

# DataPlus Mobile<sup>®</sup>

## Field Forms Builder for Natural Resource Data Collection

Form Design to Dramtically Increase  
Productivity



Jim Lahm  
Electronic Data Solutions  
Portland, OR



- Overview of DataPlus Pro & Mobile
- New Features
- Case Studies
  - Forestry
  - Wildlife
  - Fisheries
- Services & Support









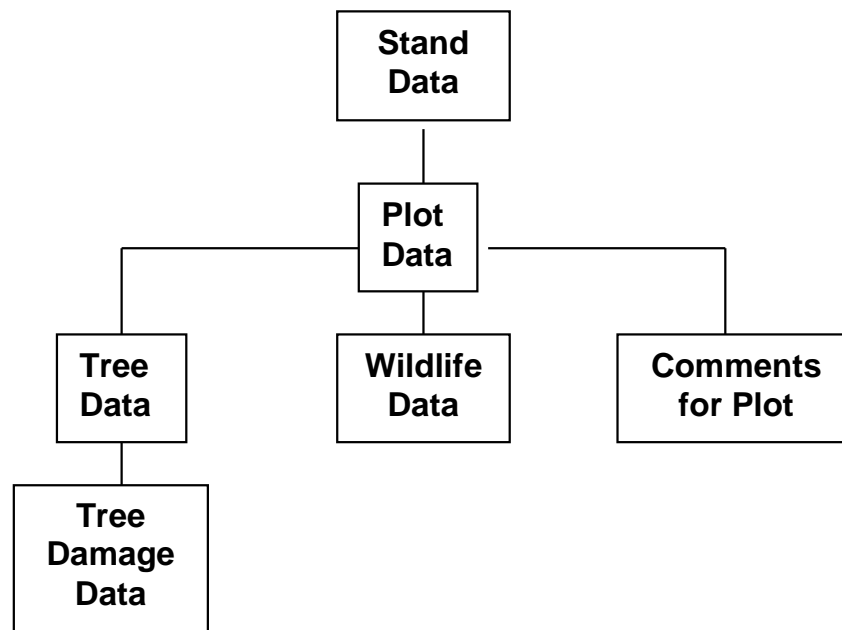
- Application Generator for laptop/desktop PC
- DPCedit for writing custom routines (calculatable fields, etc.)
- Host Communication software
- Data File Editor
  - Microsoft Access MDB Converter
  - DBF Conversion
  - ASCII Conversion
  - Shapefile Conversion
  - Mapped Export to ODBC
- MS Windows Mobile Handheld or Win 7,8,10 License
- Technical Support





# Levels & Braches

- DataPlus Mobile allows up to 5 file levels.
- Each file can have up to 26 child branches.
- Each file can have up to 250 columns each with a maximum of 2500 total bytes per line.



# DataPlus® Professional

## Application

Created: 11/12/1998  
Version:   
Last Edit: 10/03/2014  
Build: 43

## Hierarchy

Help

Hierarchy	Columns
Stand	1. KEY_A C15 (hidden)
Plot	2. Date C10
Tree	3. Time C8
Damage	4. Region N2.0
Wildlife	5. Forest C3
Comments	6. Stand C10
	7. Cruiser C3
	8. Acres N5.0

- Data Format
- General
- Screen Define
- User Programs
- GPS
- Branch Control
- Column Display
- Data Entry
- Error Checks
- Auto Store
- Locks / Blocks

## Application Tabs Branch Tabs Column Tabs

App Links

Help

GPS

Application requires GPS  Use application-specific waypoint file

Allow GPS status

Use local filters

Require DGPS

Require 3D position

Minimum SVs:

Max DOP:

Select Edit Create View

- Allow Multiple Datasets
- Use File Coordinates
- Use Status Columns
- Enable Key Mapping

Global User Programs

Dependent Files

Select Edit Remove

Edit/Create

Add Remove

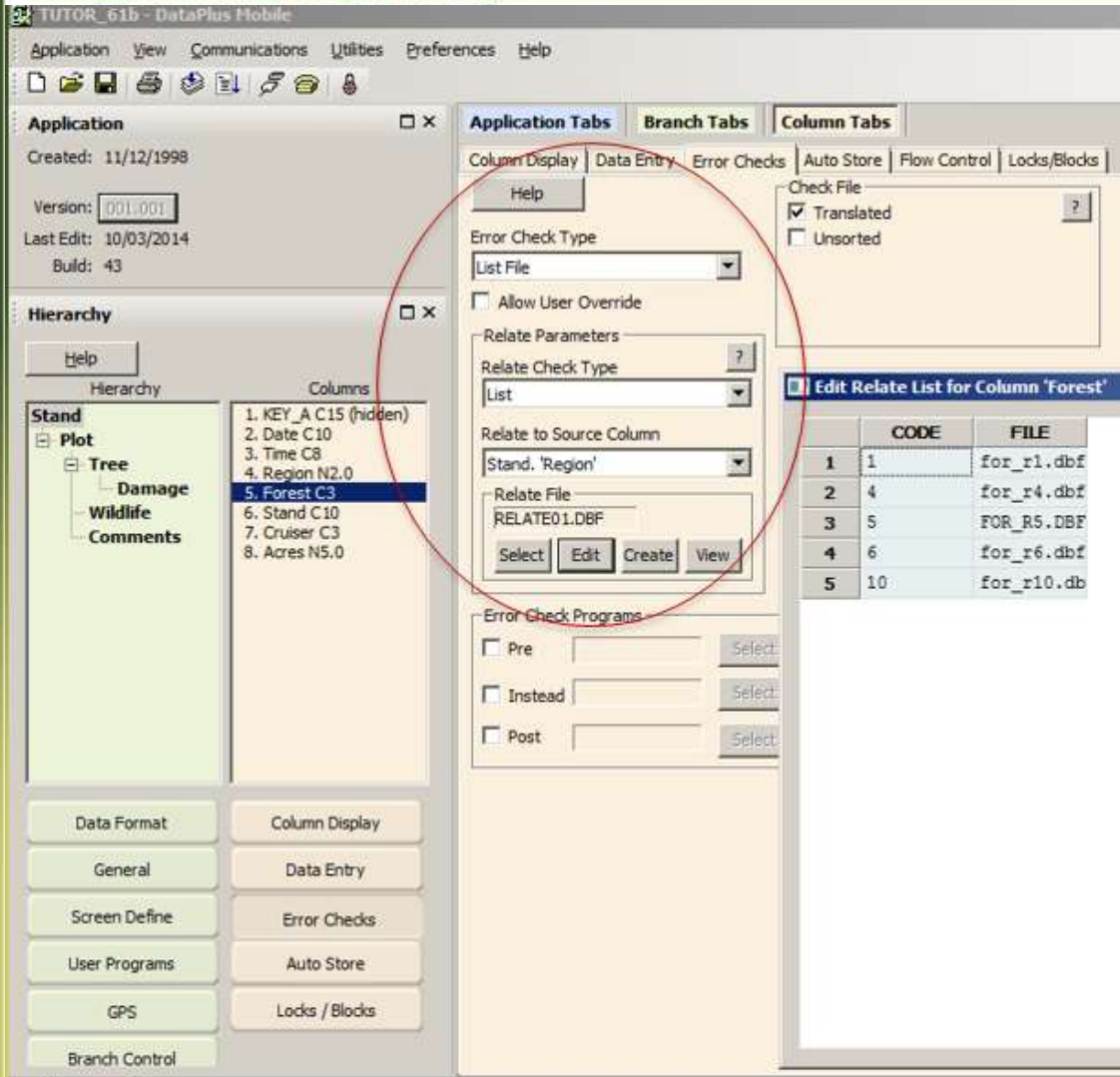
DataPlus is designed for nonprogrammer, yet it is robust enough for the professional software developer.



Device with Keyboard, with TouchScreen, External Device Input:

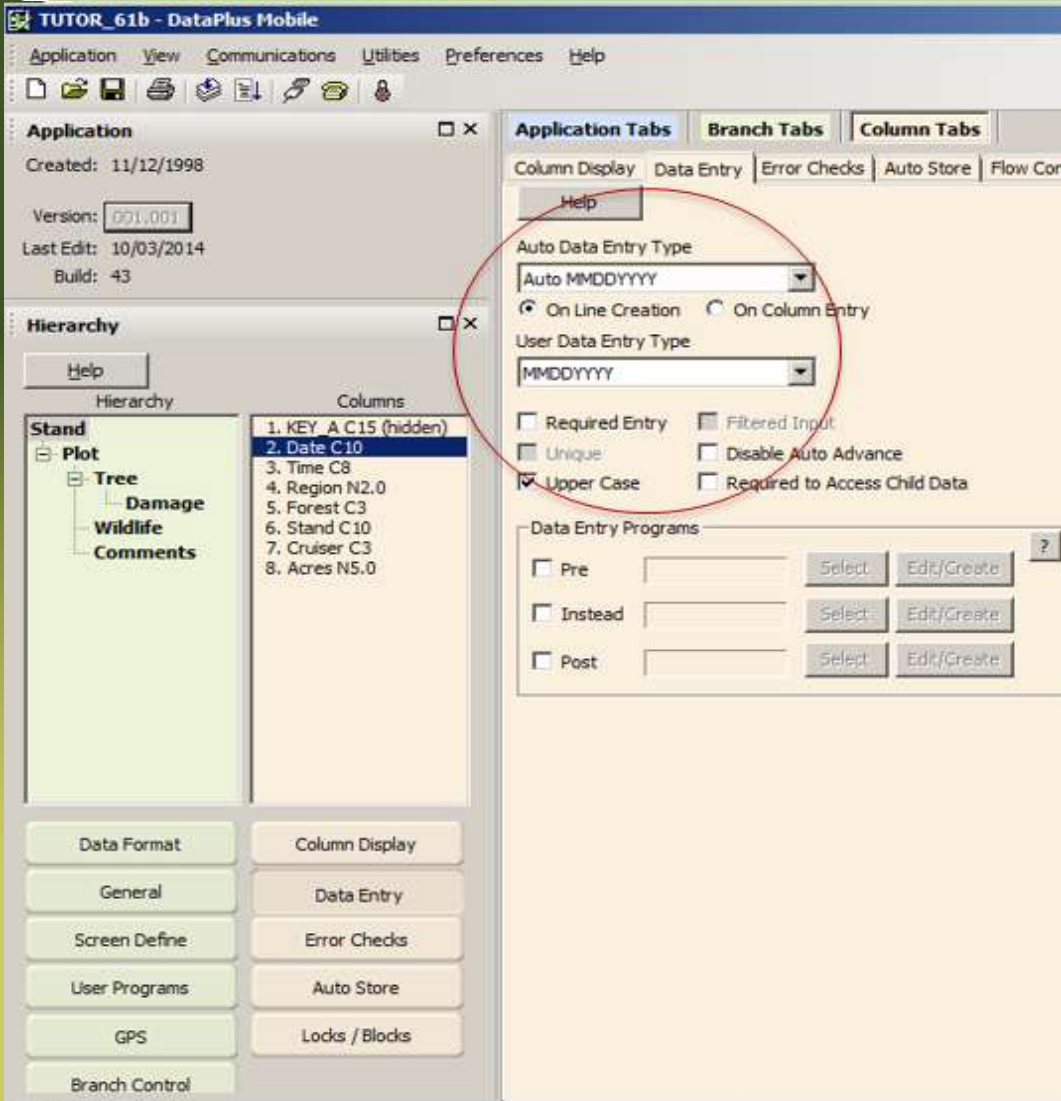
- GPS receivers
- Laser rangefinders
- Electronic scales
- Bar code scanners
- Digital Calipers
- Bluetooth/802.11b wireless eliminates cables
- Water quality multi-parameter sensors





## Data Error Checking In The Field

- Minimum/maximum range checks
- List file (menu)
- Error checks related to data in other columns (relevance)
- User error check programs
- Missing data checks (required field)



## Automated Data Entry Functions

- Copy data forward
- Increment value from the cell above
- Read date & time from internal time clock
- Preload constant data
- Random number generator



## Customization of Screens

- Choice of line display, line-align display or virtual display
- Double lined prompts
- Show column on subsequent screens
- View-only or hide columns
- Custom help messages for each column
- Easily format data for different hand helds



## Line



## Line Align



## Virtual







Application  X

Created: 11/12/1998

Version:

Last Edit: 12/05/2014

Build: 43

Hierarchy  X

Help

Hierarchy

Columns

**Stand**

- Plot
  - Tree
    - Damage
    - Wildlife
    - Comments

1. KEY\_A C15 (hidden)
2. KEY\_AA C10 (hidden)
3. KEY\_AAB C10 (hidden)
4. Latitude N14.9 (hidden)
5. Longitude N14.9 (hidden)
6. Spec C6
- 7. Code C1**
8. Nnbr N3.0
9. Use C6
10. Bearing N3.0
11. Distance N4.0

Application Tabs Branch Tabs **Column Tabs**

Column Display | Data Entry | Error Checks | Auto Store | Flow Control

Help

Hide

Clip

Column Help Message

Data Format

Column Display

General

Data Entry

Screen Define

Error Checks

User Programs

Auto Store

GPS

Locks / Blocks

Branch Control



## Four levels of touch screen support

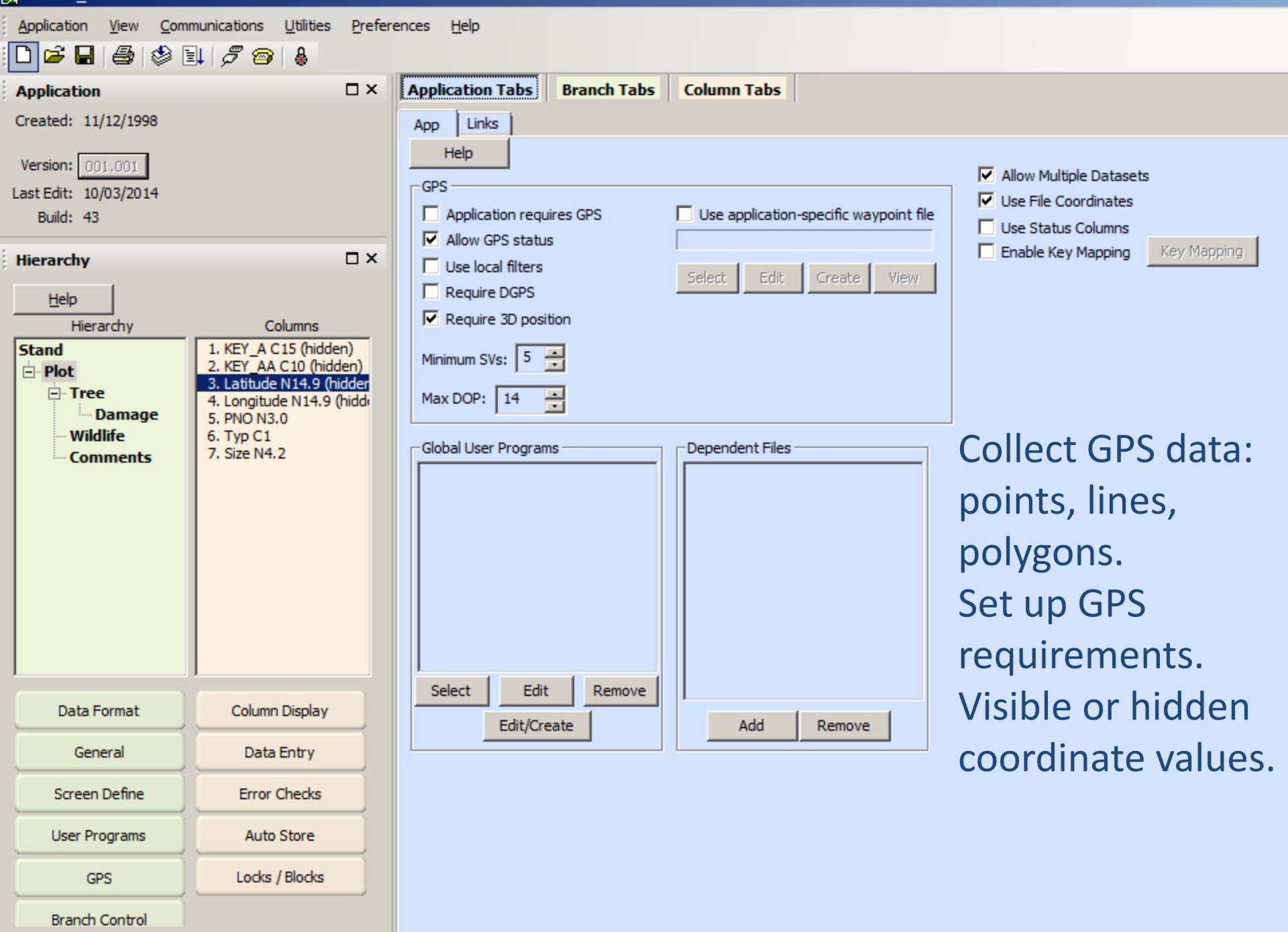
- Touch Screen ignored
- Touch Screen to move to other fields or to bring up data validation for cell
- Touch Screen available for DP Edit Actions
- Options 2 and 3 plus Touch Screen Buttons for all Function keys



## Data Flow Control

- Jump Tables Allowing Movement to Specific Column Based on Data From Other Columns
- Column Searches
- Missing Data Checks





Collect GPS data:  
points, lines,  
polygons.  
Set up GPS  
requirements.  
Visible or hidden  
coordinate values.



**Application** □ ×

Created: 11/12/1998

Version:

Last Edit: 10/03/2014

Build: 43

**Hierarchy** □ ×

Hierarchy	Columns
Stand	1. KEY_A C15 (hidden)
Plot	2. KEY_AA C10 (hidden)
Tree	3. KEY_AAA C10 (hidden)
Damage	4. Tree N3.0
Wildlife	5. Spec C3
Comments	6. TTL N3.0
	7. Mch N2.0
	8. DBH N4.1

<input type="button" value="Data Format"/>	<input type="button" value="Column Display"/>
<input type="button" value="General"/>	<input type="button" value="Data Entry"/>
<input type="button" value="Screen Define"/>	<input type="button" value="Error Checks"/>
<input type="button" value="User Programs"/>	<input type="button" value="Auto Store"/>
<input type="button" value="GPS"/>	<input type="button" value="Locks / Blocks"/>
<input type="button" value="Branch Control"/>	

**Application Tabs** | **Branch Tabs** | **Column Tabs**

|  |  |  |  |

**Child Blocks**

Do not block

Block access to all children if data present in this column

Block access to specific children if data present in this column

Block access to all children if data not present in this column

Block access to specific children if data not present in this column

Available   Blocked

**Sibling Blocks**

Do not block

Block access to all siblings if data present in this column

Block access to specific siblings if data present in this column

Block access to all siblings if data not present in this column

Block access to specific siblings if data not present in this column

Available   Blocked

**Locks: Lock Column Data Depending on Child Data**

Do not lock

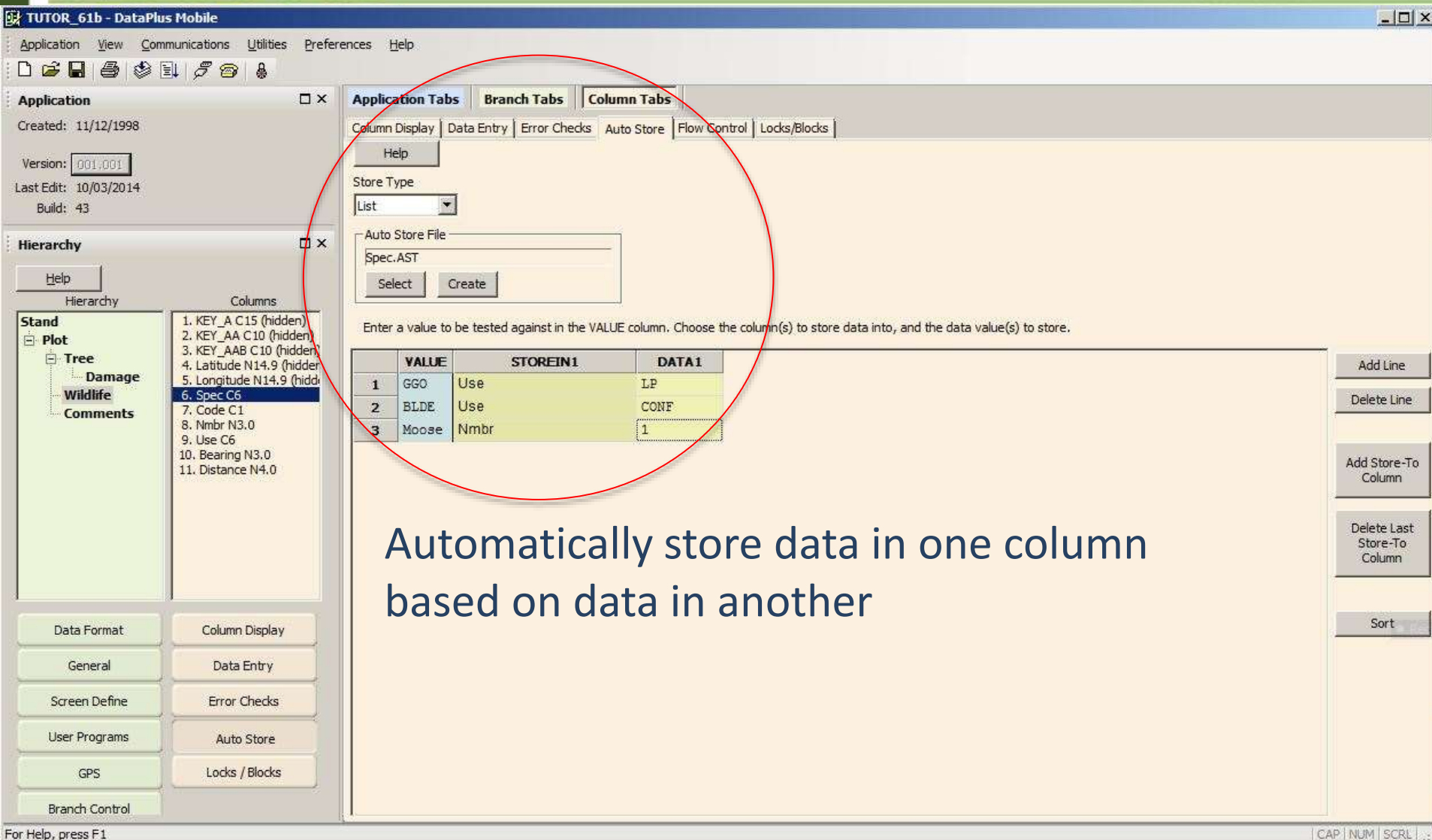
Lock column data if any child data present

Lock column data if specific children present

Available   Locked

**Locks & Blocks:**  
 Lock certain fields to prevent changes after a previous entry.  
 Block certain fields from being accessed that are invalid.





**TUTOR\_61b - DataPlus Mobile**

Application View Communications Utilities Preferences Help

Application  
Created: 11/12/1998  
Version: 001.001  
Last Edit: 10/03/2014  
Build: 43

Hierarchy  
Help

Columns

1. KEY\_A C15 (hidden)
2. KEY\_AA C10 (hidden)
3. KEY\_AAB C10 (hidden)
4. Latitude N14.9 (hidden)
5. Longitude N14.9 (hidden)
6. Spec C6
7. Code C1
8. Nnbr N3.0
9. Use C6
10. Bearing N3.0
11. Distance N4.0

Application Tabs: Column Display | Data Entry | Error Checks | **Auto Store** | Flow Control | Locks/Blocks

Store Type: List

Auto Store File: Spec.AST

Select Create

Enter a value to be tested against in the VALUE column. Choose the column(s) to store data into, and the data value(s) to store.

	VALUE	STOREIN1	DATA1
1	GGO	Use	LP
2	BLDE	Use	CONF
3	Mooae	Nnbr	1

Buttons: Add Line, Delete Line, Add Store-To Column, Delete Last Store-To Column, Sort

Bottom Panel: Data Format, General, Screen Define, User Programs, GPS, Branch Control, Column Display, Data Entry, Error Checks, Auto Store, Locks / Blocks

For Help, press F1

Automatically store data in one column based on data in another

TUTOR\_61b - DataPlus Mobile

Application View Communications Utilities Preferences Help

Application Created: 11/12/1998 Version: 001.001 Last Edit: 10/03/2014 Build: 43

Hierarchy Help

Stand Plot Tree Damage Wildlife Comments

Columns

- KEY\_A C15 (hidden)
- KEY\_AA C10 (hidden)
- KEY\_AAA C10 (hidden)
- Tree N3.0
- Spec C3
- TTL N3.0
- Mch N2.0
- DBH N4.1

Application Tabs: Application Tabs Branch Tabs Column Tabs

Data Format General Screen Define User Programs GPS Branch Control

Available columns: Stand. 'Date', Stand. 'Time', Stand. 'Region', Stand. 'Forest', Stand. 'Stand', Stand. 'Cruiser'

In use: Plot. 'Typ', Tree. 'Spec'

Buttons: Add ->, <- Remove

Help

To enter a numeric range, enter #-# (ex: 3-5). If the control column is a 'Key Number into Character Column' entry type, leaving the column blank would match a column with no data entered.

Legend: Control Columns Affected Columns

Branch:	Plot	Tree	Tree	Tree	Tree	Tree
Column:	Typ	Spec	Tree	TTL	Mch	DBH
Format:	C1.0	C3.0	N3.0	N3.0	N2.0	N4.1
1	1	DF	Leave	Empty/Skip	Empty/Skip	Empty/Skip
2	2		Leave	Require	Leave	Require

Buttons: Add Line, Insert Line, Delete Line

Data Format Column Display

General Data Entry

Screen Define Error Checks

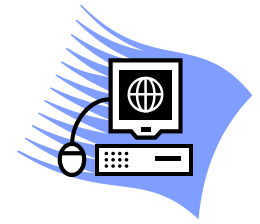
User Programs Auto Store

GPS Locks / Blocks

Branch Control

- Easily accommodates different hand held display sizes





## Integrated Communications Software for MS Windows & Windows Mobile Devices

- User Friendly Overlay to MS ActiveSync/Windows MDC
- File transfer between PC & handheld/GPS/Tablet
- Can run in the background or unattended







# DataPlus Host

www.elecdata.com

**DataPlus Mobile Host**

File Communications Tools Options Help

DPM Host Mobile Removable DataPlus PC

Send App Send Data Recv Data Install

Mobile version available: 4.03 (07/14/2015)

Status

Mobile detected: ● Yes    Software detected: ● Yes    Unit Number: demo copy

[Acknowledge Errors](#)

Current Activity

```
09/21/2015 14:44:57 Mobile device connected. Serial number: F5AF3EC. Application: undefined.
09/21/2015 14:44:57 Mobile software version: 4.02 Date: 06/24/2015
09/21/2015 14:44:57 The mobile program has not been updated because the auto-update feature is off.
09/21/2015 14:45:12 Sending application to remote device
09/21/2015 14:45:12 From path C:\ElecData\DataPlus Mobile\Apps
09/21/2015 14:45:12 To path \DataPlus Mobile\Apps
09/21/2015 14:45:12 TUTORIAL.dpa
09/21/2015 14:45:12 1 file sent successfully
09/21/2015 15:25:28 Disconnected from mobile device.
09/21/2015 16:16:10 Mobile device connected. Serial number: demo copy. Application: undefined.
09/21/2015 16:16:10 Mobile software version: 4.02 Date: 06/24/2015
09/21/2015 16:16:10 The mobile program has not been updated because the auto-update feature is off.
09/21/2015 16:19:40 Disconnected from mobile device.
09/21/2015 16:19:57 Mobile device connected. Serial number: demo copy. Application: undefined.
09/21/2015 16:19:57 Mobile software version: 4.02 Date: 06/24/2015
09/21/2015 16:19:57 The mobile program has not been updated because the auto-update feature is off.
09/21/2015 16:49:24 User has chosen not to overwrite application on mobile device.
09/21/2015 16:59:44 Disconnected from mobile device.
09/21/2015 16:59:56 Mobile device connected. Serial number: demo copy. Application: undefined.
09/21/2015 16:59:56 Mobile software version: 4.02 Date: 06/24/2015
09/21/2015 16:59:57 The mobile program has not been updated because the auto-update feature is off.
```





TUTOR\_61b - DataPlus Mobile

Application View Communications Utilities Preferences Help

Application  
 Created: 11/12/1998  
 Version: 001.001  
 Last Edit: 10/03/2014  
 Build: 43

Hierarchy  
 Stand  
 Plot  
 Tree  
 Damage  
 Wildlife  
 Comments

Columns  
 1. KEY\_A C15 (hidden)  
 2. Date C10  
 3. Time C8  
 4. Region N2.0  
 5. Forest C3  
 6. Stand C10  
 7. Cruiser C3  
 8. Acres N5.0

Application Tabs: Branch Tabs, Column Tabs

Data Format | General | Screen Define | User Programs | GPS | Branch Control

	ColumnName	Prompt1	Prompt2	Type	Size	Decimals	Key
1	KEY_A	NewCol		C	15	0	<input checked="" type="checkbox"/>
2	Date	Date		C	10	0	<input type="checkbox"/>
3	Time	Time		C	8	0	<input type="checkbox"/>
4	Region	Region		N	2	0	<input type="checkbox"/>
5	Forest	Forest		C	3	0	<input type="checkbox"/>
6	Stand	Stand		C	10	0	<input type="checkbox"/>
7	Cruiser	Cruiser		C	3	0	<input type="checkbox"/>
8	Acres	Acres		N	5	0	<input type="checkbox"/>

Buttons: Add, Insert, Delete, Edit, Move Up, Move Down, Move To...

Data Format | Column Display | General | Data Entry | Screen Define | Error Checks | User Programs | Auto Store | GPS | Locks / Blocks | Branch Control

# List File

TUTORIAL2 - DataPlus Mobile

Application Communications Utilities Preferences Help

Hierarchy: Stand

- Plot
  - Tree
    - Damage
    - Wildlife
    - Comments

Columns

- KEY\_A C15 (hidden)
- Date C8
- Time C8
- Region N5.0
- Forest C3
- Stand C6
- Acres N5.0
- Cruiser C3

Application Tabs: Application Tabs Branch Tabs Column Tabs

Column Display Data Entry Error Checks Auto Store Flow Control Locks/Blocks

Check File

- Translated
- Unsorted

Error Check Type: List File

View File: FOREST.CL

	STRING	TRANSLATE	MEANING
1	002	BEA	Beaverhead
2	003	BTR	Bitterroot
3	004	IPH	IdPanHandle
4	005	CLR	Clearwater
5	006	CUS	Custer

Relate Parameters

Relate Check Type: None

Error Check Programs

- Pre
- Instead
- Post

Data Format Column Display


General Data Entry

Screen Define Error Checks

User Programs Auto Store

GPS Flow Control

Branch Control Locks / Blocks



DataPlus Mobile Forest Stand Acres

Forest	Stand	Acres
		0

STR | TRA | MEANING

- 002 | BEA | Beaverhead
- 003 | BTR | Bitterroot
- 004 | IPH | IdPanHandle
- 005 | CLR | Clearwater
- 006 | CUS | Custer

< Choices:5 >

F1 F2 F3 F4 F5 A5 F6 F7 F8 F9 F0 AK





Hierarchy Help

Hierarchy	Columns
Trap Header	1. KEY_A C15 (hidden)
Trap Data	2. KEY_AA C10 (hidden)
	3. Gate N2.0
	4. Sex C1
	5. Age C1
	6. F_age_d C1
	7. Recap C1
	8. L_EarTags C6
	9. R_EarTag C6
	10. VIS C2
	11. BloodTube C7
	12. Keep C1

Data Format	Column Display
General	Data Entry
Screen Define	Error Checks
User Programs	Auto Store
GPS	Flow Control
Branch Control	Locks / Blocks

Application Tabs Branch Tabs Column Tabs

App Links Versioning Security Compilation

Help

GPS

Use local filters

Require DGPS

Require 3D position

Minimum SVs:

Max DOP:

Use application-specific waypoint file

Select Edit Create View

- Allow Multiple Datasets
- Use File Coordinates
- Use Status Columns
- Enable Key Remapping Key Remapping

Global User Programs

Select Edit Remove

Edit/Create

Dependent Files

Add Remove



# Branch Control

WYOELK - DataPlus Mobile

Application Communications Utilities Preferences Help

Hierarchy: Trap Data

Columns:

- KEY\_A C15 (hidden)
- KEY\_AA C10 (hidden)
- Gate N2.0
- Sex C1
- Age C1
- F\_age\_d C1
- Recap C1
- L\_EarTags C6
- R\_EarTag C6
- VIS C2
- BloodTube C7
- Keep C1

Application Tabs: Application Tabs | **Branch Tabs** | Column Tabs

Data Format | General | Screen Define | User Programs | GPS | **Branch Control**

Available columns:

- Trap Header, 'Recorder'
- Trap Header, 'Feed\_Groun'
- Trap Header, 'Date'
- Trap Data, 'Gate'
- Trap Data, 'F\_age\_d'
- Trap Data, 'Recap'

In use:

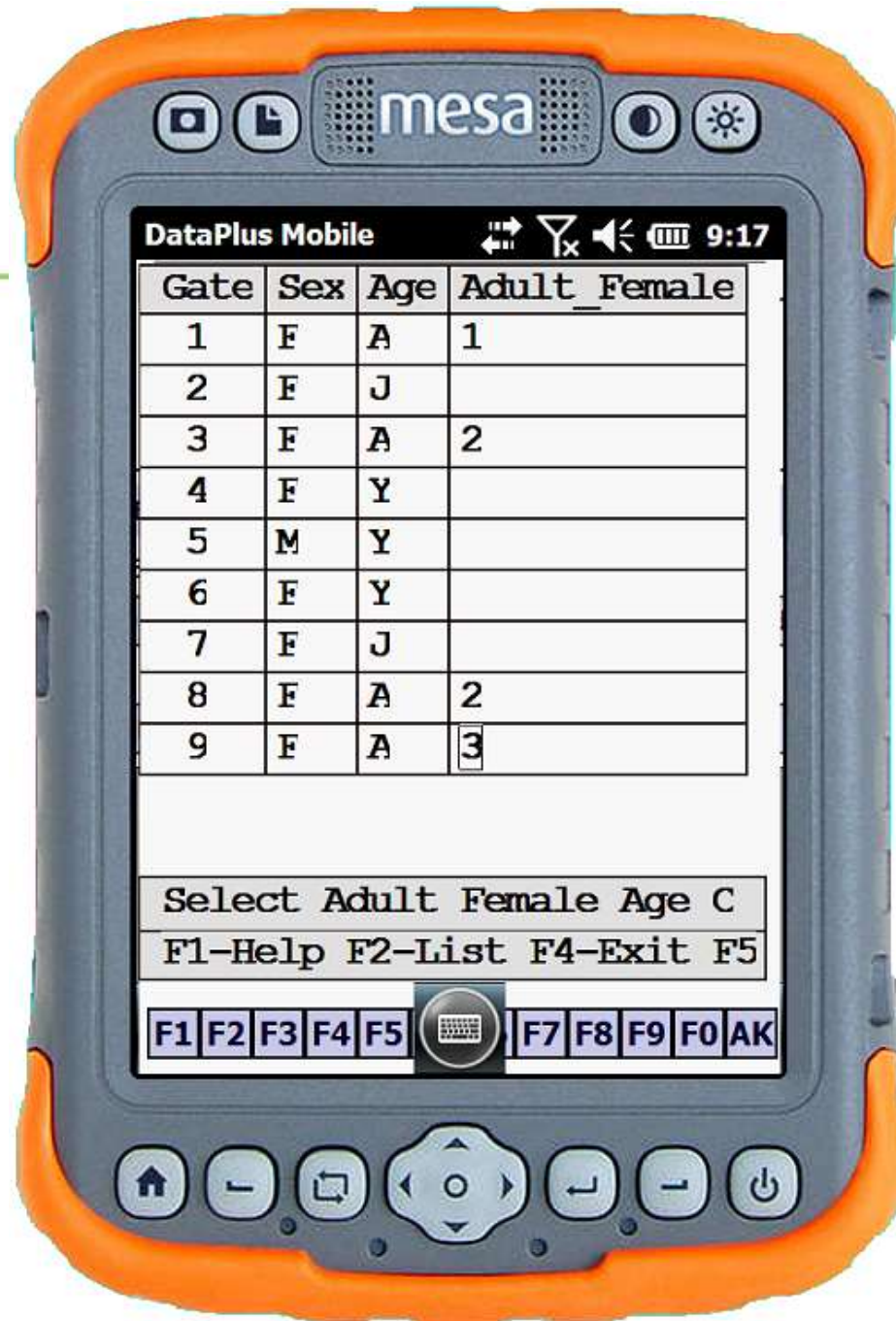
- Trap Data, 'Sex'
- Trap Data, 'Age'

To enter a numeric range, enter #-# (ex: 3-5). If the control column is a 'Key Number into Character Column' entry type, leaving the column blank would match a column with no data entered.

Legend: Control Columns Affected Columns

Branch:	Trap Data Sex C1.0	Trap Data Age C1.0	Trap Data Gate N2.0	Trap Data F_age_d C1.0	Trap Data Recap C1.0	Trap Data L_EarTags C6.0	Trap Data R_EarTag C6.0	Trap Data VIS C2.0	Trap Data BloodTube C7.0
1	F	A	Require	Require	Require	Require	Require	Require	Require
2	F	Y	Require	Skip	Require	Require	Require	Require	Require
3	F	J	Require	Skip	Require	Require	Require	Require	Require
4	M	A	Require	Skip	Require	Require	Require	Skip	Skip
5	M	J	Require	Skip	Require	Require	Require	Skip	Skip
6	M	Y	Require	Skip	Require	Require	Require	Skip	Skip

Data Format | Column Display | General | Data Entry | Screen Define | Error Checks | User Programs | Auto Store | GPS | Flow Control | Branch Control | Locks / Blocks



DataPlus Mobile 9:17

Gate	Sex	Age	Adult_Female
1	F	A	1
2	F	J	
3	F	A	2
4	F	Y	
5	M	Y	
6	F	Y	
7	F	J	
8	F	A	2
9	F	A	3

Select Adult Female Age C  
F1-Help F2-List F4-Exit F5

F1 F2 F3 F4 F5  F7 F8 F9 F0 AK



FISHDATA - DataPlus Mobile

Application Communications Utilities Preferences Help

Hierarchy

Help

Hierarchy Columns

Level 1  
Fish

1. KEY\_A C15 (hidden)  
2. KEY\_AA C10 (hidden)  
3. Species C3  
4. Length N6.2  
5. Weight N6.2  
6. Mark C2

Application Tabs Branch Tabs Column Tabs

Column Display Data Entry Error Checks Auto Store Flow Control Locks/Blocks

Help

Check File  
 Translated  
 Unsorted

List File  
Species.d

Allow User Override

Relate Parameters  
Relate Check Type  
None

Error Check Programs  
 Pre  
 Instead  
 Post

Edit List Check for Column 'Species'





	STRING	TRANSLATE	MEANING
1	RBT	RBT	Rainbow Trout
2	YSC	YSC	Yellowstone Cutthroat
3	BKT	BKT	Brook Trout
4	BRN	BRN	Brown Trout
5	MWF	MWF	Mountain Whitefish
6	SRC	SRC	Snake River Cutthroat
7	MSC	MSC	Mottled Sculpin
8	LKT	LKT	Lake Trout

Save  
Cancel  
Print  
Help  
Add  
Insert  
Delete

Translated Error Check with Meaning Column





# Fisheries Case Study

Pressing a number  
Loads the three-letter  
Abbreviation for fish species

**DataPlus Mobile**      **12:58**

Ln#	Spe	STR	TRA	MEANING
1	RBT	1	RBT	Rainbow Trout
2	RBT	2	YSC	Yellowstone Cutthroat
3	RBT	3	BKT	Brook Trout
4	YSC	4	BRN	Brown Trout
5	YSC	5	MWF	Mountain Whitefish
		6	SRC	Snake River Cutthroat
E		7	MSC	Mottled Sculpin
F1		8	LKT	Lake Trout
		9	TST	Test Fish

< Choices:9 >



- We can develop your DPM application
  - Price based on hours of development time
  - Estimate can be provided based on existing paper data sheets or a detailed written description
  - DataPlus App Library (future)



# DataPlus Users

*Over 1300 Licenses Sold!*

Alaska Fish & Game  
Idaho Fish & Game  
Utah Division of Wildlife Resources  
Florida Marine Fisheries Division  
Maine Dept. of Natural Resources  
Nez Pierce Tribe  
Rye Tree Service  
Oregon Dept. of Forestry  
Interpine Forestry  
Temple Inland  
Bureau of Indian Affairs  
Weyerhaeuser  
University of Alaska  
Wyoming Game and Fish  
Bureau of Land Management

USDA Forest Service  
Chehalis Indian Tribe  
WA Dept. of Natural Resources  
City of Logan, UT  
High Desert Timber  
Roseburg Forest Products  
Mason-Bruce Girard  
Potlatch  
Plum Creek Timber  
Fort Lewis Forestry  
Boise Cascade  
Duck Creek  
Integrated Resource  
Terra Verde



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## Lesson 1: Creating a Basic Application

**GOAL** — To create and test a basic application on a PC that can later be copied to a handheld computer for use in the field.

### OBJECTIVES

- Use the **Application** tab.
- Create the hierarchy for application **CRUISE**.
- Use the **Data Format** tab.
- Format columns for application **CRUISE**.
- Save the application.
- Compile and test the application with sample data.
- Use **keystroke help**.
- Use **sibling jumps**.

1. Open **DPM Generator** under **Start> All Programs> DataPlus Mobile**.
2. Select **New** from the **Application** menu.
3. Type "**CRUISE**" in the **New Application** box.
4. Click **OK**.
5. To see all the option for this tutorial, we will be using the **Line** screen type till Lesson 3. Set **ScreenType** in the **Screen Define** on the **Branch Tab** to **Line**.



### Hierarchy

Next, we need to set up a file hierarchy like discussed in the introduction. In the hierarchy



- To **name** the branch, click on the highlighted branch name or hit F2. Then type the branch name and hit enter.
  - To **add** a branch to the highlighted branch, press the Insert key or right click on the parent branch and select **Add**. Then type the branch name and hit enter. Each parent file may have up to nine child branches.
  - To **delete** the highlighted branch, press the delete key or right click on the branch and select **Delete**. All children will be deleted with it.
6. In the hierarchy window, select "Level 1" and rename it.
    - Click on **Level 1**.
    - Type "**Stand**".
    - Press **ENTER**.
  7. Create a child branch
    - Select **Stand** (if needed).
    - Press **INSERT**.
    - Type "**Plot**".
    - Press **ENTER**.
  8. Select **Plot** and press Insert for each of its three child branches, naming them
    - Tree**
    - Wildlife**
    - Comments**

These three branches are called **siblings**.
  9. Select **Tree**, press **INSERT**, and type "Damage". Press **ENTER**.
  10. Click the **Save** button to save the application.

Try it out!



Application Generator &  
Program Editor Software



DataPlus is a Windows based applications generator for Windows, Windows Mobile, Windows CE, and DOS based hand held computers and tablets. Quickly create flexible data collection applications, which you can design and test on your desktop before deploying to your device. Downloads included for DataPlus Professional and Mobile.

[Download for all versions of DataPlus](#)

[Purchase DataPlus](#)

[More Information](#)

No access to the Date File Editor

[www.elecdata.com/downloads](http://www.elecdata.com/downloads)





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# Our Services

- Professional GIS services
- Specialize in mobilizing field crews
- Water and weather monitoring solutions
- Vector Control Hardware & Software Solutions
- UAS products and services
- Software development
- Rental equipment
- Repair services, technical support & training





Thank You!

