

European Union European Regional Development Fund



Innovative methods of inventory and monitoring of the Danube floodplain forests using 3-D Remote Sensing technology (INMEIN; HUSK/1101/1.2.1/0141)

Harmonisation of field surveys

Procedures for derivation the stand and tree variables from ALS data

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Scientific seminar, Starý Smokovec 24TH APRIL 2014

General concept for assessment of tree and stand characteristics based on RS data



Concept for assessment of tree and stand characteristics based on RS data in the project INMEIN



Reference meassurement

Responsibility

Methodology: Project "INMEIN" team Implementation: Project "INMEIN" team

Design

Typ: Unsystematic intentional choice of reference plots (RP) Spatial scope: The whole territory (5867 ha) Number of RP: Optimized in the stratified areas according to growing stock variability

Stratification of the territory

Stratification area: File of forest compartments aggregated according to the selection criteria Selection criteria for stratification:

- Tree species composition (Stratum)
- Age class (Substratum)

Stratum	Selection criterion: tree species dominance	Substratum	Selection criterion: age class
А	Poplars (breeding - Aa; domestic - Ab)	A-D	Fast growing species to 15 y: 5 years Fast growing species over 15 y: 10 years
В	Willows (willow tree - Ba; head willow - Bb)	(1,n) Other tree species: 15 years	
С	Ash		
D	Others (mix)		

Reference meassurement

Type of reference plot

Shape: Circle Size of the circle: Variable according to number of trees (at least 30 target trees)

Required characteristics

- Tree characteristics
 - Technology: FieldMap; TruePulse 360B; Other
 - Parameters: Position of tree; Tree species; Tree height; Tree diameter; Crown base;
 Crown projection; Crown level; Exactness of height measurement; Notes
- Positional characteristics of other objects
 - Technology: GNSS equipment (positional accuracy of ±6 m)
 - Parameters: Centre of RP; Well identified objects on remote sensing data; Other



Zi	ákladní data	DBH·H Korunová projekce Korunový profil Kmer
	DBH,mm:	145
	Height,m:	16,70
1	Crown base,m:	3,80
С	rown length,m:	12,90
	DBH2_mm:	149
	Species:	TI
	CrownLevel:	Crown level
	Exactness_h:	Good
	DescriptCode:	·
	Descript:	



Forest meansuration

Responsibility

Methodology: Standard forest mensuration methods Implementation: Private company (out of project)

Design

Typ: Forest compartments (stands) mensuration Spatial scope: The whole territory (5867 ha)

Required characteristics (used in the project INMEIN)

- Stand characteristics
 - Stand parameters: Stand area; Stand age; Stand density/stocking; Timber volume; Tree species composition; Vertical layers
 - Tree species parameters: Mean height; Mean diameter; Mean volume

Control meassurement

Responsibility

Methodology: Project "INMEIN" team Implementation: Private company (external service within project)

Design

Typ: Systematic network of control plots (CP) Spatial scope: area of interest "Ostrov orliaka morského" (96,5 ha) Number of CP: Optimized in the stratified areas according to network (outside reservevation 100x100 m, inside reservation 70x70 m)

Type of reference plot

Shape: Circle Size of the circle: Variable according to number of trees (at least 20 registered trees with dbh >7 cm)

Required characteristics

- Tree characteristics
 - Parameters: Tree species; Tree height; Tree diameter; Crown quality
- Stand characteristics
 - Parameters: Tree species composition; Timber volume/ha; Stocking; Vertical layers



Procedures for derivation the stand and tree variables from ALS data

Application for derivation

Name: reFLex (remote ForestLand explorer) Version: 0.01



Comparison of accuracy and costs between innovative and traditionally inventory will be possible after measurement is finished (forest mensuration, control measurement)

Procedures for derivation the stand and tree variables from ALS data





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Thank you for attention!



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