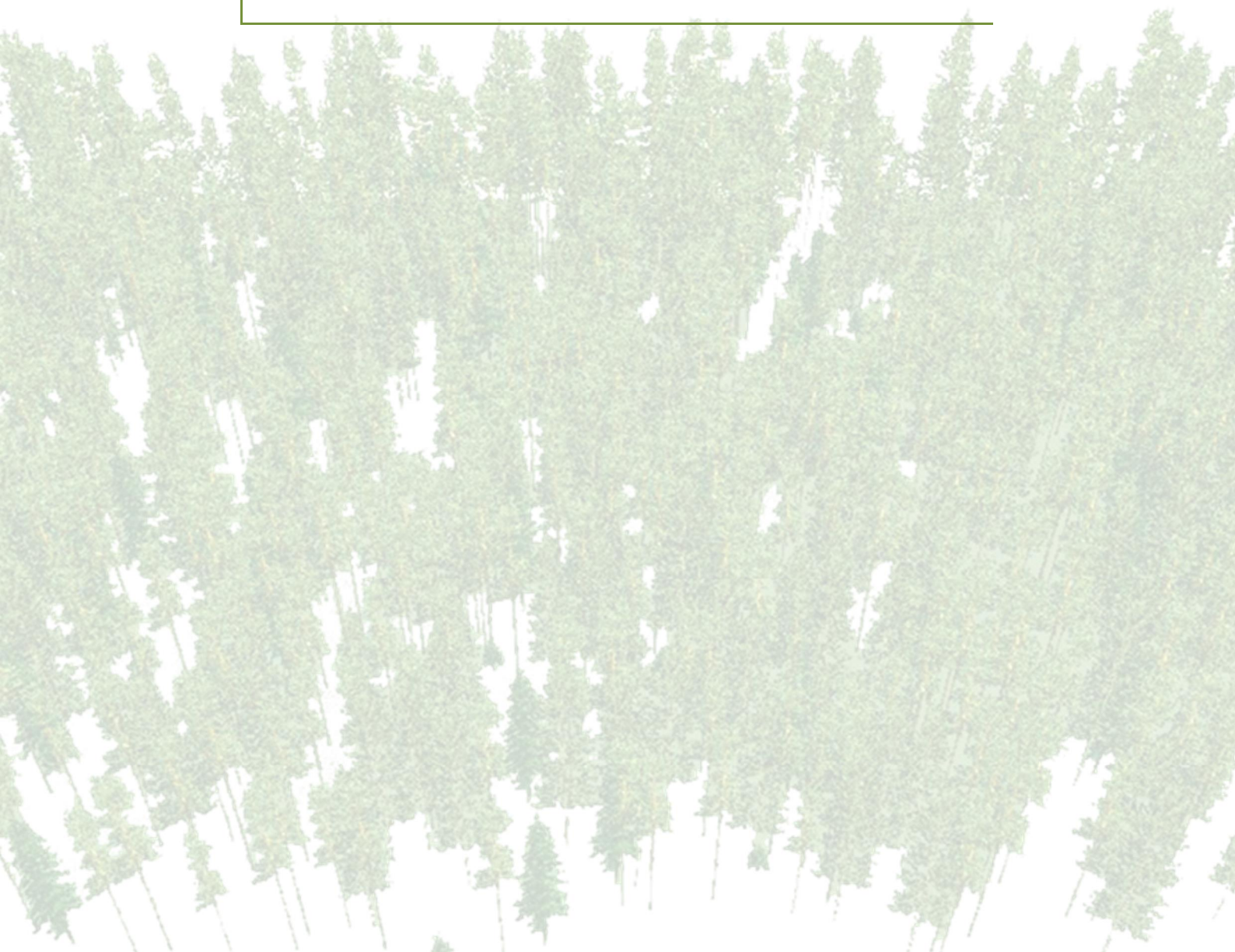
Haglöf SWEDEN

User manual

TopiTax

Version 2.1
Revised: 2019-07-02

An application for DP II



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Important information

Read the manual before using the application.

! If you are upgrading your application read the section about the Version history before upgrading so no data will be lost.

TopiTax – for what and why?

TopiTax is a software for tree inventory, plot inventory. There are 2 levels in the program, Stand and plots.

Stand Variables: Owner, Holding category.

Plot variables: Department Nr, Plot Number, Radius/Factor, Non Productive codes, Coordinates, Structure.

Tree variables: Species, Diameter, Height, Age, Growth, Sociology and broken top.

Results can be printed to a *.csv (semi comma separated text file), and as a *.kml(Google earth) file.

DpDme can be used to determine the distance to the plot center.

DpGps can be used for collecting plot coordinates and navigate.

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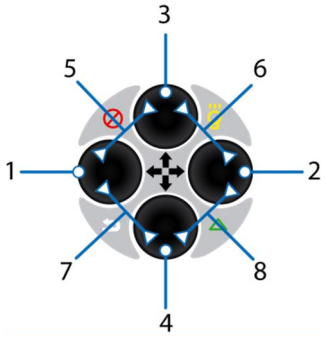
Getting started

DP II

To be able to get started and using the DPII it can be a necessity to comprehend the functions of icons and keystrokes.



Navigation keys, overview

	Icon	Key(s)	Description
1		Left	Step/Move Left, decrease a value
2		Right	Step/Move right, increase a value
3		Up	Step/Move up, increase a value
4		Down	Step/Move down, decrease a value
5		Up + Left	Shut off
6		Up + Right	Activate background light.
7		Down + Left	Exit,Escape
8		Down + Right	Activate IR receive

Example

Use Escape to leave a menu or for aborting an ongoing Kermit-communication.

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Main menu

The main menu is the first menu of the program. This is where you end up when starting the program.

Function	Description
STAND	Ccreate a new stand, choose an existing stand or edit stand variables..
SEND DATA	Printout functions
SETTINGS	Settings for the program and caliper.
RECEIVE	Preload plots into program.
CLEAR MEMORY	Delete one or all stands/data/printouts.
TURN OFF	Turns the calliper off
USB	Set caliper in USB mode

The menu system is based on levels with several choices on each.

! Use the navigation keys up and down to select a menu choice. Press Enter to confirm your choice. Step back one level by pressing Escape

SETTINGS

Here you can determine how the program should work and behave.

Settings – Program

How to set language

1. Choose **Settings → Program → Language** and press Enter.
2. With navigation key right and left choose between German/Italian/English.
3. Press Enter to save.

How to set active species

1. Choose **Settings → Program → Species** and press Enter.
2. With navigation key right, check or uncheck the box for the species you want to be able to choose among when cruising trees.
3. Press Enter to save.
4. This is suitable for not having to step through species not used.

How to set taking 2 diameters for each tree, cross scale.

1. Choose **Settings → Program → Options** and press Enter.
2. With navigation key right, check or uncheck the box for the cross scale function(2xDiameter) to be active or not.
3. Press Enter to save.

How to set taking plot coordinates.

1. Choose **Settings → Program → Options** and press Enter.
2. With navigation key right, check or uncheck the box for the plot coordinate(Coordinate) to be active or not.
3. Press Enter to save.

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How to set using DpDme, and using plot Radius instead of Factor.

1. Choose **Settings → Program → Options** and press Enter.
2. With navigation key right, check or uncheck the box for the DpDme to be active or not.
    a. If you check the DpDme all plots that you create new will be with a plot radius.
    b. If you Uncheck the DpDme box all plots that you create new will be with a plot factor.

How to set taking broken top on trees.

1. Choose **Settings → Program → Options** and press Enter.
2. With navigation key right, check or uncheck the box to take breoken top on trees(Broken Top) to be active or not.
3. Press Enter to save.

Settings - System

See the included user manual for the DPII to see what kind of system settings that can be made

Clear Memory

How to delete one Stand

1. Choose **Clear memory → One Stand** and press Enter.
2. Choose wanted Stand by using the navigation keys left and right.
3. Press Enter and the Stand is chosen.
4. Answer Yes to delete the Stand. The Stand and all its departments/plots/trees will be deleted.

How to delete all data

1. Choose **Clear memory → All Stands** and press Enter.
2. Answer Yes to delete all data. All Stand and all plots/trees will be deleted.
3. All printouts saved on the caliper will also be deleted.

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Receive Data

Here you can preload the program with Stands and plots. You have to create a *.csv file. Use Excel and choose Save As→Csv. The file should be saved in the folder "DPII/Data/TopiTax/Input".
You will be asked whether the plots are with radius or factor and you will have to enter either a radius or a factor.

The Layout for the columns must look like this:

Column	***Level***	***Variable***	***Comments***
1	Stand	Besitskod	Numbers,Maximum 4 numbers
2	Stand	Betriebskl.	Letters, Max 1 letter.
3	Plot	Abteilung	Numbers, Max 3 numbers
4	Plot	Plot Number	Letters and numbers, Max 4 numbers, program will only read numbers so P0001 will be saved as 0001.
5	Plot	UTM X	Numbers and decimal separator
6	Plot	UTM Y	Numbers and decimal separator
7	Plot	UTM ZONE	Program will read the last 3 Characters in column, example "EPSG:32632 - WGS84 / UTM zone 32N" will be saved as "32N"

Example with 4 Plots:

Besitzkod.	Betriebskl.	Abt.	PktNr	X-Koordinate	Y-Koordinate	UTM Zone And Letter
2003	A	1	L0001	696684,2318	5141216,099	EPSG:32632 - WGS84 / UTM zone 32N
2003	A	1	L0002	697734,2318	5141216,099	EPSG:32632 - WGS84 / UTM zone 32N
2003	A	1	L0003	697909,2318	5141216,099	EPSG:32632 - WGS84 / UTM zone 32N
2003	A	1	L0004	698084,2318	5141216,099	EPSG:32632 - WGS84 / UTM zone 32N

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Stand Level

Here you start your work by creating a new Stand or choosing an existing. Here you can edit stand variables.

How to open an old Stand

1. From the main menu choose **Stand → Old Stand** and press Enter.
2. Choose wanted Stand by using the navigation keys left and right.
3. Press Enter and the Stand is chosen.

How to create a new Stand

1. From the main menu choose **Stand → New Stand** and press Enter.
2. Enter the Stand variables, **Owner** and **Holding Category**.
3. A new Stand is created.

How to change current Stand variables

1. From the Stand menu choose **Edit** and press Enter.
    a. If the stand is created from a file you can not edit the stand variables.
2. Change the variables.
3. The changes are saved.

How to enter the Plot level

1. From the Stand menu choose **Plot** and press Enter.

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Plot Level

Here you start create your plots and measure your trees

How to create a plot

1. From the Plot menu choose **Measure** and press Enter.
2. Choos **New Plot** = **Yes** and press Enter.
3. Enter the **Department number**
4. There are now 2 different possibilities
    a. If you have in program settings options have chosen to work with DpDme you Enter the plot radius in meters.
    b. If you in program settings options **NOT** have chosen DpDme you enter the plot factor(1/2/4).
5. If you have, in program settings, chosen to take plot coordinates you do so now.
    a. The display will say "waiting for gps signal" until a signal is received from the GPS.
    b. Then the screen will show the number of received coordinates (usually 1 every second) and display an average of those received signals.
    c. When you press Enter that average will be stored on the plot.

How to select an existing plot, edit existing plot, navigate to plot.

1. From the Plot menu choose **Measure** and press Enter.
2. Choos **New Plot** = **No** and press Enter.
3. Step through the plots with the navigation keys.
    a. An asterix "*" in the upper right corner will let you know if there are trees on the plot.
    b. To scroll faster between plots hold the navigation key down.
4. Press Enter at wanted plot
5. Step through the plot variables and change if wanted.
    a. If the plot is received and created from a file you can not change any plot variables(department, nr)
6. Answer if you want to navigate to the plot or not.
    a. If you choose to navigate a display will show the direction and distance to the plot.
    b. The program will make a sound when you are within 5m of the coordinates.
7. Answer if the plot is to be moved or not.
    a. There are 16 different choises for moving.
8. Answer if the plot is productive or not.
    a. If not productive there are 20 codes to choose among. If the plot is not productive you will answer if you want to set the plot as finished.
9. Answer yes if you want to take(save) new plot coordinates.

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How to delete a plot

1. From the Plot menu choose **Delete Plot** and press Enter.
2. Choose the plot you want to delete by using the navigation keys left and right.
3. Answer yes to delete the plot and the trees on the plot and the plot itself will be deleted. **You can not delete a plot if it is marked as finished**!

How to set a plot as finished

When exiting measuring trees on a plot you get the question if the plot is finished. If you answer yes 2 times the plot will be set as finished and you can not enter any more trees on that plot.

How to delete a tree

1. From the Plot menu choose **Delete Tree** and press Enter.
2. Choose the plot you want to delete the tree on.
3. Choose the tree you want to erase by using the navigation keys left and right.
4. Press Enter and answer Yes. The tree is then erased.

How to take sample tree information

If you press escape when measuring trees you will automatically end up choosing sample trees.

1. When you escape the measuring menu you will be able to enter sample tree ingormation
2. Choose between all the trees, the calculated sample trees for each species will be marked with an *. Press Enter to choose.
3. Enter Height in meters.
4. Enter Age in years.
5. Enter Growth in mm.
6. An * in the Fert/Fini column will mark if all values are set on the sample tree.
7. Continue to the next sample tree. Press Escape when done.

How to enter structure on a plot

When exiting the measuring menu on a plot you get to choose structure.

a.	Blösse	0
b.	Jungwuchs	1
c.	Dickung	2
d.	Stangenholz	3
e.	Baumholz	4
f.	Altholz	5
g.	Altholz i. Verju	6
h.	Zweischichtig	7
i.	Mehrschichtig	8

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Measure Trees

1. From the Plot menu choose **Measure** and press Enter.
2. Choose to create a new or to continue on an existing plot.
    a. When choosing among plots hold the navigation key down in order to speed up the scrolling of plots.
3. Choose species with navigation keys left and right.
4. Press Enter to take the diameter.
5. If you in settings have chosen to enter sociologie you do so now.
    a. Vorherrschend 1
    b. Herrschend 2
    c. Gering mitherrsc 3
    d. Beherrscht 4
    e. Unterdruckt 5
    f. Altersklassenfre 6
6. If you in settings have chosen to enter broken top you answer yes or no, default for new trees is no.
7. Tree is saved and you start from section 3 again

How to use the double scale function

1. When in measuring mode press navigation key up.
2. Choose 2xDiameter.
3. Now 50cm will be added to the value of the scale.

How to delete a tree while measuring

1. When in measuring mode press navigation key up.
2. Choose Delete tree.
3. Choose tree and answer yes to delete it.
4. Continue measuring trees.

How to enter a note on a tree while measuring

1. When in measuring mode press navigation key up.
2. Choose Note.
3. Choose tree and answer yes to choose it.
4. Enter your comment on the chosen tree.
5. Continue measuring trees.

How to enter a tree comment while measuring

1. When in measuring mode press navigation key up.
2. Choose Note.
3. Choose tree and answer yes to choose it
4. Choose among 4 different tree comments
    a. Nichts / Niente
    b. Baum ist faul / L'albero è marcio
    c. Stammschaden / Danno al tronco
    d. Zwiesel / Biforcazioni

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5. Continue measuring trees.

Using DpDme when measuring trees

1. When measuring the diameter you press navigation key down with the caliper jaws placed around the tree.
2. The DpDme will then measure the distance from the plot center to the center of the tree.
3. A message will appear and show the distance to the tree and plot radius.
4. Then the user can decide whether to measure the tree or not.

How to step through measured trees after plot is done and mark trees to delete

1. When you press escape while measuring you are shown a list of all the trees measured on that plot.
2. Move between the trees by using navigation key Up and Down.
3. Mark the tree to be deleted by pressing navigation key Right.
4. Move to the next tree.
5. When done you must press ENTER to delete the marked trees.
    a. A double beep will sound if trees have been deleted.
6. If you press ESCAPE then the trees you have marked will not be deleted.

When you press escape while measuring you are shown a list of all the trees measured on that plot.

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Printing

There are 2 different printouts. One is a *.csv semi comma separated printout to be opened for example in Excel. The other is a *.kml file to be opened in Google Earth. One printout file will be created for each stand.

The "**To File**" alternative is used for storing the printout in the memory and retrieve it by using the USB cable and locate the data folder "***DPII/Data/TopiTax/***". The caliper acts like an ordinary USB memory.

The Bluetooth Ftp is used for sending files by Bluetooth. Pairing is needed with the receiving device, this is done in the settings for the system in the main menu "Settings→System→Com Port→Bluetooth→Master→Pair"

Excel

Prints a *.csv, semi comma separated text file with a new row for each tree. The filename for the printout will be based on the following Stand variables:

1. Owner
2. Holding category
3. Serial number of caliper

Owner_Holding category_Serialnumber.csv

Col ***Variable***

1.	Stand Owner	
2.	Stand Holding category	
3.	Department number	
4.	Plot number	
5.	Plot factor	
6.	Plot radius	
7.	Plot Latitude Nature	[dd.ddddddd]
8.	Plot Longitude Nature	[dd.ddddddd]
9.	Plot Utm X Nature	[m.m]
10.	Plot Utm Y Nature	[m.m]
11.	Plot Utm X preloaded plot	[m.m]
12.	Plot Utm Y preloaded plot	[m.m]
13.	Plot Utm Zone	[DDX], example 32N
14.	Plot Not productive code	
15.	Plot Not productive name	
16.	Plot movement code	
17.	Plot movement name	
18.	Tree Species Nr	
19.	Tree Diameter	[mm]
20.	Tree Sociology Nr	
21.	Tree Height	[dm]
22.	Tree Age	[year]
23.	Tree Growth	[mm]

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24. Tree Structure Nr
25. Tree Notes
26. Tree Comment code
27. Tree Comment name
28. Tree Broken Top [0=No, 1=Yes]

Kml

A xml file to be opened in Google earth.

Calculations

Sample trees

Sample trees will be taken with the base on basal area weighted average diameter per species (Trees with broken tops will not be calculated).

So for each species an average diameter is calculated:

D = Diameter [cm]

Db = basal area weighted average diameter per species

NrTrees = Nr of trees per species

Db = $\sqrt{(\Sigma(\mathbf{D} \times \mathbf{D})/\mathbf{NrTrees})}$

And then the program searches for the tree that has a diameter that is closest to **Db** and sets that as a sample tree.

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Version history

Information about the changes between the different versions.

! If you are to upgrade it is essential to make sure if the new version is compatible with previous version. I it is not compatible then all data must be taken care of before the upgrade is performed, otherwise data will be lost.

Versions

Version	Description	Compatible
1.3	• Made it possible to edit the plot coordinates even if you have preloaded the plot from file	***YES***
1.4	• Adde plot variable plot productive or not and if not productive 20 different codes and names. • Corrected sample tree check to include all species and age and growth as well. • Corrected question when not all sample tree information has been gathered. • Translations	***NO***
1.5	• Changed name to TopiTax • Added a control so you can not delete a plot marked as finished. • Corrected german translation. • Removed sample tree menu from plot menu. • Changed wording when not all calculated sample trees has all values entered.	***YES***
1.6	• Added 2 species, changed name on 1 species. • Added tree variable Broken top, can turn on and off in settings. • Put entering of structure before answering if plot is done.	***NO***
1.7	• Corrected german language file, yes and no was switched when entering broken top question.	***YES***
1.8	• Added plot variable "Moved" with 16 predefined choises. • Added tree variable comment with 3 predefined values. • Changed scale use for tree variable growth. • Added scrolling fast when holding down key when choosing plots. • Removed delete heights from plot menu. • When exiting a plot you can now step through your trees and mar trees to be deleted. • When entering the sample tree function the display now shows 7 trees at the same time to be able to locate the sample trees easier. • Added preloaded plot coordinates to the printout.	***NO!***

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1.9	• Corrected converting from lat lon to utm x y . When lat lon is 0 utm x and y will not be printed. • Corrected printing original x and y from input file to read and print the original value for utm x and y instead of a conversion from lat and lon. • Corrected reading utm x and y from inputfile to read decimals correctly. • Speed up the selection of plots when scrolling. • Corrected translation of plot variable comment (Verschiebung).	***YES***
2.0	• Changed printout for plot coordinates. Nature = new coordinates taken in field.	***YES***
2.1	• Corrected sample tree calculation	***YES***

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