

Advantages of Field-Map technology use in forestry researches: an example from Poland

Kamil Bielak Stanislaw Drozdowski Bogdan Brzeziecki

Department of Silviculture Warsaw University of Life Sciences

Content:

- 1. Introduction.
- 2. Description of main research areas.
- 3. Field Map as a main tool for data collection and data processing.
- 4. Final remarks.



2010

3rd Field-Map User Conference



2010

3rd Field-Map **User Conference**

Field-Map Hardware

Field-Map Software







- FM PM
- FM DC
- FM IA
- FM SA

Stork



2010

3rd Field-Map User Conference

Field-Map Hardware

Field-Map Software







- FM PM
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4th Field-Map International User Conference, Karkonosze 18-21.09.2012

Stork

Field-Map Technology



2010



Autumn 2010, Jilove u Prahy

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Faculty of Forestry at the Warsaw University of Life Sciences is the oldest and the largest forestry academic institution in Poland, with its history started almost 200 years ago

Current research areas and running projects

Silviculture systems allowing promotion of uneven-age mixed stands in Polish lowland forests

Influence of long-term strict protection on tree species change in the Bialowieza Primeval Forest











Basic parameters of sample plots:

Plot no	Forest comp.	Length (m)	Width (m)	Area (ha)	Number of stands
1	370/371	320	40	1.28	5
2	284/285	780	40	3.12	9
3	316/317	920	40	3.68	6
4	318/288/28 9	1380	40	5.52	13
5	319	200	60	1.20	3
Total		3600		14.80	36



Dates of records:

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2	284/285	1936	1959	1972	1982	1992	2002	2012
3	316/317	1936	1956	1971	1983	1993	2003	2013
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5	319	1936	1959	1969	1981	1991	2001	2011
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Basic measurement program (every 10 years):

For each tree with a D.B.H. of at least 5cm:

Species,

Diameter in two directions (N-S and E-W),

Spatial location (x and y coordinates),

Crown condition (normal, weakened or dead),

Position in the canopy (five height classes).







Plot 284/285 780 m x40 m (theory)





Plot 284/285 780 m x40 m (reality)













Field-Map Project Manager and FM Tools

🔟 Field-Map Project Manager

Project Layers Tools Extensions Options Help

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Field-Map Project Manager and FM Tools









Main principles of forest management



Methodology: Data Collection

Information

At the stand level:

- 1) Spatial elements:
 - distribution of logging limits,
 - location of skid trails network,
 - location of landing area
 - location and area of each cutting
 - distribution of sample plots
- 2) Biota elements:
 - location and area of natural regeneration
 - location of habitats of rare plants
 - nest occurrence of birds of prey



At the single tree level:

- 1) Spatial elements:
 - spatial coordinates of each tree on the sample plot
- 2) Main quantitative parameters
 - d.b.h.
 - height
- 3) Main qualitative parameters
 - assessment of potential timber assortments
 - determining of origin of each tree
 - silvicultural quality



Field-Map Project Manager

Project Layers Tools Extensions Options Help

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Field-Map Data Collector



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Field-Map Data Collector















Field-Map Stem Analyst

Data entering



Field-Map Stem Analyst

Data entering



Field-Map Stem Analyst

Results

Sample tree charts Global models View stems

Data entering



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Models

Data

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Field-Map Inventory Analyst

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Field-Map Inventory Analyst



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Conclusions:

1. From our practice, the efficiency of data collection by means of Field-Map technology fluctuates between 1.5 and 2 in comparison to the traditional methods.

2. We have saved plenty of time on data entering and avoided a lot of possible mistakes during this operation (error-free data). Additionally, use of Field-Map Inventory Analyst has sped up significantly data processing.

3. Thanks to flexibility of Field-Map technology (open for any old data, easy use of collected data for further processing, scripting) it was possible to apply it to different researches task at our department.



Thank you for your attention !!!

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