

Nontraditional/Nonstandard SOFIA DATA BASES and ITEMS

StOFR – forested plots

StPLOTS – all plots

StSNAG – forested plots

StDES –forested plots, and previously forested last survey

VARIABLES IN THE *stOFR* DATA SETS: Forested Plots only

These data sets contain other forest resources data for each plot location that is currently timberland, or was timberland in the previous survey. Detailed data for productive-reserved (Wilderness) and woodland (unproductive) were included for 1988 and later surveys. The data sets are arranged by state, with data for each state in a separate data set.

[Click on the entries in this list to jump to its definition further down the document](#)

Variable Number	Format	Acronym	Description
1	num	pid	Plot identification code; combination of state, county, and location (sscccIII)
2	num	cid	County identification code; combination of state, and county codes (ssccc)
3	num	st	State code
4	num	un	Unit number
5	num	co	County code
6	num	lo	Plot location number
7	num	exp	Expansion factor (current); number of acres per location (obtain from <i>stDES</i>)
8	num	syear	Survey year
9	num	jdate	Julian date
10	num	szwater	Size of water body
11	num	dswater	Distance to water body
12	num	dsurban	Distance to urban land
13	num	dsagric	Distance to agricultural land
14	num	acc	Access condition
15	num	fence	Fencing
16	num	hsign	Hunting signs
17	num	otsign	Other signs
18	num	burn	Burn history
19	num	lvstk	Livestock use
20	num	sowater	Water sources on the plot
21	num	trduse	Trail or road use
22	num	logdeb	Logging debris
23	num	moss	Spanish moss
24	num	hart	Hunting artifacts
25	num	bevalt	Beverage artifacts
26	num	foodart	Food artifacts
27	num	homeart	Homesteading artifacts
28	num	otart	Other artifacts
29	num	otact	Other activities

VARIABLES IN THE *stPLOTS* DATA SETS – All plots

These data sets contain information on ALL ground plot locations within a given state. Each state has information from current surveys beginning with 1988.

[click on entries below](#)

Variable	Type	Description
pid	num	Plot identification code; combination of state, county and location (ssccc111).
guse	num	Current ground use (more detailed than EW-glucur)
pguse	num	Past ground use (more detailed than EW- gluold)
exp	num	Current expansion factor
syear	num	Year of the survey.

VARIABLES IN THE *stSNAG* DATA SETS – Forested plots only

A record of all dead trees ≥ 5.0 inches diameter at breast height and larger within 37.2 feet of point 1. Used to estimate standing dead trees (snags) per acre by forest type, owner class, etc., by species group, height, and diameter class for wildlife habitat assessments.

[click on entries below](#)

Variables (all numeric):

1	pid
6	syear
7	exp
11	tn
12	ptrid
13	spd
14	dc
15	ht
16	sound
17	tpa

VARIABLES IN THE *stDES* DATA SET

Most of the variables in the *stDES* data base are documented in the EW database. They are not repeated here. Still, other variables provide more detail that Ewand are listed here. Note that they may have different acronyms (variable codenames).

[click on entries below](#)

Variable Number	Format	Acronym	Description
	num	pid	Plot id
	num	org	Stand origin
30	num	hrv	Harvesting activity
31	num	mgt	Management and disturbance code
	num	phyc	Physio class (pine, upland, bottomland)
34	num	disr	Distance to road code
35	num	szfor	Size of contiguous forest code
44	num	fcon	Forest continuity; LA 1991 and later.

stOFR DATA SETS Detailed Descriptions.

These data sets contain other forest resources data for each plot location that is currently timberland, or was timberland in the previous survey. Detailed data for productive-reserved (Wilderness) and woodland (unproductive) were included for 1988 and later surveys. The data sets are arranged by state, with data for each state in a separate data set.

These are the other forest resources information readily available for states surveyed prior to Louisiana, 1984. There were, at one time, some “special study” variables for southwest Louisiana 1974 (deer browse), Arkansas 1978 (selected attributes), Tennessee in 1980 (range vegetation cover), and Alabama 1982 (understory vegetation cover), but were not standardized or included in online stOFR databases.

Variable 1. Plot identification code

pid

Combination of state, county, and location (sscccll)
Use for matching data sets that are being cross referenced; can be used for both plot and tree level data.

Variable 7. exp Current expansion factor (from stDES)

Variable 8. Survey year

syear

1990; 1982	Alabama
1988; 1995	Arkansas
1991 **; 1984*	Louisiana
1994; 1987	Mississippi
1993; 1986	east Oklahoma
1989	Tennessee
1992; 1986	east Texas

- *=Southeast Unit only. ** 5 coastal parishes with no surveys

Variable 9. Julian date

jdate

0	Field observations missing
1-31	January
32-59	February
60-90	March
91-120	April
121-151	May
152-181	June
182-212	July
213-243	August
244-273	September
274-304	October
305-334	November
335-365	December

Variable 10. Size of water body

szwater

2	1/8 to 1 acre; 40-120 feet wide
3	Noncensus water (1-40 acres; 120 feet - 1/8 mile wide)
4	Census water (> 40 acres; > 1/8 mile wide)
9	No permanent water within 1,600 feet

Variable 11. Distance from water body

dswater

AL 1982 survey:

1	0 - 200 feet
2	201 - 400 feet
3	401 - 600 feet
4	601 - 800 feet
5	801 - 900 feet
88	> 900 feet

LA 1984 and later surveys:

1	0 - 200 feet
2	201 - 400 feet
3	401 - 600 feet
4	601 - 800 feet
5	801 - 1000 feet
6	1001 - 1200 feet
7	1201 - 1400 feet
8	1401 - 1600 feet
9	None within 1600 feet

Variable 12. Distance from urban land
dsurban

Urban or built-up land. - Urban or built-up land is land comprised of areas of intensive human use with much of the land covered by man-made structures. Included in proximity (nontimber) estimates are areas 10 acres or more in size, such as towns, villages, strip developments along highways, power and communication facilities, institutions, and industrial complexes.

AL 1982 survey recorded to nearest 500 feet

And codes below for 500-foot midpoints are used
(3, 8, 13, 18, 23, 28, 33, 38, and 43), and
88 > 4,500 feet

LA 1984 and later surveys:

Exact distance rounded to nearest hundred feet

1	33-149 feet
2	150-249 feet
3	250-349 feet
.	.
.	.
.	.
50	4950-5049 feet
51	5050-5149 feet
52	5150-5249 feet
75	> 1 mile (5300 feet) to 3 miles
99	None within 3 miles

Variable 13. Distance from agricultural land
dsagric

Agricultural land. - Agricultural land is land used primarily for the production of crops or livestock. Included in proximity (nontimber) estimates are areas 10 acres or more in size, such as cropland and pasture, nurseries, vineyards, orchards, confined feeding areas, or horse farms.

AL 1982 survey recorded to nearest 500 feet;

codes below for 500-foot midpoints are used (3, 8, 13, 18, 23, 28, 33, 38, and 43).
Also: 88 > 4,500 feet

LA 1984 and later surveys:

Exact distance rounded to nearest hundred feet

- 1 33-149 feet
- 2 150-249 feet
- 3 250-349 feet
- .
- .
- 50 4950-5049 feet
- 51 5050-5149 feet
- 52 5150-5249 feet
- 53 5250-5300 feet (1 mile)
- 99 None within 1 mile (5300 feet)

Variable 14. Access condition

acc

- 5 Paved road
- 6 Dirt or gravel road, suited for 2-wheel drive vehicles
- 7 Right-of-way or not suited for 2-wheel drive vehicles
- 8 Trail or road not suited for 4-wheel drive vehicles
- 9 None within 1320 feet (1/4 mile)

Variable 15. Fencing

fence

- 4 Greater than 6 feet high
- 5 4 1/2 - 6 feet high
- 6 Less than 4 1/2 feet high; suitable for livestock
(not used for AL 1982)
- 7 Less than 4 1/2 feet high; unsuitable for livestock
(not used for AL 1982)
- 8 Less than 4 1/2 feet high; all conditions (used for
AL 1982 survey only)
- 9 None within 1320 feet (1/4 mile)

Variable 16. Hunting signs

hsign

AL 1982 survey:

- 1 Hunting restricted
- 2 No hunting
- 3 Other restrictions
- 4 Combination of 1 and 2
- 5 Combination of 2 and 3
- 6 No trespassing or keep out signs
- 9 None within 1320 feet (1/4 mile)

LA 1984 and later surveys:

- 1 No hunting
- 2 Hunting restricted, hunting club (priority)
- 9 None within 1320 feet (1/4 mile)

Variable 17. Other signs

otsign

LA 1984 and later surveys:

- 1 No trespassing or keep out (priority)
- 2 Activities restricted
- 9 None within 1320 feet (1/4 mile)

Variable 18. Burn history

burn

AL 1982 survey:

- 1 Within 3 years
- 4 3 years or more
- 9 No evidence on plot

LA 1984 and later surveys:

- 1 Recent (1-2 years)
- 2 3 years or more to previous survey
- 3 Older than prior survey
- 9 No evidence on plot

Variable 19. Livestock use

lvstk

- 1 Cattle sighted
- 2 Other livestock sighted
- 3 Cattle and other livestock sighted
- 4 Tracks
- 5 Dung
- 6 Trails
- 8 Other evidence
- 9 No evidence on plot

Variable 20. Water sources on the plot

sowater

- 1 Swamp
- 2 Pond
- 3 Permanent stream or small creek (not used for AL 1982)
- 4 Temporary stream, creek, drainage ditch (not used for AL 1982 survey)
- 5 Stream (AL 1982 survey only)
- 8 Other
- 9 None on plot

Variable 21. Trail or road use

trduse

- 4 Recent use - road
- 5 Recent use - trail
- 6 No recent use - road
- 7 No recent use - trail
- 9 No trails or roads on plot

Variable 22. Logging debris

logdeb

- 1 Recent, abundant
- 2 Recent, not abundant
- 3 Not recent, abundant
- 4 Not recent, not abundant (not used for AL 1982 survey)
- 8 No abundant or recent evidence (AL 1982 survey only)
- 9 No evidence on plot (not used for AL 1982 survey)

Variable 23. Spanish moss (not used for AL 1982 survey)

moss

- 1 Well-distributed ($\geq 1/2$ of all trees)
- 2 Not well-distributed ($< 1/2$ of all trees)
- 9 Absent on plot

Variable 24. Hunting artifacts

hart

- 1 Tree stand
- 2 Shotgun shell(s)
- 3 Rifle shell(s)
- 4 Shotgun and Rifle shells
- 5 Tree stand and shells
- 8 Other evidence
- 9 None on plot

Variable 25. Beverage artifacts (not used for AL 1982 survey)

bevert

- 1 Paper
- 2 Glass, metal (aluminum), plastic
- 8 Other or combination
- 9 None on plot

Variable 26. Food artifacts (not used for AL 1982 survey)

foodart

- 1 Recent, intact, and recognizable
- 2 Age uncertain; metal, glass, plastic
- 8 Other or combination
- 9 None on plot

Variable 27. Homesteading artifacts (not used for AL 1982 survey)

homeart

- 1 Shed, other building; current use
- 2 Fence; current use
- 3 Homestead not in current use
- 9 None on plot

Variable 28. Other artifacts

otart

AL 1982 survey:

- 1 Nonbiodegradable
- 4 Biodegradable
- 8 Combination
- 9 None

LA 1984 and later surveys:

- 1 Bottles, cans, glass, metal of unknown contents
- 2 Discarded machinery, etc. - not in use
- 3 Machinery, etc. - in use
- 4 Biological materials (crops, wildlife food, etc.)
- 5 Paint, flagging, etc. for marking trees, boundaries
- 8 Others or combinations
- 9 None on plot

Variable 29. Other activity

otact

AL 1982 survey:

- 1 Game management
- 3 Campfire
- 88 Other
- 99 None

LA 1984 and later surveys:

- 1 Game or wildlife management
- 2 Fishing
- 3 Camping, hiking
- 4 Farming
- 5 Logging
- 6 Mining
- 7 Garbage from water flow deposition or
dumping (priority)
- 8 Maintenance of right-of-way
- 10 Oil or gas drilling
- 11 Markers for logging activities
- 12 Markers for boundaries
- 19 Liquid distillation
- 30 Military activity
- 88 Other or combination
- 99 No evidence observed on plot

VARIABLES IN THE *stPLOTS* DATA SETS: : ALL Plots

Plot identification code

pid

Combination of state, county, and location (ssccclll)
Use for matching data sets that are being cross referenced; can be used for plot level data.

Ground use (current)

guse

20 = commercial forest land	66 = other farmland
40 = unproductive forest land	67 = urban & other
50 = productive reserved forest	68 = marsh
61 = cropland	91 = census water
62 = improved pasture	92 = noncensus water
63 = natural rangeland	99 = inaccessible
64 = idle farmland	

Past ground use

pguse

20 = commercial forest land	66 = other farmland
40 = unproductive forest land	67 = urban & other
50 = productive reserved forest	68 = marsh
61 = cropland	91 = census water
62 = improved pasture	92 = noncensus water
63 = natural rangeland	99 = inaccessible
64 = idle farmland	

Current expansion factor

exp

This variable is the number of land acres that the plot represents for the current survey. Use this variable for determining the total amount represented by the plot. These are records of ground-visited plot locations since 1988. A past “exp” is needed to work with pguse. Adjustments also needed, account for total earth cover (land and water) area.

Survey year for detailed “current” ground use. Observations (but not expansion factors) of land types, with few exceptions, can be computed from one prior survey.

syear

1990;	Alabama
1988; 1995	Arkansas
1991	Louisiana
1994	Mississippi
1993	east Oklahoma
1989	Tennessee
1992	east Texas

stSNAG Data Sets: Detailed Descriptions –Forest land only

Variable 1. Plot identification code

pid

Combination of state, county, and location (ssccclll)

Use for matching data sets that are being cross referenced; can be used for both plot and tree level data.

Variable 6. Survey year

syear

1990	Alabama
1988; 1995	Arkansas
1991	Louisiana
1994	Mississippi
1993	east Oklahoma
1989	Tennessee
1992	east Texas

Variable exp from the stDES plot data tables.

Variable 11. Tree number

tn

Standing dead tree number

(Generally one or less. Only for trees that occur within 37.2 feet of point 1)

Variable 12. Past tree number

ptrid

Past tree number, if recorded as dead in the prior survey and current survey (1988 to 1994 surveys only)

Variable 13. Species group

spd

1=Pine
2=Hardwood
3=Redcedar
4=Baldcypress

Variable 14. Diameter class

dc

Current diameter class, in 2 inch increments.

Variable 15. Height

ht

Current height of the snag, to the nearest foot

Variable 16. Soundness

sound

1 sound (<50% of the wood in the bole of the tree is rotten);
2 unsound (\geq 50% of the wood in the bole of the tree is rotten)

Variable 17. Trees per acre

tpa

10.02 trees/acre if present; 0 otherwise. Multiply tpa by exp (plot expansion factor) to obtain trees/acre by plot characteristics.

VARIABLES IN THE *stDES* DATA SETS: : Forested Plots only

Selected variables not in EW or added details not in EW data base.

Plot identification code

pid

Combination of state, county, and location (ssccclll)

Use for matching data sets that are being cross referenced; can be used for both plot and tree level data.

Variable 19. Stand origin (EW has simply planted or natural)

org

1 = Natural stands (no evidence of artificial regeneration).

2 = 40 percent or more of the sample location estimated to be occupied by trees originating from artificial regeneration.

3 = Evidence of planting or seeding, but less than 40 percent of the sample location estimated to be occupied by trees originating from planting or seeding.

4 = Stand has recently been harvested and regeneration is not yet evident.

Variable 21. Physiographic class

phyc

1 = Pine. -- Upland sites on which pine is present or was formerly present.

2 = Upland hardwood. -- Upland sites other than pine sites.

3 = Bottomland hardwood. -- Bottomland sites.

Variable 30. Harvesting activity

hrv

This variable describes crop tree removals since the last survey. Precommercial and poletimber thinnings are not included; also, single tree selection harvesting is not included.

0 = No evidence of harvesting (may include the removal of a small number of trees for firewood, posts, etc., if the stand will not be affected).

1 = Partial harvest -- includes all selection cuts, high-grading, diameter-limit cutting, and any other sawtimber cutting practice which leaves a residual stand of crop trees or potential crop trees and cull trees. Does not include poletimber thinning.

2 = Seed tree and shelterwood -- a small number of crop trees were left to provide seed or shade to establish a new stand.

3 = Clearcut of merchantable trees -- all non-merchantable trees left standing.

4 = Complete clearcut -- all trees removed, including rough and rotten stems.

5 = Salvage cut -- removal of damaged or salvable dead trees, often leaving a gap in the stand.

Variable 31. Management Activity and Disturbance

mgt

This variable describes stand treatments, other than harvesting that have occurred since the last survey. If more than one treatment has occurred, the most significant one is recorded.

0 = No evidence of stand treatment.

1 = Commercial thinning -- trees larger than 5" dbh have been removed to relieve overcrowding and improve growth on crop trees.

- 2 = Pre-commercial thinning -- seedlings and/or saplings have been removed to help crop trees attain dominance.
- 3 = Stand improvement -- cleaning, release, or other intermediate cuttings as follows: (1) rough trees or other inhibiting vegetation have been removed to relieve competition with crop trees; or (2) undesirable trees have been killed (by girdling, poisoning, or burning) to relieve competition with crop trees.
- 4 = Stand conversion -- the stand was poorly stocked with low quality hardwoods, or with severely diseased pines, and has been converted to a pine or high quality hardwood stand.
- 5 = Site preparation -- clearing, prescribed burning, drainage, chopping, disking, bedding, tree girdling, poisoning, or other practices clearly intended to prepare a site for either natural or artificial regeneration.
- 6 = Natural disturbance -- significant damage to the stand has occurred due to fire, flood, insects, disease, or other natural or man-caused disturbance which is not intended to be a timber management practice.

Distance from road
disr

Estimated distance from the plot center to the nearest all-weather road (improved and maintained) or unimproved road. Unimproved roads are either currently truck operable or prospectively so, with minimum improvement such as blown-down tree removal.

1980 (TN) and prior surveys:

- 1 less than 1/2 mile
- 2 1/2 to 1 mile
- 3 1 to 2 miles
- 4 2 to 3 miles
- 5 more than 3 miles

1982 (AL) survey:

- 1 0.1 miles or less
- 2 0.2 miles
- 3 0.3 miles
- 4 0.4 miles
- 5 0.5 miles
- 6 0.6 miles
- 7 0.7 miles
- 8 0.8 miles
- 9 0.9 miles
- 0 1 mile or more

1984 (LA) and later surveys:

- 01-53 100-5300 feet
- 75 1 mile (5300 ft.) to 3 miles
- 99 3 miles or more

Size of contiguous forest area (Forest Fragment size class)
szfor

Boundaries are nonforest areas, including public roads, railroad tracks, fields, pastures, urban areas, waterways exceeding 120 feet in width, etc. Pipe lines and power lines are not considered limiting. Ownership boundaries are not considered.

- 0 = Nonforest locations
- 1 = 1-10 acres
- 2 = 10-50

- 3 = 50-100
- 4 = 100-500
- 5 = 500-2500
- 6 = 2500-5000
- 7 = 5000 acres or more

Variable 44. Forest continuity

fcon

A description of plots that straddle two or more forest types and/or physiographic conditions. The forest type or physiographic condition must be one acre or greater in size (not recorded before Louisiana 1991)

- 0 = Nonforest location
- 1 = Artificial versus natural origin
- 2 = Age (two or more even-aged stands - plantations)
- 3 = Stand size (obvious difference in stand size)
- 4 = Forest type (pure pine versus pure hardwood on same physioclass)
- 5 = Bottomland versus upland (different timber type due to physioclass)
- 8 = Combination of two or more of the above
- 9 = Uniform forest type and condition

SOFIA DATA BASE ORGANIZATION

The SOFIA data base is organized into tree and plot. EW has county-level information. Data at the county level has received the highest level of processing, and is the most convenient form to use, provided the desired information is available at that level. Plot and tree data will require additional computations in order to obtain total population values represented by the sample.

Survey years for online data for timberland are:

1990; 1982; 1972	Alabama
1995, 1988; 1978	Arkansas
1991; 1984; 1974	Louisiana
1994; 1987; 1977	Mississippi
1993; 1986; 1976	east Oklahoma
1989; 1980	Tennessee
1992; 1986; 1975	east Texas

The outline below provides a general guide for use of the data levels.

I. TREE LEVEL:

- There is one data set (table) per state survey. An additional data set is for cross referencing tree species for output purposes.
- Data sets contain 1 record per tree.
- The stTR data sets contain sample tree data whose volumes MUST be expanded to plot level for inventory estimates, using an appropriate trees per acre variable. Plot (per acre) values for timber volumes are also contained in the stTR data sets. Expansion by an appropriate trees per acre variable has ALREADY been accomplished for these plot values contained in stTR.
- The SPECIES data set contains species codes, groups, and names for cross referencing stTR. Used to supply names and group summaries for development of output.

II. PLOT LEVEL:

- There are 16 data sets (tables) per state.
- Data sets contain 1 record per plot.
- All volumes, number of trees, basal areas, and biomass weights are per acre values.
- Multiplication of per acre values by an expansion factor is NECESSARY to obtain total volumes, number of trees, basal areas, and biomass weights represented by the plot; the remeasurement expansion factor is used for growth, removals, and mortality volumes.
- Expansion factors must be summed to obtain total area.
- Measurements such as d.b.h. and height (in the data set stSTOCK) are averages for trees on each plot.

Other data bases

Tree-level data sets

- | | |
|------------|-----------------------------|
| 1. stTR | Tree-level data |
| 2. SPECIES | Species-level data on trees |

Plot-level data sets:

- | | |
|-------------|---|
| 1. stDES | Plot-Level Descriptions |
| 2. stDESN | Description labels |
| 3. stVOL | Net Volume |
| 4. stNVSOFT | Net Volume Softwoods |
| 5. stNVHARD | Net Volume Hardwoods |
| 6. stGRMGS | Growth, Removals, Mortality of growing stock |
| 7. stGRMLV | Growth, Removals, Mortality of all live trees |

8. stGRMSL	Growth, Removals, Mortality of sawlogs, in cubic feet
9. stGRMBF	Growth, Removals, Mortality of sawlogs, in board feet
10. stGR	Growth
11. stRM	Removals
12. stMT	Mortality
13. stSTOCK	Stocking
14. stBIODW	Biomass of standing trees, dry weight
15. stBIOFW	Biomass of standing trees, wet weight
16. stOFR	Other forest resources
17. stSNAG	Snag tree data
18. stPLOTS	All plot-level data

Coding in various DATA SET

st

State

un

FIA Unit code

co

County code

lo

Location numbers range from 1 to 535 (although typically less than 100).

cid

state + county (ssccc)

Use for matching data sets that are being cross referenced; can be used for both plot and county level data.

	st	sta	un	co
Alabama	1	AL	1-6	1-133
Arkansas	5	AR	1-5	1-149
Louisiana	22	LA	1-5	1-127
Mississippi	28	MS	1-5	1-163
Oklahoma	40	OK	1-2	1-153 (eastern counties)
Tennessee	47	TN	1-5	1-189
Texas	48	TX	1-2	1-507 (eastern counties)

County name

con

Whole county/parish name is used if possible; abbreviated if too long.

Plot location number

lo

Location numbers range from 1 to 535 (although typically less than 100).

Variable 8. Current expansion factor

exp

This variable is the number of acres that the plot represents. Use this variable for determining the total amount represented by the plot. Add this variable for area; multiply this variable by plot (per acre) values to obtain total volumes, number of trees, etc. (Note: For expanding growth, removals, and mortality volumes, use rexp rather than exp.)