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# User's Guide for the Northeast Stand Exam Program (NEST Version 2.1)

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## **Abstract**

Explains the Northeast Stand Exam (NEST Version 2.1) program. The NEST program was designed for use on the Polycorder 600 Series electronic portable data recorder to record data collected from the standard permanent plot as described by the Stand Culture and Stand Establishment Working Groups of the Northeastern Forest Experiment Station.

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# User's Guide for the Northeast Stand Exam Program (NEST Version 2.1)

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## Introduction

This guide is a training aid for the Northeast Stand Exam (NEST Version 2.1)<sup>1</sup> program. NEST was developed for use on the Omnidata 600 Series Polycorder<sup>2</sup> data recorder to record data collected from the standard permanent plot as described by the Stand Culture and Stand Establishment Working Groups of the Northeastern Forest Experiment Station. To use the guide, you must be familiar with the permanent plot data collection procedures as described in "Standard Plot Layout and Data Collection Procedures for the Stand Establishment and Stand Culture Working Groups."<sup>3</sup>

The Omnidata 600 Series Polycorder belongs to a class of portable, lightweight, weather-resistant electronic data recorders. Recording data electronically in the field permits efficient and error-free transfer of that data to a computer. Additionally, data recorders used in conjunction with data collection programs such as NEST ensure the compatibility of data collected by several groups. The data formats described in this document will provide the basis for building a data base that can be used throughout the Northeastern Forest Experiment Station.

NEST was developed by Omnidata International, Inc. for the U.S. Department of Agriculture, Forest Service, and has been modified by the authors who are members of the Stand Culture and Stand Establishment Working Group of the Northeastern Forest Experiment Station.

To transfer data and programs between the Polycorder and a personal computer, (PC) communications software is needed. Several products are available for this purpose. The data and program transfer examples described in this guide are limited to the use of POLYTOOLS. You should be familiar with PC to Polycorder communication links. For detailed instructions on Polycorder communications, see

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<sup>1</sup>The computer program in this publication is available on request with the understanding that the U.S. Department of Agriculture cannot assure its accuracy, completeness, reliability, or suitability for any other purposes than that reported. The recipient may not assert any proprietary rights thereto nor represent it to anyone as other than a Government-produced computer program. For cost information write: Dave Marquis, Forestry Sciences Laboratory, PO Box 928, Warren, PA 16329.

<sup>2</sup>Omnidata, Polycorder, and Polytools are registered trademarks of Omnidata International, Inc., Logan, UT. The use of trade, firm, or corporation names in this publication is for the information and convenience of the reader. Such use does not constitute an official endorsement or approval by the U.S. Department of Agriculture or the Forest Service of any product or service to the exclusion of others that may be suitable.

<sup>3</sup>Marquis, David A. Standard plot layout and data collection procedures for the Stand Establishment and Stand Culture Working Groups. Gen. Tech. Rep. Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. In preparation.

Chapter 7 in the "Polycorder Operator's Manual."

Some notations used in this guide that refer to using the keyboard on the Omnidata 600 Series Polycorder follow. In general, a key name within brackets identifies a key that should be pressed on the Polycorder. For example:

- <SHF> = press the shift key
- <ENTER> = press the enter key
- <RIGHT> = press the right arrow key

To start using the NEST program:

- Study the permanent plot data collection procedures.
- Read this guide focusing on Sections III and IV. Section III describes how to use the NEST program, including an explanation of the function keys. Section IV is a detailed reference guide for the menus used in NEST.
- Install NEST on the Polycorder, using Section II as a guideline.
- Go through sample data collection session in Appendix A.
- Review the NEST menu scheme in Table 1.

## II. Installation

### Equipment Needed

- The Omnidata 600 Series Polycorder and the Polycorder Operator's Manual.
- A PC compatible microcomputer.
- Communications software for the PC.
- A null-modem cable or an RS-232 cable with a null-modem adaptor.
- The latest version of the NEST program file (NEST.PGM).

### Loading NEST

To provide adequate room for the NEST program and associated data files, your Polycorder should be equipped with at least 256K of memory. The NEST program will use approximately 100K of memory and will require approximately 45 minutes to transfer from the PC to the Polycorder. Make sure your Polycorder has the available memory space before loading the program. The total memory of your Polycorder is displayed on the opening screen when you turn it on. If you have large amounts of data or programs already loaded into the Polycorder memory, you may have to clear some of it to provide space for NEST and new data files. If it is necessary to erase files from the Polycorder, see the Polycorder Operator's Manual for detailed instructions.

To install NEST on your Polycorder, turn on your PC and Polycorder and:

**Table 1. NEST V2.1 menu outline with a brief description of each function.**

0 — Main Plot	0 — new ID	Enter ID for new plot, variables recorded are determined by ID sampling intensity <sup>a</sup>
	1 — Sel Old ID	Select an existing plot
	2 — Edit Old ID	Edit old identification information
	3 — Ent/ED Soil	Enter/edit soil information
	4 — Ent/ED OI	Enter/edit overstory information
	5 — Exit	Return to Main Menu
1 — Sub Plot	0 — Ent/ED Plot	Enter/edit understory information
	1 — Sel Old Plot	Select an existing plot
	2 — Ent/ED OP	Enter/edit overstory prism information
	3 — Ent/ED WR	Enter/edit woody regeneration information
	5 — Exit	Return to Main Menu
2 — Prog Para	ID — INT (Identification intensity)	Sampling Intensity: All Variables, All but Soil, ID/Plot/Stand, Minimum, Soils Only
	UN — INT (Understory intensity)	Sampling Intensity: All Variables, Not Overstory Prism (OP), None, All + Compare Old, No OP + Compare Old
	OI — INT (Overstory intensity)	Sampling Intensity: All Variables, R + RS Only, <sup>b</sup> None, All + Compare, R + RS + Old
3 — Upload		Transfer data from Polycorder to PC
4 — Download		Transfer data from PC to Polycorder
5 — Erase Data		Erases all user created data files
6 — Memory Avail		Displays available memory
7 — Set Clock		Sets battery maintained clock
8 — Battery Check		Checks battery charge <sup>c</sup>
9 — Fctn Key Help		Describes function keys
P — Poly Op Sys		Exits to operating system

<sup>a</sup>See Appendix B for sampling intensity classification of all variables (identification, understory, and overstory).

<sup>b</sup>Abbreviations used in description include the following:

R = Required variable

RS = Required sample

<sup>c</sup>Voltmeter required.

1. Physically link PC to Polycorder. Use a null-modem RS-232 cable. Your PC may require either a 9-pin or a 25-pin serial connector of either gender. The Polycorder requires a 25-pin female connector.
2. Set the communication parameters (i.e. baud rate, parity, data bits, etc.) to the same values on both the PC and on the Polycorder. We suggest values of:
  - baud rate—9600
  - data bits—8
  - parity—None
  - stop bits—1
  - duplex—half

To view and edit these parameters on the PC, view the directory containing the Polytools programs, and start the POLYTOOLS software by typing "PT" <ENTER>. Press <ENTER> again to view the POLYTOOLS menu. Select "Transfer Files" and press <ENTER> which will bring up a submenu. Select "Set Up Parameters" and press <ENTER>. You can now edit the communication parameters that POLYTOOLS will use to communicate with the Polycorder.

You should also check the communication parameters on the Polycorder. First, from the MODE prompt, press <5> and <2> to view the current parameters. The first parameter to appear is the baud rate. A baud rate of 9600 is recommended; it is the fastest rate available for data transfer. If needed, you may change the baud rate by entering a new value and pressing <ENTER>. To view and edit the other parameters, use the <RIGHT> key on the Polycorder keyboard. Press <ESC> to return to the MODE prompt when you are finished. You are now ready to begin downloading the NEST program to the Polycorder.

3. From the **MODE** prompt of the Polycorder Operating System, press <3> and <2>. This tells the Polycorder to prepare for input from the serial port.
4. On the PC, select "Transfer Files" and press <ENTER>, then select "Download to Poly" and press <ENTER>. With a diskette containing the NEST program in drive A, type in "A:NEST.PGM" and press <ENTER><ENTER>. The PC should now be downloading the NEST program to the Polycorder. On the PC screen, POLYTOOLS should display a window showing the NEST program code as it is transferred to the Polycorder.

When the downloading process is complete, the PC will beep, signaling the successful completion of the transfer. The Polycorder will automatically compile the program. If the compilation is successful, you will see the NEST opening banner on the Polycorder screen for a few seconds and then the Main Menu will appear. You can now execute the NEST program.

## Erasing NEST

The NEST program can be erased from your Polycorder using a System Reset Adaptor. To erase the NEST program, plug the adaptor into the serial port located at the top of the Polycorder and turn on the Polycorder. All user programs, format files, and data files will be erased by this action. This action will also reset the baud rate and other communication parameters to the original factory settings. The System Reset Adaptor will be distributed along with the NEST program.

## III. Using NEST

### Getting In and Out of NEST

After the NEST program is properly loaded onto the Polycorder, getting into the NEST program is simple. Just turn on the Polycorder. The Polycorder will briefly display series, memory, and operating system information, then display the banner for the NEST program. The third and final screen will be the Main Menu of the NEST program (Fig. 1). From the Main Menu, the user may select the desired options for that session.

To exit the NEST program and enter the Polycorder operating system, go to the Main Menu of the NEST program and select "Poly Op Sys" and press <ENTER>. A **MODE** prompt will be displayed on the Polycorder screen, which indicates the Polycorder operating system is active. To return to the NEST program, just press the <ESC> key while the **MODE** prompt is displayed on the screen.

### The Display

Using the NEST program is similar to using other menu driven software packages. The user selects the options of the program using a series of menus. Once the options have been specified, the data are input in a typical spreadsheet format. Table 1 provides an overview and a brief description of each function within the NEST menu system.

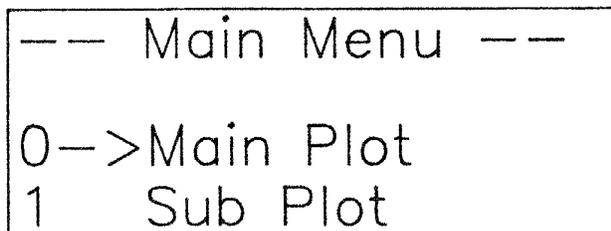


Figure 1.—The screen image of the Main Menu of the NEST program.

If a new 6' plot is not desired, the user should delete the new line. Keying in <SHF> <SHF> <ENTER> will perform a missing data check for the current subplot and will exit to the menu if successful.

Exit . . . . . Return to the main menu.

## V. Data File Organization

### The Data File

Some manipulation of the data will be required when transferring the data between the Polycorder and the database. To simplify this process, programs are being developed, but are not yet available. The information provided below will aid the user in transferring the data between the Polycorder and the PC.

The data recorded in the Polycorder using the NEST program is organized by data type. The files are created by the NEST program as needed. The structure is as follows:

- ID.D . . . . . Header data file (ID, Stand, Site, etc.)—All other file names are based on the line number that the file pointer for this file is on. For example, if the file pointer is on line 3, then the soil profile file name would be "SP3.D". This file contains one record for each stand.
- SPid#.D . . . Soil Profile file—id# is the line number the ID.D filepointer is on. Contains horizon level soil information.
- OIid#.D . . . Overstory Individual tree file—id# is the line number that the ID.D file pointer is on. Contains individual tree data.
- UNid#.D . . . Understory file—id# is the line number that the ID.D file pointer is on. Contains understory information. The portion of the WR and OP files accessed is dependent on the file pointer for this file. Limits are set based on sector and regeneration plot numbers of the record pointed to by the UN file pointer.
- OPid#.D . . . Overstory Prism file—id# is the line number that the ID.D file pointer is on. Contains overstory prism tally information for the WR plots.
- WRid#.D . . . Woody Regeneration file—id# is the line number that the ID.D file pointer is on. Contains the woody regeneration information for the WR plots.

### Uploading (from Polycorder to PC)

The Upload routine of the NEST program transfers all of the data collected from within the NEST program to a PC via a serial communications port. After the data are transferred to the PC, it will be in the following form on the PC:

The first record of the ID file.

The entire SP (Soil Profile) file for the first ID file record.

The entire OI (Overstory Individual tree) file for the first ID file record.

The entire UN (Understory) file for the first ID file record.

The entire OP (Overstory Prism) file for the first ID file record.

The entire WR (Woody Regeneration) file for the first ID file record.

The pattern is then repeated for all of the files associated with the second record of the ID file, and continues until all plots are listed.

The PC file resulting from the transfer of the data will have one line per record, no blank lines within the portion of the file pertaining to a single stand, one space between fields (there may be leading or trailing spaces within fields), and one blank line following the completion of the data for a particular plot. Each line will have the data type as the first character: 1 for ID, 2 for SP, 3 for OI, 4 for UN, 5 for OP, and 6 for WR.

Specific steps to do an upload using POLYTOOLS to capture the transfer on a PC are as follows:

1. Physically link PC to Polycorder using null-modem RS-232 cable.
2. From Main Menu of the NEST program, select "Upload" and press <ENTER>.
3. Activate POLYTOOLS software on the PC, "PT" is the executable filename. Select "Transfer Files" and press <ENTER>, select "Upload From Poly" and press <ENTER>, select "Standard Upload" and press <ENTER>. Type in the PC filename where the data will be transferred to (filename is independent of any stand names used on the Polycorder) and press <ENTER> <ENTER>. This PC is now ready to receive and capture data transmission.
4. Press <ENTER> on the Polycorder to activate the transmission. The Polycorder and the PC will indicate when the transmission is complete.
5. To return to the Main Menu on the Polycorder, press any key and likewise follow the prompts to exit POLYTOOLS on the PC.

## Downloading (from PC to Polycorder)

Creating files to download from the PC requires some alteration of the files that were uploaded from the Polycorder. The first character, indicating the file type should be removed. The remaining field definitions are the same (for field definitions see Appendix B). There should still be one line per record, but each field should be followed by a comma. If a field is left empty (for example „), then the existing data in the field will be left intact if downloading to an already existing file. You must have commas for every field preceding the one(s) you want to overwrite. But commas are not required beyond the last field you have data for even if the file contains more fields.

To download files to the Polycorder, the user should create a separate file for ID.D. This file will have the same number of lines as number of plots being downloaded.

The user should also create OI and WR files for each record in ID.D file. Download order is important as the download routine goes through the ID.D file record by record in order to create the correct filenames on the Polycorder. Each downloaded file must end with a “#” sign in the first column of the last record.

The following lists the specific steps to download using POLYTOOLS to transmit to the Polycorder:

1. Physically link PC to Polycorder using a null-modem RS-232 cable.
2. From Main Menu of the NEST program select “Download” and press <ENTER>. Key in the filename and press <ENTER>.
3. Activate POLYTOOLS software on the PC, “PT” is the executable filename. Select “Transfer Files” and press <ENTER>, then select “Download to Poly” and press <ENTER>. Type in the PC filename of the ID file to be downloaded and press <ENTER> <ENTER>. The PC is now ready to transmit to the Polycorder.
4. Press <ENTER> on the Polycorder to activate the transmission. The Polycorder and the PC will indicate when the transmission is complete.
5. When the ID file download is complete, the NEST program will prompt the user to download an OI file and will provide a default name for the file. The user can accept the filename by pressing <ENTER>, or key in a new name and then press <ENTER>.
6. Prepare PC to download OI file by pressing <ESC> and then select “Download to Poly”. Type in the OI filename on the PC and hit <ENTER> <ENTER>. To activate the transmission, press <ENTER> on the Polycorder.
7. When the download is completed, the NEST program will prompt the user to download a WR file. Repeat steps 5

and 6 to download the WR file and any other OI and WR files pertaining to the plots included in the ID file.

8. To return to the Main Menu on the Polycorder, press any key. To exit POLYTOOLS, press <ESC> <ESC> <Q>.

## Literature Cited

Omnidata International, Inc. 1986. Polycorder Electronic Notebook. Document 2700. Logan, UT: Omnidata International.

## Appendix A—Sample Data Collection Session

The following illustrates a simple data collection scheme using the Polycorder with the NEST program.

Using the NEST program can be reduced to three simple steps:

1. Set the sampling scheme (Program Parameters).
2. Input the plot identification data.
3. Record the desired plot data.

Use your Polycorder and follow along as these three steps are illustrated below. In this example, the sampling scheme will require minimal plot identification data, no understory information, and minimal overstory data.

### Step 1—Setting the Sampling Scheme

- 1-1 The first step is to select the NEST program parameters. To do this, turn on the Polycorder, use the appropriate arrow keys to select “Prog Para” from the Main Menu (Fig. 2), and press <ENTER>. This allows the user to specify the sampling intensity for identification, understory, and overstory data collection procedures.



Figure 2.—The correct cursor location for selecting the Program Parameters option from the Main Menu.

- 1-2 The cursor will be located under "ID-INT" for plot identification sampling intensity. Key in <SHF> <ENTER>, this will bring up a context sensitive help screen. Use the arrow keys to select "Minimum" and key in <SHF> <SHF> <ENTER>. The previous menu will return to the screen and a "3" will be displayed under "ID-INT". Press <ENTER> to accept this as the code for identification intensity.
- 1-3 The cursor will now be displayed under "UN-INT" for understory sampling intensity, key in <SHF> <ENTER> to bring up the help screen. Use the arrow keys to select "None" and key in <SHF> <SHF> <ENTER>. The previous menu will return to the screen and a "2" will be displayed under "UN-INT". Press <ENTER> to accept this as the code for understory sampling intensity.
- 1-4 The cursor will now be displayed under "OI-INT" for overstory sampling intensity, key in <SHF> <ENTER> to bring up the help screen. Use the arrow keys to select "R + RS Only" and key in <SHF> <SHF> <ENTER>. The previous menu will return to the screen and a "1" will now be displayed under "OI-INT". Press <ENTER> to accept "1" as the code for understory sampling intensity.
- 1-5 Check to make sure that your screen has the same settings as the screen in Figure 3. If the settings are different, return to the appropriate step above and key in the correct value. When the settings are correct, press <ESC> to return to the Main Menu. You are now finished specifying the program parameters, which will remain the same until they are reset. Turning off the Polycorder will not affect the settings.

**Step 2—Entering Plot Identification Data**

- 2-1 At the Main Menu, select "Main Plot" and press <ENTER>.
- 2-2 At the Main Plot Menu, select "New ID" representing New Plot Identification and press <ENTER>. The cursor will now be located under "Plot Id". Key in the plot or stand identifier, such as "122EXMP.1" and press <ENTER>. The maximum number of characters is nine.
- 2-3 The cursor now appears under "RmsDate", representing Remeasurement Date. Key in the month and year as "12/90" for December, 1990.
- 2-4 Your Polycorder screen should now be similar to Figure 4. If so, press <ESC> to return to the Main Menu. You are now finished specifying the minimal plot identification information.

**Step 3—Recording Desired Plot Data**

- 3-1 At the Main Menu, select "Main Plot" and press <ENTER>.
- 3-2 At the Main Plot Menu, select "Ent/ED OI" and press <ENTER>. The screen will briefly display the plot ID and then display the screen for entering overstory individual tree information (Fig. 5).
- 3-3 Begin by keying in a "1" under the "Tree" prompt representing Tree Number and press <ENTER>.
- 3-4 Forest Survey species code is entered next under the prompt of "Sp". If you can identify a species but are not familiar with the code, bring up the help screen and enter the code with that method. In this session, we will enter "833" (Forest Survey code for red oak) for the first tree and press <ENTER>. If you make a mistake, press <LEFT> and correct it by keying in the correct code.

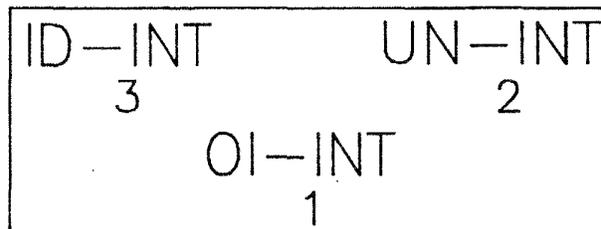


Figure 3.—The correct settings for the Program Parameters for the example data collection session.

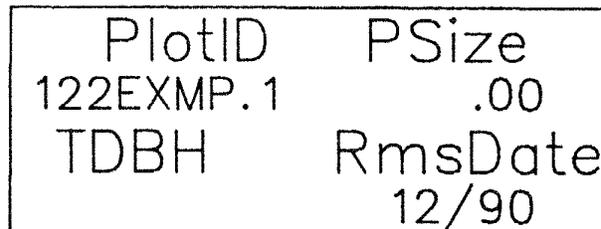


Figure 4.—The correct form of the plot identification screen after the information is entered into the Polycorder.

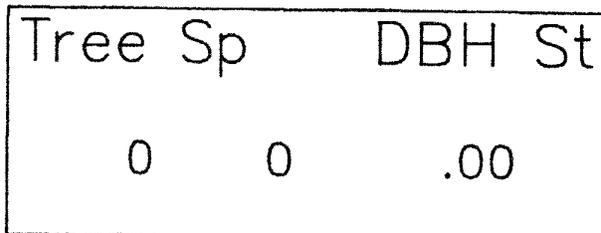


Figure 5.—The opening screen of the Overstory Individual tree sampling mode.

3-5 The cursor is now under "DBH". Key in the value of "12.1" and press <ENTER>.

3-6 The cursor is now under "St", representing Status. Press <SHF><ENTER> to bring up the help screen. Select "Live" with the arrow keys and press <SHF><SHF><ENTER>. A "0" will appear under "St", press <ENTER> to accept this value. During actual data collection activities, you will quickly learn the codes for required variables, and the help screen will rarely be needed.

3-7 The cursor is now under "Sec", representing Sector. Key in the value of "1" and press <ENTER>. This is the last required variable for the first tree that the user must input at this time. The Sample Tree Code, also a required variable, already has a default value of "0". The Polycorder will select the sample trees after all of the required overstory data have been recorded.

3-8 To begin recording data for the next tree, return the cursor to the beginning of the next line by pressing <DOWN><SHF><SHF><LEFT>. You may repeat steps 3-1 through 3-8 with the sample data set following these instructions.

3-9 The next step is to select the Sample Trees. The NEST program will do this automatically if you press <SHF><SHF><SHF><LEFT>. The NEST program checks for missing data, calculates the quadratic stand diameter, then selects the Sample Trees. If the last line of your data file is blank, delete it first or the procedure will not be successful (Note: See instructions given in Function Keys for deleting a line). The NEST program will selectively recode the Sample Tree code to "1" for those trees that should be measured for the Required Sample (RS) variables.

3-10 The final step is to go through the plot again recording the data for the RS variables for the trees that were selected as Sample Trees.

### Sample Data Set

Tree	Sp	DBH	St	Sec
2	621	20.80	0	1
3	531	4.10	0	1
4	621	16.20	0	1
5	318	3.50	0	1
6	833	15.60	0	2
7	833	26.50	0	2
8	318	3.20	0	2
9	621	20.20	0	2
10	621	17.10	0	2
11	318	3.90	0	2
12	833	22.10	0	3
13	833	16.00	0	3
14	701	4.30	0	3
15	318	3.70	0	3
16	316	2.90	0	3
17	621	15.90	0	3
18	318	4.70	0	3
19	621	23.70	0	4
20	833	28.00	0	4
21	621	20.80	0	4
22	531	4.10	0	4
23	621	16.20	0	4
24	318	3.50	0	4
25	951	17.40	0	5
26	762	18.90	0	5
27	318	3.20	0	5
28	621	20.20	0	5
29	621	17.10	0	5
30	833	17.00	0	6
31	833	29.70	0	6
32	762	17.40	0	6
33	701	4.30	0	6
34	318	3.70	0	6
35	316	2.90	0	6
36	621	15.90	0	6
37	318	4.70	0	6

## APPENDIX B—User Data File Formats

The following defines the field number, field type and width, and field description for one record of each of the user file types.

Data type and width described as Xn.d, where:

X = A for alphanumeric

N for numeric

n = total field width, including decimal point

.d = the number of decimal places

## ID.F - Plot Identification

Seq.	Screen Prompt <sup>a</sup>	Description	Entry Class	Width
1.	ST	State FIA code	Required	N2
2.	CTY	County FIA code	Required	N3
3.	Project	Station + RWU No.	Required	A7
4.	Study-Num.	Study No.	Required	A10
5.	Blk	Block or replication No.	Required	A3
6.	PlotID	Stand Id	Required	A9
7.	PSize	Plot Size	Required	N6.2
8.	TDBH	Threshold DBH	Required	N3.1
9.	RmsDate	Remeasurement date	Required	A6
10.	Area	Stand area	Required	N4
11.	Or	Stand origin	Required	A1
12.	Or-Dte	Stand origin date	Required	A4
13.	Ov-Tr	Overstory treatment code	Required	A2
14.	OthTr	Other treatment code	Required	A2
15.	TrDate	Treatment date	Required	A4
16.	Latid	Latitude	Required	N5
17.	Longi	Longitude	Required	N5
18.	Elev	Elevation	Required	N4
19.	Asp	Aspect	Required	A3
20.	SSt	Slope steepness	Required	A3
21.	SSh	Slope shape	Required	A2
22.	Topo	Topographic position	Required	A2
23.	ELT	Ecological land type	Required	A3
24.	SiteTyp	Local site type	Required	N1
25.	SiteCl	Local site class	Required	N2

a Abbreviations of variables as they appear on the Polycorder screen.

SP.F - Soil Profile

Seq.	Screen Prompt <sup>a</sup>	Description	Entry Class	Width
1.	SoilSr	Soil Series	Required	A6
2.	PMat	Parent material source	Required	N2
3.	Humus	Humus type	Required	N1
4.	Drain	Drainage class	Required	N1
5.	Horiz	Horizon name	Required	A3
6.	Depth	Horizon depth	Required	A5
7.	Color	Soil color	Required	A8
8.	Textr	Soil texture	Required	A4
9.	SGrade	Soil structure grade	Required	A2
10.	SSize	Soil structure size	Required	A2
11.	SShape	Soil structure shape	Required	A3
12.	CStrnth	Consistence strength	Required	A3
13.	CPlastic	Consistence plasticity	Required	A2
14.	CSticki	Consistence stickiness	Required	A2
15.	RAbund	Root abundance	Required	A1
16.	RSize	Root size	Required	A1
17.	CFrag	Coarse fragments	Required	A2
18.	MQuan	Mottling quantity	Required	A1
19.	MSize	Mottling size	Required	A1
20.	MContr	Mottling contrast	Required	A1
21.	BndryD	Boundary distinctness	Required	A1
22.	BndryT	Boundary topography	Required	A1

a Abbreviations of variables as they appear on the Polycorder screen.

UN.F - Understory Information

Seq.	Screen Prompt <sup>a</sup>	Description	Entry Class	Width
1.	StdId	Stand ID	Required	A9
2.	PlSize	Plot size	Required	N1
3.	Sec	Section number	Required	N1
4.	Plt#	6' radius plot number	Required	N3
5.	Slash	Slash cover	Required	N1
6.	Sbed	Seedbed condition	Required	N1
7.	Compt	Seedbed compaction	Required	N1
8.	Stone	Stony surface soil	Required	N1
9.	Wet	Wet surface soil	Required	N1
10.	Rubus	Rubus percent cover	Required	N3
11.	Fern	Ferns percent cover	Required	N3
12.	Grass	Grasses/sedges pct. cover	Required	N3
13.	Herbs	Tall herbs percent cover	Required	N3
14.	Moss	Club mosses percent cover	Required	N3
15.	Other	Other non-woody pct. cover	Required	N3
16.	Shrub	Shrubs percent cover	Required	N3
17.	Tree	Trees percent cover	Required	N3
18.	Total	Total percent cover	Required	N3
19.	DomSp	Dominant ground cover spp.	Required	N1
20.	Grape	Number of grapevines	Required	N2
21.	Camph	Number of camphor vines	Required	N2
22.	Othvine	Number of other climbing vines	Required	N2

a Abbreviations of variables as they appear on the Polycorder screen.

OP.F - Overstory Prism

Seq.	Screen Prompt <sup>a</sup>	Description	Entry Class	Width
1.	Sec	Section number		N1
2.	Pl#	6' radius plot ID number		N3
3.	Sp	FIA species code	Required	N3
4.	DBH	Diameter breast height	Required	N2

WR.F - Woody Regeneration

Seq.	Screen Prompt <sup>a</sup>	Description	Entry Class	Width
1.	Sec	Section number	Required	N1
2.	Pl#	6' radius plot ID number	Required	N3
3.	Sp	FIA species code	Required	N3
4.	S6	No. stems size 6	Required	N3
5.	S5	No. stems size 5	Required	N3
6.	S4	No. stems size 4	Required	N3
7.	S3	No. stems size 3	Required	N3
8.	S2	No. stems size 2	Required	N3
9.	S1	No. stems size 1	Required	N3
10.	HtT	Height of tallest stem	Required	N3
11.	Orig	Origin of tallest stem	Required	N1
12.	FreeTG	Free to grow	Required	N1
13.	O6	Old no. stems size 6	Optional	N3
14.	O5	Old no. stems size 5	Optional	N3
15.	O4	Old no. stems size 4	Optional	N3
16.	O3	Old no. stems size 3	Optional	N3
17.	O2	Old no. stems size 2	Optional	N3
18.	O1	Old no. stems size 1	Optional	N3
19.	OHTT	Old height of tallest stem	Optional	N3

a Abbreviations of variables as they appear on the Polycorder screen.

OI.F - Overstory Individual Tree

Seq.	Screen Prompt <sup>a</sup>	Description	Entry Class	Width
1.	Tree	Tree ID	Required	N4
2.	Sp	FIA species code	Required	N3
3.	DBH	Diameter breast height	Required	N5.2
4.	St	Status	Required	A1
5.	Sec	Sector (section)	Required	A1
6.	Smp	Sample tree	Required	N1
7.	Ori	Origin	R6 <sup>b</sup>	A1
8.	CrTr	Crop tree	Optional	N1
9.	QC1	Quality class	Optional	N1
10.	Lv1	# of live branches log 1	RS <sup>c</sup>	A3
11.	Ep1	# of epicormic branches log 1	RS	A3
12.	Dd1	# of dead branches log 1	RS	A3
13.	Lv2	# of live branches log 2	RS	A3
14.	Ep2	# of epicormic branches log 2	RS	A3
15.	Dd2	# of dead branches log 2	RS	A3
16.	Ovr	# of overgrowths	Optional	A3
17.	Rot	Percent rot	Optional	A3
18.	Swp	Percent sweep	Optional	A3
19.	Gr	Actual tree grade	RS	A1
20.	PGr	Potential tree grade	RS	A1
21.	SI	Site index tree	RST <sup>d</sup>	N1
22.	Age	Tree age	RST	N3
23.	Ht	Total height	RST	N3
24.	HFB	Height to first live branch	RS	A2
25.	HBC	Height to base live crown	RS	A2
26.	HFk	Height to main stem fork	RS	A2
27.	Ht4	Height to 4" dib	Optional	N3
28.	H10	Height to 10" dib	Optional	N3
29.	JCl	Jump cut loss %	Optional	N3
30.	CC1	Crown class	Optional	N2
31.	CCn	Crown condition	Optional	N1
32.	CDe	Crown defoliation	Optional	N1

33.	#Den	Dens	Optional	N1
34.	Dam	Damage	Optional	N2
35.	Vi	Vines in crown	Optional	N1
36.	CD1	Crown diameter 1	Optional	N2
37.	CD2	Crown diameter 2	Optional	N2
38.	CrR	Crown release %	Optional	N3
39.	D17	Diameter outside bark @ 17.3'	Optional	N3
40.	X	X coordinate	Optional	N3
41.	Y	Y coordinate	Optional	N3

- a Abbreviations of variables as they appear on the Polycorder screen.
- b Required for all trees >0.5" on the 6-ft.-radius regeneration sub-plots.
- c Required for 3 sample trees from each 0.1-acre sector, selected at random with 2 from above QSD, 1 from below QSD.
- d Required sample of site index trees.