

Database Code: TP114

Title: Plant biomass dynamics following logging, burning, and thinning in Watersheds 6 and 7, Andrews Experimental Forest, 1979 to present

Abstract:

In 1974, Watershed 6 was clearcut and watershed 7 was shelterwood cut for the purposes of 1) comparing volume growth for the residual stand after shelterwood harvest with pretreatment growth and concurrent growth of a nearby stand, 2) comparing survival and height growth of both planted and natural regeneration on the clearcut and shelterwood watersheds, and 3) correlating seedling survival and height growth with amount of light (canopy density estimate), competition from lesser vegetation, type of seedbed material, and soil-air interface temperatures on watersheds 6 and 7. In the fall of 2001, WS7 was thinned to 220 trees per acre. This study includes vegetation measurements taken in the summer of 2002 in watersheds 6 and 7 for the purpose of characterizing plant succession after thinning in a small, high-elevation watershed.

Keywords: Biomass (understory); Forest composition; Species composition; Thinning; Organic matter; Primary production; biomass; community composition; species composition; plant species composition; primary production; thinning; organic matter; forests; understory vegetation;

Date data commenced: 1979-07-09

Date data terminated: 2014-08-20

Principal Investigator: Mark E. Harmon

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1. Individual tree remeasurement

These data are available through TV010 entity 2

Attribute List:

DBCOD	N	N	char(10)	enum			
ENTITY	N	N	numeric(1,0)	range	1.0000	1.0000	number
TREEID	Y	N	char(13)	freetext			
PSP_STUDYID	N	N	char(4)	place			
WATERSHED	Y	N	char(10)	place			
PLOTID	Y	N	char(8)	place			
SPECIES	Y	N	char(6)	taxa			
TAG	Y	N	numeric(4,0)	range	1.0000	1000.0000	number
YEAR	Y	N	numeric(4,0)	range	2002.0000	2050.0000	YYYY
TREE_STATUS	N	N	char(1)	enum			
DBH	N	N	numeric(5,1)	range	5.0000	80.0000	cm

DBH_CODE	N	N	char(1)	enum				
CANOPY_CLASS	N	N	char(1)	enum				
TREE_VIGOR	N	N	char(1)	enum				
CROWN_RATIO	N	Y	numeric(3,0)	range	0.0000	100.0000	number	
TREE_HEIGHT	N	Y	numeric(4,1)	range	2.0000	24.0000	m	
TREEAZIM	N	N	numeric(3,0)	range	0.0000	360.0000	deg az	
SAMPLEDATE	N	Y	date	range			YYYY-MM-DD	
COMMENTS	N	Y	varchar(80)	freetext				

2. Stump data

Attribute List:

DBCOD	N	N	char(10)	enum				
ENTITY	N	N	numeric(1,0)	range	2.0000	2.0000	number	
WATERSHED	N	N	char(10)	place				
YEAR	N	N	numeric(4,0)	range	2002.0000	2050.0000	YYYY	
PLOT	N	N	numeric(2,0)	range	3.0000	70.0000	number	
SPECIES	N	N	char(6)	taxa				
STUMPDBA	N	N	numeric(5,1)	range	1.0000	30.0000	cm	

3. Tree Cores

Attribute List:

DBCOD	N	N	char(10)	enum				
ENTITY	N	N	numeric(1,0)	range	3.0000	3.0000	number	
WATERSHED	Y	N	char(10)	place				
YEAR	Y	N	numeric(4,0)	range	2002.0000	2002.0000	YYYY	
PLOT	Y	N	numeric(2,0)	range	1.0000	70.0000	number	
TAG	Y	N	numeric(4,0)	range	1.0000	1000.0000	number	
SPECIES	Y	N	char(6)	taxa				
DBH	N	Y	numeric(5,1)	range	1.0000	50.0000	cm	
POSITION	N	Y	char(1)	enum				
BARKTHICK	N	Y	numeric(4,1)	range	0.1000	2.0000	cm	
SAPWTHICK	N	Y	numeric(4,1)	range	0.5000	12.0000	cm	
COMMENTS	N	Y	varchar(80)	freetext				

4. Ground Surface Cover Types

Attribute List:

DBCOD	N	N	char(10)	enum				
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ENTITY	N	N	numeric(1,0)	range	4.0000	4.0000	number
WATERSHED	Y	N	char(10)	place			
YEAR	Y	N	numeric(4,0)	range	2002.0000	2050.0000	YYYY
PLOT	Y	N	numeric(2,0)	range	1.0000	70.0000	number
QUADRAT	Y	N	numeric(1,0)	range	1.0000	2.0000	number
CANCOVER	N	N	numeric(3,0)	range	0.0000	100.0000	%
SLASHDEPTH	N	Y	numeric(3,0)	range	0.0000	75.0000	cm
SLASH	N	Y	numeric(3,0)	range	0.0000	100.0000	%
CWD	N	Y	numeric(3,0)	range	0.0000	100.0000	%
BARE	N	Y	numeric(3,0)	range	0.0000	100.0000	%
MOSS	N	Y	numeric(3,0)	range	0.0000	100.0000	%
BOLE	N	Y	numeric(3,0)	range	0.0000	100.0000	%
LITTER	N	Y	numeric(3,0)	range	0.0000	100.0000	%

5. Understory Vegetation Cover

Attribute List:

DBC CODE	N	N	char(10)	enum			
ENTITY	N	N	numeric(1,0)	range	5.0000	5.0000	number
WATERSHED	Y	N	char(10)	place			
PLOT	Y	N	numeric(2,0)	range	1.0000	70.0000	number
QUADRAT	Y	N	numeric(1,0)	range	1.0000	2.0000	number
YEAR	Y	N	numeric(4,0)	range	2002.0000	2050.0000	YYYY
SPECIES	Y	N	char(6)	taxa			
COVER	N	N	numeric(5,1)	range	0.0000	100.0000	%

6. Biomass Measurements

Attribute List:

DBC CODE	N	N	char(10)	enum			
ENTITY	N	N	numeric(1,0)	range	6.0000	6.0000	number
WATERSHED	Y	N	char(10)	place			
YEAR	Y	N	numeric(4,0)	range	2002.0000	2050.0000	YYYY
PLOT	Y	N	numeric(2,0)	range	1.0000	70.0000	number
QUADRAT	Y	N	numeric(1,0)	range	1.0000	2.0000	number
SPECIES	Y	N	char(6)	taxa			
LINECT	Y	N	numeric(2,0)	range	1.0000	20.0000	number
STEMCT	N	Y	numeric(2,0)	range	1.0000	30.0000	number

DBA	N	Y	numeric(5,1)	range	0.1000	20.0000	cm
HEIGHT	N	Y	numeric(3,0)	range	1.0000	500.0000	cm
MODALHT	N	Y	numeric(3,0)	range	1.0000	500.0000	cm
LENGTH	N	Y	numeric(3,0)	range	5.0000	100.0000	cm
COMMENTS	N	Y	varchar(80)	freetext			

7. Whole plot species list

Attribute List:

DBCOD	N	N	char(10)	enum			
ENTITY	N	N	numeric(1,0)	range	7.0000	7.0000	number
WATERSHED	Y	N	char(10)	place			
YEAR	Y	N	numeric(4,0)	range	2002.0000	2002.0000	YYYY
PLOT	Y	N	numeric(2,0)	range	1.0000	70.0000	number
LIFEFORM	N	N	char(6)	enum			
SPECIES	Y	N	char(6)	taxa			
COMMENTS	N	Y	varchar(80)	freetext			

8. Plot level data

Attribute List:

DBCOD	N	N	char(10)	enum			
ENTITY	N	N	numeric(1,0)	range	8.0000	8.0000	number
WATERSHED	Y	N	char(10)	place			
PLOT	Y	N	numeric(2,0)	range	1.0000	70.0000	number
PLOTTYPE	N	N	char(1)	enum			
SLOPE	N	N	numeric(3,0)	range	0.0000	100.0000	%

9. Vegetation cover estimates

Attribute List:

DBCOD	N	N	char(10)	enum			
ENTITY	N	N	numeric(1,0)	range	9.0000	9.0000	number
YEAR	Y	N	numeric(4,0)	range	1979.0000	1995.0000	YYYY
WATERSHED	Y	N	char(10)	place			
PLOT	Y	N	numeric(2,0)	range	1.0000	65.0000	number
SPECIES	Y	Y	char(6)	taxa			
MILCOVER	N	Y	numeric(3,0)	range	0.0000	100.0000	%
SUB1COVER	N	Y	numeric(3,0)	range	0.0000	100.0000	%
SUB2COVER	N	Y	numeric(3,0)	range	0.0000	100.0000	%

SUB3COVER	N	Y	numeric(3,0)	range	0.0000	100.0000	%
SUB4COVER	N	Y	numeric(3,0)	range	0.0000	100.0000	%
SAMPLEDATE	N	Y	date	range	7/9/1979 12:00:00 AM	12/18/1995 12:00:00 AM	YYYY-MM-DD

Attributes Definitions:

BARE

Percent cover by bare ground

BARKTHICK

Crown class

BOLE

Percent cover by boles or stems

CANCOVER

Percent canopy cover

CANOPY_CLASS

Canopy class code

COMMENTS

Comments

COVER

Percent cover

CROWN_RATIO

Percent of a tree's height with live branches around one third or more of the bole's circumference

CWD

Percent cover by coarse woody debris

DBA

Diameter at the base

DBC CODE

FSDB database code

DBH

Diameter at breast height

DBH_CODE

Describes cases where dbh was estimated using methods defined in the codes

ENTITY

Entity number

HEIGHT

Height of plant

LENGTH

Length (of fronds)

LIFEFORM

Lifeform (trees, shrubs,herbs,ferns, grass,bryo)

LINECT

Line count

LITTER

Percent cover by litter

MILCOVER

Percent cover in milacre plot

MODALHT

Modal height of plants

MOSS

Percent cover by moss

PLOT

Plot number

PLOTID

Plot identification number (watershed+transect+original plot number)

PLOTTYPE

Type of plot (non-riparian, riparian)

POSITION

Position from which core was taken (uphill, side, flat, downhill)

PSP_STUDYID

Permanent Study Plots (PSP) study identification code - a mutually exclusive grouping of study forest stands

QUADRAT

Quadrat

SAMPLEDATE

Date of sampling

SAPWTHICK

Creaoon ratio

SLASH

Percent cover slash

SLASHDEPTH

Depth of slash

SLOPE

Plot slope

SPECIES

Species code according to Garrison et al., 1972

STEMCT

Stem count

STUMPDBA

Diameter at approximately 28 cm height.

SUB1COVER

Cover of subplot 1 (1.1ft.sq.)

SUB2COVER

Cover of subplot 2 (1.1ft.sq.)

SUB3COVER

Cover of subplot 3 (1.1ft.sq.)

SUB4COVER

Cover of subplot 4 (1.1ft.sq.)

TAG

Tag number

TREE_HEIGHT

Tree height

TREE_STATUS

Tree status code

TREE_VIGOR

Overall vigor code

TREEAZIM

Tree azimuth

TREEID

Tree identification code represented as WATERSHED+PLOTID+00000, where 00000 represents a unique tree number for that stand and plot

WATERSHED

Watershed

YEAR

Year of sampling

Enumerated Domains:

Enumerated Domain for Attribute: CANOPY_CLASS

U	Unknown or not measured
C	Co-dominant: Crown extends to the top of the general canopy layer and receives light from the top but not much from the sides
D	Dominant: Crown emerges from the general canopy layer and receives light from the top and the sides
E	Emergent: only used in Stand RS39 in 1992
I	Intermediate: Crown extends into the lower portion of the general canopy layer and receives mostly filtered light from the top and the sides
S	Suppressed: Crown completely beneath the general canopy layer

Enumerated Domain for Attribute: TREE_STATUS

- 1 Living tree
- 2 Ingrowth - typically young and previously unmeasured trees that now satisfy minimum diameter requirements. Ingrowth codes are not used in the year of plot establishment.
- 3 Living stem is fused with one or more tree stems at measurement height and measured together as one
- 6 Dead tree - typically is not noted in the year of plot establishment
- 9 Tree is missing or not found; no measurements are possible

Enumerated Domain for Attribute: TREE_VIGOR

- M Vigor is not recorded for dead or missing trees
- 1 Good vigor: no apparent signs of distress
- 2 Fair vigor: some signs of distress apparent (e.g., discolored foliage, paucity of leaves or needles, broken stem with few live branches)
- 3 Poor vigor: extreme distress apparent (i.e., death imminent)
- U Unknown vigor of a living tree - vigor is not recorded

Enumerated Domain for Attribute: DBCODE

- TP114 FSDB Database Code

Enumerated Domain for Attribute: DBH_CODE

- G Good: normally measured DBH
- 1 DBH estimated by linear interpolation or extrapolation
- 2 DBH estimated from growth rates of nearby trees of similar size
- 3 DBH estimated assuming 'no growth' (usually missing, non-vigorous, or damaged trees)
- 4 DBH estimated for individual boles using basal area of joint dbh of grown together (fused) trees
- 8 DBH is measured using a non-standard field procedure or estimated in the field
- 9 DBH estimated, method unknown or unspecified
- V Verified: diameter is double checked in the field
- M Missing: no measurement taken for missing or dead (mortality) trees
- U Unknown: DBH is missing for a tree not listed as missing or dead

Enumerated Domain for Attribute: DBCODE

- TP114 FSDB Database Code

Enumerated Domain for Attribute: POSITION

- D Core taken on downhill side
- U Core taken on uphill side
- S Core taken from the side

Enumerated Domain for Attribute: DBCODE

- TP114 FSDB Database Code

Enumerated Domain for Attribute: DBCODE

- TP114 FSDB Database Code

Enumerated Domain for Attribute: DBCODE
TP114 FSDB Database Code

Enumerated Domain for Attribute: DBCODE
TP114 FSDB Database Code

Enumerated Domain for Attribute: LIFEFORM

FERNS	Fern species
GRASS	Grass species
TREES	Tree species
BRYO	Moss species
SHRUBS	Shrub species
HERBS	Herb species

Enumerated Domain for Attribute: DBCODE
TP114 FSDB Database Code

Enumerated Domain for Attribute: PLOTTYPE

R	Riparian plot
N	Non-riparian plot

Enumerated Domain for Attribute: DBCODE
TP114 FSDB Database Code

Enumerated Domain for Attribute: DBCODE
TP114 FSDB Database Code