



— A Guide to  
Street Tree Inventory Software —

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## Chapter 2 – Software Overview

- ▶ *Software providers*
- ▶ *Program customization*
- ▶ *Program data options*
- ▶ *Discontinued programs*
- ▶ *Data collection*
- ▶ *Data entry time*

Tree inventory software providers and contact information are listed in Table 2.1. Although literature searches provided most information for this table, Internet searches and personal communications with urban forestry professionals were also beneficial. Several developers are no longer

supporting their software (Table 2.4) and are therefore not listed here. It is possible that other commercial software providers exist, however our search did not find them. Not all of the programs listed in Table 2.1 are described in this publication as some providers chose not to participate.

▼ Table 2.1: Street tree inventory software programs, providers, and contact information.

Software	Developer(s)	Address	Phone	E-mail
Canopy	Natural Path Forestry Consultants, Inc.	Natural Path Forestry Consultants P.O. Box 7723 Missoula, MT 59802	(406) 721-3263	natpath@naturalpath.com
Inventree	Minnesota DNR University of Minnesota USDA Forest Service Lisa Burban, Steven Kunde	Kunde Company, Inc. 2311 Woodbridge St. #170 Roseville, MN 55113	(612) 484-0114	kundeco@isd.net
Inventree	Solutions by Lehman	Solutions by Lehman 202 Lincoln Way East Mishawaka, IN 46544-2042	(219) 256-9267	charlesl41@aol.com
SilviBASE	Natural Resource Planning Services	Natural Resource Planning Services 5700 SW 34th St. Suite 324 Gainesville, FL 32608	(352) 378-8966	nrps@worldnet.att.net
TreeKeeper Jr.	Davey Resource Group	The National Arbor Day Foundation 100 Arbor Avenue Nebraska City, NE 68410	(402) 474-5655	N/A
TreeKeeper for Windows, TreeKeeper Online	Davey Resource Group	Davey Resource Group 1500 North Mantua Street P.O. Box 5193 Kent, OH 44240-5193	1-800-447-1667	info@davey.com
Tree Manager for Windows	ACRT	ACRT 2545 Bailey Road P.O. Box 401 Cuyahoga Falls, OH 44221	1-800-622-2562	askacrct@acrinc.com
Treemaster	Urban Forestry Consultants	Urban Forestry Consultants 4980 Asplan Way Suite 205 El Sobrante, CA 94803	(510) 222-6278	tpehrson@pacbell.net
Trims '97	TRIMS Software International, Inc.	TRIMS Software International, Inc. 3110 North 19th Avenue Suite 190 Phoenix, AZ 85015	1-800-608-7467	info@trims.com
Urban Forest Inventory	Forest Data Corporation	Forest Data Corporation P.O. Box 276 Inverness, CA 94937	(415) 669-7426	forester@compuserve.com
Urban Forest Inventory System	Natural Resource Technologies	Natural Resource Technologies P.O. Box 780603 Tallassee, AL 36078	1-888-848-2146	nrtнал@aol.com
UTMS III, UTMS 5000, Snappy	J. Alan Wagar	UTMS 17076 10th Ave. NW Shoreline, WA 98177	(206) 546-8251	jawagar@u.washington.edu

An important option to consider when selecting a tree inventory software program is the level of customization that it provides. Customization includes a range of options from changing interface controls to creating user-designed reports. The advantages of being able to customize a program include:

- Program can be tailored to the user's needs.
- An increase in efficiency through setting personal preferences and eliminating unneeded options.
- An overall increase in flexibility and control.

There are also disadvantages in having the option to customize:

- A higher learning curve is required.
- The complexity of the program may be intimidating to some users.
- Potentially a higher initial cost.

Although it is important to have a program that is tailored to specific needs, developers usually design tree inventory software to meet most of those needs - whether the program is customizable or not. Table 2.2 lists the programs described in this study,

▼ Table 2.2: Customization levels for queries, interface controls, reports, and fields for each program.

	Queries <sup>a</sup>	Interface controls <sup>b</sup>	Reports <sup>a</sup>	Fields <sup>c</sup>
● Customizable by user ◆ Customizable by developer ■ Not customizable				
Canopy	●	■	●	◆
Inventree (Kunde)	●	■	●	◆
Inventree (Lehman)	●	●	●	●
TreeKeeper for Windows	●	●	●	◆
TreeKeeper Jr.	●	■	■	■
TreeKeeper Online	◆	◆	◆	◆
Tree Manager for Windows	●	■	●	◆
Trims '97	●	◆	●	◆
Urban Forest Inventory System	●	●	●	●
Urban Tree Management System	■	■	■	●

<sup>a</sup>Preprogrammed queries and reports are not considered to be customization.

<sup>b</sup>Buttons, toolbars, menus, and menu items are considered to be interface controls.

<sup>c</sup>Creation/removal of fields is considered to be customization. Note that this does not refer to specific items within a field.

and indicates whether they are customizable by either the user or the developer. Developer customization may incur additional costs depending on the level of customization desired and the software provider's policies. Programs not received for review are not included in Table 2.2.

Table 2.3 indicates tree site data fields offered by each program. Fields that occurred only once are grouped into *other* categories under their appropriate headings (*location descriptors*, *tree descriptors*, *site descriptors*, and *miscellaneous*). Fields are also categorized as either

*optional* or *required*. Required fields need to have data entered into them, whereas optional fields do not. Fields that have a similar purpose but use different terminology were consolidated into one group (row) heading. When using this table the reader should take into consideration

the level of customization offered by these programs (Table 2.2) since either the user or developer may add or remove fields that are shown here. Programs and their respective fields are shown in Table 2.3 without customization (default fields).

▼ Table 2.3: Data fields (rows) offered by each program (columns). Table 2.2 can be used in conjunction with this table for determining the level of customization offered by each program.

	Canopy	Inventree (Kunde Co.)	Inventree (Lehman)	Treekeeper for Windows	Treekeeper Jr. (NADF)	Treekeeper Online	Treeman for Windows	Trims '97	UFIS	UTMS-III
<b>Location Descriptors</b>										
Street	●	●	■	●	●	●	●	●	●	●
Address number	●	●	■	●	●	●	●	●	●	●
Extension	■			■	■	■				
On, from, to streets				●	●	■	●	■		
Location/side/quadrant	●			●	●	■	●	■		
Site/tree/cell number	●			●	●	■	●	■	●	■
Area/zone/unit/district	●	■	■		■	■	■	■		●
Landuse	●	■								
Coordinates				■				■	■	■
Zip code		■		●	■	■				
Other <sup>a</sup>		●		●						■
<b>Tree Descriptors</b>										
Common name <sup>b</sup>	●	●	■	●	●	●	●	●	■	●
Scientific name <sup>b</sup>		■	■	■	●	■	■	●		●
Species value	●	■			■	■	■		●	●
Diameter	●	■	■	■	■	■	●	■	●	■
Height	■			■		■		■	●	■
Condition	●	■	■	■	■	■	●	■	●	■
Pruning cycle				■	■	■				
Insects	■	■								
Disease	■	■								
Appraised value	■	■							■	■
Other <sup>a</sup>	■			■				■		■
<b>Site Descriptors</b>										
Growspace type	●	■		■	●					■
Growspace size	■	■	■	■	●	■	■	■		■
Utilities	●	■	■	■	●	■	■	■	■	■
Location value	●	■		■		■			●	■
General site information		■		■			■			■
<b>Miscellaneous</b>										
Comments/notes	■		■	■	■	■	■	■		■
Date		■	■	■	■	■	●		■	●
Maintenance	■	■	■	■	■	■	■	■	■	■
Resident information			■	■			■	■		
Staff/inspector				■	■		●		■	
Other <sup>a</sup>	■		■	■			■	■		■

<sup>a</sup> Non-duplicated (unique) fields were grouped into the *Other* category, and may include more than one field per program. For programs that have multiple fields in this category, any one field that is required has been noted above.

<sup>b</sup> Programs that offer either common or scientific naming conventions were placed strictly in the *Common name* category. Refer to Chapter 3 for further program details.

While searching for software providers several developers were contacted who verified that they are no longer marketing their software. These programs are listed in Table 2.4. Two developers, the Davey Resource Group and ACRT, are discontinuing the MS-DOS<sup>®</sup> versions of their software and are focusing on Windows<sup>®</sup> based developments. The Davey Resource Group version of TreeKeeper Jr. has also been discontinued, however The National Arbor Day Foundation version is still available. Replies were not received from developers with programs listed as having unknown availability.

▼ Table 2.4: Programs that are either discontinued or have unknown availability. Information for discontinued programs was verified by developers.

Software	Developer	Availability
Compu-tree	Systemics	Unknown
dTree	dTree	Discontinued
Interpretree	Technical Forestry Services	Discontinued
TREBASE	Miller, Andrews	Discontinued
Tree Inventory and Management System	Texas A&M	Unknown
Tree Inventory System	Michigan State University	Discontinued
TreeKeeper Jr. (Davey version) <sup>a</sup>	Davey Resource Group	Discontinued
TreeKeeper (MS-DOS <sup>®</sup> version) <sup>b</sup>	Davey Resource Group	Discontinued
Tree Manager (MS-DOS <sup>®</sup> version) <sup>b</sup>	ACRT	Discontinued
Tree Ranger	Ranger Services, Inc.	Discontinued
Urban Forestry Data Management System	USDA Forest Service	Discontinued
Urban Tree Inventory Program	Oklahoma Forestry Services	Discontinued

<sup>a</sup>National Arbor Day Foundation version is still available.

<sup>b</sup>Replaced with Windows<sup>®</sup> version.

The following data fields are either required or are the most common in each program:

- Date
- Street
- Address
- Tree site number
- Tree location (front or side)
- Species (common name)
- DBH (diameter)
- Height
- Condition
- Location (CTLA)
- Overhead utilities (presence/absence)
- Terrace width
- Maintenance suggestions
- Comments

These data were recorded from the Stevens Point study area for entry into each street tree inventory program. Although most are self-explanatory, a few are described below.

Each tree or planting site at an address was given a unique tree site number. The numbering sequence started at the lower end of the address on the primary street (address street) and continued through to the side street (secondary street) sites. Figure 2.1 indicates an example of this numbering convention. In order to distinguish between sites on primary and secondary streets, either an F (front) or S (side) was recorded for each tree or planting site location.

DBH was measured to the nearest one-tenth of an inch (0.25 cm) using a diameter tape. Although most programs use broader diameter classes, a few are capable of recording to this level of precision. Several programs use condition classes following the Council of Tree and Landscape Appraisers tree valuation methods (CTLA 1992). Condition was therefore recorded as a percentage (nearest five percent). Where needed both diameter and condition values were converted to larger classes for data entry.

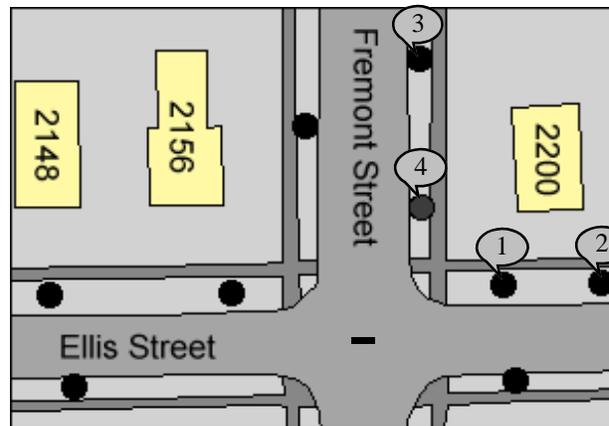


Figure 2.1: The site numbering convention used during data collection followed in conjunction with the address numbers (from low to high) on both primary and secondary streets. Planting sites (site 4) were included in the numbering sequence.

Height was estimated to the nearest five to ten feet. Height value was estimated by comparing tree heights to surrounding artificial features (i.e. buildings, utility lines, utility poles, light poles). Although height measurement accuracy was not a concern for this study, it should be noted that data collection time will increase when using a height measuring device.

Overhead utilities were recorded as either present (Y) or absent (N). Terrace width was paced to the nearest one foot (0.3 m). The following coding system was used for maintenance recommendations:

- PR – Priority prune
- R – Remove
- PL – Plant
- C – Cable
- B – Brace
- W – Water

Trees that did not receive a maintenance recommendation were considered to require routine maintenance actions.

Comments were recorded in order to indicate infrequently encountered characteristics or problems at tree sites. These include: insects, disease, the presence of cables or bracing, multiple stems, girdling root, and structural defects.

Data collection was timed for approximately 200 tree sites on four streets. Timing intervals were taken on a per street basis. Street length ranged from 0.33 to 0.37 miles (0.53 to 0.59 km). The mean time spent at each tree site was 2.1 minutes, ranging from 1.9 to 2.2 minutes.

Tree site locations were marked on an ArcView map printout during timed periods. Although the time required for this process was minimal, it should be taken into consideration when conducting an inventory.

Data entry was timed for at least 300 records in each program. The results are indicated in Figure 2.2, which shows the number of tree sites entered per minute per program using a keyboard. Programs not indicated in Figure 2.2 were either not received for this study or arrived too late for timing.

number of data fields entered per site for each program. The general trend indicates that programs which have more data entered per tree site require more data entry time. Discrepancies from this trend, such as a point that lies directly vertically or horizontally from another point, may imply a difference in data entry efficiency for a program.

Figure 2.3 indicates the number of sites entered per minute versus the

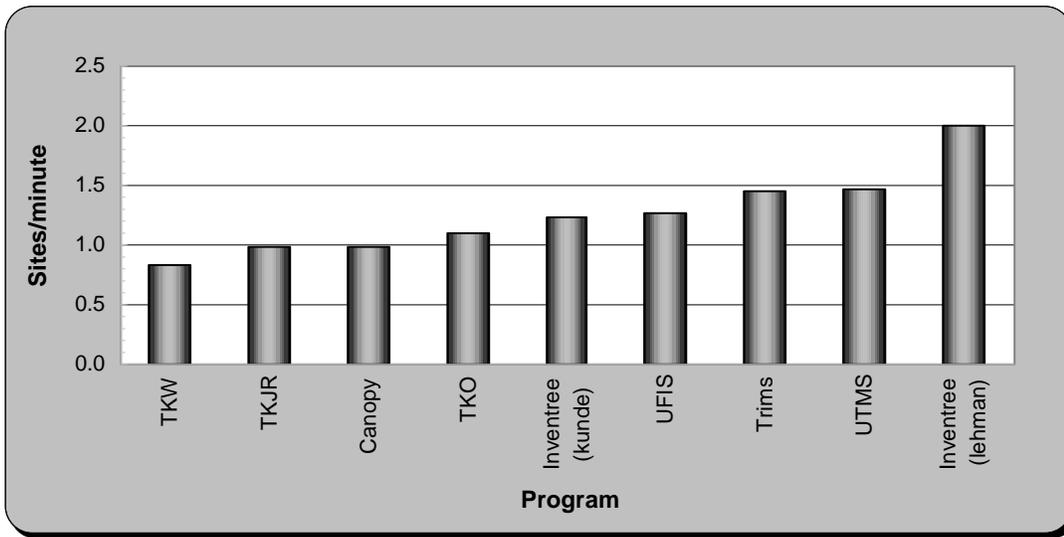


Figure 2.2: Number of sites entered per minute for each program using keyboard entry.

TKW: TreeKeeper for Windows  
 TKJR: TreeKeeper Jr.  
 TKO: TreeKeeper Online  
 UFIS: Urban Forest Inventory System  
 UTMS: Urban Tree Management System

Figure 2.3: Number of sites entered per minute versus the number of fields entered per tree site for each program.

