



# Field-Map

## News in Field-Map Scripting Versions X9 and 20



IFER - Monitoring and Mapping Solutions Ltd.

<http://www.field-map.com>

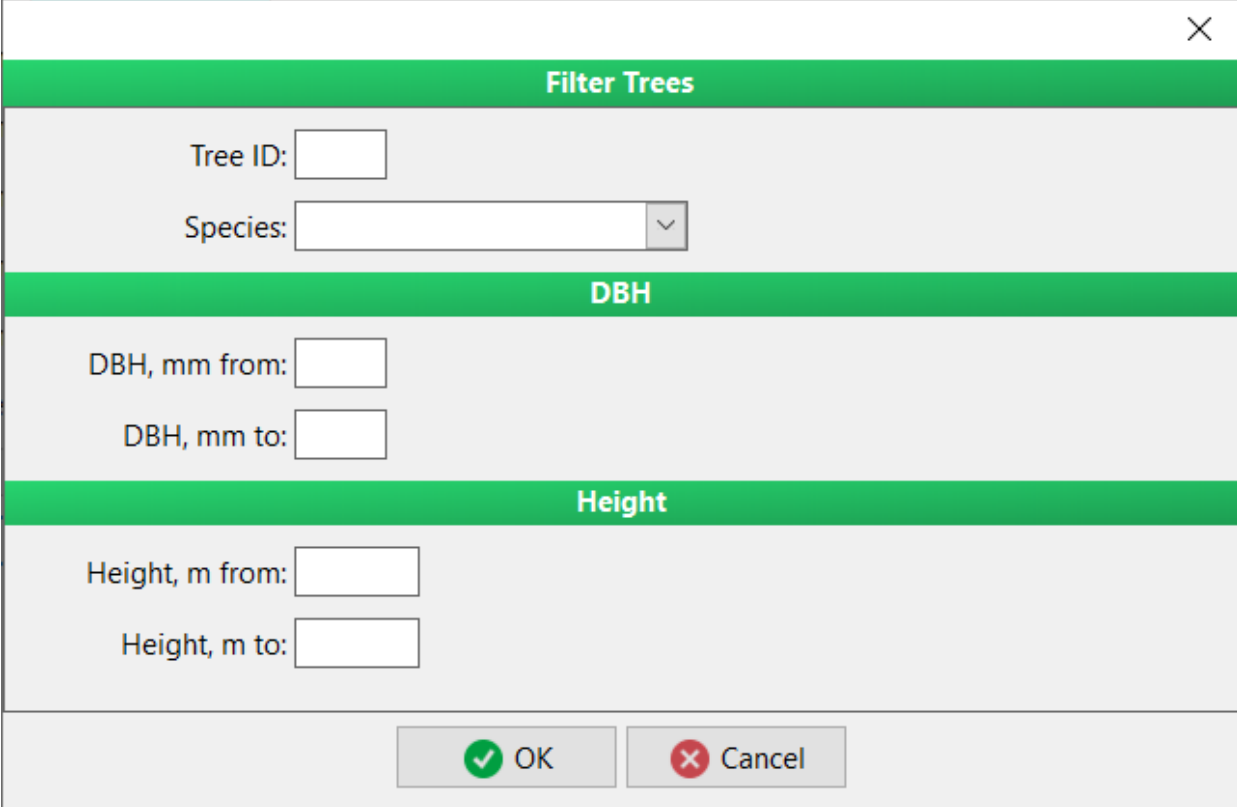
# Basic information

- ▶ Scripting engine is still evolving
- ▶ Over 100 new functions were implemented in Field-Map version 20
- ▶ Documentation is being continually updated
- ▶ Move from using dll extensions to using scripts
- ▶ 6 new scripting events

# User Interface and Control Functions

# Value Dialog

- ▶ Input multiple values in one dialog
- ▶ Possibility to input dates and choose from lookup lists
- ▶ Can be used with virtual keyboard



The image shows a screenshot of a software dialog box titled "Filter Trees". The dialog has a white title bar with a close button (X) in the top right corner. The main content area is divided into four sections, each with a green header bar:

- Filter Trees**: This section contains two input fields: "Tree ID:" followed by a text box, and "Species:" followed by a dropdown menu.
- DBH**: This section contains two input fields: "DBH, mm from:" followed by a text box, and "DBH, mm to:" followed by a text box.
- Height**: This section contains two input fields: "Height, m from:" followed by a text box, and "Height, m to:" followed by a text box.

At the bottom of the dialog, there are two buttons: "OK" with a green checkmark icon and "Cancel" with a red X icon.


# Value Dialog

- ▶ Add fields to the dialog window:
  - ▶ Integer (procedure `AddInteger`)
  - ▶ Float (procedure `AddFloat`)
  - ▶ String (procedure `AddString`)
  - ▶ Lookup list (procedure `AddLookupList`)
  - ▶ Date (procedure `AddDate`)
- ▶ Separate fields using headers (procedure `AddHeader`)
- ▶ Show the dialog to the user (function `InputValues`)
- ▶ Access values after the dialog is closed:
  - ▶ By field index (property `Value[i]`)
  - ▶ By field label (function `ValueByLabel`)


# Attribute Editor

- ▶ Allows changing values directly from the map window by using the OnDoubleClickToMap event
- ▶ Can change multiple values at once

Attribute Editor (© 2021 IFER / ver. 1.0) ✕

Species  

NS	OMS	XS	ESF	GF	NMF	NF	XF	DF	SP	AUP
WEP	LP	XP	EL	XL	YEW	POK	SOK	QPU	XOK	QCE
BE	HBM	NOM	SY	FM	AH	FAM	SEM	WEM	SBI	XBI
ROW	WCH	SLI	GAR	VAR	ASP	WPO	BPO	HCH	SC	

Decay status  

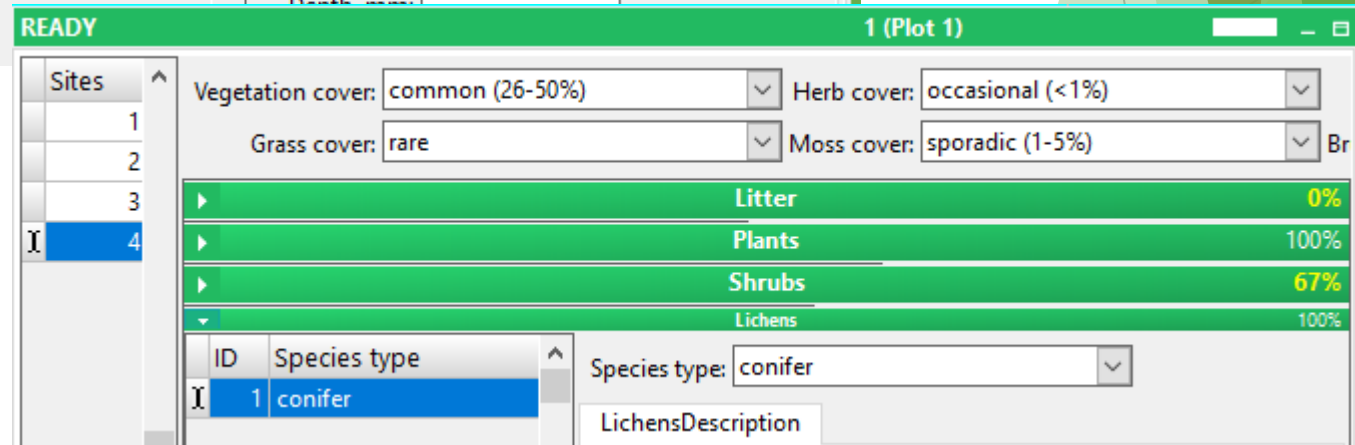
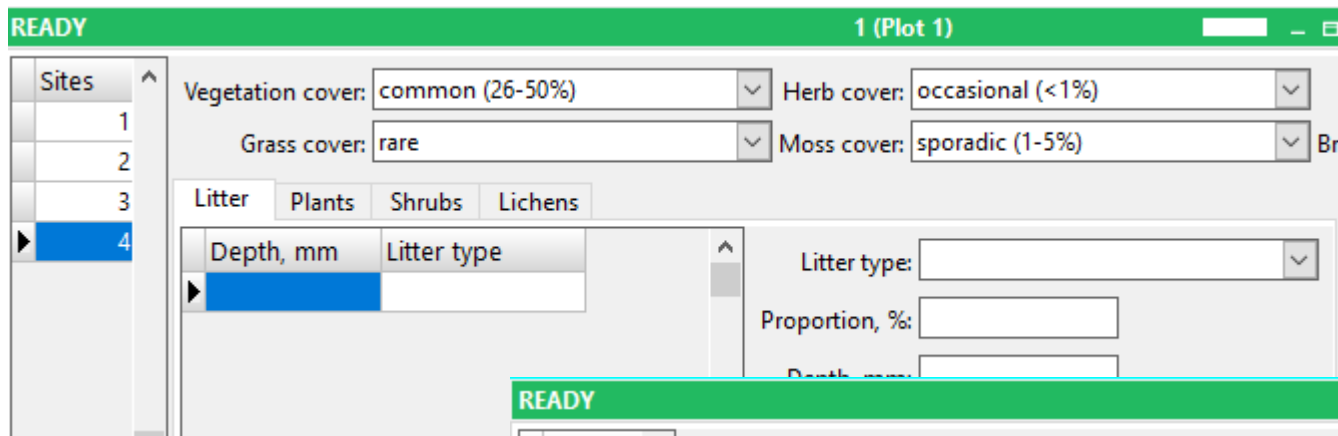
# Attribute Editor

- ▶ Add attribute to the attribute editor
  - ▶ `function AddAttribute(LayerName_,AttributeName_ :string, ShowKeyboardHint_ :boolean)`
- ▶ Disable/enable finger controls
  - ▶ `property FingerControl :boolean`
- ▶ Override color settings of the changed fields
  - ▶ `property ColoredPanels :boolean`
- ▶ Show the attribute editor to the user at specified coordinates (of the screen)
  - ▶ `functionShow(const Xpos,Ypos :integer) :Boolean`
  - ▶ If (-1,-1) is used as coordinates, the dialog opens in the screen center

# Panels in Scroll Box

- ▶ Set container type

- ▶ property ContainerType :string {NOTEBOOK,SCROLLBOX}





# Panels in Scroll Box

- ▶ Manage scroll box bar color, header, caption, secondary caption

The screenshot shows a software window titled "READY" and "1 (Plot 1)". On the left is a "Sites" scroll box with a green header and a list of sites 1 through 4. Site 4 is selected. The main area contains several panels:

- Vegetation cover:** common (26-50%)
- Herb cover:** occasional (<1%)
- Grass cover:** rare
- Moss cover:** sporadic (1-5%)
- Litter:** 0%
- Plants:** 100%
- Shrubs:** 67%
- Lichens:** 100%

Below the Lichens panel is a "Species type" dropdown set to "conifer". Below that is a "LichensDescription" panel with a table:

ID	Type	Occurrence
* 1	folicose	frequent

To the right of the table are "Type: folicose" and "Occurrence: frequent" fields, and a refresh button.

# Panels in Scroll Box

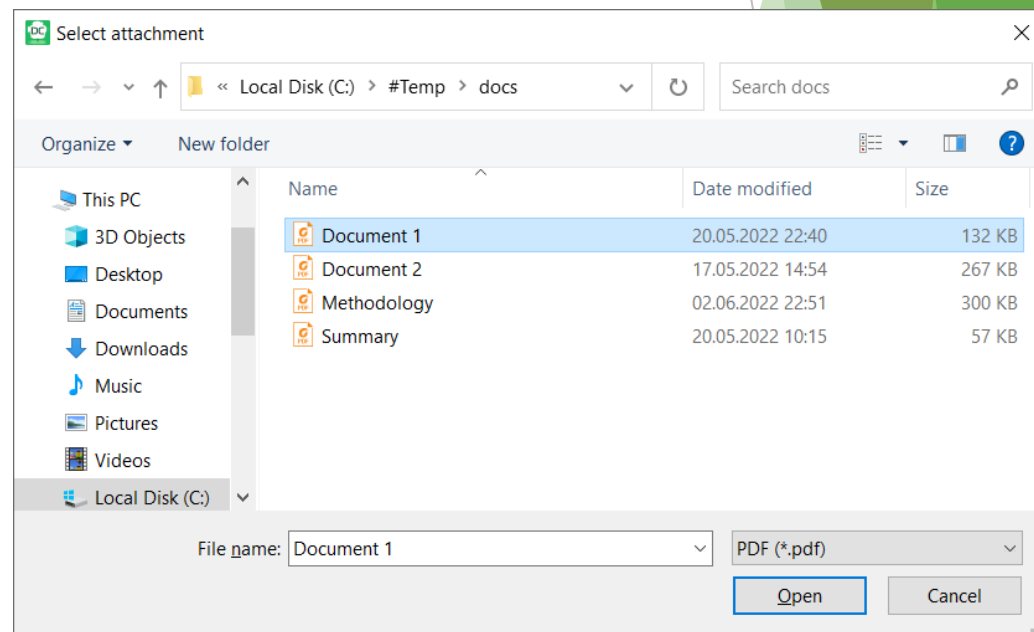
- ▶ Expand / collapse scroll box
  - ▶ procedure ComboPanelCollapse
  - ▶ Procedure ComboPanelExpand
  - ▶ procedure CollapseAllComboPanels
  - ▶ Procedure ExpandAllComboPanels
- ▶ Events triggered by changes in scroll box
  - ▶ OnComboPanelCollapse
  - ▶ OnComboPanelExpand

The screenshot shows a software window titled "READY" and "1 (Plot 1)". On the left is a scroll box labeled "Sites" with a list of sites 1, 2, 3, and 4. Site 4 is selected. To the right of the scroll box are four dropdown menus for cover types: "Vegetation cover: common (26-50%)", "Herb cover: occasional (<1%)", "Grass cover: rare", and "Moss cover: sporadic (1-5%)". Below these is a table with green rows and white text, showing the percentage of cover for different categories. The table has four rows: "Litter" (0%), "Plants" (100%), "Shrubs" (67%), and "Lichens" (100%).

Category	Percentage
Litter	0%
Plants	100%
Shrubs	67%
Lichens	100%

# Miscellaneous User Interface Functions

- ▶ Open virtual keyboard for specified attribute by script:
  - ▶ procedure ShowVirtualKeyboard(const name :string)
- ▶ File picker dialog:
  - ▶ function ExecuteFileDialog(const Caption\_, InitialDir\_, Filter\_ :string) :string



# System Functions

# Working with files

- ▶ Store and load files in BLOB fields
- ▶ BLOB fields work with synchronization - files can easily be transferred to the server and between users
- ▶ Store file to BLOB field:
  - ▶ `function File2Blob(const SourceFilename_,BlobAttributeName_ :string) :boolean`
- ▶ Save file from BLOB to folder:
  - ▶ `function Blob2Folder(const DestFolder_,BlobAttributeName_ :string) :Boolean`
- ▶ Can be used in combination with file picker dialog and function `OpenFileByWindowsAssociation`

# Events OnEnterControl and OnExitControl

- ▶ Layer events
- ▶ Events are triggered when the cursor enter a field and when it exits (by pressing tab or enter or by clicking to another field)
- ▶ Two global variables are automatically filled that can be used in scripts:
  - ▶ SenderLayer
  - ▶ SenderAttribute

# Mapping and Measuring Functions

# Conversion to and from WGS84

- ▶ New functions to convert coordinates between projection used in Field-Map and WGS84
- ▶ Convert coordinates to WGS84:
  - ▶ `function ProjectionToWGS84(const Y,X :double; out Lat,Lon :double) :boolean`
- ▶ Convert coordinates from WGS84:
  - ▶ `function WGS84ToProjection(const Lat,Lon:double; out Y,X :double) :boolean`



# Calculating magnetic declination

- ▶ Magnetic declination can be calculated directly in Field-Map script
- ▶ Based on IGRF data (up to year 2024)
- ▶ Input is date, latitude and longitude (in WGS84)
- ▶ `function CalcMagneticDeclination_deg(const Lat_deg, Lon_deg :double; Date :variant) :variant`

**Thank you for your attention**



**Field-Map**