENDIX I (continued)

Structure for database: PROD.DBF

Field	Field Name	Type	Width	Dec	Index
1	SPECIES	Character	3		N
2	SITECLASS	Character	1		N
3	PROD_10	Numeric	3		N
4	PROD_20	Numeric	3		N
5	PROD_30	Numeric	3		N
6	PROD_40	Numeric	3		N
7	PROD_50	Numeric	3		N
8	PROD_60	Numeric	3		N
9	PROD_70	Numeric	3		N
10	PROD_80	Numeric	3		N
11	PROD_90	Numeric	3		N
12	PROD_100	Numeric	3		N
13	PROD_110	Numeric	3		N
14	PROD_120	Numeric	3		N
15	PROD_130	Numeric	3		N
16	PROD_140	Numeric	3		N
17	PROD_150	Numeric	3		N
18	PROD_160	Numeric	3		N
19	PROD_170	Numeric	3		N
20	PROD_180	Numeric	3		N
21	PROD_190	Numeric	3		N
22	PROD_200	Numeric	3		N
** Total **			65		

Structure for database: PURE.DBF

Field	Field Name	Type	Width	Dec	Index
1	SPECIES	Character	3		N
2	SITECLASS	Character	1		N
3	VOL_10	Numeric	3		N
4	VOL_20	Numeric	3		N
5	VOL_30	Numeric	3		N
6	VOL_40	Numeric	3		N
7	VOL_50	Numeric	3		N
8	VOL_60	Numeric	3		N
9	VOL_70	Numeric	3		N
10	VOL_80	Numeric	3		N
11	VOL_90	Numeric	3		N
12	VOL_100	Numeric	3		N
13	VOL_110	Numeric	3		N
14	VOL_120	Numeric	3		N
15	VOL_130	Numeric	3		N
16	VOL_140	Numeric	3		N
17	VOL_150	Numeric	3		N
18	VOL_160	Numeric	3		N
19	VOL_170	Numeric	3		N
20	VOL_180	Numeric	3		N
21	VOL_190	Numeric	3		N
22	VOL_200	Numeric	3		N
** Total **			65		

APPENDIX I (continued)

Structure for database: STANFERR.DBF

Field	Field Name	Type	Width	Dec	Index
1	MS	Character	9		N
2	STAND	Numeric	4		N
3	STAND_SUFF	Numeric	1		N
4	ERROR_ID	Numeric	2		N
5	ERROR	Character	30		N
** Total **			47		

Structure for database: WGCODE.DBF

Field	Field Name	Type	Width	Dec	Index
1	WG	Character	2		Y
2	CODE	Character	2		Y
** Total **			5		

APPENDIX II

MAKEDISK BATCH FILES

MAKEDISK.BAT

```
@ECHO OFF
PROMPT $G
CLS
ECHO.
ECHO.
ECHO   Enter the word DRIVE followed by the letter of the drive on which to
ECHO   transfer the PCNFCS program  eg.  DRIVE A, then press ENTER.
ECHO.
```

DRIVE.BAT

```
@ECHO OFF
IF "%1"=="A" GOTO DRIVEA
IF "%1"=="a" GOTO DRIVEA
IF "%1"=="B" GOTO DRIVEB
IF "%1"=="b" GOTO DRIVEB
REM NON-VALID DRIVE ENTERED
GOTO END

:DRIVEA
ECHO.
ECHO.
ECHO.
ECHO.
ECHO                          PUT DISK 1 IN DRIVE A
PAUSE
COPY ..\TEMP\*.ZIP A:
COPY C:\UTILITY\PKUNZIP.EXE A:
COPY C:\BDCOMP\DJOIN.EXE A:
COPY INSTALL.EXE A:
DSPLIT -S 1100,1180 -O A: PCNFCS.EXE
GOTO END

:DRIVEB
ECHO.
ECHO.
ECHO.
```

APPENDIX II (continued)

```
ECHO.
ECHO                                    PUT DISK 1 IN DRIVE B
PAUSE
COPY ..\TEMP\*.ZIP B:
COPY C:\UTILITY\PKUNZIP.EXE B:
COPY C:\BDCOMP\DJOIN.EXE B:
COPY INSTALL.EXE B:
DSPLIT -S 1100, 1180 -O B: PCNFCS.EXE
GOTO END

:END
PROMPT $P$G
CLS
```

APPENDIX III

HEIGHT.DBF

WG	SC	A	B	C
01	0	4.050409	-48.36061	-1.00
01	1	3.851300	-50.82600	-1.00
01	2	3.601411	-52.25860	-1.00
01	3	4.254200	-16.01820	-0.50
01	4	4.237100	-20.42529	-0.50
04	0	3.645984	-24.33381	-1.00
04	1	3.471200	-26.54920	-1.00
04	2	3.299700	-27.83280	-1.00
04	3	3.091361	-30.79850	-1.00
04	4	2.859568	-39.40099	-1.00
07	0	3.747122	-11.98245	-0.75
07	1	3.405200	-25.10500	-1.00
07	2	3.269000	-27.41300	-1.00
07	3	3.114600	-30.74800	-1.00
07	4	2.881159	-38.87831	-1.00
10	0	3.575054	-16.94687	-0.75
10	1	3.465900	-20.05000	-0.75
10	2	3.357900	-23.78000	-0.75
10	3	3.410900	-32.71300	-0.75
10	4	3.183022	-37.27952	-0.75
11	0	3.575054	-16.94687	-0.75
11	1	3.465900	-20.05000	-0.75
11	2	3.357900	-23.78000	-0.75
11	3	3.410900	-32.71300	-0.75
11	4	3.183022	-37.27952	-0.75
12	0	3.575054	-16.94687	-0.75
12	1	3.465900	-20.05000	-0.75
12	2	3.357900	-23.78000	-0.75
12	3	3.410900	-32.71300	-0.75
12	4	3.183022	-37.27952	-0.75
13	0	3.575054	-16.94687	-0.75
13	1	3.465900	-20.05000	-0.75
13	2	3.357900	-23.78000	-0.75
13	3	3.410900	-32.71300	-0.75
13	4	3.183022	-37.27952	-0.75
17	0	3.575054	-16.94687	-0.75
17	1	3.465900	-20.05000	-0.75
17	2	3.357900	-23.78000	-0.75
17	3	3.410900	-32.71300	-0.75
17	4	3.183022	-37.27952	-0.75
18	0	3.575054	-16.94687	-0.75
18	1	3.465900	-20.05000	-0.75
18	2	3.357900	-23.78000	-0.75
18	3	3.410900	-32.71300	-0.75
18	4	3.183022	-37.27952	-0.75
19	0	3.575054	-16.94687	-0.75
19	1	3.465900	-20.05000	-0.75

APPENDIX III (continued)

WG	SC	A	B	C
19	2	3.357900	-23.78000	-0.75
19	3	3.410900	-32.71300	-0.75
19	4	3.183022	-37.27952	-0.75
29	0	3.555946	-30.08946	-1.00
29	1	3.403600	-33.06480	-1.00
29	2	3.278700	-35.45967	-1.00
29	3	3.163600	-39.57022	-1.00
29	4	3.280039	-25.01018	-0.75
33	0	3.823071	-22.44245	-1.00
33	1	3.654400	-24.46300	-1.00
33	2	3.729800	-14.22300	-0.75
33	3	3.620900	-16.13600	-0.75
33	4	3.464546	-20.58747	-0.75
34	0	3.823071	-22.44245	-1.00
34	1	3.654400	-24.46300	-1.00
34	2	3.729800	-14.22300	-0.75
34	3	3.620900	-16.13600	-0.75
34	4	3.464546	-20.58747	-0.75
36	0	3.647108	-29.97340	-1.00
36	1	3.470410	-29.87000	-1.00
36	2	3.392001	-31.51600	-1.00
36	3	3.169538	-32.53107	-1.00
36	4	2.913733	-38.07394	-1.00