

**Metadata Catalog of the
Missouri Ozark Forest Ecosystem Project**



MOFEP

**Missouri Ozark Forest
Ecosystem Project**

by

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Preface

The Missouri Ozark Forest Ecosystem Project (MOFEP) was initiated by the Missouri Department of Conservation in 1990 as a long-term study of typical forest management practices on the plant and animal components of those forests. The study is led by the Department's Wildlife and Forestry Divisions, with cooperation from the University of Missouri.

The study area, located in the Ozark Region of southeastern Missouri, consists of mature upland oak-hickory and oak-pine forest communities. The study design includes three replications of three forest management systems: evenaged, unevenaged and non-manipulative or control. Management units range in size from 266 to 527 ha (657 to 1,302 acres), with a total study area of 3,275 ha (9,200 acres). Initial forest treatments began in October 1994.

Post-treatment data is now being collected to investigate the effects of forest management on the composition and spatial distribution of woody and herbaceous vegetation, forest interior birds, reptiles and amphibians, tree canopy insects, forest litter invertebrates, small mammals, tree genetics and nutrient cycling.

This report should be cited as:

Westin, Steve 1997, Metadata catalog of the Missouri Ozark Forest Ecosystem Project, Missouri Department of Conservation, Jefferson City, Missouri, 171 pp

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Introduction

This catalog lists and describes each layer of spatial information developed for the MOFEP project through early 1997. The first round of forest management treatments was completed in 1996. Both site specific and general area base layer information have been included in this document. The sections in the report correspond to the various studies, plus a general section and a section containing descriptions of the 1:24,000 scale topographic map data.

The general format of this catalog is two or three pages for each layer of information. This first page is a brief description of the layer, and a printed example of the file contents. The second page contains information about the coverage, including source map and content contact information. The third page (if applicable) contains information about the structure of the attached attribute data, including definitions of items and their values.

MOFEP spatial data is developed using Arc Info and Arc View GIS software, and is maintained as Arc Info coverages. At the end of this report, there is a directory listing of the ARC/INFO coverages for the MOFEP project.

General Site Description

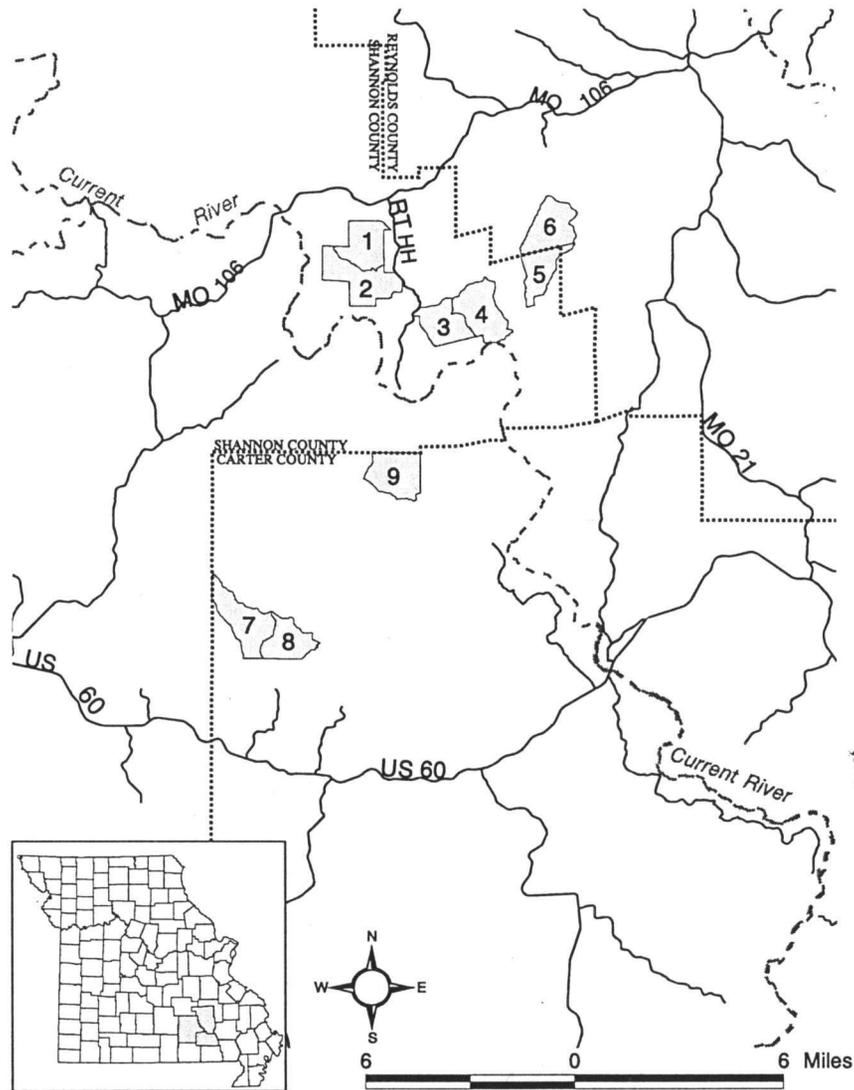


Figure 1 Overview of MOFEP site, including counties, highways and rivers

The Missouri Ozark Forest Ecosystem Project is made up of nine sites, ranging in size from 260 to 527 ha (657 to 1,302 acres) that are located in Carter, Reynolds and Shannon Counties. The Current River runs southeast through the area, splitting sites 1 through 6 from sites 7 through 9. This project is bounded by U.S. Route 60 on the south, MO Highway 106 to the north, and MO Highway 21 to the east.

USGS Quadrangle Locator Map

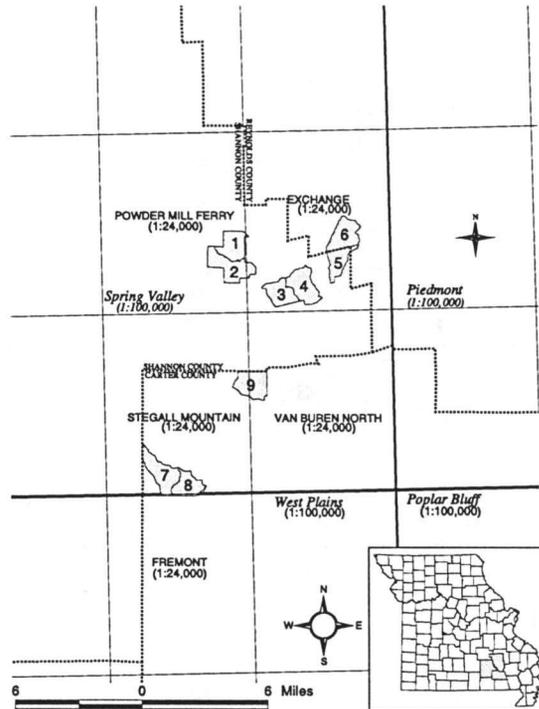


Figure 2 Location of MOFEP sites within the 1:250,000, 1:100,000 and 1:24,000 scale USGS Topographic Sheets

Locator Table

Scale	Map Name	Site(s):
1:250,000	Rolla	1-9
1:250,000	Poplar Bluff	7-8 (south 1/5)
1:100,000	Spring Valley	1-6, 7-8(south 1/5)
1:100,000	West Plains	7-8 (south 1/5)
1:24,000	Exchange	1-2 (eastern edge), 3-6
1:24,000	Fremont	7-8 (south 1/5)
1:24,000	Powder Mill Ferry	1-2 (all but eastern edge)
1:24,000	Stegal Mountain	7-8 (top 4/5), 9 (western half)
1:24,000	Van Buren North	9 (eastern half)

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Ecological Land Types

This coverage describes the preliminary Ecological LandType (ELT) boundaries within each MOFEP site. These were digitized from arcs drawn on United States Geological Survey 1:24,000 scale topographic maps. Each polygon contains the value corresponding to that Ecological Land Type. The United States Forest Service has developed ELT's for the Mark Twain National Forest, including full descriptions. These descriptions were used as a guide to develop the boundaries within the MOFEP study. As a part of a statewide ecological classification system development project, ELT's for the MOFEP sites will be revisited in the near future.

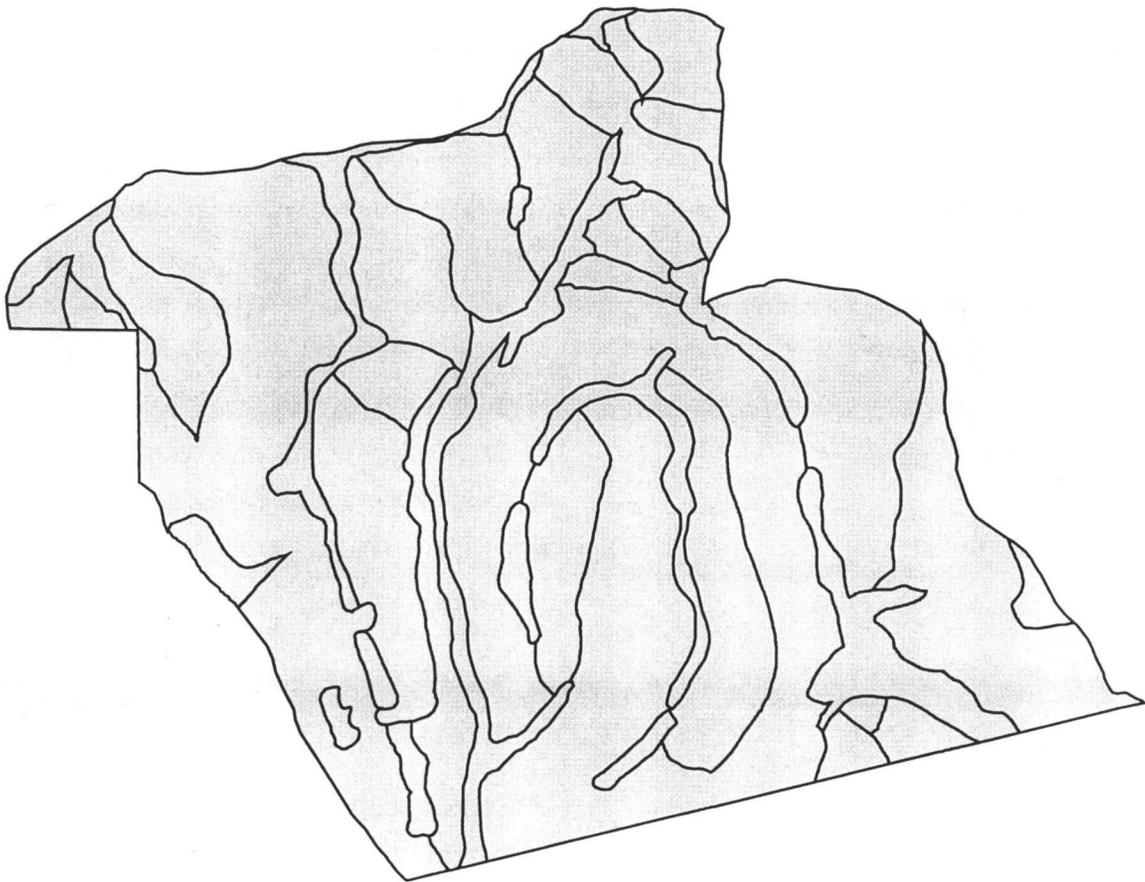


Figure 1-1

Ecological LandType boundaries for Site 3

File Name:elt#

(# = Mofep Site Number)

Data Theme:	Elt (Ecological Land Type)
Data Source:	Hand-drawn arcs on USGS 1:24,000 scale topographic maps
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Tim Nigh, Planning Division, Missouri Department of Conservation
File Description:	This file consists of arcs which outline the boundary of the site, built into polygons.
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	US Geological Survey

File Name: elt#

Data File Structure

Field Name	Type	Width	Description	Values
elt#-id	binary	4	Polygon id, related to ELT number	3,5,6,7,11,17-23
elt	integer	3	Ecological Land Type Number	3,5,6,7,11,17-23

Definition Table: elt (from Mark Twain National Forest Ecological Land Classification System, Miller, 1981)

Value	Description
3	<i>Landform: High Flood Plain, Low Terrace; Aspect: Neutral; Percent Slope: 0-4; Soil Series: Ashton, Secesh, Huntington, Gladden, Razort, Elk; Vegetation Community: Mesic bottomland forest</i>
5	<i>Landform: Upland Waterway; Aspect: Neutral; Percent Slope: 0-4; Soil Series: Midco, Elsah, Cedargap; Vegetation Community: Dry bottomland forest</i>
6	<i>Landform: Upland Waterway; Aspect: Neutral; Percent Slope: 0-4; Soil Series: Midco, Elsah, Cedargap; Vegetation Community: Dry-mesic bottomland forest</i>
7	<i>Landform: Toe Slope; Aspect: All; Percent Slope: 0-14; Soil Series: Clairborne, Peridge, Mindale, Viraton, Crider; Vegetation Community: Mesic forest</i>
11	<i>Landform: Ridge; Aspect: Neutral; Percent Slope: 0-8; Soil Series: Clarksville, Coulstone, Poynor, Doniphan; Vegetation Community: Dry Chert forest</i>
17	<i>Landform: Side Slope; Aspect: South and West; Percent Slope: 8-99; Soil Series: Clarksville, Coulstone, Poynor, Doniphan, Ocie; Vegetation Community: Dry Chert forest</i>
18	<i>Landform: Side Slope; Aspect: North and East; Percent Slope: 8-99; Soil Series: Clarksville, Coulstone, Poynor, Doniphan, Ocie; Vegetation Community: Dry-mesic chert forest, Dry-mesic sand forest</i>

Value	Description
19	<p>Landform: Side Slope; Aspect: South and West; Percent Slope: 8-99; Soil Series: Bardley, Opequon, Gatewood; Vegetation Community: Glade savanna</p>
20	<p>Landform: Side Slope; Aspect: North and East; Percent Slope: 8-99; Soil Series: Bardley, Opequon, Gatewood; Vegetation Community: Dry mesic limestone forest</p>
21	<p>Landform: Side Slope; Aspect: All; Percent Slope: 5-99; Soil Series: Gasconade, Rockland; Vegetation Community: Dolomite glade, Limestone glade</p>
22	<p>Landform: Side Slope; Aspect: All; Percent Slope: 5-99; Soil Series: Gasconade, Rockland; Vegetation Community: Xeric limestone forest</p>
23	<p>Landform: Side Slope; Aspect: All; Percent Slope: 5-99; Soil Series: Gasconade, Rockland; Vegetation Community: Dry limestone forest</p>

Forest Inventory Layer

This file contains the polygons representing the stands within each site. These were derived from the "stands" layer, described later in this catalog. Attached to these stands are the current ELT and a standard inventory description. The control sites, 1, 6 and 8, have no inventory data available.

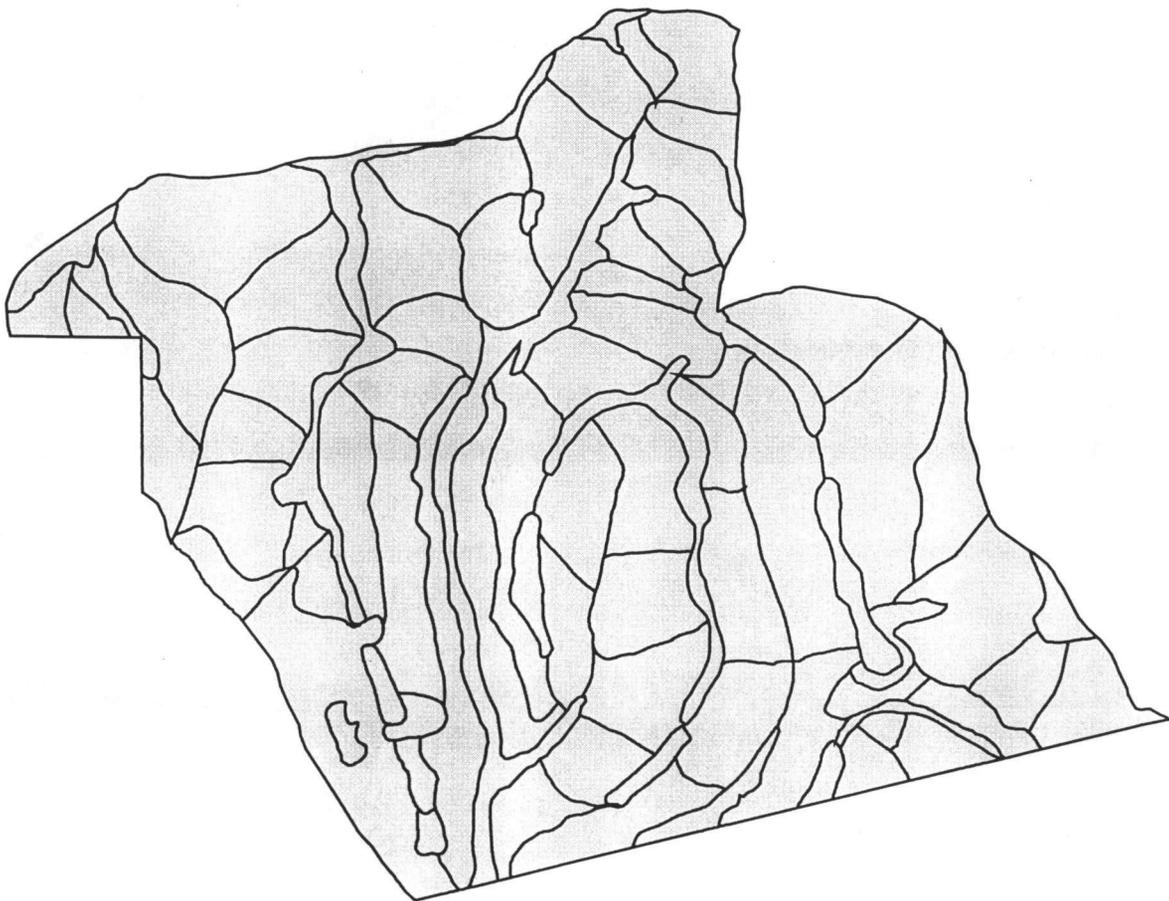


Figure 1-2

Forest Inventory for Site 3

File Name: invent#

(where # is site number)

Data Theme:	Inventory
Data Source:	Stands Coverage, ELT coverage, and field-collected inventory data
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Brian Brookshire, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of polygons which represent stands and attached data
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: invent#

Data File Structure

Field Name	Type	Width	Description	Values
standno	integer	3	Stand Number	1-145
newacres	integer	7	Number of acres	0-10000 (whole number)
elt2	integer	3	Ecological LandType (original designation)	3,5,6,7,11,17-23
fileno	character	8	Site Number	"MOFEP" + site number
daterecd	decimal	8	Date Recieved	YYYYMMDD
evaluator	character	10	Crew Leader	Name
date	decimal	10	Original Date	YYYYMMDD
time	character	5	Original Time	0:00-24:00
date1	decimal	10	Copied Date	YYYYMMDD
time1	character	5	Copied Time	0:00-24:00
aspect	character	3	Aspect	0-359 (degrees)
position	character	1	Topographic position	R, U, M, L, B
slope	integer	2	Slope in percent	0-99
sispc	character	3	Species for site index	Species Code
siage	integer	3	Age of site index tree	0-200
siht	integer	3	Height of site index tree	0-200
si	integer	2	Site Index	0-99
grow	integer	2	Number of rings in the outside inch	0-99
stclass	character	1	Calculated Site Class	0-4, F, G, V
stclassobs	character	1	Observed Site Class	0-4, F, G, V
ldt	integer	2	Largest Diameter Tree Objective	0-99

Field Name	Type	Width	Description	Values
prescmt	character	4	Prescription entered in the field	L, OG, TSI, ROCC, ROSH, RP, I, P, G, F, V, X, RPBS, RPDS, RPP, ITSI, GM, GB, GC, FM, FB, FC, XP, VM, VC, VB, UAMP, UAMC
pres	character	4	Final Prescription	L, OG, TSI, ROCC, ROSH, RP, I, P, G, F, V, X, RPBS, RPDS, RPP, ITSI, GM, GB, GC, FM, FB, FC, XP, VM, VC, VB, UAMP, UAMC
fctype1	character	3	Mid Story Species #1	Species Code
fctype2	character	3	Mid Story Species #2	Species Code
fctype3	character	3	Mid Story Species #3	Species Code
unddens	character	1	Density of the Mid Story	0-9 (standard index)
acres	integer	4	Acres in that stand	1-500
regen	character	1	Regeneration notes	0-9 (standard index)
tsi	character	1	TSI notes	0-9 (standard index)
oldgrowth	character	1	Old growth notes	0-9 (standard index)
accessible	character	1	Accessibility notes	0-9 (standard index)
visible	character	1	Visibility notes	0-9 (standard index)
disturbed	character	1	Level of disturbance	0-9 (standard index)
typedistrb	character	1	Type of disturbance	L,F,D,G,W,I,X,O
herbcov	character	1	Grould layer coverage	0-9 (standard index)
herbdiv	charcter	1	Herbaceous diversity	0-9 (standard index)
specialftr	character	4	Special features	G, GI, GD,GS,GL,GC,GX, F,FO,FU,FB,FX,E,EP,EA,V
wlstems	integer	1	Wildlife Habitat Assessment Guide (WHAG)	blank
wlconc	integer	1	WHAG	blank

Field Name	Type	Width	Description	Values
wlherbs	integer	1	WHAG	blank
wlfood	integer	1	WHAG	blank
totba	number	5	Total Basal per Acre	0-200
stockpc	integer	3	Percent Stocking	0-150
mbfpera	number	4	Mean Basal Feet per Acre	0-12
balev	integer	3	B level basal area	40-80
baclev	integer	3	C level basal area	30-50
avgdia	number	4	Average Diameter	0-18
treepera	integer	4	Number of Trees per Acre	0-9999
treeperab	integer	4	Trees per Acre at B-level	50-1600
treeperac	integer	4	Trees per Acre at C-level	30-80
totagsba	numeric	5	Total acceptable growing stock Basal Area	0-200
totmerchba	numeric	5	Total merchantable Basal Area	0-200
scavpera	integer	3	Small cavities per acre	0-400
mcavpera	integer	3	Medium cavities per acre	0-100
lcavpera	integer	3	Large cavities per acre	0-50
ssnagpera	integer	3	Small snags per acre	0-400
msnagpera	integer	3	Medium snags per acre	0-100
lsnagpera	integer	3	Large snags per acre	0-50
gingpersc	character	4	Gingrich & Roach prescription	?
type1	character	3	Spp1-- Top species in terms of living basal area	species code
ba1	numeric	4	Basal area of spp1	0-150
no1	numeric	5	Number of trees per acre of spp1	0-9999
vol1	numeric	4	Mean Basal Feet per acre of spp1	0-12

Field Name	Type	Width	Description	Values
type2	character	3	Spp2-- Second species in terms of living basal area	species code
ba2	numeric	4	Basal area of spp2	0-150
no2	numeric	5	Number of trees per acre of spp2	0-9999
vol2	numeric	4	Mean Basal Feet per acre of spp2	0-12
type3	character	3	Spp3-- Third species in terms of living basal area	species code
ba3	numeric	4	Basal area of spp3	0-150
no3	numeric	5	Number of trees per acre of spp3	0-9999
vol3	numeric	4	Mean Basal Feet per acre of spp3	0-12
type4	character	3	Spp4-- Fourth species in terms of living basal area	species code
ba4	numeric	4	Basal area of spp4	0-150
no4	numeric	5	Number of trees per acre of spp4	0-9999
vol4	numeric	4	Mean Basal Feet per acre of spp4	0-12
type5	character	3	Spp5-- Fifth species in terms of living basal area	species code
ba5	numeric	4	Basal area of spp5	0-150
no5	numeric	5	Number of trees per acre of spp5	0-9999
vol5	numeric	4	Mean Basal Feet per acre of spp5	0-12
ba068	integer	4	Basal area of redcedar	0-150
ba110	integer	4	Basal area of Shortleaf Pine	0-150

Field Name	Type	Width	Description	Values
ba835	integer	4	Basal area of post oak	0-150
ba824	integer	4	Basal area of blackjack oak	0-150
ba837	integer	4	Basal area of black oak	0-150
ba806	integer	4	Basal area of scarlet oak	0-150
ba802	integer	4	Basal area of white oak	0-150
ba833	integer	4	Basal area of Northern red oak	0-150
babothdw	integer	4	Basal area of bottomland hard hardwoods	0-150
babotswd	integer	4	Basal area of bottomland soft hardwoods	0-150
bamapbee	integer	4	Basal area of sugar maple and beech	0-150
noplots	integer	2	Number of plots in stand	0-99
matureba	integer	3	Total mature basal area in stand	0-150
immagsba	integer	3	Total immature Acceptable Growing Stock Basal Area	0-150
immugbsa	integer	3	Total immature Unacceptable Growing Stock Basal Area	0-150
poleagsba	integer	3	Total pole Acceptable Growing Stock Basal Area	0-150
poleugsba	integer	3	Total pole Unacceptable Growing Stock Basal Area	0-150

Field Name	Type	Width	Description	Values
stagsba	integer	3	Total small tree Acceptable Growing Stock Basal Area	0-150
stugsba	integer	3	Total small tree Unaccetpable Growing Stock Basal Area	0-150
cullba	integer	3	Total cull tree Basal Area	0-150
prsz	character	2	Present Size Class	R,ST,P,SP,LP,S,SS,U,G,F,V
fusz	character	2	Future Size Class	same as prsz
dfc	character	1	Desired Future Management Condition	E,U,G,S,F,O
notes	character	60	notes	
animalhab	character	2	Animal Habitat Type (not used)	blank
cotyp	character	3	Forest Cover Type	NON,SLP,ERC,SPO,ERH,PB O,BSO,WHO,WBR,OGC,OAH , CWD,EAM,MAB,OTH
cobj	character	3	Cover type objective	same as above
canopyht	character	1	Overstory Canopy Height	0-9 (nearest ten foot increment)
canopycov	character	1	Overstory Canopy Coverage	<5% 0 5-15% 1 15-25% 2 25-35% 3 35-45% 4 45-55% 5 55-65% 6 65-75% 7 75-85% 8 85+% 9

Field Name	Type	Width	Description	Values
sizedesn	character	1	United States Forest Service size density code used	blank
yrorigin	integer	4	Year of Origin	1940-1997
undht	character	1	Mid story canopy height	0-9 (nearest ten foot increment)
ground1	character	3	Ground layer spp #1	species code
ground2	character	3	Ground layer spp #2	species code
ground3	character	3	Ground layer spp #3	species code
llitter	character	1	Depth of leaf litter	0-9, nearest inch
health	character	1	Forest health level and type	Ten percent increments of amount of trees affected by insect, disease or other health problems
number	integer	4	Summation Purposes only	1

* see elt layer

Definition Table: position

Value	Description
R	Ridge
U	Upper Slope
M	Mid Slope
L	Lower Slope
B	Bottom

Definition Table: species code

Value	Description (common name)
531	AMERICAN BEECH
540	ASH SPP.
546	ASH, BLUE

Value	Description (common name)
544	ASH, GREEN
541	ASH, WHITE
221	BALDCYPRESS
951	BASSWOOD, AMERICA
762	BLACK CHERRY
602	BLACK WALNUT
694	BLACKGUM
601	BUTTERNUT
452	CATALPA
742	COTTONWOOD
491	DOGWOOD SPP.
068	EASTERN REDCEDAR
970	ELM SPP.
972	ELM, AMERICAN
975	ELM, RED
977	ELM, ROCK
974	ELM, SIBERIAN
971	ELM, WINGED
462	HACKBERRY
500	HAWTHORN SPP.
400	HICKORY SPP.
402	HICKORY, BITTERNUT
408	HICKORY, BLACK
409	HICKORY, MOCKERNUT
404	HICKORY, PECAN
403	HICKORY, PIGNUT
407	HICKORY, SHAGBARK
405	HICKORY, SHELLBAR
401	HICKORY, WATER

Value	Description (common name)
552	HONEYLOCUST
391	HORNBEAM
701	IRONWOOD
571	KENTUCKY COFFEETREE
901	LOCUST, BLACK
313	MAPLE, BOXELDER
316	MAPLE, RED
317	MAPLE, SILVER
318	MAPLE, SUGAR
999	MISC. NONCOMMERCIAL
680	MULBERRY SPP.
682	MULBERRY, RED
681	MULBERRY, WHITE
000	NONSTOCKED
837	OAK, BLACK
824	OAK, BLACKJACK
823	OAK, BUR
813	OAK, CHERRYBARK
832	OAK, CHESTNUT
826	OAK, CHINKAPIN
833	OAK, NORTHERN RED
828	OAK, NUTTALL
822	OAK, OVERCUP
830	OAK, PIN
835	OAK, POST
806	OAK, SCARLET
817	OAK, SHINGLE
834	OAK, SHUMARD
812	OAK, SOUTHERN RED

Value	Description (common name)
825	OAK, SWAMP CHESTNUT
804	OAK, SWAMP WHITE
827	OAK, WATER
802	OAK, WHITE
831	OAK, WILLOW
331	OHIO BUCKEYE
641	OSAGE ORANGE
521	PERSIMMON
131	PINE, LOBLOLLY
110	PINE, SHORTLEAF
129	PINE, WHITE
471	REDBUD
373	RIVER BIRCH
931	SASSAFRAS
006	SERVICEBERRY
711	SOURWOOD
461	SUGARBERRY
611	SWEETGUM
731	SYCAMORE
920	WILLOW SPP.
922	WILLOW, BLACK
621	YELLOW POPLAR

Definition Table: stclass (observed and calculated)

Value	Description
0	Site Index <40, Fields, Glades, and other openings
1	Site Index 40-54
2	Site Index 55-64
3	Site Index 65-74

Value	Description
4	Site Index 75+
F	Field or other opening
G	Glade
S	Savanna

Definition Table: pres/prescmt(final and observed)

Value	Description
L	Leave
OG	Old Growth
TSI	TSI
ROCC	Regenerate Oak--Clearcut
ROSH	Regenerate Oak--Shelterwood
RP	Regenerate Pine
I	Intermediate Cut
P	Walnut P&R
G	Glade Management
F	Field Management
V	Savanna Management
X	Other Cultural Work
RPBS	Regenerate Pine by Burning & Seeding
RPDS	Regenerate Pine by Doze & Seeding
RPP	Regenerate Pine by Planting
ITSI	Intermediatete Cut/TSI
GM	Glade Management--Mechanical Treatment
GB	Glade Management--Burning
GC	Glade Management--Chemical Treatment
FM	Field Management--Mechanical Methods
FB	Field Management--Prescribed Burning
FC	Field Management--Chemical Treatment

Value	Description
XP	Plant Seedlings in the Field--Convert from Field to Forest
VM	Savanna Management--Mechanical Treatment
VC	Savanna Management--Chemical Treatment
VB	Savanna Management--Prescribed Burning
UAMP	Uneven-Aged Management--Precommercial Treatment
UAMC	Uneven-Aged Management--Commercial Sale

Definition Table: standard index

Value	Description
0	none
1	Low
2	Medium
3	High

Definition Table: typedistrb

Value	Description
L	Logging
F	Fire
D	Decline
G	Grazing
W	Wind/Windthrow
I	Insect/Disease
X	Other
O	Flooding

Definition Table: specialftr

Value	Description
G	Glade
GI	Glade--Igneous
GD	Glade--Dolomite

Value	Description
GS	Glade--Sandstone
GL	Glade--Limestone
GC	Glade--Chert
GX	Glade--Other
F	Forest
FO	Forest--Old Growth
FU	Forest--Upland
FB	Forest--Bottomland
FX	Forest--Other
E	Endangered Species Site
EP	Endangered Species Site-- Plant
EA	Endangered Species Site-- Animal
V	Savanna
P	Prairie
C	Cave
B	Bluff
S	Spring
N	Fen
A	Aquatic Feature
AI	Aquatic Feature-- intermittent stream with permanent pools
AP	Aquatic Feature--Perennial Stream
AD	Aquatic Feature--Dry Upland Waterway
AR	Aquatic Feature--Riparian Corridor
AL	Aquatic Feature--Lake or Pond
K	Sinks or Sinkholes
L	Cultural Features
X	Other

Definition Table: prsz (Present Size Class)

Value	Description
R	Regeneration (<2")
ST	Small Trees (2-5")
P,SP,L	POLES (6-11")
P	
S, SS	Large Trees (12+")
U	Uneven-Aged
G	Glade
F	Fields and other openings
S	Savanna

Definition Table: dfc (Desired Future Condition)

Value	Description
E	Evenaged Forest
U	Uneven-Aged Forest
G	Glade
V	Savanna
F	Field/Food Plot
O	Old Growth Forest

Definition Table: cotpy (Cover Type)

Value	Description
NON	non stocked or non Forest
SLP	Shortleaf Pine
ERC	Eastern Red Cedar
SPO	Shortleaf Pine-- Oak or Oak-Pine
ERH	Eastern Red Cedar-- Hardwood
PBO	Post-Blackjack Oak
WHO	White Oak
WBR	White-Black--Northern Red Oak

Value	Description
OGC	<i>Oak--Gum--Cypress or other bottomland hardwood</i>
OAH	<i>Oak Hickory (other than listed above)</i>
CWD	<i>Cottonwood</i>
EAM	<i>Elm-Ash-Maple or bottomland soft hardwood</i>
MAB	<i>Maple--Basswood</i>
OTH	<i>Other</i>

MOFEP 1996 Sale Boundaries

This file consists of the boundaries of the different cutting areas on the MOFEP project. They do not directly correspond to the site boundaries, but include multiple sites. They are based upon the stand level, with these boundaries forming segments within the sale boundary. The Ecological LandType has also been included as part of the data with this file.

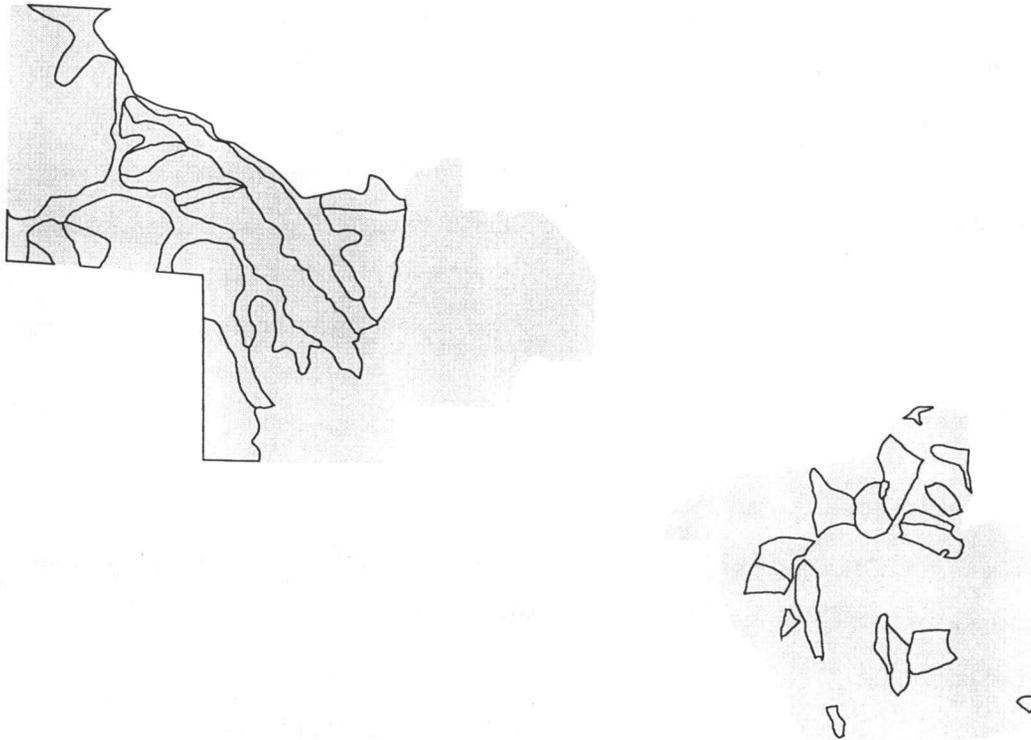


Figure 1-3

Boundaries of MOFEP 1996 Sale #1

File Name: sale96#

(# is the sale number)

Data Theme:	Sale Boundaries
Data Source:	Combination of stand boundaries
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Brian Brookshire, Forestry Division, Missouri Department of Conservation
File Description:	This file contains the boundaries of each sale on the MOFEP project in 1996
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: sale96#

Data File Structure

Field Name	Type	Width	Description	Values
standno	integer	3	Stand Number	1-145
elt*	integer	3	Ecological LandType	3,5,6,7,11,17-23

*see elt layer

Partial Clip of Hydro

This file consists of a hydrology layer corresponding to the boundary of the clip area encompassing sites 1 through 6. The source data is the hydrology layer from the 1:100,000 scale digital United States Geological Survey Topographic maps.

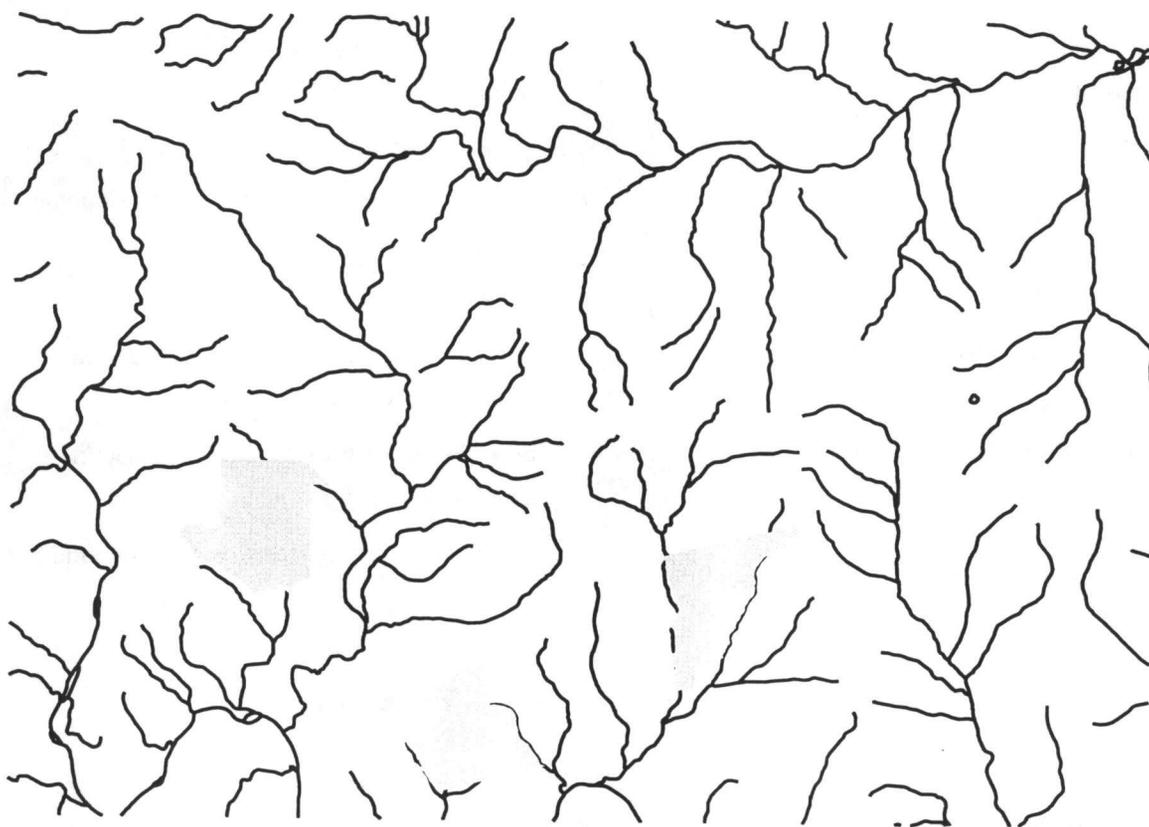


Figure 1-4

Overall Hydrology for the MOFEP Partial clip area

File Name: mrhydro

Data Theme:	Hydrology
Data Source:	1:100,000 scale digital USGS topographic maps
Feature Type:	Line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Corridonse, Garwood, Midridge Powder Mill Ferry, Redford, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of arcs which correspond to the hydro of the partial clip taken from /state/hydro/hydro-all
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS digital 1:100,000 Topographic Sheets
Vintage:	Varies
Scale:	1:100,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: mrhydro

Data File Structure

Field Name	Type	Width	Description	Values
major1	6	integer	First most significant attribute	50--line
minor1	6	integer	further refinement of first attribute	200,201,412
major2	6	integer	Second Most Significant attribute	50--line 59--coincident feature
minor2	6	integer	further refinement of second attribute	9, 610

Definition Table: minor codes

Value	Description
9	?
200	Shoreline
201	Manmade shoreline
412	stream
610	Intermittent

Partial Clip of Roads (Piedmont)

This file consists of the road from the United States Geological Survey Piedmont 1:100,000 scale digital topographic map. This layer contains the west portion of the roads for the partial clip encompassing sites 1 through 6. This file consists of only the roads that are contained within the partial clip area of the MOFEP Project.



Figure 1-5

Roads for the Piedmont 1:100,000 Quad for the Partial
Clip of the MOFEP Project

File Name: mrelroad

Data Theme:	Roads
Data Source:	Roads from USGS 1:100,000 Scale Topographic Sheets
Feature Type:	Line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Corridonse, Garwood, Midridge Powder Mill Ferry, Redford, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of arcs which correspond to the roads of the partial clip (1:100,000 Piedmont Quad)
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	Digital 1:100,000 Topographic Sheets
Vintage:	Varies
Scale:	1:100,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: mrelroad

Data File Structure

Field Name	Type	Width	Description	Values
major1	6	integer	First most significant attribute	170--road
minor1	6	integer	further refinement of first attribute	205, 209, 210, 211, 215

Definition Table: elt#-id

Value	Description
205	Secondary route, class 2, symbol undivided
209	Road or street, class 3
210	Road or street, class 4
211	Trail, class 5, other than four-wheel-drive vehicle
215	Perimeter of Parking area

Partial Clip of Roads (Spring Valley Quad)

This file consists of the road from the United States Geological Survey Spring Valley 1:100,000 scale digital topographic map. This layer contains of the east section of the roads for the partial clip encompassing sites 1 through 6.



Figure 1-6

Roads for the Spring Valley 1:100,000 Quad for the Partial Clip of the MOFEP Project

File Name: mrexroad

Data Theme:	Roads
Data Source:	Roads from USGS 1:100,000 Scale Topographic Sheets
Feature Type:	Line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Corridonse, Garwood, Midridge Powder Mill Ferry, Redford, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of arcs which correspond to the roads of the partial clip (1:100,000 Spring Valley Quad)
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS digital 1:100,000 Topographic Sheets
Vintage:	Varies
Scale:	1:100,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: mrexroad

Data File Structure

Field Name	Type	Width	Description	Values
major1	6	integer	First most significant attribute	170--road
minor1	6	integer	further refinement of first attribute	205, 209, 210, 211

Definition Table: elt#-id

Value	Description
205	Secondary route, class 2, symbol undivided
209	Road or street, class 3
210	Road or street, class 4
211	Trail, class 5, four-wheel-drive vehicle

Partial Clip of State Roads

This file consists of the state maintained road system that fall within the area bounded by the partial clip of the area. The attributes of the road coverage (created and attributed by the Missouri Department of Transportation) are preserved in this file.



Figure 1-7

Partial Clip of State Roads

File Name: mrhighwy

Data Theme:	Roads
Data Source:	Digital road arcs from USGS 1:100,000 Scale Topographic Sheets
Feature Type:	Line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Corridonse, Garwood, Midridge Powder Mill Ferry, Redford, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of arcs which correspond to the roads of the partial clip taken from /state/roads/state sys
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS digital 1:100,000 Topographic Sheets
Vintage:	Varies
Scale:	1:100,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: mrhighwy

Data File Structure

Field Name	Type	Width	Description	Values
dist	integer	1	Highway District	9
cnty no	integer	3	County Number	90-101
rte desg	character	2	Route Designation	MO, RT, SP
route	character	3	Route Number	21, 106, B, D, F, HH, K, Y
blognum	floating	8	Beginning Log Number	Exact miles from state border at beginning
elognum	floating	8	Ending Log Number	Exact miles from state border at end
blog	integer	5	Beginning Log Number	Mile marker at beginning
elog	integer	5	Ending Log Number	Mile marker at end
addtype	character	10	County +Route Designation +Route Number	Combined field
elog-1	floating	8	Ending Log Number - 1	1399.000-44169.000

Perennial Hydro for Clip Area

This file consists of the perennial USGS 1:100,000 scale digital hydrology layer for the partial clip area encompassing site 1 through 6.

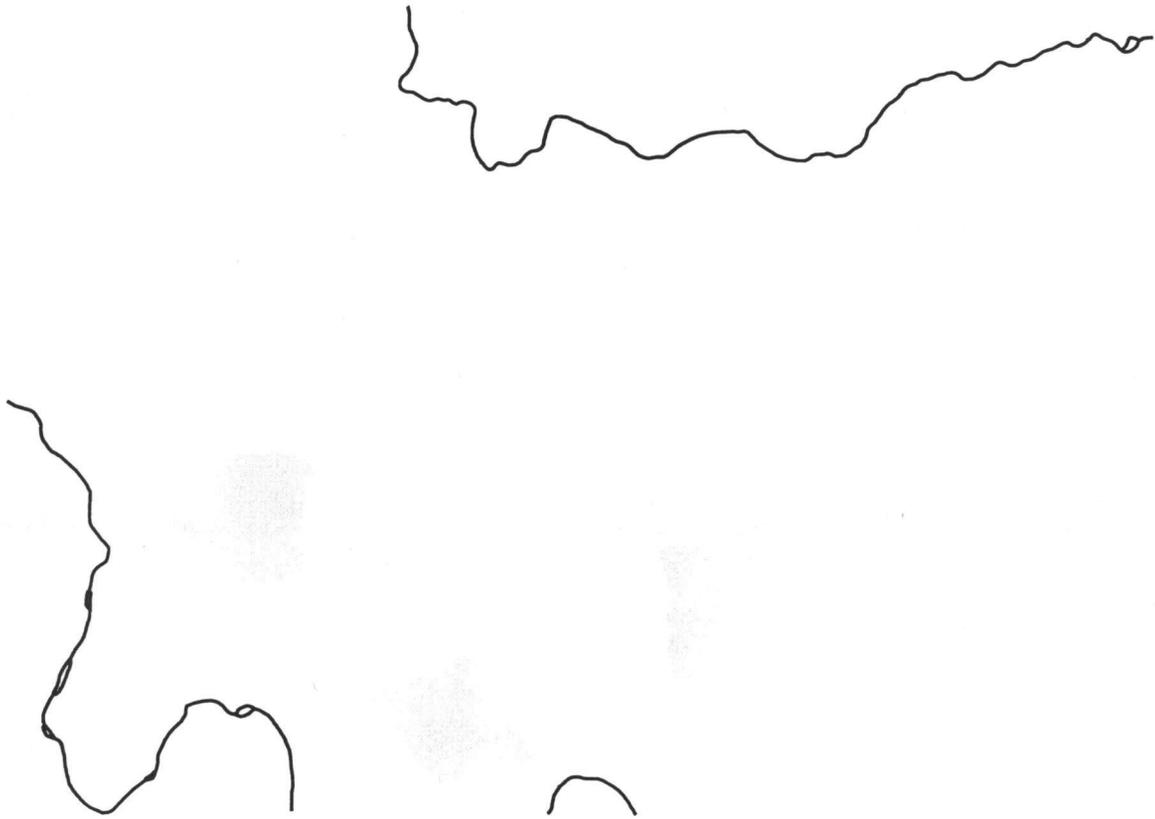


Figure 1-8

Perennial Hydro for Clip Area

File Name: mrhydro2

Data Theme:	Perennial Hydrology
Data Source:	1:100,000 scale digital USGS topographic maps
Feature Type:	Line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Corridonse, Garwood, Midridge Powder Mill Ferry, Redford, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	Arcs representing perennial hydrology
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS digital 1:100,000 Topographic Sheets
Vintage:	Varies
Scale:	1:100,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: mrhydro2

Data File Structure

Field Name	Type	Width	Description	Values
major1	6	integer	First most significant attribute	0,50--line
minor1	6	integer	further refinement of first attribute	0,412--stream
major2	6	integer	Second Most Significant attribute	0,59--co-incident feature
minor2	6	integer	further refinement of second attribute	0,9

Definition Table: minor codes

Value	Description
9	?
412	stream

Ponds

This file consists of polygons which represent the ponds, when present, on each site. These were digitized off of United States Geological Survey 1:24,000 scale topographic maps.

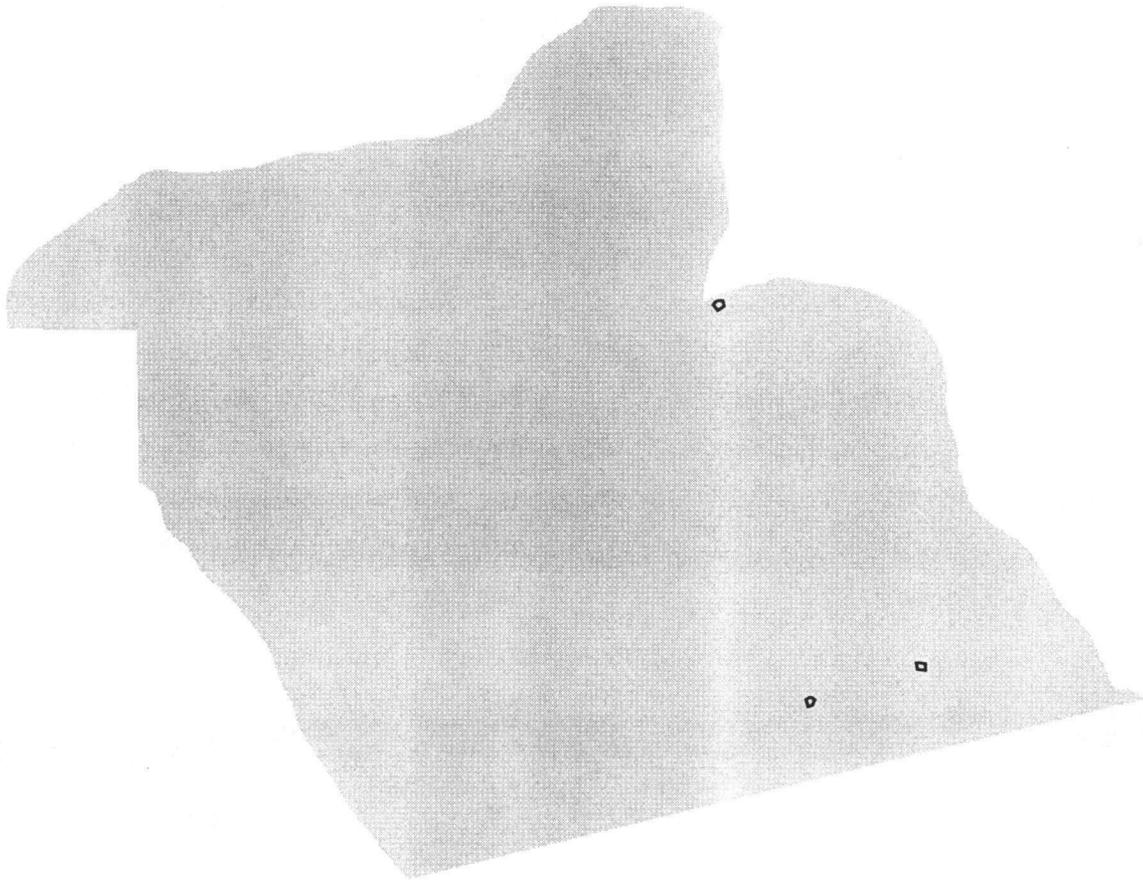


Figure 1-9

Ponds for Site 3

File Name: ponds#

(# is the site number)

Data Theme:	Ponds
Data Source:	Field Inventory
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Powder Mill Ferry
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of polygons which represent the extent of ponds on a MOFEP site
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic maps
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

Project Area Clip Boundary

This is a general boundary file for the entire MOFEP project area. It encompasses all nine sites, and the vicinity around them.



Figure 1-10

Project Area Clip Boundary

File Name: mofpclip

Data Theme:	Project Area Clip Boundary
Data Source:	Digital and Hard Copy Countour Lines from USGS 1:24,000 Scale Topographic Sheets
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of a polygon which corresponds to the entire MOFEP project and vicinity
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

Project Area Contour Lines

(Hypsography)

This is a combined layer of contour lines for the entire MOFEP project. It is made up of the individual contour lines for each of the USGS 1:100,000 digital topographic maps. This layer encompasses all nine sites and the surrounding vicinity.

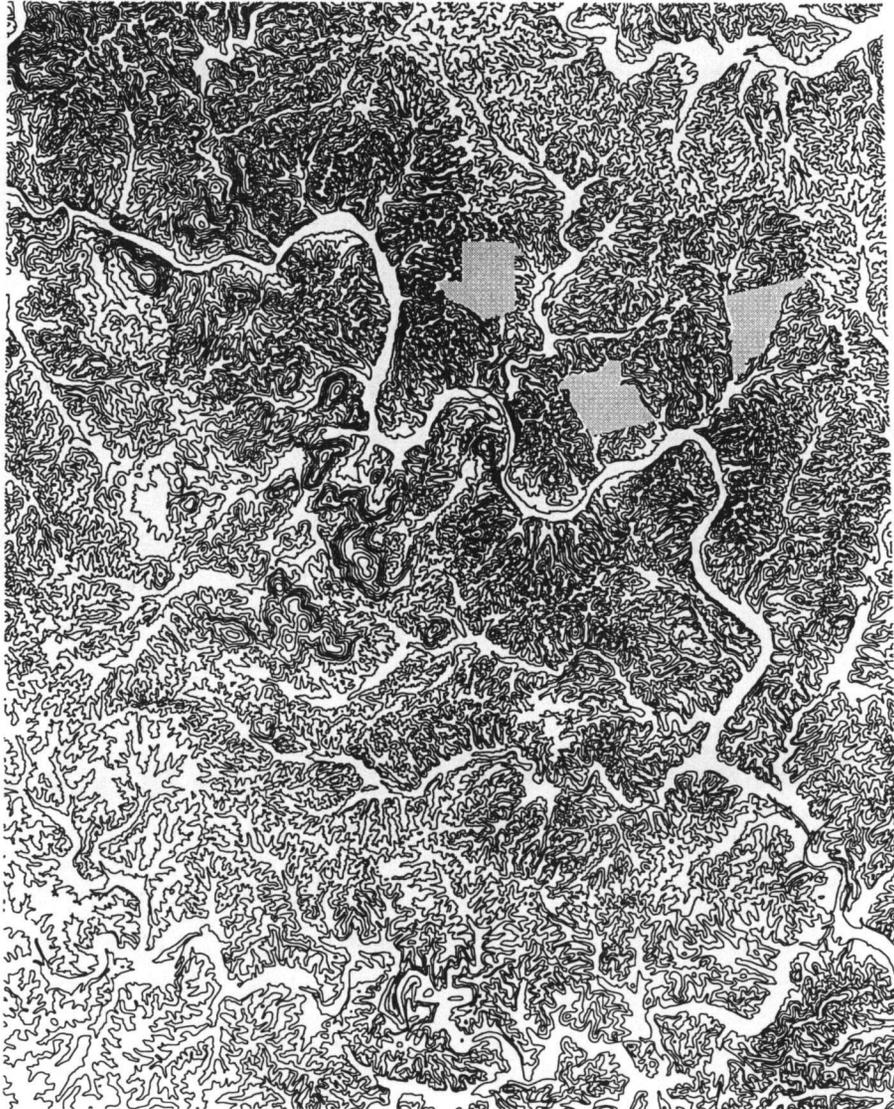


Figure 1-11

Project Area Contour Lines

File Name: mofephyp

Data Theme:	Contour Lines (Hypsography)
Data Source:	Digital and Hard Copy Countour Lines from USGS 1:24,000 Scale Topographic Sheets
Feature Type:	Line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of arcs which correspond to the contour lines for the entire project
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: mofephyp

Data File Structure

Field Name	Type	Width	Description	Values
major1	6	integer	First most significant attribute	20--lines
minor1	6	integer	further refinement of first attribute	200--contour line
major2	6	integer	Second Most Significant attribute	24--elevation in minor attribute
minor2	6	integer	further refinement of second attribute	120--400 (elevation in meters)

Project Area Partial Clip

This file is a polygon area consisting of sites 1 through 6, and the surrounding vicinity.



Figure 1-12

Project Area Partial Clip

File Name: mrclip

Data Theme: Boundary Clip

Data Source:

Feature Type: Polygon

Co-ordinate System: Universal Transverse Mercator

Projection Parameters: Zone 15

Datum: North American Datum of 1927

Map Unit: Meters

7.5' Quads: Exchange, Corridonse, Garwood, Midridge
Powder Mill Ferry, Redford, Stegal Mountain, Van
Buren North

Release Date: June 7, 1997

Contact Person (GIS Related): Steve Westin, Forestry Division, Missouri
Department of Conservation

Contact Person (Content Related): Steve Westin, Forestry Division, Missouri
Department of Conservation

File Description: This file consists of a polygon which surrounds
sites 1 through 6 and the immediate vicinity

Available GIS Format: ARC/INFO coverage

Base Map Source(s)

Base Map Description: USGS 1:24,000 7.5' Topographic Sheets
(both digital and hard copy versions)

Vintage: Varies

Scale: 1:24,000

Projection Parameters: UTM, Zone 15

Source: USGS

Reference Trees

This file consists of points which indicate the location and number of reference trees on each of the MOFEP sites. These were digitized from United States Geological Survey 1:24,000 scale topographic maps.

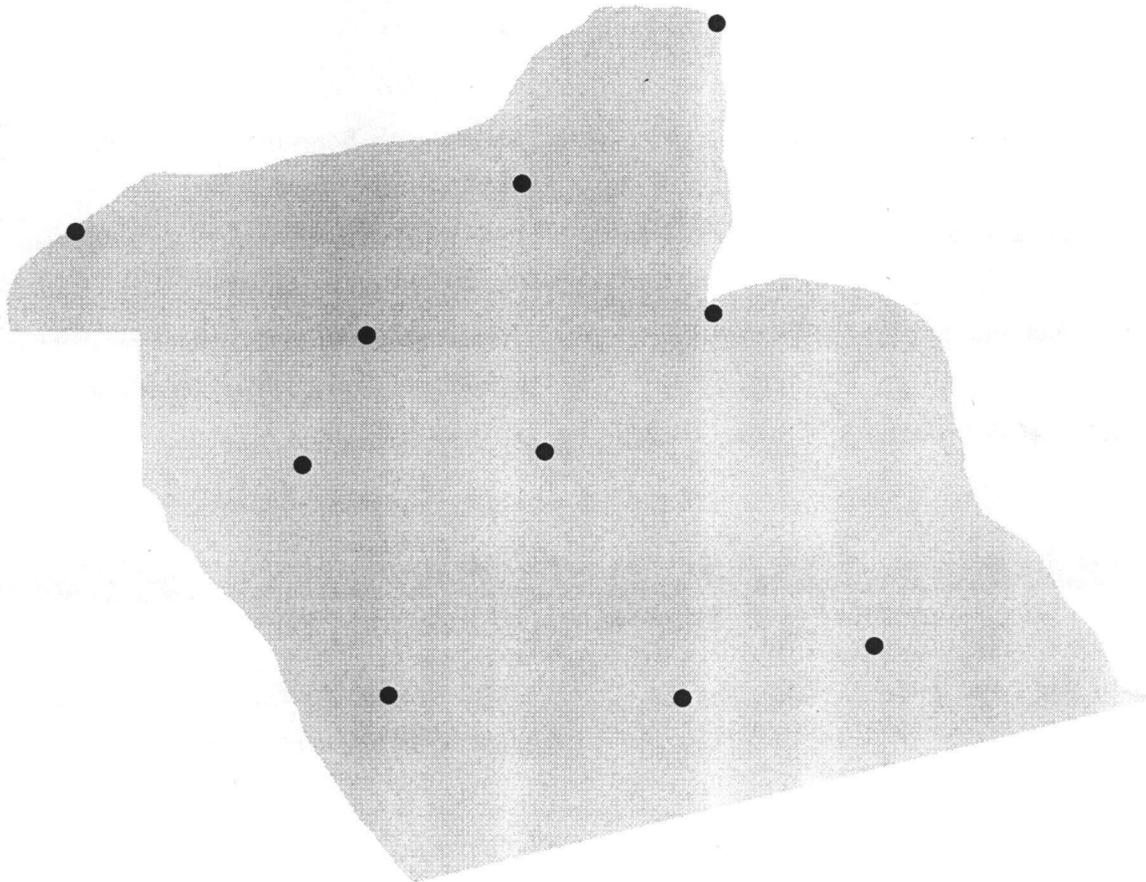


Figure 1-13

Reference Trees on Site 3

File Name: ref#

(where # is the site number)

Data Theme:	Reference Trees
Data Source:	Points digitized from USGS 1:24,000 scale topographic maps
Feature Type:	Point
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Corridonse, Garwood, Midridge Powder Mill Ferry, Redford, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Brian Brookshire, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of points which represent the location of reference trees on each site.
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: ref#

Data File Structure

Field Name	Type	Width	Description	Values
tree num	integer	2	Tree Number	1-99

Site Boundaries

This layer was developed using United States Geological Survey 1:24,000 scale topographic maps as a base. Boundaries for each site were hand drawn and digitized from this data source. Where possible, existing section lines, roads, and hydrography arcs were substituted for the digitized boundary lines.

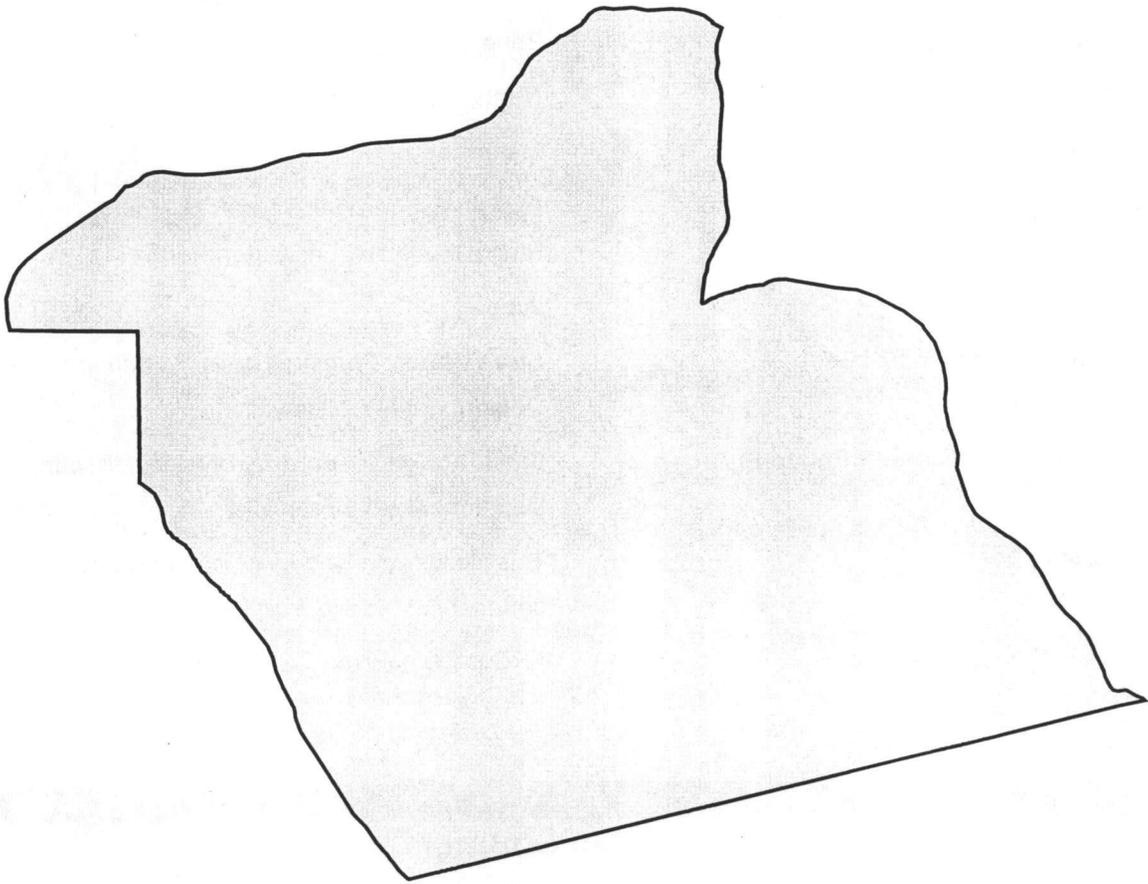


Figure 1-14 Boundary for Site 3 of the MOFEP Project

File Name:bound#

(# = Mofep Site Number)

Data Theme:	Site Boundary
Data Source:	Primarily Pre-existing compartment boundaries for Missouri Department of Conservation Ownership
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Brian Brookshire, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of arcs which outline the boundary of the site, built into polygons.
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	United States Geological Survey

Site Elevation Contour Lines (Hypsography)

The data for sites 1 through 6, and 9 (east half), is the hypsography from United States Geological Survey Digital 1:24,000 scale topographic maps. The hypso layer from the following Digital 1:24,000 Quadrangles was used: Exchange, Van Buren North and Powder Mill Ferry. The relevant portions of each quadrangle was clipped out, using the site boundary, and combined into the appropriate sites. For sites 7,8 and 9 (west half), the hypso layer was digitized from hardcopy 1:24:000 scale maps from the following quadrangles: Fremont, Stegall Mountain.



Figure 1-15 Contour Lines for Site 3

File Name: hypso#

(# = Mofep Site Number)

Data Theme:	Contour Lines (Hypsography)
Data Source:	Digital and Hard Copy Contour Lines from USGS 1:24,000 Scale Topographic Sheets
Feature Type:	Line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of arcs which correspond to the contour lines on each site
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	US Geological Survey

File Name: hypso#

Data File Structure:1 (Sites 1-6)

Field Name	Type	Width	Description	Values
major1	6	integer	First most significant attribute	20--lines
minor1	6	integer	further refinement of first attribute	200--contour line
major2	6	integer	Second Most Significant attribute	22--elevation in minor attribute
minor2	6	integer	further refinement of second attribute	520--1140 (elevation in feet)
elevmeters	10	number	Elevation in Meters (calculated from minor 2)	158.496--353.568

Data File Structure:2 (Sites 7-9)

Field Name	Type	Width	Description	Values
elevfeet	5	integer	elevation in feet	520--1140 (feet)
elevmeters	5	integer	elevation in meters	158.496--353.568 (meters)

Site Hydrology

This data is the hydrology layer from the United States Geological Survey Digital 1:24,000 scale topographic maps. The hydro layer from the following 1:24,000 Quadrangles was used: Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, and Van Buren North. The relevant portion of each quadrangle was clipped out, using the site boundary, and combined into the appropriate sites.

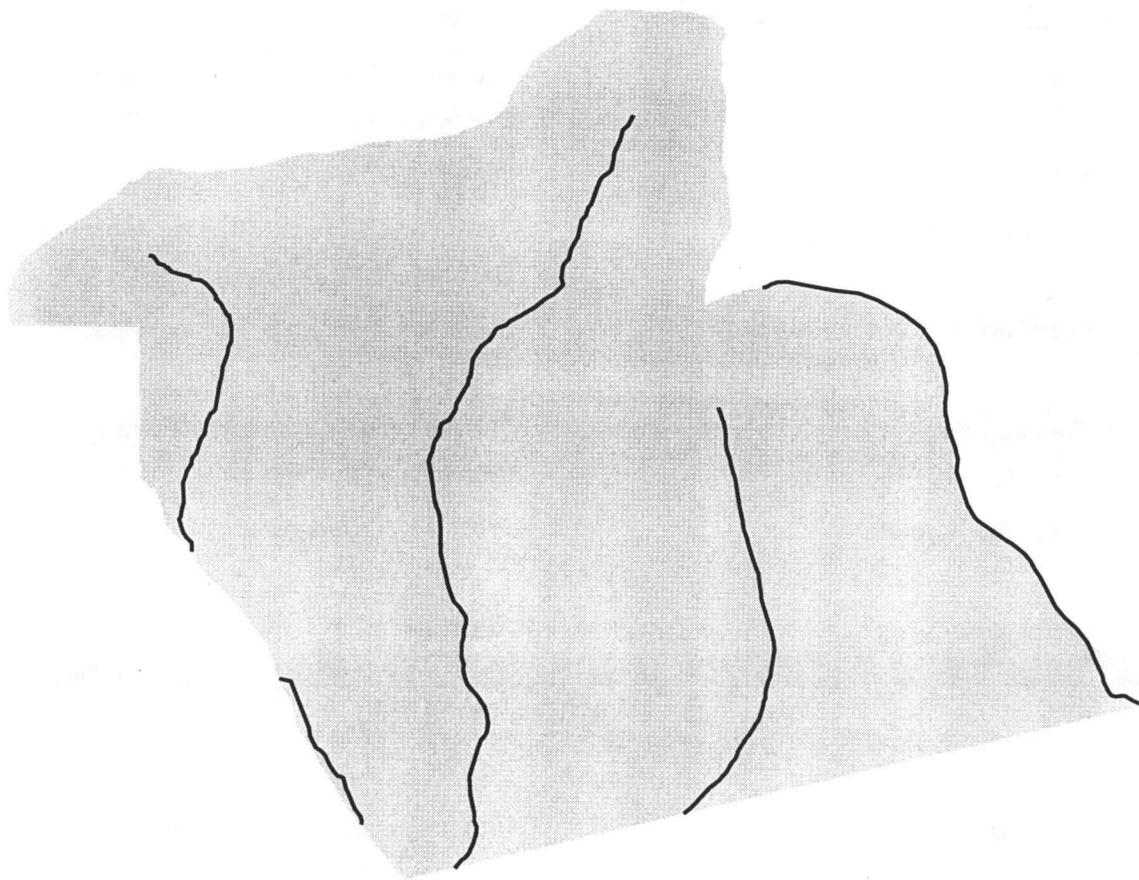


Figure 1-16

USGS 1:24,000 Scale Hydrology for Site 3

File Name: hydro#

(# = Mofep Site Number)

Data Theme:	Hydrology
Data Source:	Digital Hydrology from USGS 1:24,000 Scale Topographic Data
Feature Type:	line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of lines representing the hydrology on each site
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: hydro#

Data File Structure

Field Name	Type	Width	Description	Values
major1	integer	6	First Most significant attribute	50--stream
minor1	integer	6	Additional Refinement of first attribute	412--stream 200--shoreline
major2	integer	6	Second Most significant attribute	50--stream
minor2	integer	6	Additional Refinement of second attribute	605--right bank 606--left bank 610--intermittent

Site Roads

This data is the roads layer from the United States Geological Survey Digital 1:24,000 scale topographic maps. The hydro layer from the following 1:24,000 Quadrangles was used: Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, and Van Buren North. The relevant portion of each quadrangle was clipped out, using the site boundary, and combined into the appropriate sites.

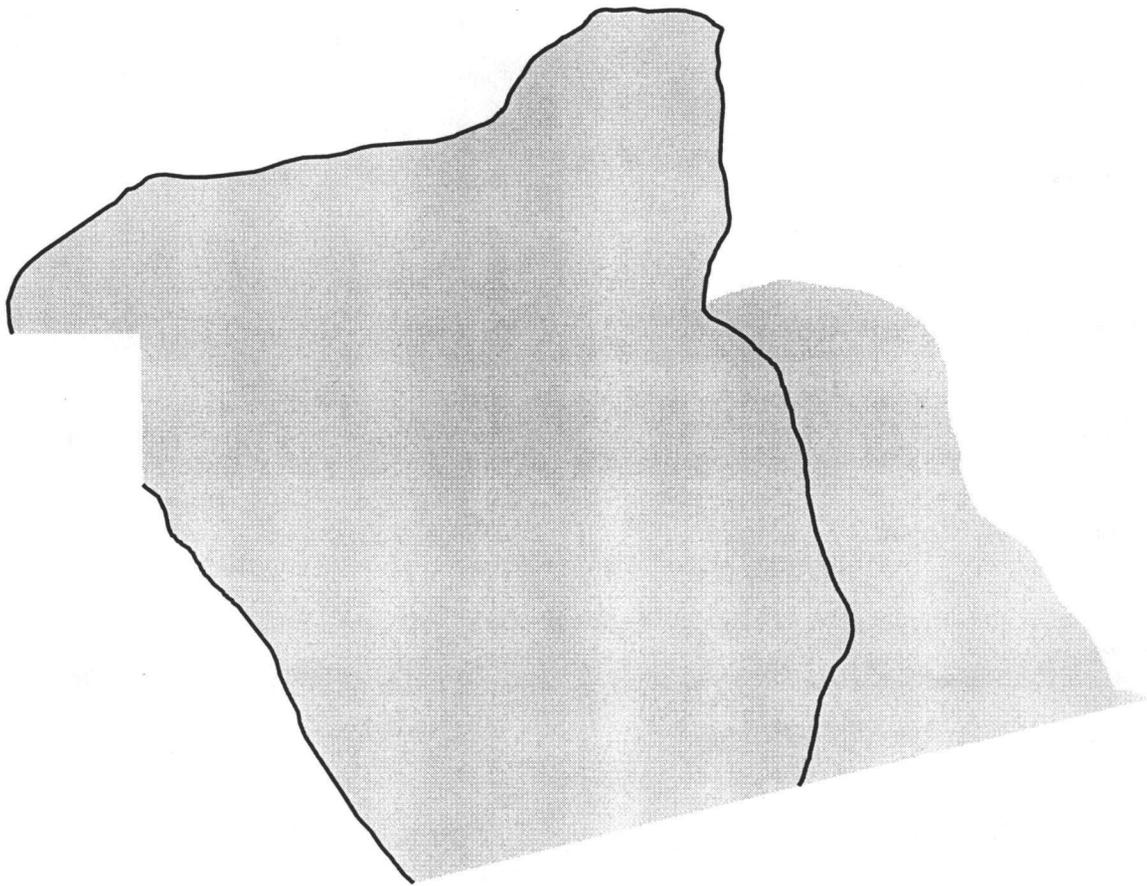


Figure 1-17

USGS 1:24,000 Scale Roads for Site 3

File Name: road#

(# = Mofep Site Number)

Data Theme:	Roads
Data Source:	Digital Hydrology from USGS 1:24,000 Scale Topographic Data
Feature Type:	line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of lines representing the roads on each site
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: road#

Data File Structure

Field Name	Type	Width	Description	Values
major1	integer	6	Feature	170
minor1	integer	6	Additional Refinement of first attribute	205,209,210,211
major2	integer	6	Route Designation	174--State Roads 179--Co-incident Feature
minor2	integer	6	Route Number	106
major3	integer	6	Alphabetic Portion of Route Number (01=A..26=Z)	177
minor3	integer	6	data for major3	2,6,808

Definition Table: minor codes

Value	Description
2	B
6	F
8	?
9	?
30	?
106	MO Route 106
205	Secondary route, class 2, symbol undivided
209	Road or street, class 3
210	Road or street, class 4
211	Trail, class 5, other than four-wheel-drive vehicle
808	HH

Stand Boundaries

This file consists of the boundaries of each stand within each MOFEP site. These were digitized off of United States Geological Survey 1:24,000 scale topographic maps. When possible, pre-existing digital hydrology and road arcs were substituted for the digitized arcs. This layer is a base layer for many of the other coverages in this dataset.

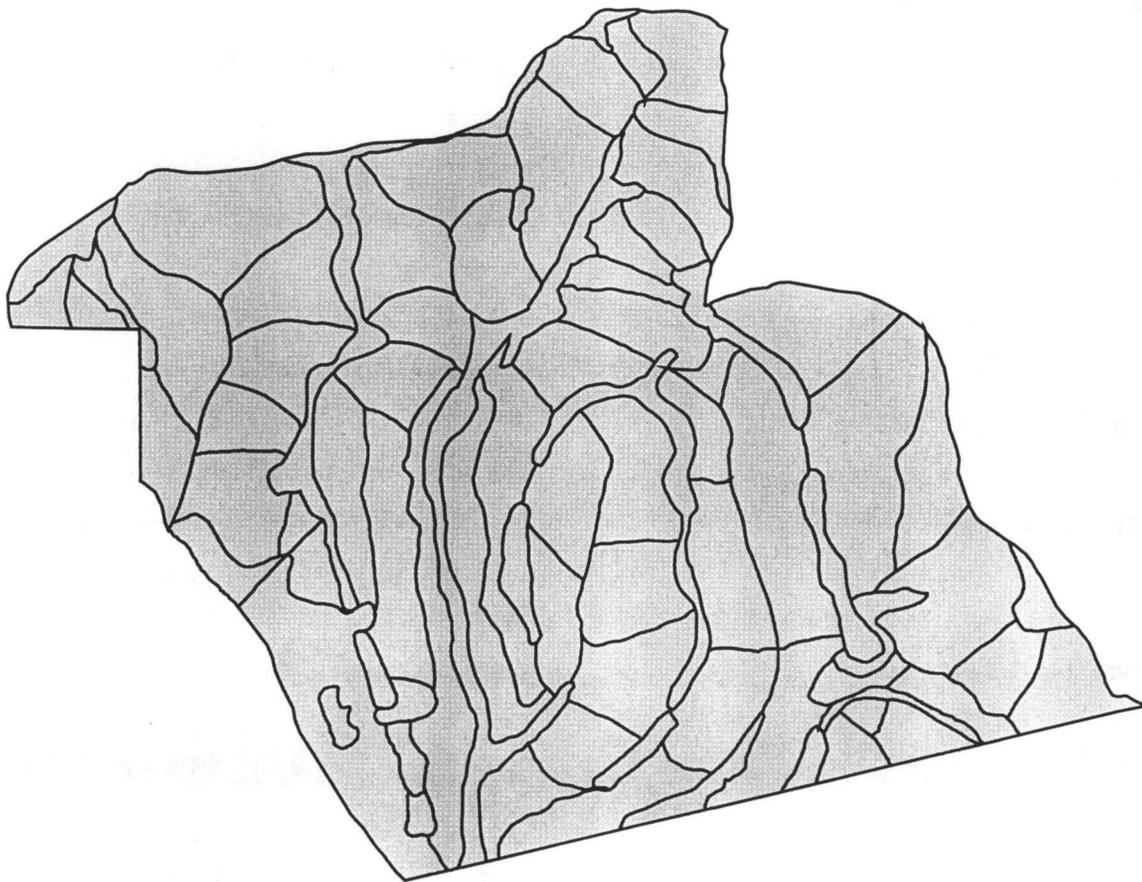


Figure 1-18

Stand Boundaries for Site 3

File Name: stands#

(# is MOFEP site number)

Data Theme:	Stand Boundaries
Data Source:	Digitized arcs drawn on USGS 1:24,000 scale topographic maps
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Brian Brookshire, Forestry Division, Missouri Department of Conservation
File Description:	This file contains the boundaries of each stand in each site. It also contains the elt value for that stand.
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (hard copy version)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: stands#

Data File Structure

Field Name	Type	Width	Description	Values
standno	integer	3	Stand Number	1-145
newacres	integer	7	Number of Acres	0-10,000 (whole number)
elt2*	integer	3	Ecological LandType (original designation)	3,5,6,7,11,17-23

*see elt layer

Stand Centroids

This coverage consists of a stand boundary coverage for each of the MOFEP sites. The labelpoints for each polygon has been moved by the centroidlabels command in ARC/INFO to the centroid of each point. A centroid is the geographic center of a polygon. The labelpoints were restricted to fall inside the polygon, in the case of irregularly shaped polygons. This layer can be used for distance calculated between the center of stands.

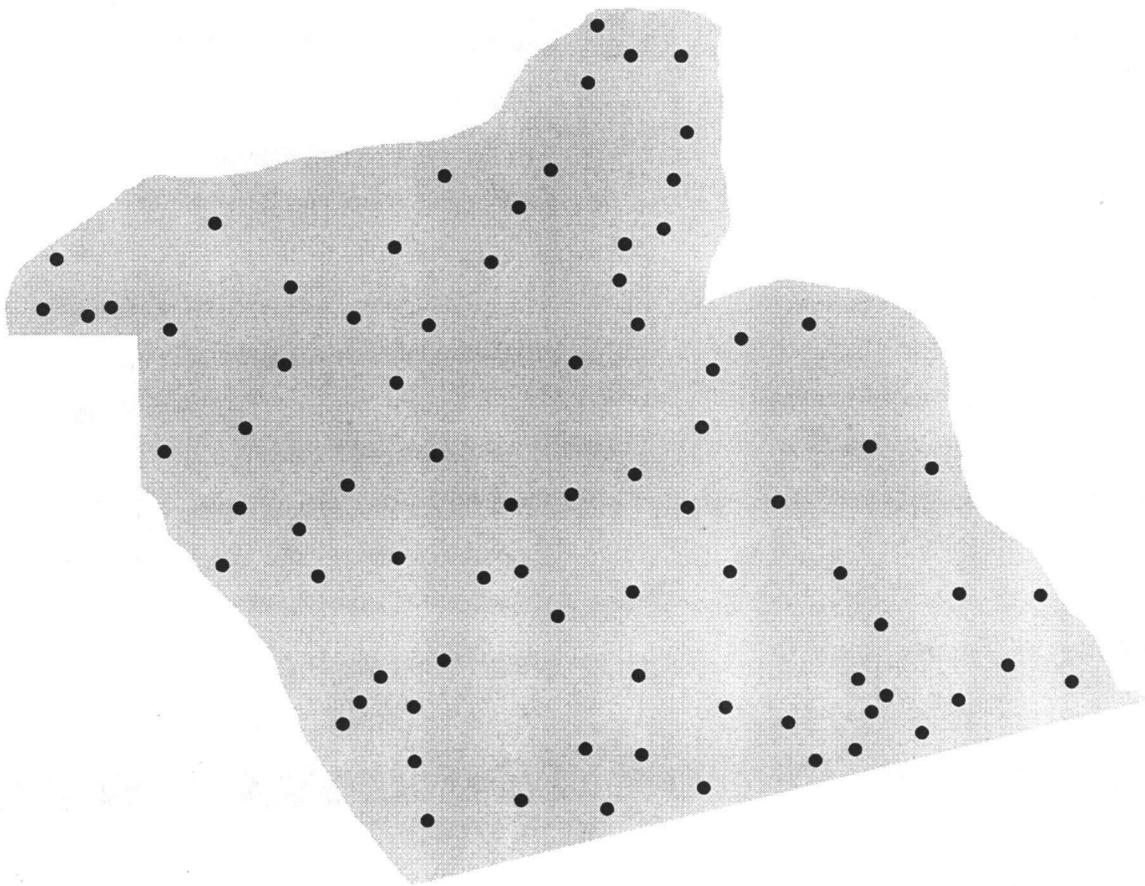


Figure 1-19

Centroid Coverage for Site 3 (stand boundaries are shown for reference).

File Name: cent#

(# = Mofep Site Number)

Data Theme:	Stand Polygon Centroid
Data Source:	"centroidlabels" command on stand boundary coverage
Feature Type:	Polygon, line, labelpoints
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of arcs which outline the boundary of the stands. Polygon labels are positioned at the polygon centroid.
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	US Geological Survey

File Name: cent#

Data File Structure

Field Name	Type	Width	Description	Values
cent#-id	Binary	4		
standno	Integer	3	Stand Number for that polygon	1-145
elt*	Integer	3	Ecological LandType	3,5,6,7,11,17-23

*See elt layer

Timber Harvest Landings

This file represents the location of the landings used in the 1996 harvesting operation on the MOFEP sites. These were digitized, as points, from United States Geological Survey 1:24,000 scale topographic maps. The points were assigned a letter in the field "landing" to differentiate between the various contractors. This data is available for sites 2, 3, 5, 7 and 9.

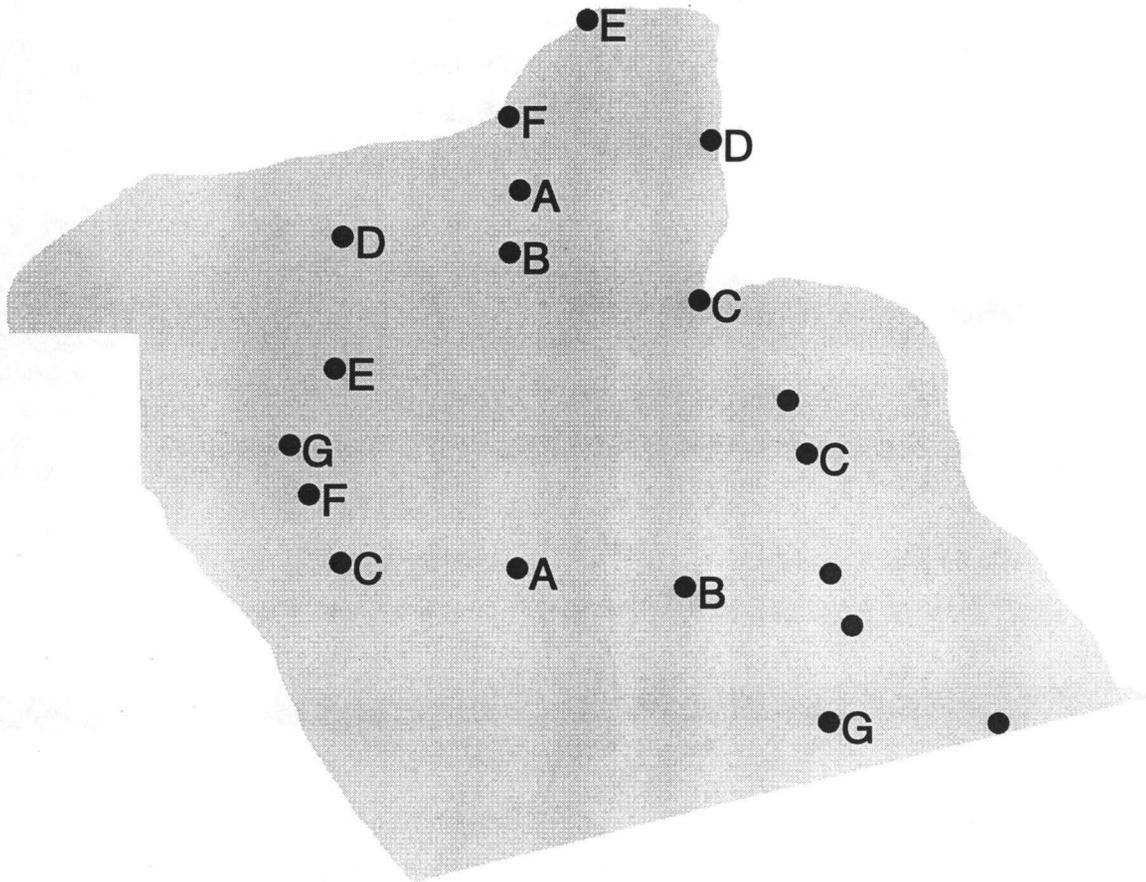


Figure 1-20

Timber Harvest Landings for Site 3

File Name: landing#

(# = Mofep Site Number)

Data Theme:	Landing Sites
Data Source:	Hand-drawn points on Countour Lines on USGS 1:24,000 Scale Topographic Sheets
Feature Type:	Point
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	District Foresters, Clearwater and Eminence Districts, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of points which correspond to the landing sites on each site
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	US Geological Survey

File Name: landing#

Data File Structure

Field Name	Type	Width	Description	Values
landing	character	3	Letter represents a particular contractor	A-X

File Name: trails#

(# is the site number)

Data Theme:	trails
Data Source:	USGS 1:24,000 scale digital and hardcopy maps
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	Arcs that correspond to trails on each of the MOFEP sites
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

Treatment

This layer consists of polygons, generally the stand boundaries, which describe the treatment units on each MOFEP site. This describes both the sale number/letter, treatment type, and cutting block number. These were derived from a combination of stand boundaries and roads on the MOFEP sites, and attributed accordingly. The sale number was derived from the "sale96#" layer, while the ELT and stand number came from the "stands#" layer.

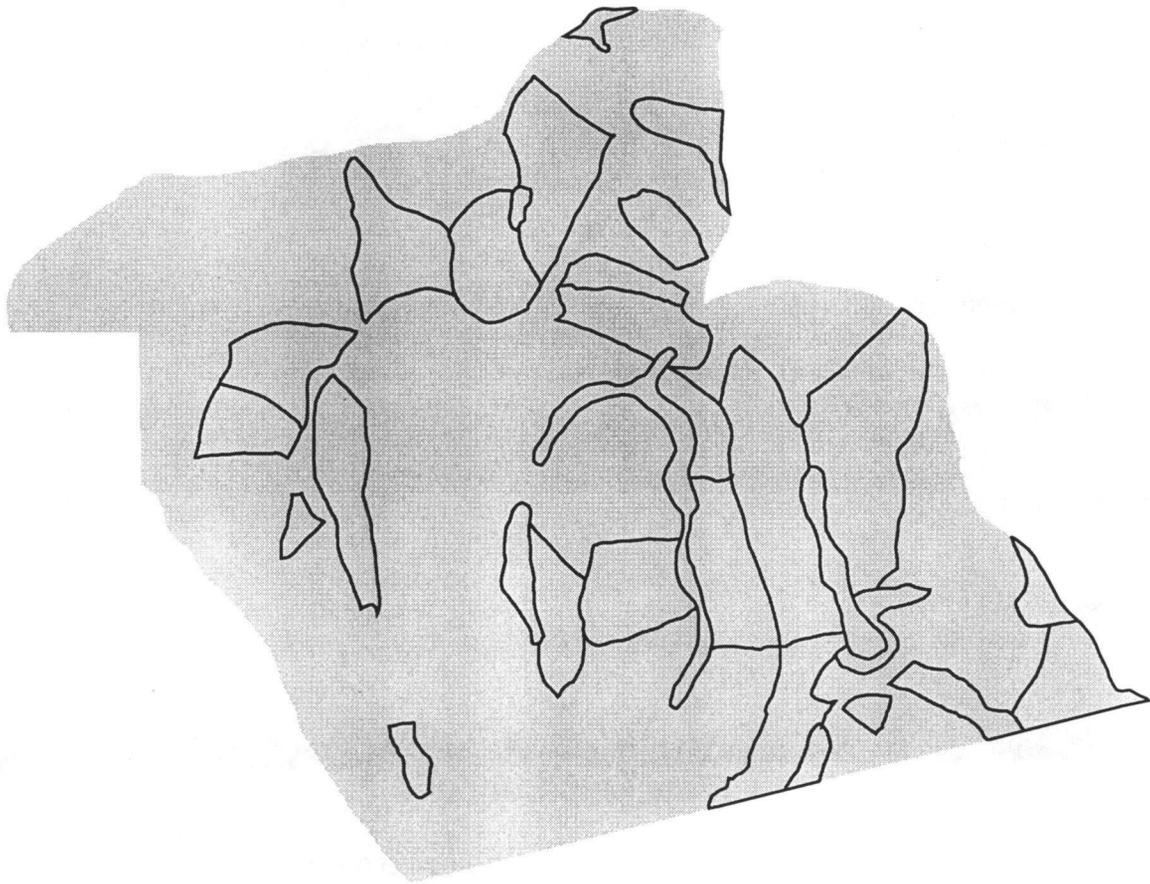


Figure 1-22

Treatments for Site 3

File Name: treat96#

(# is the site number)

Data Theme:	Treatment
Data Source:	USGS 1:24,000 scale digital and hardcopy maps "stands#" and "sale96#" layer
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Brian Brookshire, Forestry Division, Missouri Department of Conservation
File Description:	Polygons which correspond to treatment units on each site
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name:treat96#

Data File Structure

Field Name	Type	Width	Description	Values
standno	integer	3	Stand Number	1-145
elt2*	integer	3	Ecological LandType (original designation)	3,5,6,7,11,17-23
sale number	integer	2	Sale Number	1-6
cut block	integer	2	Cutting Block Number	1-13
treat	character	2	Treatment	UAM, INT, CC, NONE
acres	integer	7	Acres	0-300
Following is only in Sites 7 and 9:				
sale letter	character	2	Sale Letter	A or B

*see elt layer

Uneven-Aged Management Group Openings

This layer represents the locations of group openings on MOFEP sites 2 and 4, the Uneven-Aged Compartments. These were digitized from United States Geological Survey 1:24,000 scale topographic maps.



Figure 1-23

Uneven-Aged Management Group Openings for Site 4

File Name: grpopen

Data Theme:	Uneven-Aged Group Openings
Data Source:	USGS 1:24,000 scale topographic maps
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange and Powder Mill Ferry
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Brian Brookshire, Forestry Division, Missouri Department of Conservation
File Description:	Points which correspond to location of group opening
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

Birds

Grid Lines: East/West	2-1
Grid Lines:North/South	2-4
Net Lines	2-7
Net Point Locations	2-10
Spot Mapping Sub Plots	2-13

Grid Lines: East/West

This layer consists of arcs which travel east/west across each of the study sites. These form part of the location grid used in the Bird Study. The East/West Lines were labeled with letters, starting from the North. These intersect with the North/South lines to form a grid. These were digitized from United States Geological Survey 1:24,000 scale topographic maps.

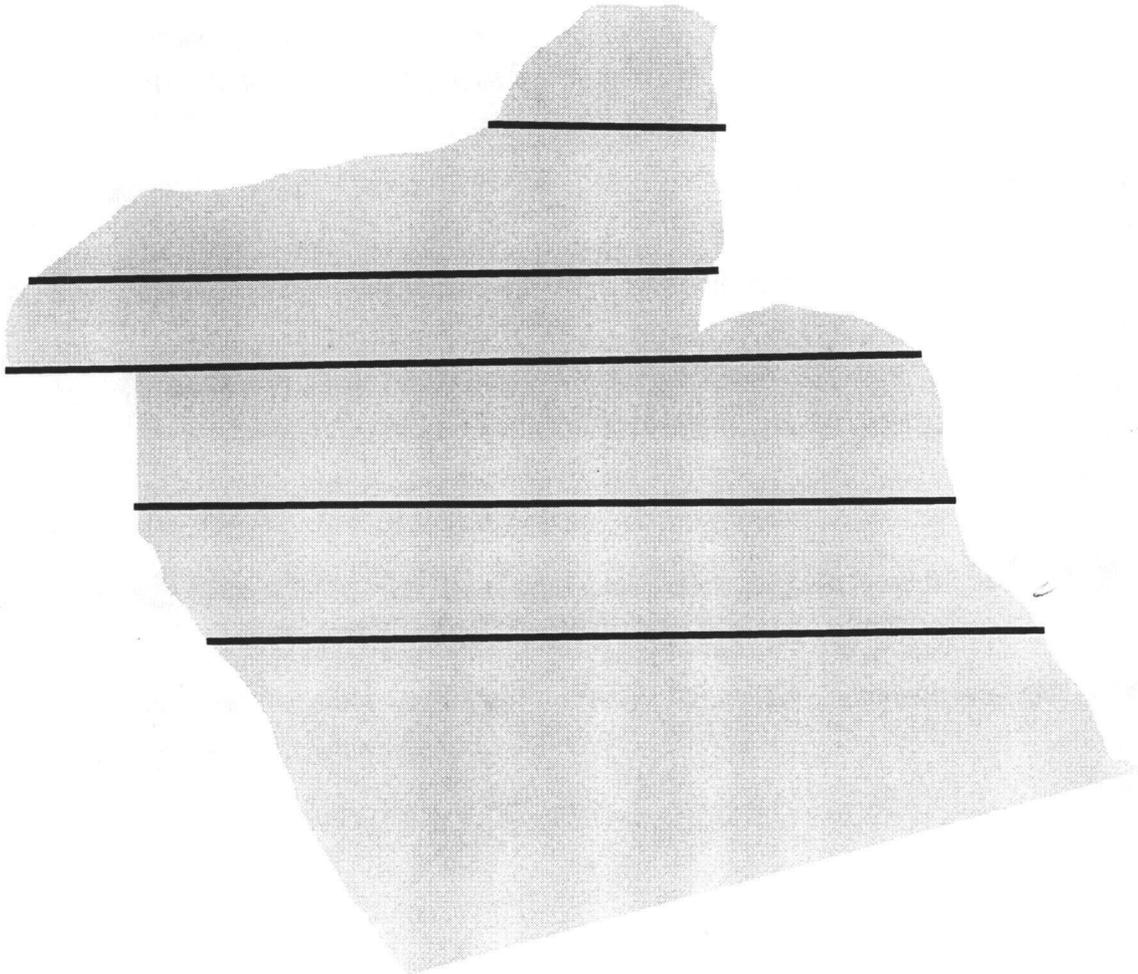


Figure 2-1

Grid Lines(east/west) for Site 3

File Name: line#ew

(# is MOFEP site number)

Data Theme:	Bird Study Grid Lines (East/West)
Data Source:	USGS 1:24,000 scale topographic maps
Feature Type:	Lines
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Richard Clawson, Wildlife Division, Missouri Department of Conservation
File Description:	Lines which define the east/west part of a grid
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: line#ew

Data File Structure

Field Name	Type	Width	Description	Values
line letter	character	2	letter corresponding to north/south position on grid	A..L

Grid Lines:North/South

This layer consists of arcs which travel north/south across each of the study sites. These form part of the location grid used in the Bird Study. The North/South Lines were labeled with numbers, starting from the west. These intersect with the North/South lines to form a grid. These were digitized from United States Geological Survey 1:24,000 scale topographic maps.

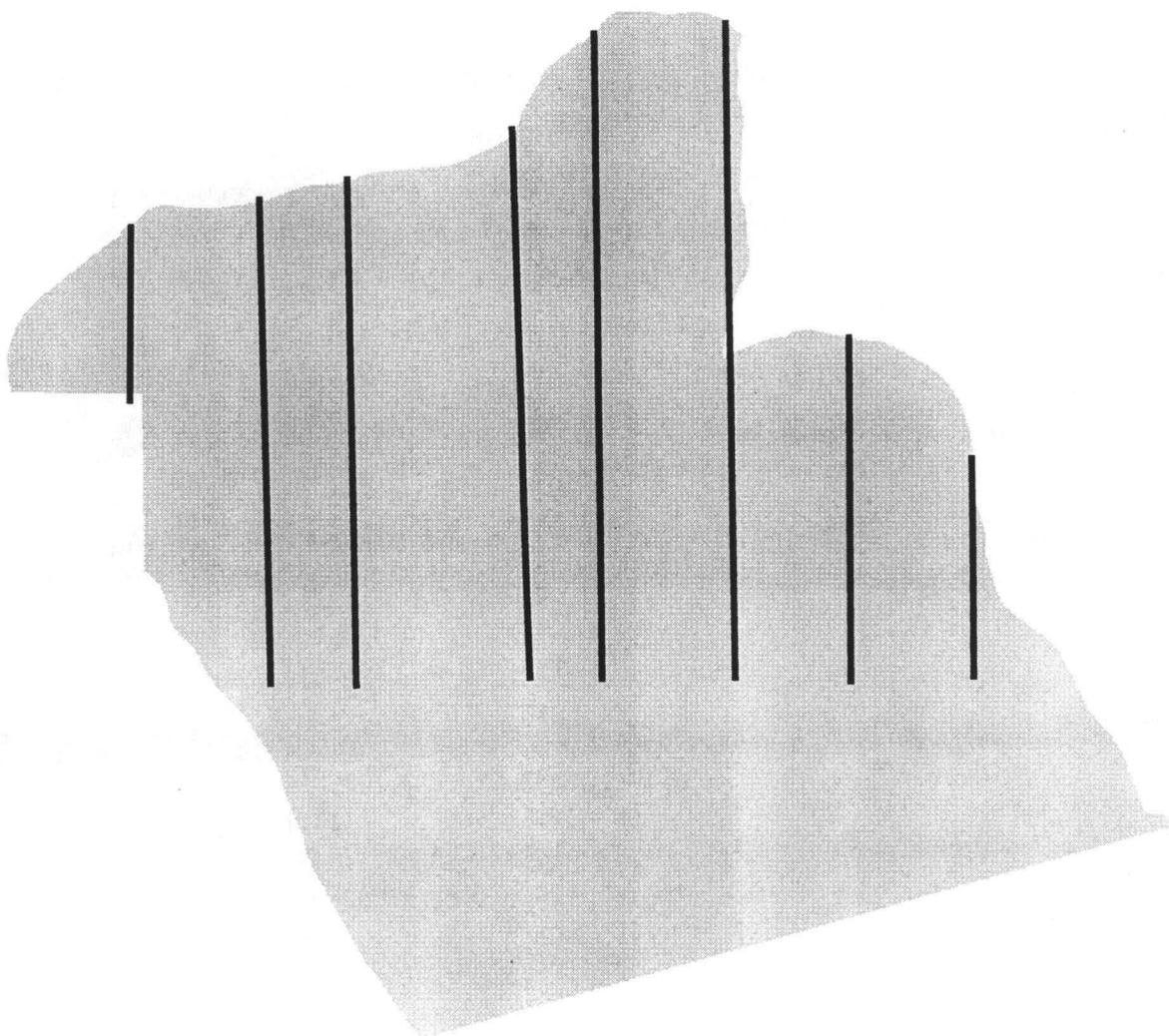


Figure 2-2

Grid Lines(north/south) for Site 3

File Name: line#ns

(# is MOFEP site number)

Data Theme:	Bird Study Grid Lines (North/South)
Data Source:	USGS 1:24,000 scale topographic maps
Feature Type:	Lines
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Richard Clawson, Wildlife Division, Missouri Department of Conservation
File Description:	Lines which define the north/south part of a grid
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: line#ns

Data File Structure

Field Name	Type	Width	Description	Values
line number	integer	2	number corresponding to east/west position on grid	1..10

Net Lines

This layer consists of lines which describe lines upon which mist nets were located on. These run east/west across the site along the gridlines. There are usually twelve nets along each of these lines. These were digitized from United States Geological Survey 1:24,000 scale digital topographic maps.

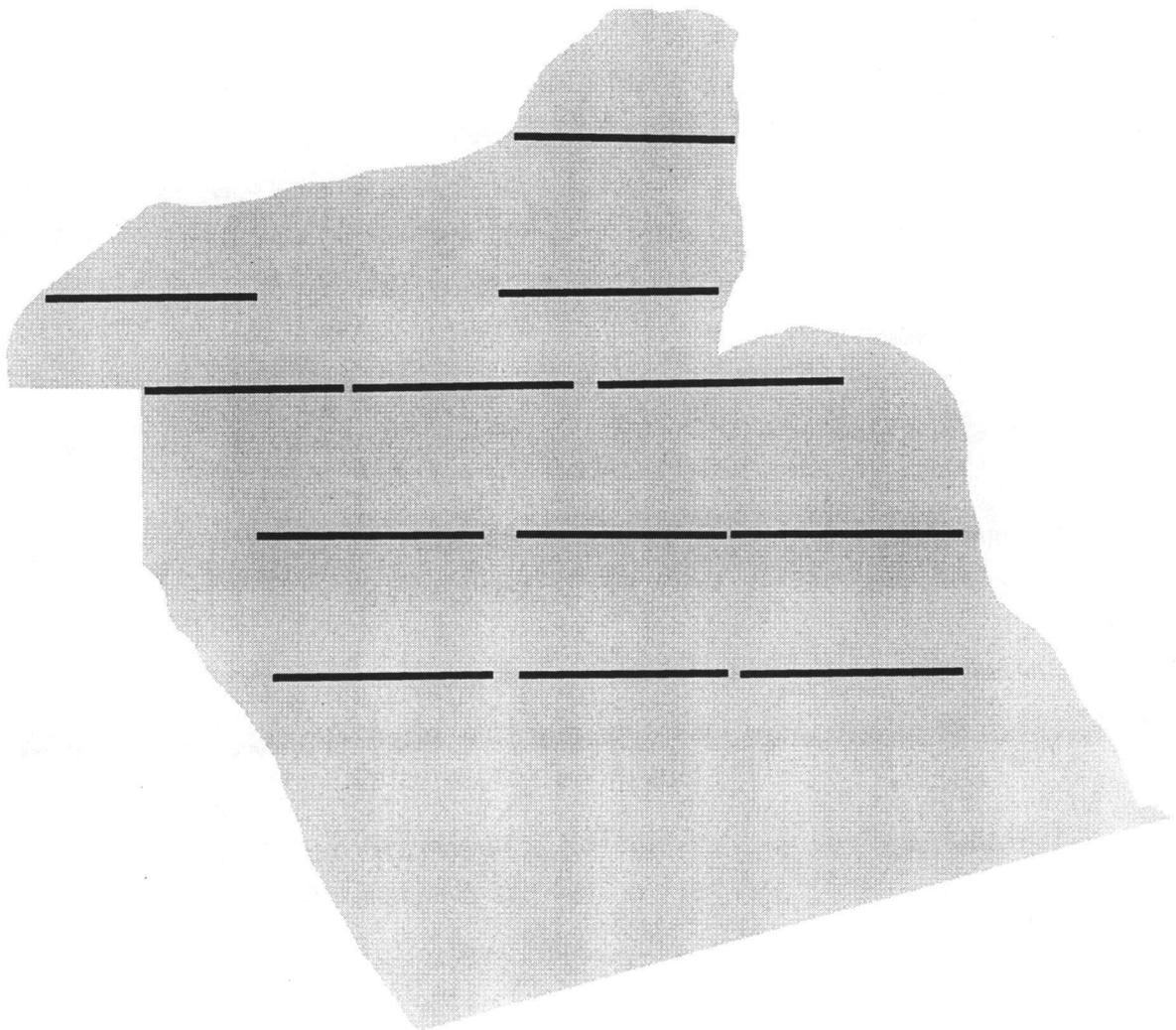


Figure 2-3

Net Lines for Site 3

File Name: netline#

(# is MOFEP site number)

Data Theme:	Bird Study Net Lines
Data Source:	USGS 1:24,000 scale topographic maps
Feature Type:	Lines
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Richard Clawson, Wildlife Division, Missouri Department of Conservation
File Description:	Lines defining net lines
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: netline#

Data File Structure

Field Name	Type	Width	Description	Values
line num	binary	4	line number	1-13

Net Point Locations

This layer consists of points which represent the locations of mist nets. These are located along the net lines which are described later in this document. The mist nets are 65 feet long, and are extended perpendicular to the net lines. These were digitized off of digital United States Geological Survey 1:24,000 scale topographic maps.

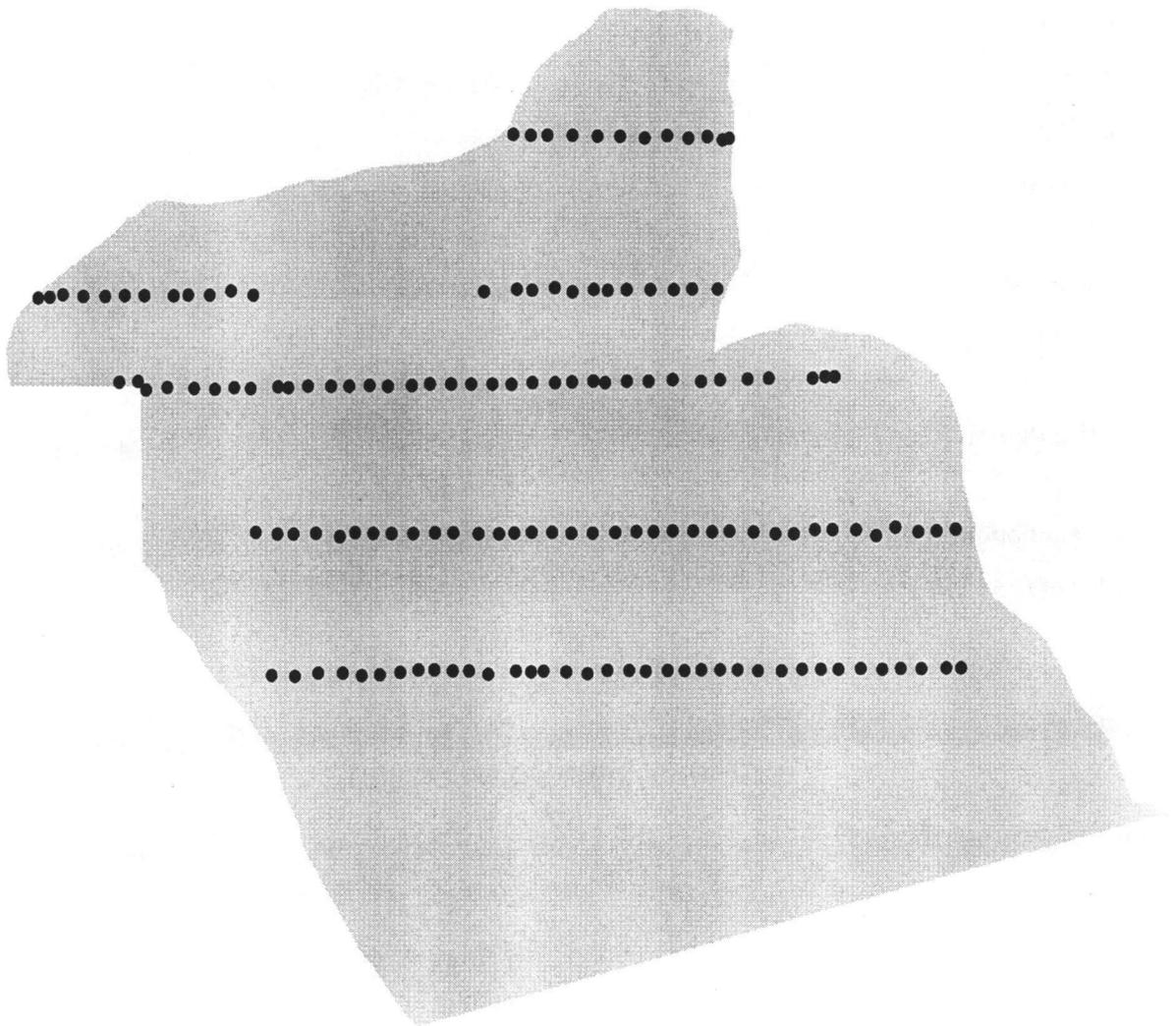


Figure 2-4

Net Point Locations for Site 3

File Name: netpnt#

(# is MOFEP site number)

Data Theme:	Bird Study Net Locations
Data Source:	USGS 1:24,000 scale topographic maps
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Richard Clawson, Wildlife Division, Missouri Department of Conservation
File Description:	Points which indicate locations of mist nets
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: netpnt#

Data File Structure

Field Name	Type	Width	Description	Values
line num	binary	4	net line	1-13
net num	binary	4	net number	1-12
line2*	binary	4	secondary line number	1-13
net2*	binary	4	secondary net number	1-12

*occur only if point used in two lines

Spot Mapping Sub Plots

This layer consists of polygons which represent the different sub-plot boundaries. These were digitized from United States Geological Survey 1:24,000 scale topographic maps.

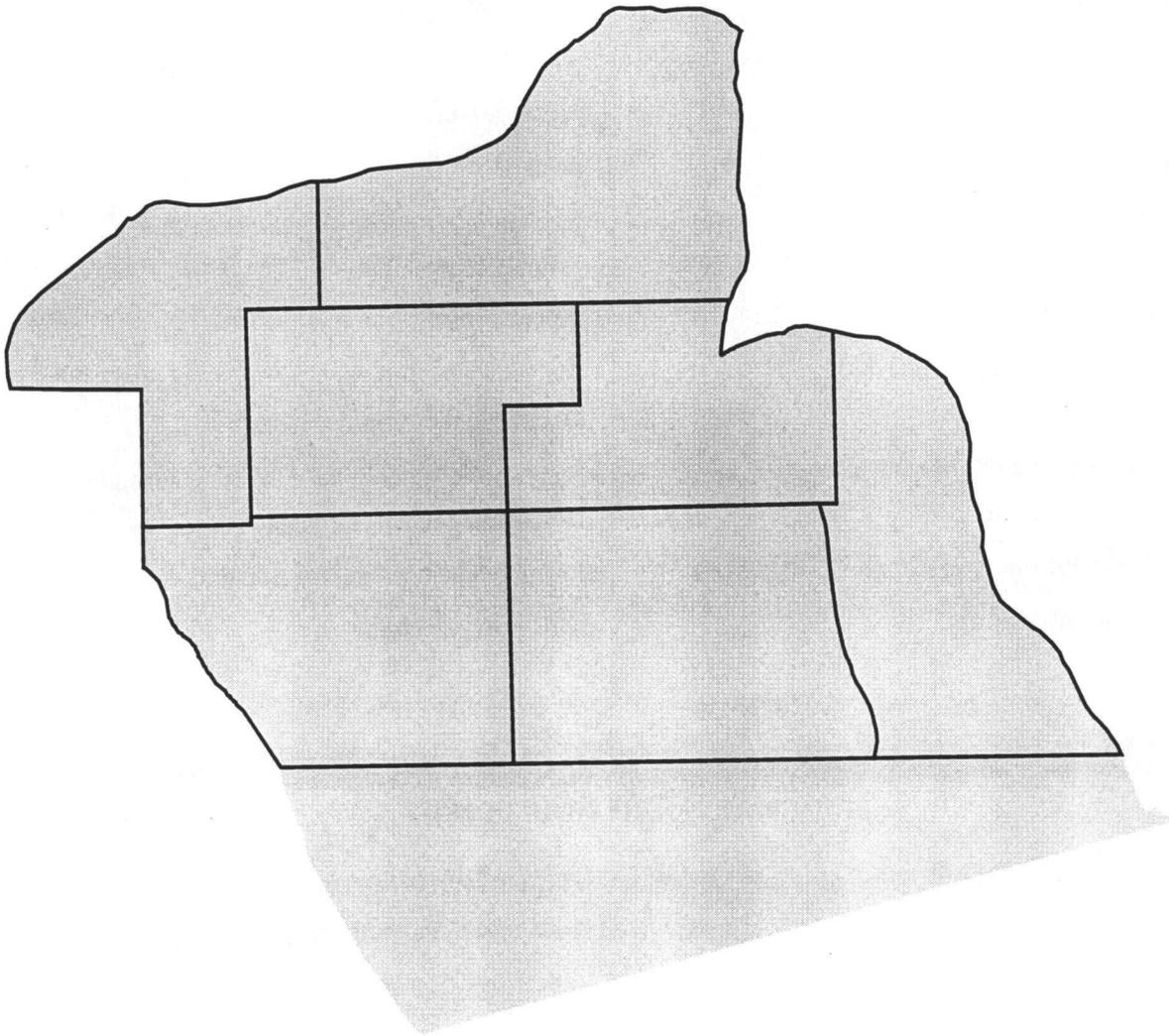


Figure 2-5

Spot-Sub Boundaries for Site 3

File Name: spotsub#

(# is MOFEP site number)

Data Theme:	Bird Study Spot Sub Boundaries
Data Source:	USGS 1:24,000 scale topographic maps
Feature Type:	Polygons
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Richard Clawson, Wildlife Division, Missouri Department of Conservation
File Description:	Polygons delineating spot boundaries
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: subspot#

Data File Structure

Field Name	Type	Width	Description	Values
sub_plot	integer	2	Sub-Plot Number	1-7

Hardmast

Acorn all	3-1
Acorn site sampling	3-4

Acorn all

This layer is the combined sampling sites for acorns on all of the samplings sites.

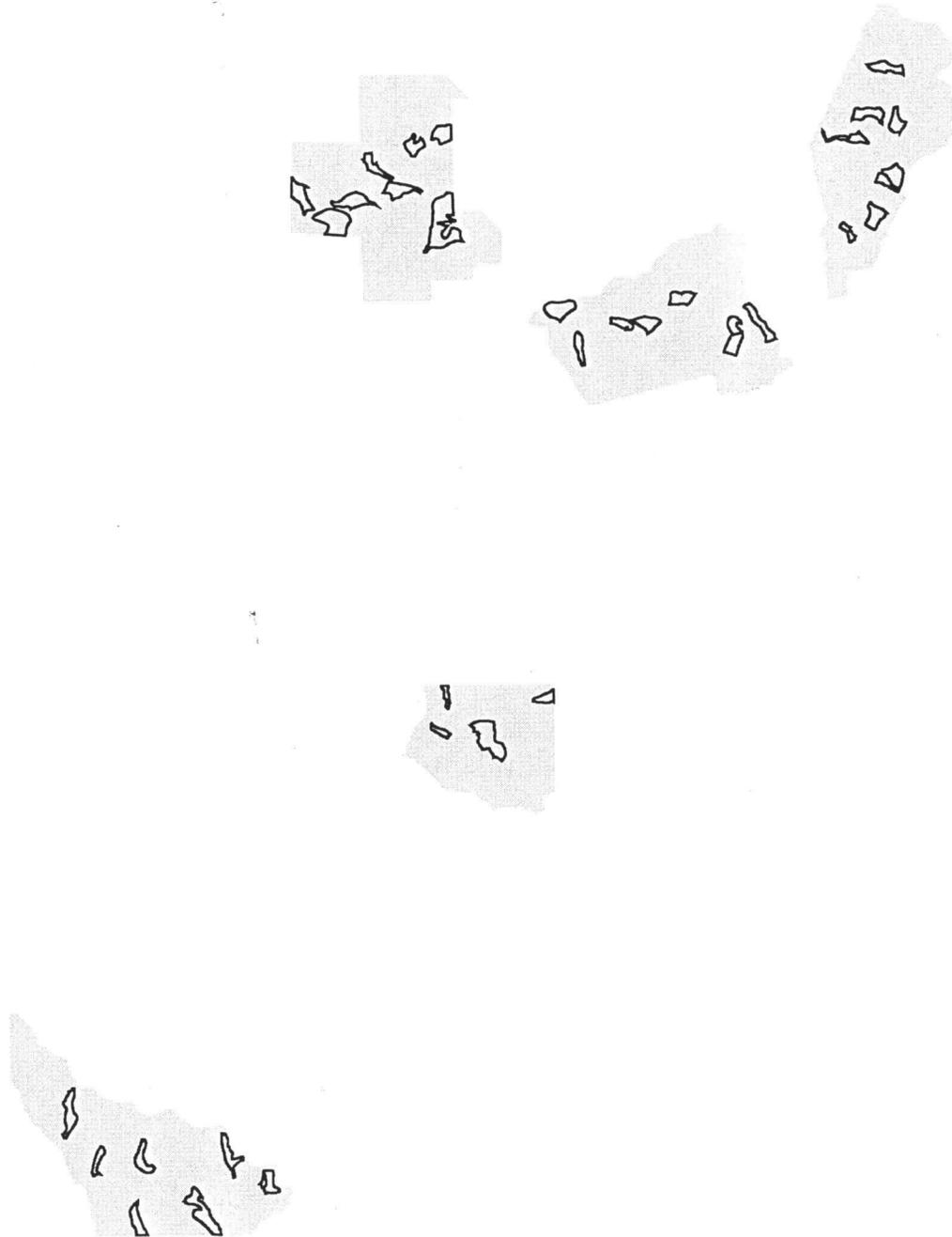


Figure 3-1 Hardmast sampling points for all sites

File Name: acornall

Data Theme:	Genetics all
Data Source:	see following section
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Larry Vangilder, Wildlife Division, Missouri Department of Conservation
File Description:	Stands boundaries which contain trees which were genetically sampled
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: acornall

Data File Structure

Field Name	Type	Width	Description	Values
acorn#	binary	4	Acorn sampling site number	MOFEP Site Number + Two-digit sampling number (Ex: 3+12=312)

Acorn site sampling

This layer consists of points which indicate the location and number of acorn sampling site on each of the MOFEP sites.

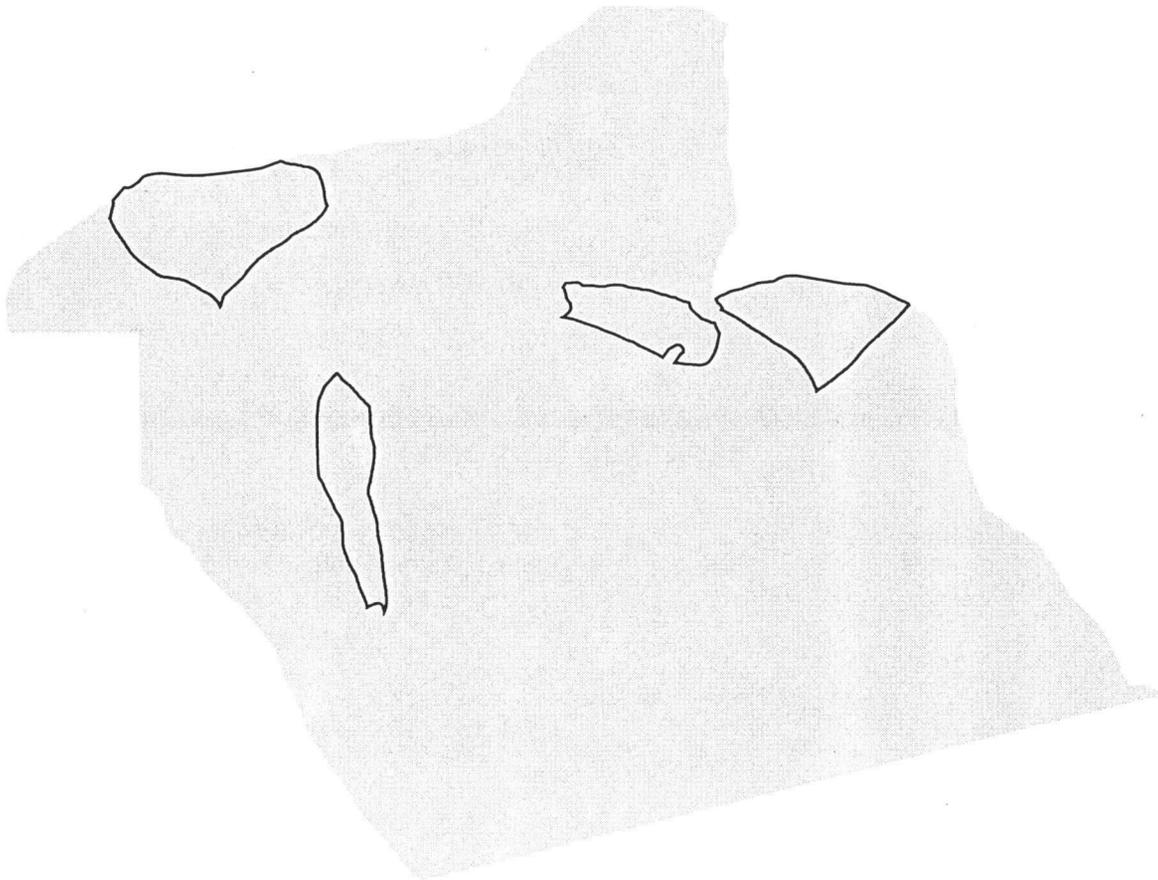


Figure 3-2

Hardmast sampling points on Site 3

File Name: acorn#
(# is the site number)

Data Theme:	Acorn Sampling Positions
Data Source:	Points generated from UTM co-ordinate pairs provided by Larry Vangilder
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Larry Vangilder, Wildlife Division, Missouri Department of Conservation
File Description:	Points that represent sampling sites
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: acorn#

Data File Structure

Field Name	Type	Width	Description	Values
acorn#	binary	4	Acorn sampling site number	MOFEP Site Number + Two-digit sampling number (Ex: 3+12=312)

Land

Elevation Surface Grid	4-1
Geology	4-3
Modified Slope Class	4-6
Slope Class	4-7
Soil Pit Locations	4-10
Soils	4-13
Special Physical feature symbols	4-21

Elevation Surface Grid

This coverage represents the elevation surface of the land, taken from United States Geological Survey 1:24,000 scale digital contour lines. This was generated using ARC/INFO's topogrid command, which produces a floating grid with a five meter cell size. This produces and an image that represents the elevation surface of each site.

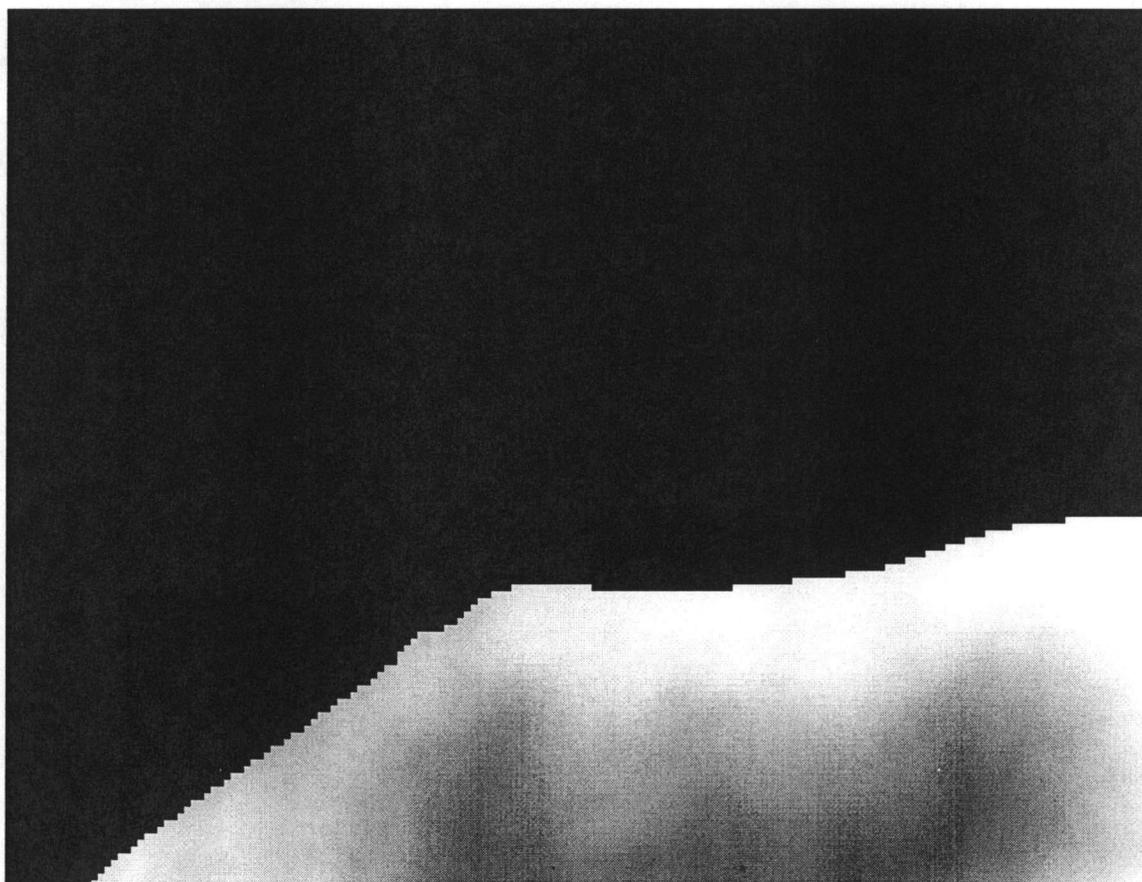


Figure 4-1

Grid surface elevation for Site 3

File Name: grid#5

(# is site number and five indicates 5 meter cell size)

Data Theme:	Grid Surface Elevation
Data Source:	ARC/INFO topogrid command and USGS 1:24,000 scale digital countour lines
Feature Type:	Image
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	Image representing surface elevation
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

Geology

This layer consists of polygons which represent the different geological types present on each of the MOFEP sites. These polygons were digitized from United States Geological Survey 1:24,000 scale topographic maps. The boundary lines were determined by field sampling, soils, aerial photo interpretation and soil and landform analysis.

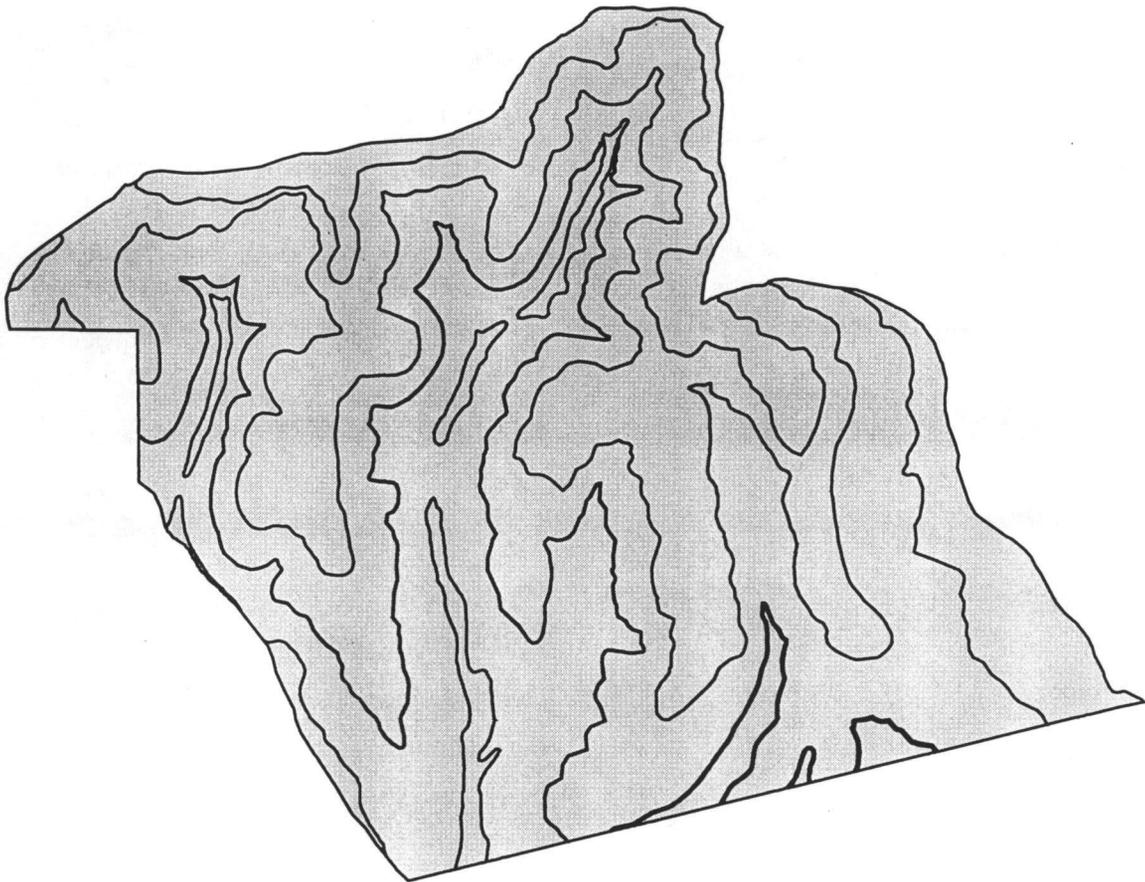


Figure 4-2

Geology for Site 3

File Name: geology#

(# is site number)

Data Theme:	Geology
Data Source:	Lines drawn on USGS 1:24,000 scale topographic maps
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Dennis Meinert, Soils Division, Missouri Department of Natural Resources
File Description:	Polygons which represent different geological types
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: geology#

Data File Structure

Field Name	Type	Width	Description	Values
geology#-id	binary	4	Number Relating to Geological Formation	1-7
geoname	character	20	Geological Formation Name	Roubidoux, Gasconade, Van Buren, Alluvial, Eminence, Pre-Cambrian, Gunter

Definition Table: genall-id

Value	Description
1	Roubidoux
2	Gasconade
3	VanBuren
4	Alluvial
5	Eminence
6	Pre-Cambrian
7	Gunter

Definition Table: geoname

Value	Description
Rubidoux	Interbedded sandstone, silicified sandstone, sandy dolomite, cherty dolomite and silicified stromatolite algal and chert beds.
Gasconade	Thick beds of dolomites and cherty dolomites dominate; coarsely crystalline with high percentages of chert; layers of silicified stromatolites are interspersed.
VanBuren	Finely crystalline dolomite with infrequent chert nodules
Alluvial	riverine deposits dominated by sand and silt size particles with high content of gravel and cobbles
Eminence	Medium to thick beds of dolomite with small amounts of chert; medium to coarsely crystalline; beds of chert range from 4-6" thick occur in some areas.
Pre-Cambrian	Massively bedded, finely crystalline rhyolite
Gunter	5-15" thick beds of sandstone and quartzose

Modified Slope Class (small polygons removed)

This coverage contains polygons which represent differing slope classes. These were derived from the original slope coverages developed for each site. The polygons less than one-quarter of an acre were merged with the neighboring polygon which shared the longest portion of its perimeter.

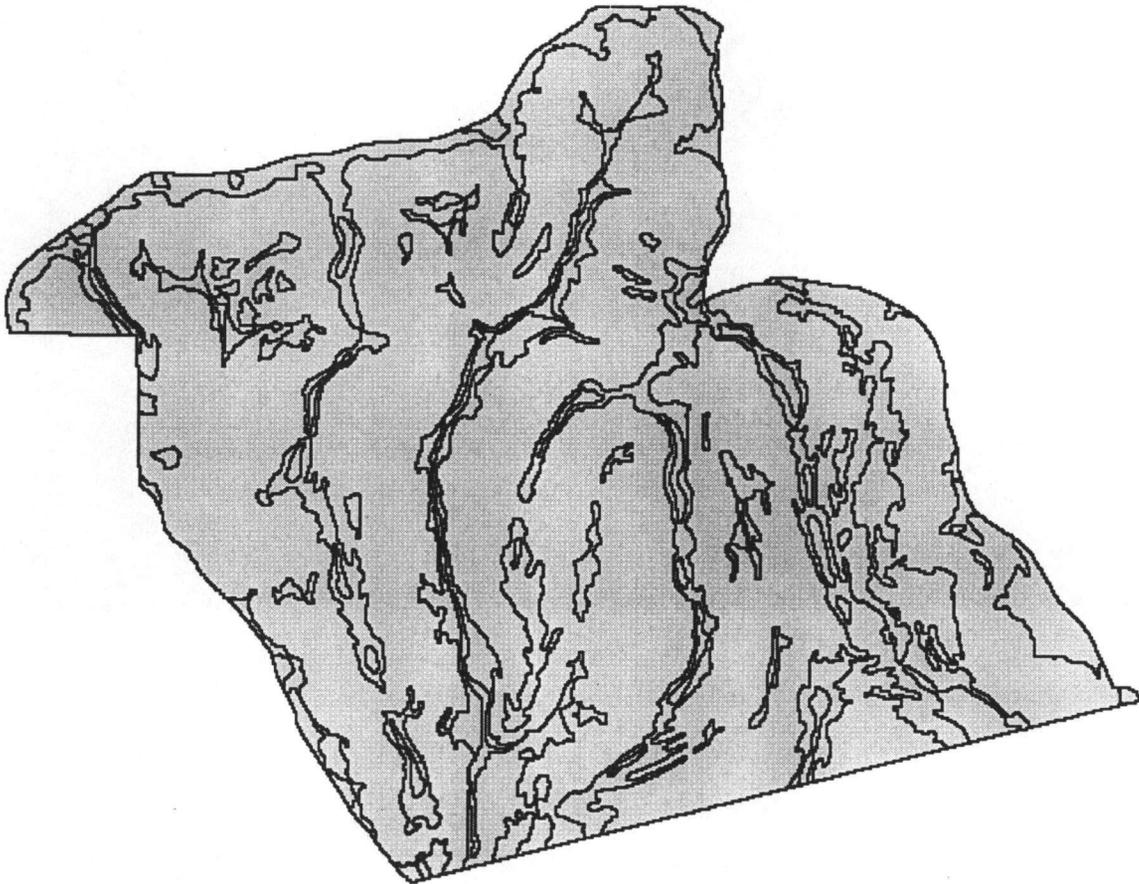


Figure 4-3 Modified slope coverage for Site 3

See following section for definition of data file structure

Slope Class

This coverage consists of slope class polygons derived from a surface model of the site. The surface model was generated using ARC/INFO's topogrid routine, and has a cell size of 5 meters. Polygons were assigned to one of four slope classes.

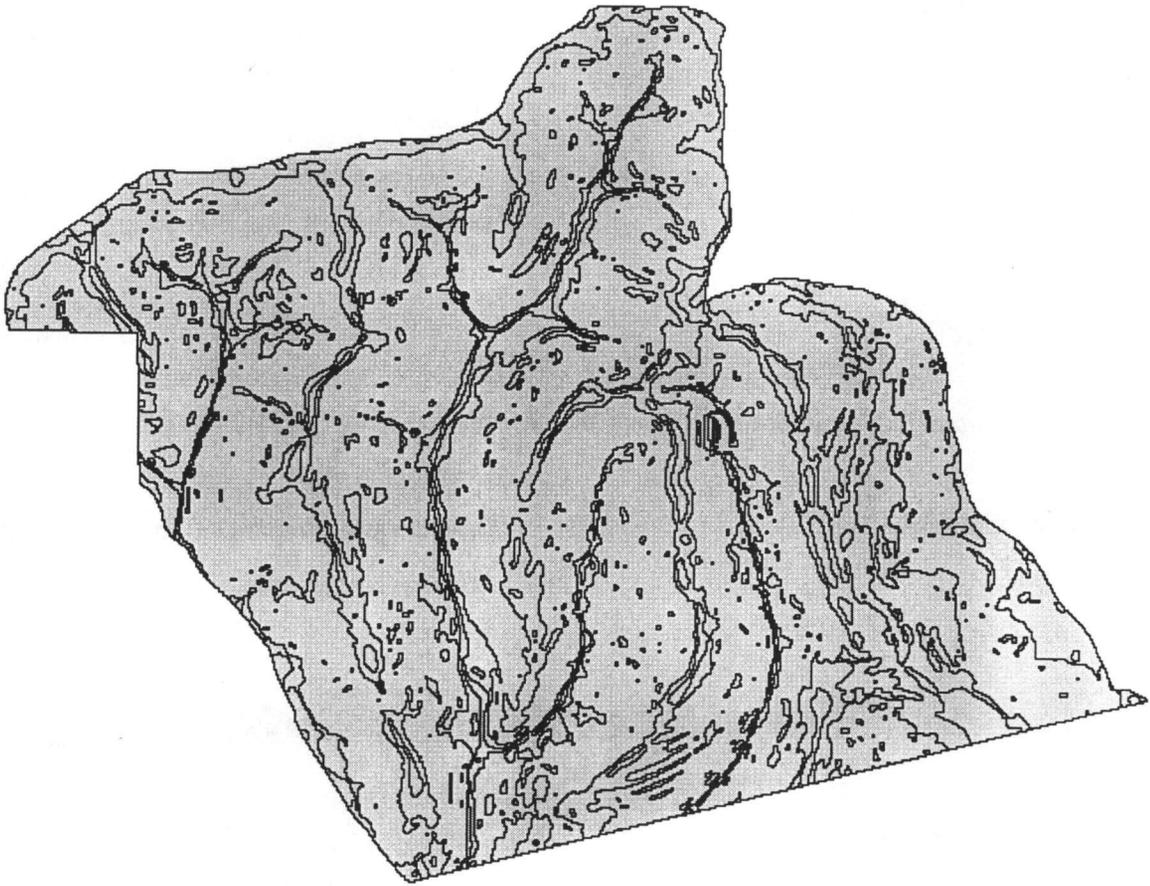


Figure 4-4

Slope coverage for Site 3

File Name: slope#

(# is the site number)

Data Theme:	Slope
Data Source:	5 meter cell size elevation surface derived from 20 ft. interval elevation contours using ARC/INFO's topgrid routine
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	Polygons which represent differing slope classes.
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: slope#

Data File Structure

Field Name	Type	Width	Description	Values
slope-code	binary	5	Slope, in class	1, 2, 3, 4

Definition Table: slope-code

Value	Description
1	0-8% Slope
2	8-20% Slope
3	20-60% Slope
4	60+% Slope

Soil Pit Locations

This layer consists of points which represent the location of soil pits. These were digitized using digital United States Geological Survey 1:24,000 scale topographic contour lines. These were done for both general sampling and comparison of cutting systems. These coverages were developed on a site level basis.

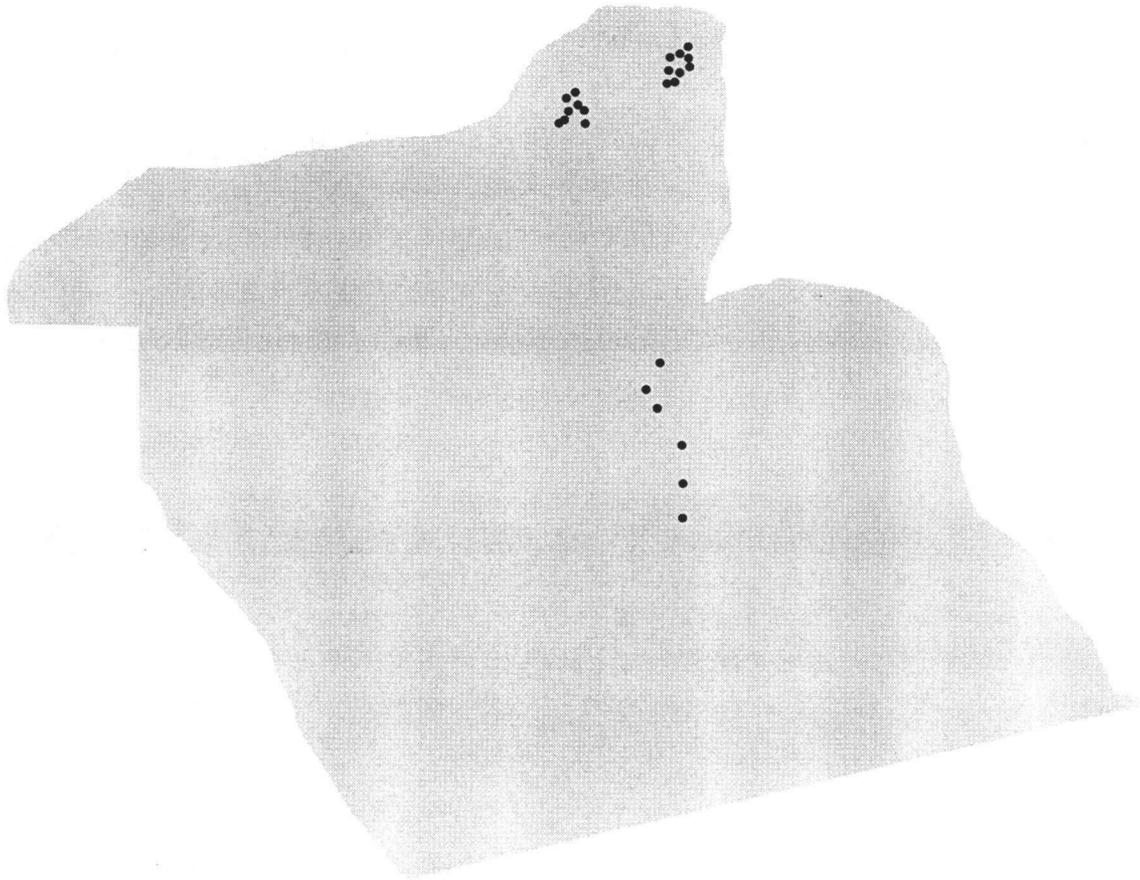


Figure 4-5

Soil pit locations on Site 3

File Name: soilpit#

(# is MOFEP site number)

Data Theme:	Soil Pit Locations
Data Source:	USGS 1:24,000 digital scale topographic maps
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Dennis Meinert, Soils Division, Missouri Department of Natural Resources; David Hammer, School of Natural Resources, University of Missouri, Columbia
File Description:	Points which indicate soil pit locations
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: soilpit#
(# is the MOFEP site number)

Data File Structure

Field Name	Type	Width	Description	Values
pit type	character	2	Management Prescription	MD, CW, CE, EW, EE, UE, UW
pit number	integer	3	Pit Number	1-99

Definition Table: pit type

Value	Definition
MD	Soil Pit
CW	Control, West Aspect
CE	Control, East Aspect
EW	Even-aged, West Aspect
EE	Even-aged, East Aspect
UE	Uneven-aged, East Aspect
UW	Uneven-aged, West Aspect

Soils

This layer consists of polygons which represent the different soil types on each site. These were developed from field sampling and aerial photointerpretation. These were then transferred to mylar United States Geological Survey 1:12,000 scale topographic maps. This was the basis for the digitization of the lines which, when combined with the site boundaries, developed the polygon layer. Further arcs were added based upon comparison to aerial photographs.



Figure 4-6

Soils coverage for site 3

File Name: soils#

(# is MOFEP site number)

Data Theme:	Soils
Data Source:	Field Sampling, Aerial Photointerpretation, USGS 1:12,000 scale topographic maps
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Dennis Meinert, Soils Division, Missouri Department of Natural Resources
File Description:	Polygons which represent different soil series
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000 (data @ 1:12,000)
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: soils#

(# is the MOFEP site number)

Data File Structure

Field Name	Type	Width	Description	Values
soils#-id	binary	4	Number which corresponds to soil series	1-63
soil type	character	4	Soils Series Symbol	see table

Definition Table: soils#-id

Value	Description
1	80F
2	75D
3	61C
4	63D
5	80D
6	73D
7	63F
8	63C
9	62C
10	75F
11	42D
12	45D
14	27
15	82F
16	82D
17	74F
18	89D
19	73C
20	80C

Value	Description
1	80F
2	75D
22	31
23	41D
24	15
25	70F
26	81F
27	74D
30	70D
31	92
33	87G
34	89C
35	83F
39	17
41	18
42	71F
43	81D
49	72D
50	72C
51	03
52	04
53	71D
54	78D
56	07
61	95F
62	92D
63	91

Definition Table: soil type

Value	Description
03	Very deep; well drained; fine-silty to fine-loamy; low bases; sinkhole; 1 to 3 percent slopes
04	Very deep; moderately well drained; fine-silty to fine-loamy; low bases; sinkhole; 1 to 3 percent slopes
07	Very deep; poorly drained; fine; low bases; sinkhole; 1 to 3 percent slopes
15	Very deep; well drained; fine-loamy to loamy-skeletal; low to medium bases; rarely flooded terrace; 1 to 4 percent slopes
17	Very deep; well drained; loamy-skeletal; low bases; non-flooded upland drainages; 1 to 4 percent slopes
18	Very deep; somewhat excessively drained; coarse-loamy; low to medium bases; rarely flooded terrace; 1 to 4 percent slopes
27	Very deep; well drained; loamy-skeletal; medium bases; occasionally flooded upland drainages; 1 to 4 percent
31	Very deep; excessively well drained; loamy-skeletal and coarse loamy; low to medium bases; occasionally flooded upland drainages and flood plains; 1 to 4 percent
41D	Very deep; moderately well drained; fine-loamy; low to medium bases; non-flooded strath terrace; 8 to 20 percent slopes
42D	Very deep; well drained; loamy-skeletal; low to medium base; occasionally flooded alluvial fan; 8 to 20 percent slopes
45D	Very deep; moderately well drained and well drained; fine-loamy; low bases; foot slope; 8 to 20 percent slopes
61C	Very deep, with fragipan at 20 to 26"; moderately well drained; fine-loamy; low bases; Rubidoux summit; 1 to 8 percent slopes.
62C	Very deep; moderately well drained; fine; low bases; Rubidoux summit; 1 to 8 percent slopes
63C	Moderately deep to very deep; with intermittent fragipans; moderately well to well drained; loamy-skeletal/clayey and loamy-skeletal; low bases; Rubidoux summit; 1 to 8 percent slopes

Value	Description
63D	Moderately deep to very deep; with intermittent fragipans; moderately well drained to well drained; loamy-skeletal/clayey and loamy-skeletal; low bases; Roubidoux shoulders and shoulder ridges; 8 to 20 percent slopes
63F	Moderately deep to very deep; well drained; loamy-skeletal/clayey and loamy-skeletal; low bases; Roubidoux side slopes; 20 to 60 percent slopes
70D	Shallow; well drained; loamy-skeletal; high bases; Eminence shoulder ridges; 8 to 20 percent slope; >50 rock outcrop
70F	Shallow; well drained; loamy-skeletal; high bases; Eminence side slopes; 20 to 60 percent slope; >50 rock outcrop
71D	Shallow; well drained; loamy-skeletal; high bases; Gasconade shoulder ridges; 8 to 20 percent slope; >50 percent rock outcrop
71F	Shallow; well drained; loamy-skeletal; high bases; Gasconade shoulder ridges; 20 to 60 percent slope; >50 percent rock outcrop
72C	Very deep; with intermittent fragipans at 20 to 40"; moderately well drained; fine-loamy; low to medium bases; Gasconade summit of Crypt Reef structural benches; 1 to 8 percent
72D	Very deep; with intermittent fragipans at 20 to 40"; moderately well drained; fine-loamy; low to medium bases; Gasconade shoulder of Crypt reef structural benches; 8 to 20 percent slope
73C	Very deep; with intermittent fragipans at 20 to 40"; moderately well drained; fine-loamy; low to medium bases; Gasconade summit of Gunter structural benches; 1 to 8 percent slopes
73D	Very deep; with intermittent fragipans at 20 to 40"; moderately well drained; loamy-skeletal and loamy-skeletal/clayey; low to medium bases; Gasconade shoulder of Crypt reef structural benches; 8 to 20 percent slope
74D	Shallow to deep; well drained; very fine; high bases; Eminence shoulder ridges; 8 to 20 percent slope; 10 to 50 percent rock outcrop
74F	Shallow well drained; very-fine; high bases; Eminence shoulder ridges; 8 to 20 percent slope; 10 to 50 percent rock outcrop
75D	Deep to very deep; well drained; loamy-skeletal/clayey and loamy-skeletal; medium to high bases; Eminence shoulder ridges; 8 to 20 percent slopes

Value	Description
75F	Deep to very deep; well drained; loamy-skeletal/clayey and loamy-skeletal; medium to high bases; Eminence side slopes; 20 to 60 percent slope
78D	Very deep; well drained; fine; low to medium bases; foot slope; 8 to 20 percent slopes
80C	Very deep; with intermittent fragipans; moderately well to well-drained; loamy skeletal/clayey and loamy-skeletal; low bases; Gasconade summit; 1 to 8 percent slopes
80D	Very deep; with intermittent fragipans; moderately well drained to well drained; loamy-skeletal/clayey and loamy-skeletal; low bases; Gasconade shoulders and shoulder ridges; 8 to 20 percent slopes
80F	Very deep; with few intermittent fragipans on lower side slopes; well drained; loamy-skeletal and loamy-skeletal/clayey; low bases; Gasconade side slopes; 20 to 60 percent slopes
81D	Shallow to moderately deep; moderately well to well drained; very-fine; high bases; Gasconade shoulder ridges; 8 to 20 percent slope; 10 to 50 percent rock outcrop
81F	Shallow to moderately deep; moderately well to well drained; very fine; high bases; Gasconade side slopes; 20 to 60 percent slope; 10 to 50 percent rock outcrop
82D	Deep to very deep; well drained; loamy-skeletal/clayey and loamy-skeletal; low to high bases; Gasconade shoulder ridges; 8 to 20 percent slopes
82F	Deep to very deep; well drained; loamy skeletal/clayey and loamy-skeletal; low to high bases; Gasconade side slopes; 20 to 60 percent slope.
83F	Very deep; with intermittent fragipans; well drained; fine-loamy; low bases; Gasconade side slopes, 20 to 60 percent slopes
87G	Shallow to moderately deep; moderately well drained to well drained; high bases; Eminence bluffs; >60 percent slopes; >50 percent rock outcrop
89C	Deep to very deep; moderately well drained; loamy-skeletal/clayey and very-fine; low to high bases; Gasconade summit of Gunter structural benches; 1 to 8 percent slope

Value	Description
89D	Deep to very deep; moderately well drained; loamy-skeletal/clayey and very-fine; low to high bases; Gasconade shoulder of Gunter structural benches; 8 to 20 percent
91	Very deep; excessively well drained; loamy-skeletal and sandy-skeletal; low to medium bases; occasionally flooded high flood plain; 1 to 4 percent slopes
92D	Moderately deep; moderately well drained and well drained; loamy-skeletal; low bases; Pre-Cambrian knobs; 8 to 20 percent slopes; 10 to 50 percent rock outcrop
95F	Moderately deep; moderately well drained and well drained; loamy-skeletal; low bases; Pre-Cambrian knobs, 20 to 60 percent slopes; 10 to 50 percent rock outcrop

Special Physical feature symbols

This layer consists of points which represent different special physical features on each of the MOFEP sites. These consists of the following symbols: sinkholes, sandy areas, rock outcrops, springs and wet areas. These were digitized as points, using digital contour lines (USGS 1:24,000 scale) and the soils layer for reference.

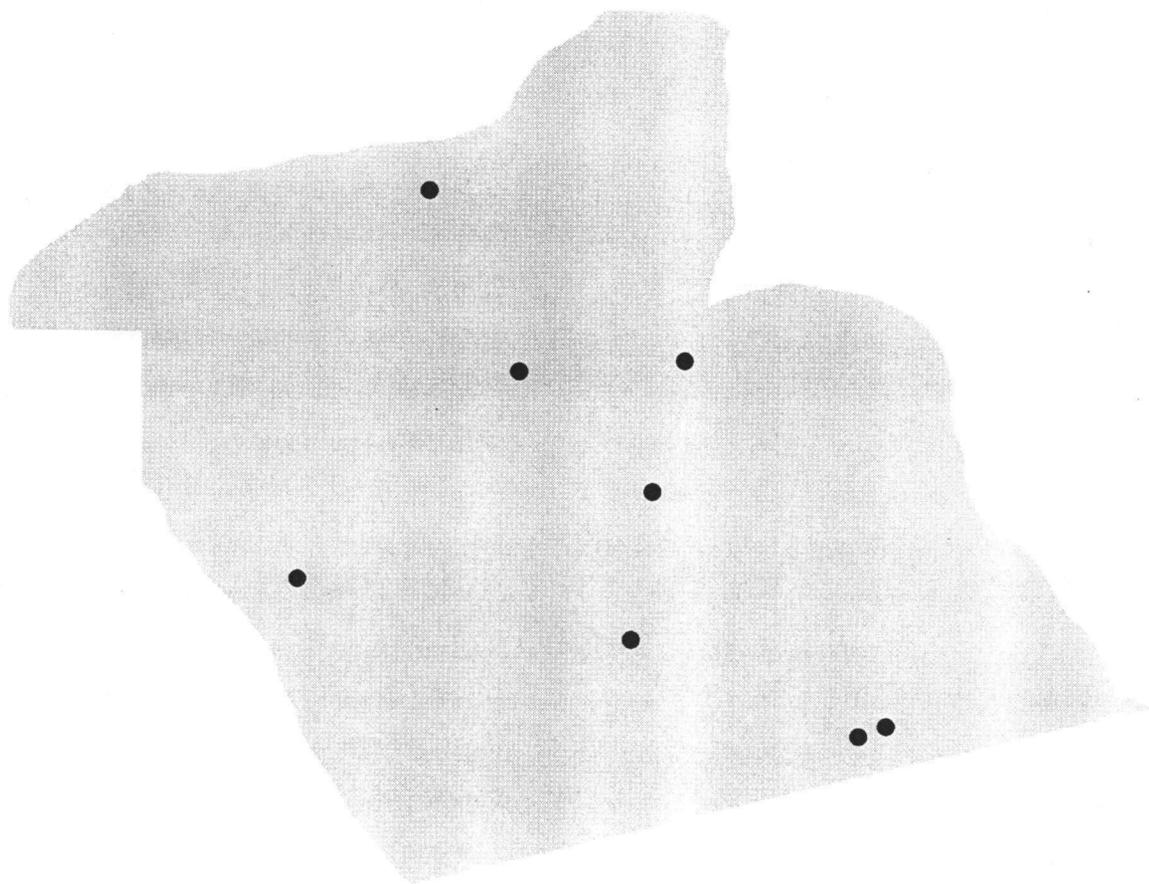


Figure 4-7

Special physical feature symbols on Site 3

File Name: soilpt#

(# is MOFEP site number)

Data Theme:	Special Feature symbols
Data Source:	USGS 1:24,000 digital scale topographic maps and MOFEP soils layer
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Dennis Meinert, Soils Division, Missouri Department of Natural Resources
File Description:	Points which indicate different special features
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: soilpt#

(# is the MOFEP site number)

Data File Structure

Field Name	Type	Width	Description	Values
soilpt#-id	binary	4	Number which corresponds to spot symbol type	1-5
spotsymbol	character	12	Special Feature Symbols	sinkhole, rock outcrop, wet area, sandy area, spring

Definition Table: soilpt#-id

Value	Description (special feature symbols)
1	sinkhole
2	rock outcrop
3	wet area
4	sandy area
5	spring

Litter Invertebrate

Litter Invertebrate Plots 5-1

Litter Invertebrate Plots

This layer consists of points which correspond to sampling locations used in the Invertebrate portion of the MOFEP study. These were digitized from United States Geological Survey 1:24,000 scale topographic maps, and are divided into MOFEP sites.

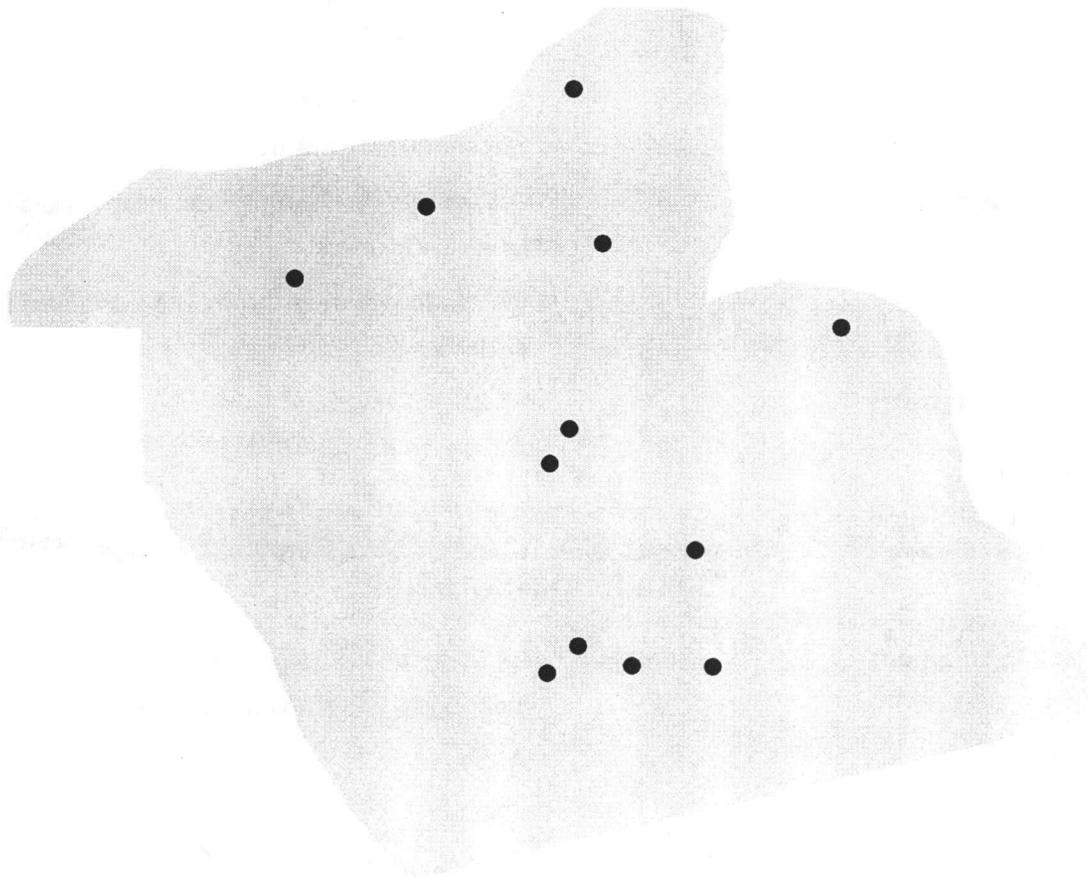


Figure 5-1

Litter Invertebrate sampling points on site 3

File Name: lilplot#

(# is MOFEP site number)

Data Theme:	Litter and Invertebrate Study
Data Source:	Points drawn on USGS 1:24,000 scale topographic maps
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Powder Mill Ferry
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Dr. Jan Weaver, Biological Science, University of Missouri-Columbia
File Description:	Points which represent sampling locations on each site
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

Reptiles and Amphibians

Herptile Plots 6-1

Herptile Plots

This layer consists of points which represent the location of samples taken for the herptile studies. These were digitized off of United States Geological Survey 1:24,000 scale topographic maps, and are broken into each MOFEP site.

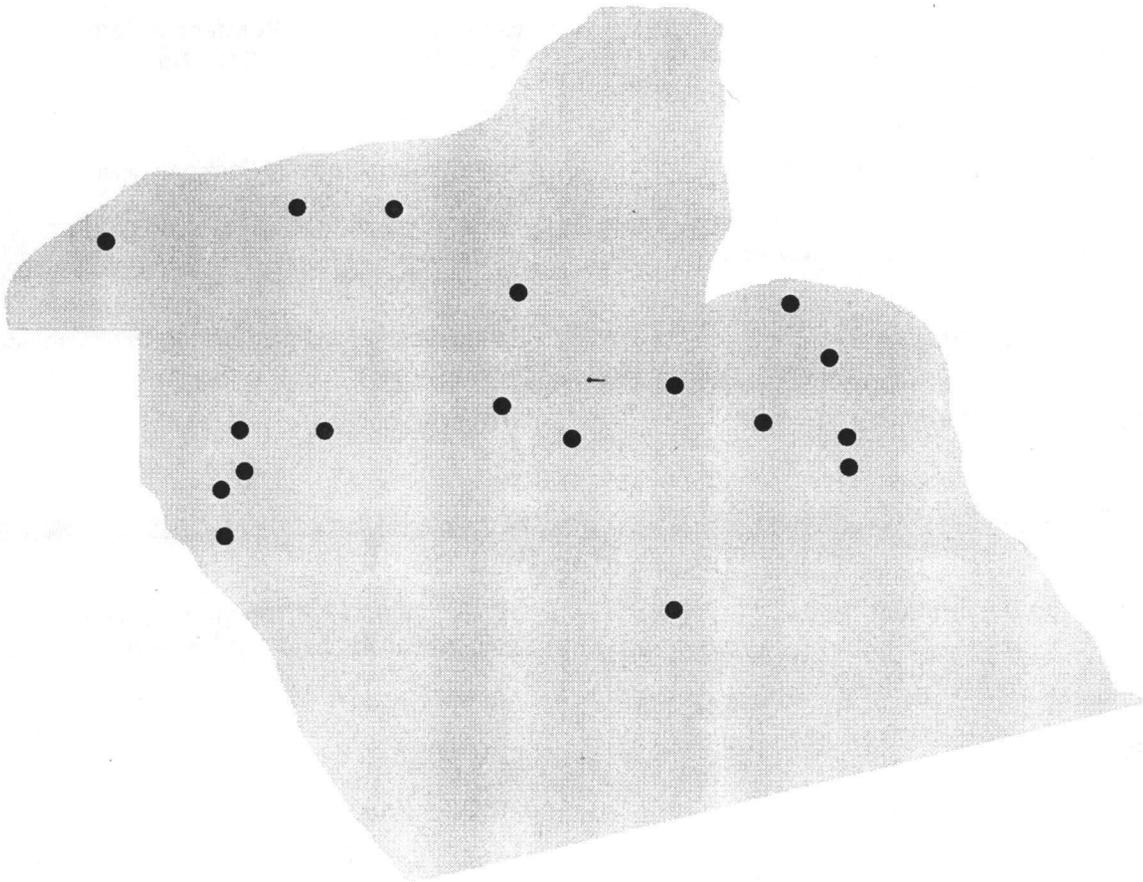


Figure 6-1

Herptile sample plots on Site 3

File Name: herpplot#

(# is the site number)

Data Theme:	Herpetology Plots
Data Source:	Points on USGS 1:24,000 scale topographic maps
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Rochelle Renken, Wildlife Division, Missouri Department of Conservation
File Description:	Points representing sampling locations on each site
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

Small Mammals

Mammal Trap Grids 7-1

Mammal Trap Grids

This layer represents the trap grid locations on each of the MOFEP sites. Each grid is 275m by 275m, approximately 7.56 hectares. The center points of each grid was located on the digital United States Geological Survey 1:24,000 topographic sheets. Using ARC/INFO's **buffer** command, a circle of radius 137.5 m was created. This was used to create a rectangle of 275 meters by 275 meters. The rectangle, where needed, was rotated to match the contours. These were assigned either a one or a two to identify each grid.

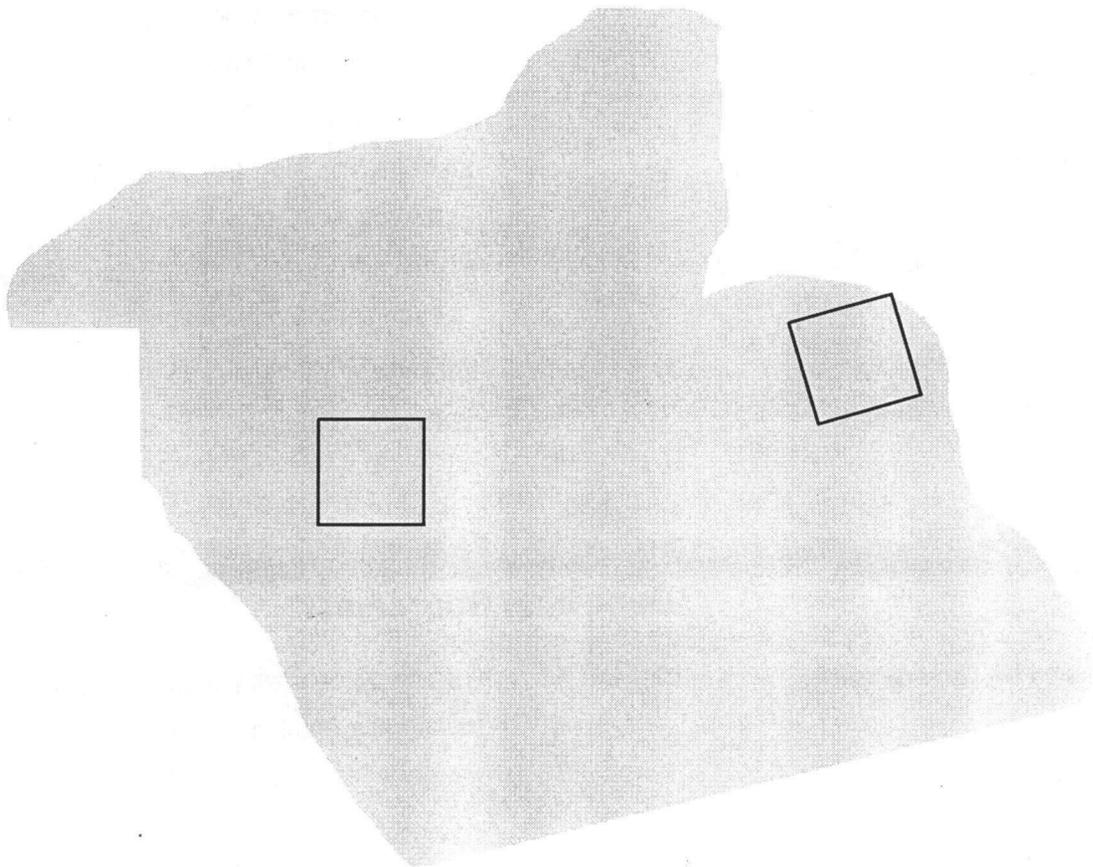


Figure 7-1

Mammal Trap Grids on Site 3

File Name: mammal#

(# is MOFEP site number)

Data Theme:	Mammal Trap Locations
Data Source:	USGS 1:24,000 scale topographic maps
Feature Type:	Polygons
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Rochelle Renken, Wildlife Division, Missouri Department of Conservation
File Description:	Polygons which define trap grids
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: mammal#

(# is the MOFEP site number)

Data File Structure

Field Name	Type	Width	Description	Values
grid number	integer	1	Trap Grid Number	1, 2

Soil Nutrients

Soil Nutrient Sampling Points 8-1

Soil Nutrient Sampling Points

This layer consists of points which represent the location of soil nutrient samples. These were digitized using United States Geological Survey 1:24,000 scale topographic maps, on a site basis.



Figure 8-1 Nutrient samples on Site 3

File Name: nutrient#

(# is MOFEP site number)

Data Theme:	Nutrient Sample Locations
Data Source:	USGS 1:24,000 scale topographic maps
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Dr. Henry Spratt, Southeast Missouri University
File Description:	Points which indicate nutrient samples
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: nutrient#

(# is the MOFEP site number)

Data File Structure

Field Name	Type	Width	Description	Values
nutrient#-id	binary	4	Nutrient sample number	0-999

Tree Genetics

Genetics All	9-1
Site Genetics	9-4

Genetics all

This file is a combined file that represents all of the MOFEP stands that contained genetically sampled trees.

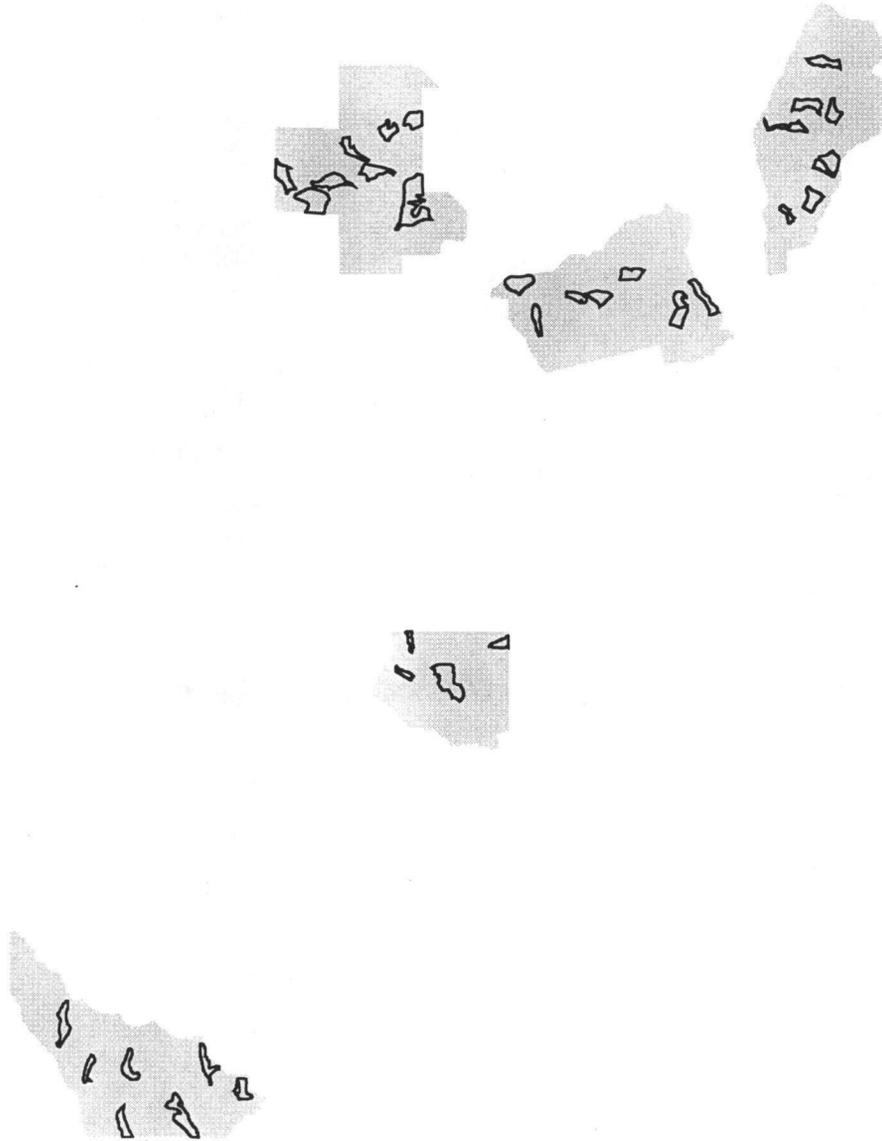


Figure 9-1 Stands with genetic sampling

File Name: genall

Data Theme:	Genetics all
Data Source:	Boundaries of stands that were designated as genetic samplings sites
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Dr. Victoria Sork, University of Missouri-St. Louis
File Description:	Stands boundaries which contain trees which were genetically sampled
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: genall

Data File Structure

Field Name	Type	Width	Description	Values
acres	number	8	Acres	.0
standno	integer	3	Stand Number	1-145
elt*	integer	3	Ecological LandType	3,5,6,7,11,17-23

*see elt layer

Site Genetics

This layer is the stands within each site that contained trees that were genetically sampled.

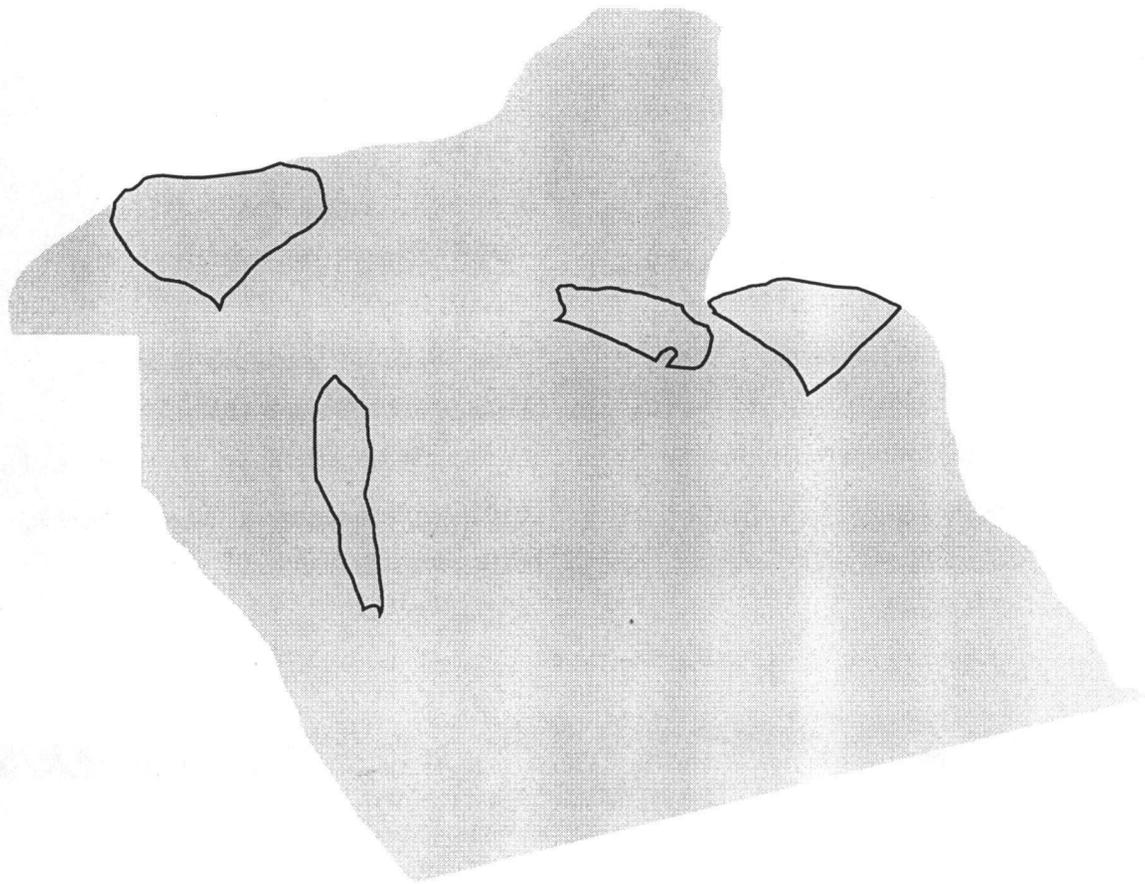


Figure 9-2

Genetically sampled stands on Site 3

File Name: genetics#

(# is the site number)

Data Theme:	Site Genetics
Data Source:	see "genall" layer
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Dr. Victoria Sork, University of Missouri- St. Louis
File Description:	Stands boundaries which contain trees which were genetically sampled
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: genetics#

Data File Structure

Field Name	Type	Width	Description	Values
acres	number	8	Acres	.0
standno	integer	3	Stand Number	1-145
elt*	integer	3	Ecological LandType	3,5,6,7,11,17-23

*see elt layer

United States Geological Survey 1:24,000 Scale Digital Topographic Maps

Boundary	10-1
Elevation Contour Lines	10-5
Hydrology	10-8
Man-made Features	10-11
Pipe	10-14
Roads	10-17
Section Lines	10-20

Boundary

This coverage contains the boundary layer for the Fremont 1:24,000 scale United States Geological Survey digital topographic map.

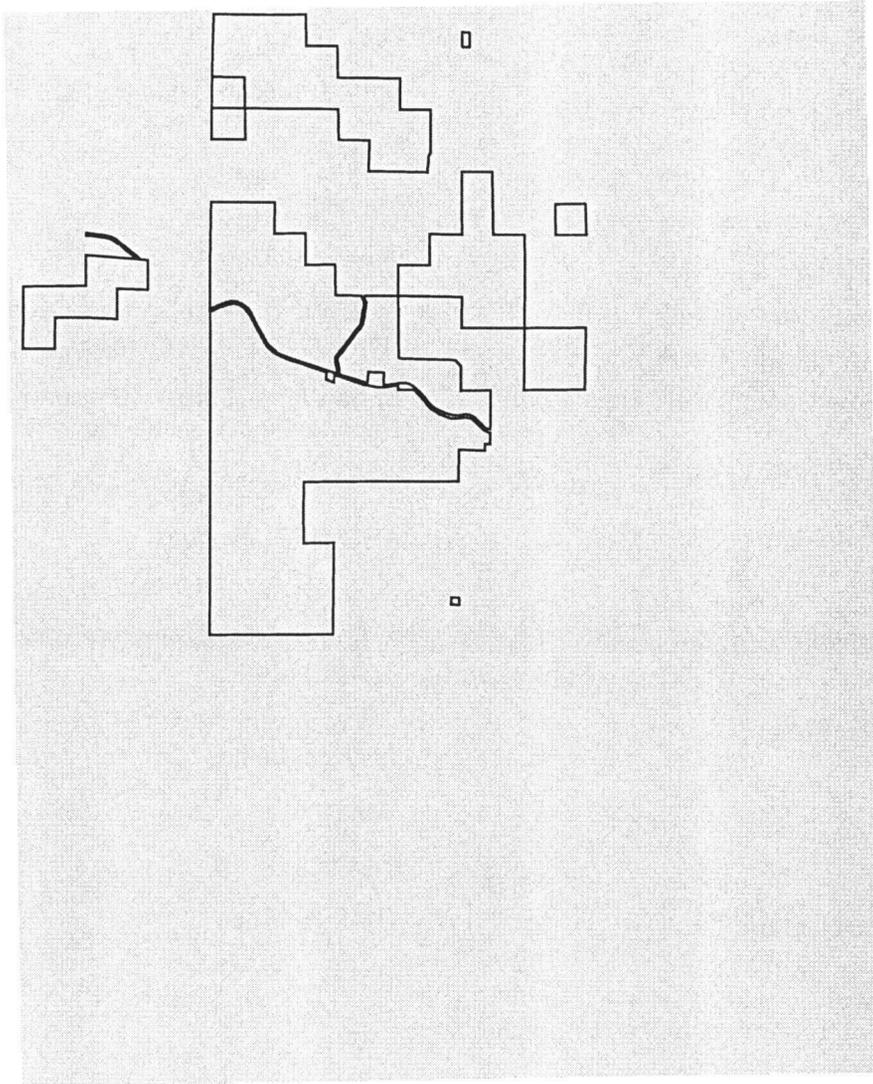


Figure 10-1

Boundaries for the Fremont Quadrangle

File Name: frebound

Data Theme:	Boundary
Data Source:	Boundaries from digital USGS 1:24,000 Scale Topographic Sheets
Feature Type:	Polygon
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Fremont
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	Polygons which represent boundaries
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: frebound

Data File Structure:

Field Name	Type	Width	Description	Values
major1	integer	6	Most significant feature	90
minor1	integer	6	description	100
major2	integer	6	Number type	91
minor2	integer	6	Values for major2	29, 35, 106
major3	integer	6	Multiple features	90, 91, 92
minor3	integer	6	Values for minor3	29,35,101,179,203
major4	integer	6	More multiple features	90, 92, 93
minor4	integer	6	Values for major4	7,9,22,43,49
major5	integer	6	More multiple features	90, 94
minor5	integer	6	Values for major5	7, 11, 100, 316, 530, 598, 606, 772
major6	integer	6	Further definition	90,93,94
minor6	integer	6	values for major6	11,104,132,606,620
major7	integer	6	More multiple features	90,94
minor7	integer	6	values for major7	106,132,620
major8	integer	6	Least significant features	90
minor8	integer	6	values for major8	106

Definition Table: majorcodes

Value	Defintion
90	feature
91	State or state equivalent FIPS code
92	County or county equivalent FIPS code
93	?
94	?

Definition Table: minorcodes

Value	Definition
9	Value (if major = 91 or 92)
11	Value (if major = 91 or 92)
22	Value (if major = 91 or 92)
29	Value (if major = 91 or 92)
35	Value (if major = 91 or 92)
43	Value (if major = 91 or 92)
49	Value (if major = 91 or 92)
100	Civil township, district or precinct, or barrio
104	National forest or grassland
106	National scenic waterway, riverway, wild or scenic river, or wilderness area
132	State forest or grassland
179	Value (if major = 91 or 92)
203	Historical line
316	Value (if major = 91 or 92)
530	Value (if major = 91 or 92)
598	Value (if major = 91 or 92)
606	Value (if major = 91 or 92)
620	Value (if major = 91 or 92)
772	Value (if major = 91 or 92)

Elevation Contour Lines (Hypsography)

This coverage contains the hypsography layer for the Exchange 1:24,000 scale United States Geological Survey digital topographic map.

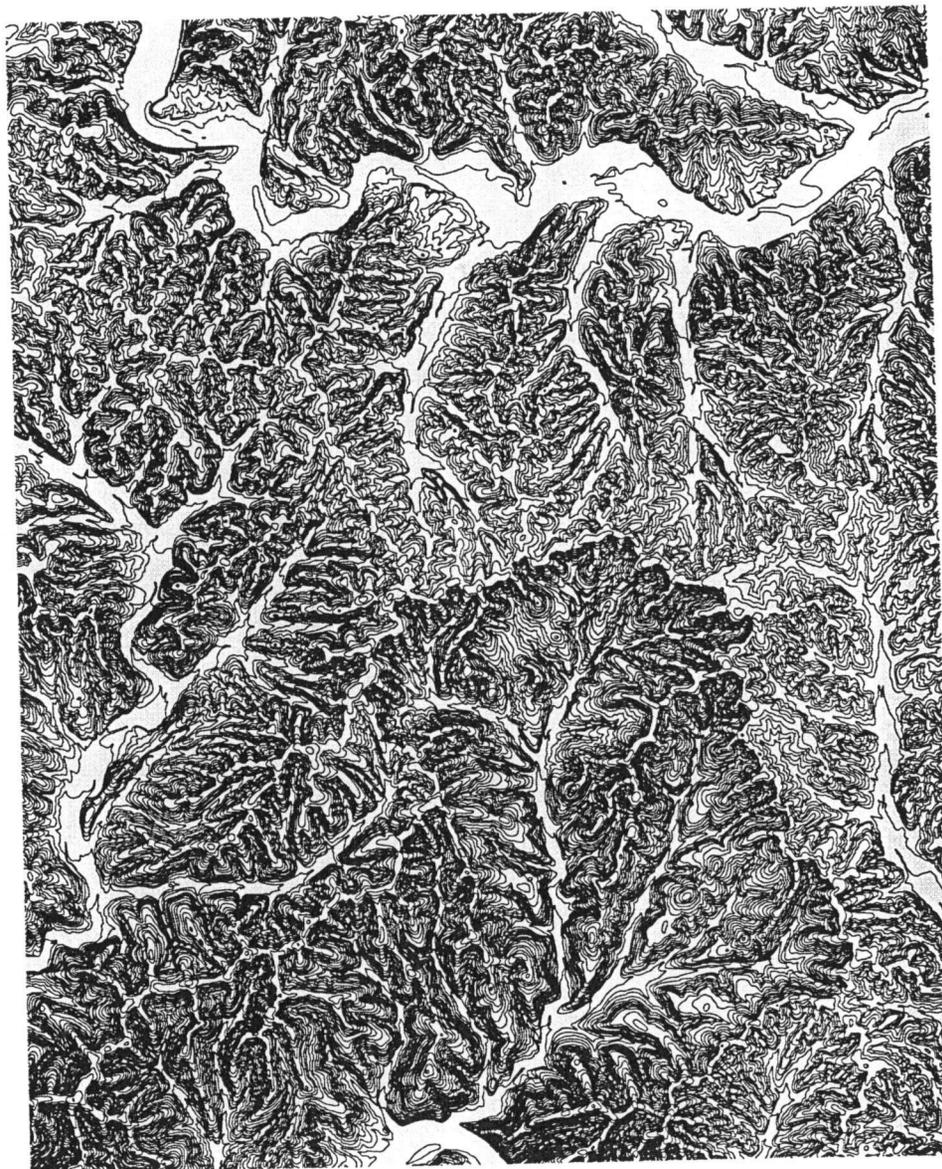


Figure 10-2 Contour Lines for the Exchange Quadrangle

File Name: exhypso

Data Theme:	Contour Lines (Hypsography)
Data Source:	Digital Contour Lines from USGS 1:24,000 Scale Topographic Sheets
Feature Type:	Line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of arcs which correspond to the contour lines on the exchange quadrangle
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: hypso#

Data File Structure:

Field Name	Type	Width	Description	Values
major1	6	integer	First most significant attribute	20--lines
minor1	6	integer	further refinement of first attribute	200--contour line
major2	6	integer	Second Most Significant attribute	22--elevation in minor attribute
minor2	6	integer	further refinement of second attribute	520--1140 (elevation in feet)
elevmeters*	10	number	Elevation in Meters (calculated from minor 2)	158.496--353.568

* only present in Powder Mill Ferry and Van Buren North

Hydrology

This coverage contains the hydrology layer for the Exchange 1:24,000 scale United States Geological Survey digital topographic map.

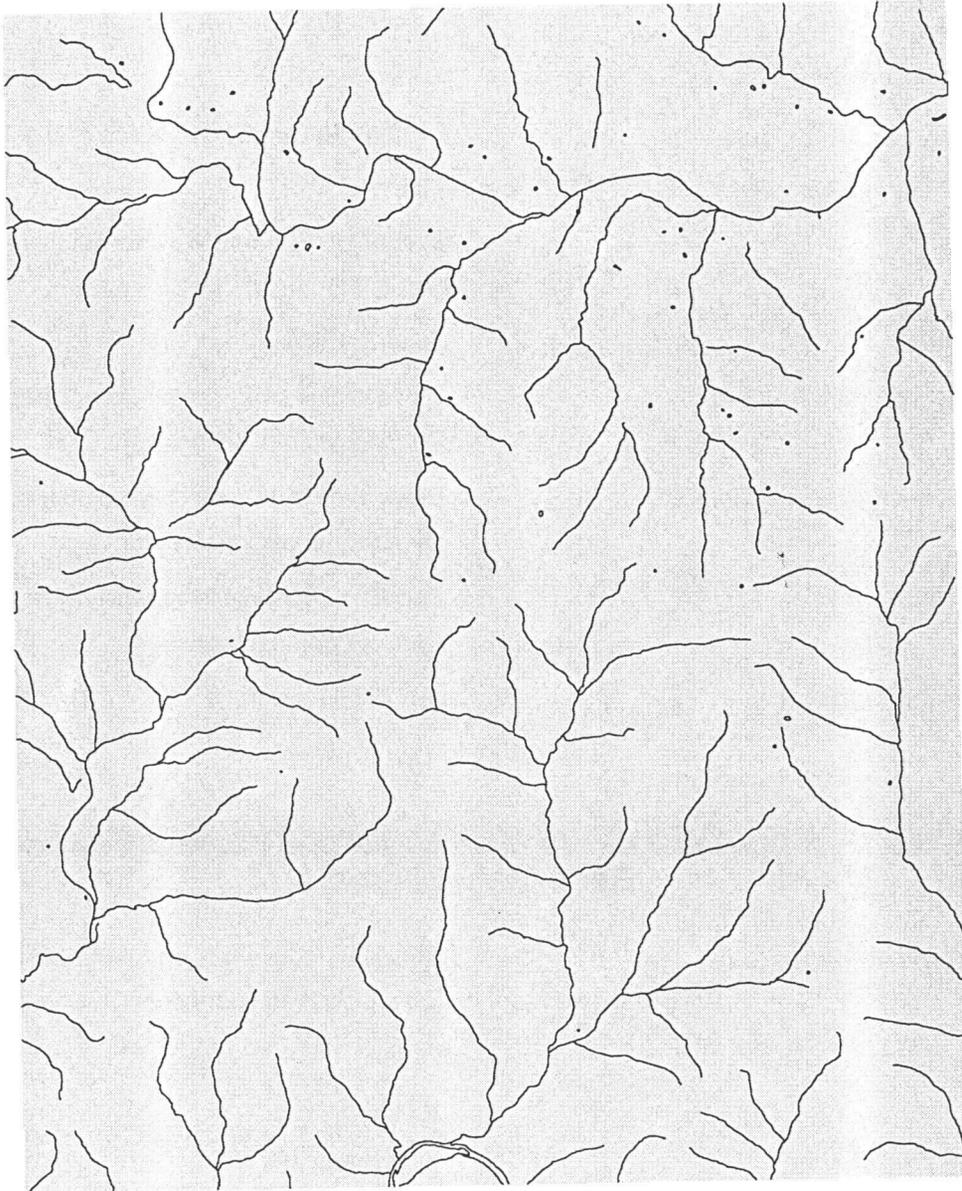


Figure 10-3

USGS 1:24,000 Scale Hydrology for Exchange
Quadrangle

File Name: exhydro

Data Theme:	Hydrology
Data Source:	Digital Hydrology from USGS 1:24,000 Scale Topographic Data
Feature Type:	line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	This file consists of lines representing the hydrology on each site
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: exhydro

Data File Structure

	Type	Width	Description	Values
streamno	binary	4	?	?
major1	integer	6	First Most significant attribute	50--stream
minor1	integer	6	Additional Refinement of first attribute	412--stream 200--shoreline
major2	integer	6	Second Most significant attribute	50--stream
minor2	integer	6	Additional Refinement of second attribute	605--right bank 606--left bank 610--intermittent

Man-made Features

This coverage contains the man-made features layer for the Exchange 1:24,000 scale United States Geological Survey digital topographic map. This includes buildings, town, cemeteries and other man-made features.

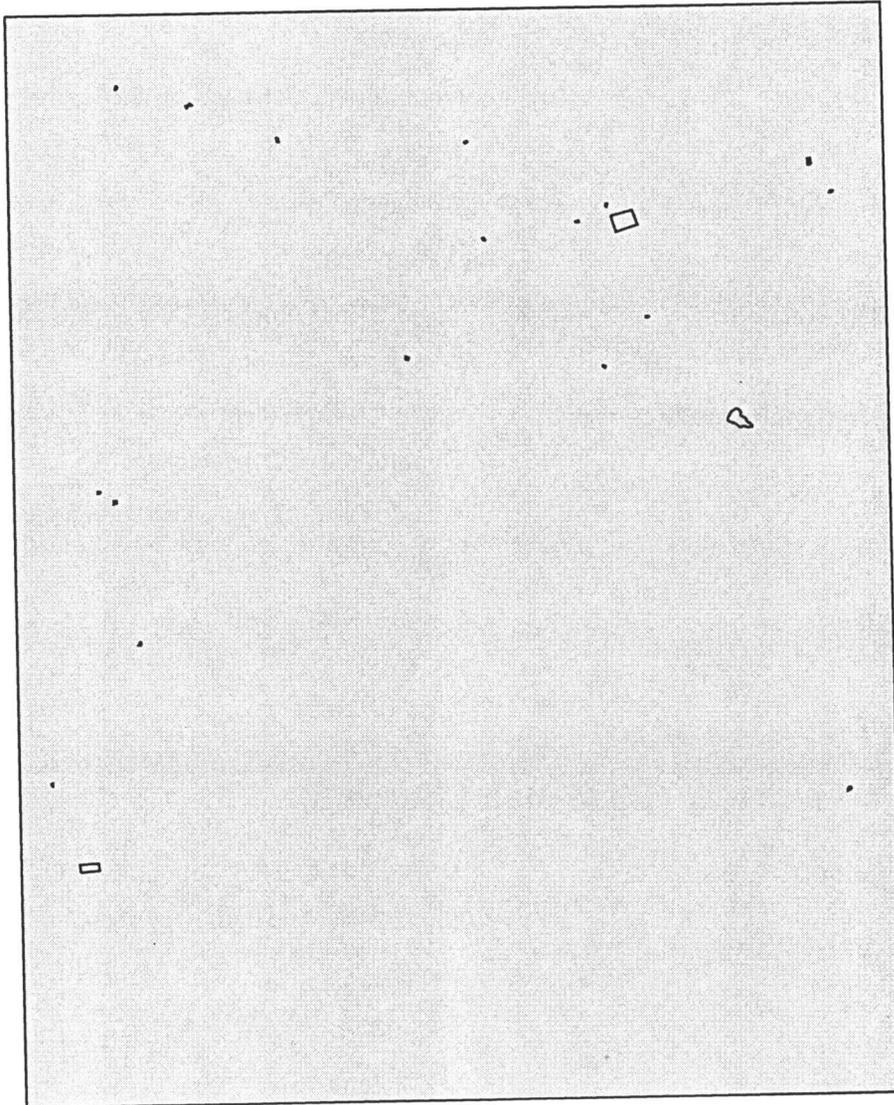


Figure 10-4 Man-made features for the Exchange Quadrangle

File Name: exnman

Data Theme:	Man-made features
Data Source:	Man-made features from digital USGS 1:24,000 Scale Topographic Sheets
Feature Type:	Polygon
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	Consists of polygons which represent man-made features
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: exnman

Data File Structure:

Field Name	Type	Width	Description	Values
major1	integer	6	Type of polygon	200-- feature
minor1	integer	6	Description	105,400,410,420,428

Definition Table: minor1

Value	Descriptions
105	Trailer Park
400	Class 1 Building
402	cloverleaf or exchange
403	Toll gate, toll plaza or perimeter of toll plaza
410	Town, village, settlement, locality, unincorporated village
420	cemetery
428	Open Pit Mine

Pipe

This coverage contains the pipe layer for the Exchange 1:24,000 scale United States Geological Survey digital topographic map.

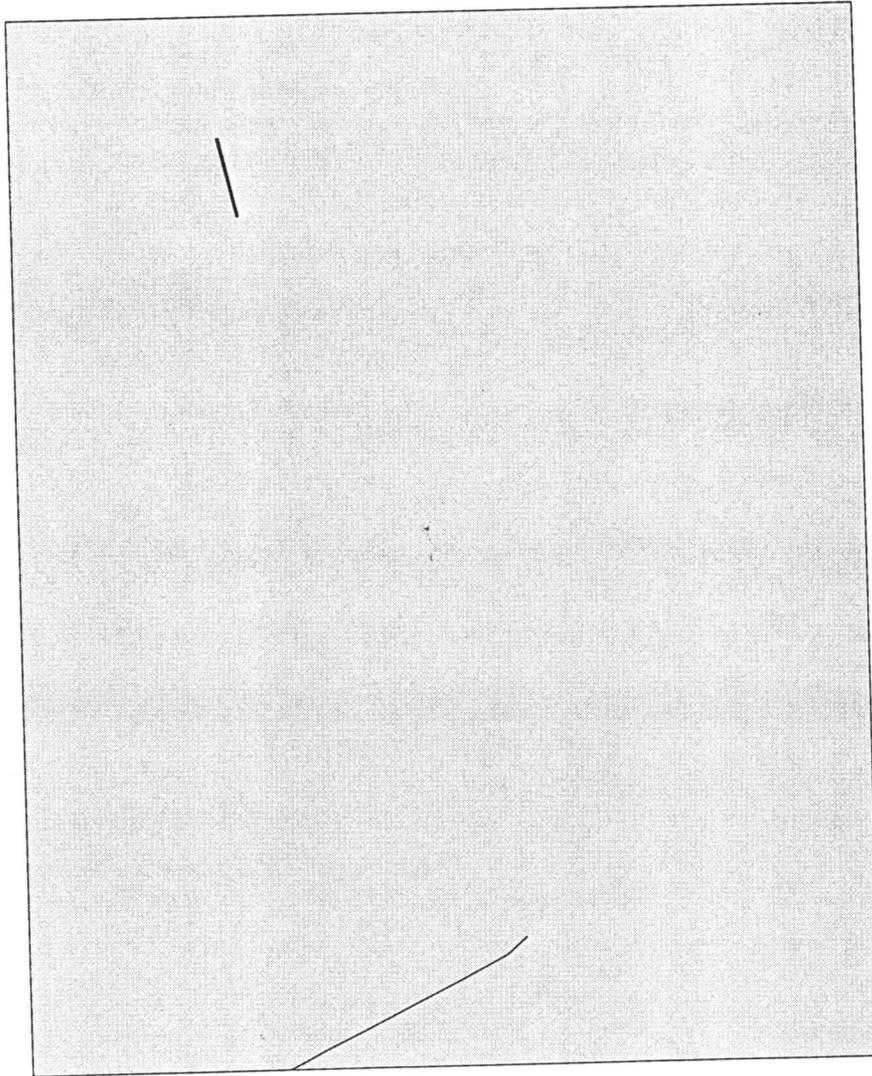


Figure 10-5

Pipes for the Exchange Quadrangle

File Name: expipe

Data Theme:	Pipes
Data Source:	Pipes from digital USGS 1:24,000 Scale Topographic Sheets
Feature Type:	line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	lines which represent pipes
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: expipe

Data File Structure:

Field Name	Type	Width	Description	Values
major1	integer	6	feature	190
minor1	integer	6	type of feature	202,403
major2	integer	6	feature	190
minor2	integer	6	further description	606

Definition Table: minorcodes

202	Power Transmission Line
403	Landing strip, airport, perimeter of airport
605	Unimproved, loose surface

Roads

This coverage contains the roads layer for the Exchange 1:24,000 scale United States Geological Survey digital topographic map.

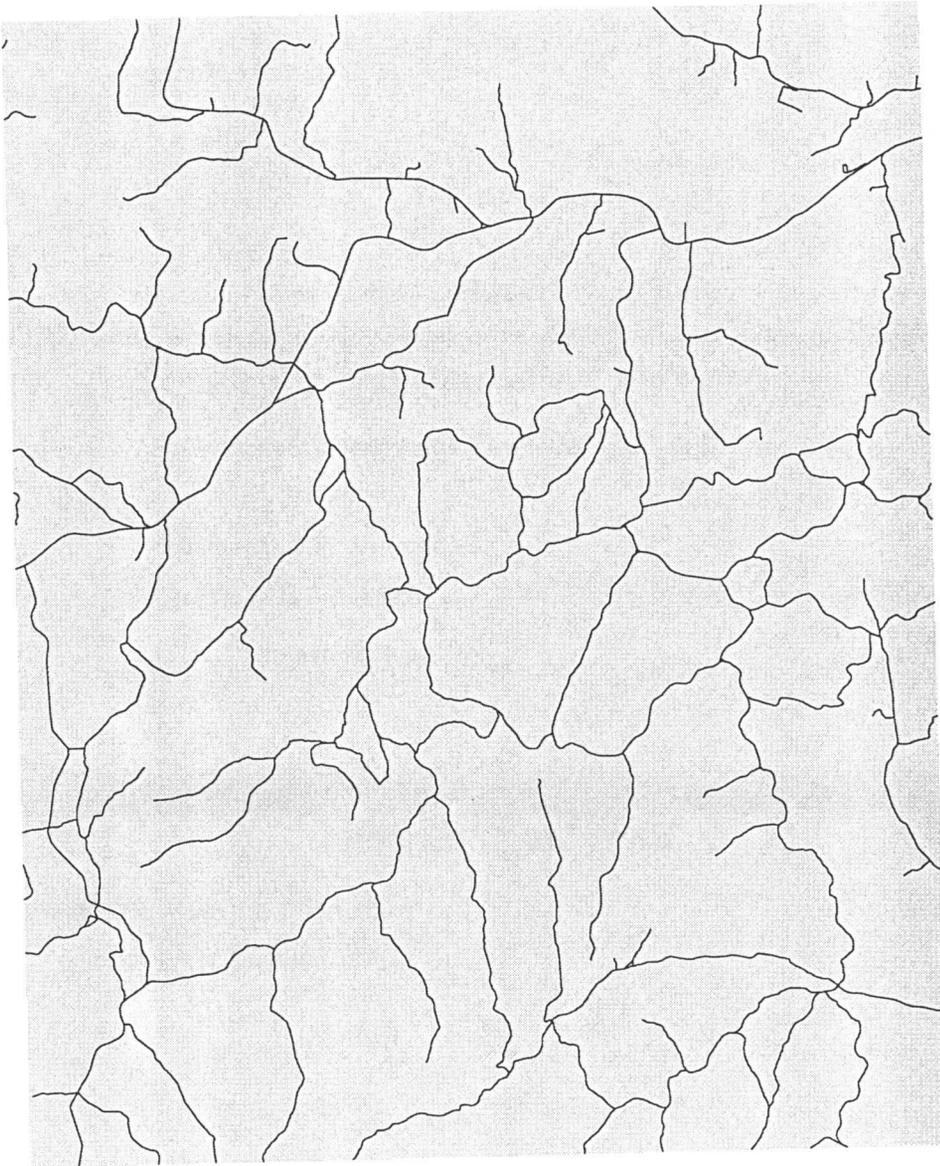


Figure 10-6

Roads for the Exchange Quadrangle

File Name: exroad

Data Theme:	Road
Data Source:	Roads from digital USGS 1:24,000 Scale Topographic Sheets
Feature Type:	line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	lines which represent roads
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: exroad

Data File Structure:

Field Name	Type	Width	Description	Values
major2	integer	6	Route Designation	174-- State Route 179-- Coincident feature
minor2	integer	6	Route number	106
major3	integer	6	Alphabetic Portion of Route Number (01=A.. 26=Z)	177
minor3	integer	6	data for major 3	2,6,808
major1	integer	6	Feature	170
minor1	integer	6		205,209,210,211

Definition Table: minorcodes

2	B
6	F
8	?
9	?
30	?
106	MO Route 106
205	Secondary route, class 2, symbol undivided
209	Road or street, class 3
210	Road or street, class 4
211	Trail, class 5, other than four-wheel-drive vehicle
808	HH

Section Lines

This coverage contains the Public Land Survey System layer for the Exchange 1:24,000 scale United States Geological Survey digital topographic map.

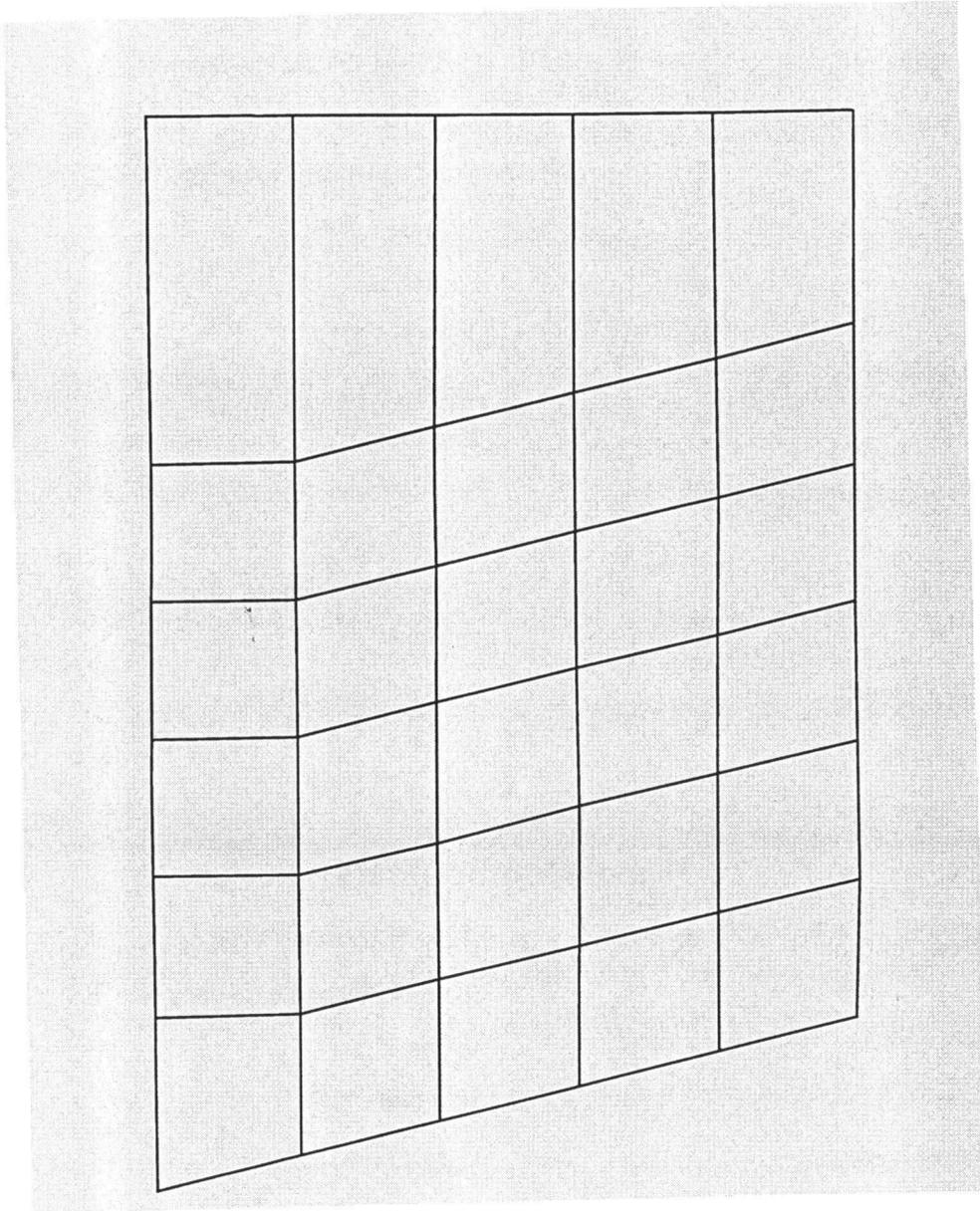


Figure 10-7 Section Lines for the Exchange Quadrangle

File Name: exnman

Data Theme:	Section Lines (plss)
Data Source:	Public Land Survey System from digital USGS 1:24,000 Scale Topographic Sheets
Feature Type:	Polygon, line
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
File Description:	Consists of polygons which correspond to sections
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: explss

Data File Structure:

Field Name	Type	Width	Description	Values
major1	integer	6	Type of polygon	306
minor1	integer	6	Range	1-99
major2	integer	6	North of Baseline	302
minor2	integer	6	Township	1-999
major3	integer	6	West of Principal Meridian	305
minor3	integer	6		1
major4	integer	6	Section Number in Minor4	301
minor4	integer	6	Section #	1-36

Vegetative

Vegetative Plot Locations 11-1

Vegetative Plot Locations

This layer consists of points which correspond to vegetative plot locations. These were digitized off of United States Geological Survey 1:24,000 scale topographic maps. They are arranged on a site basis, with plot numbers within each site.

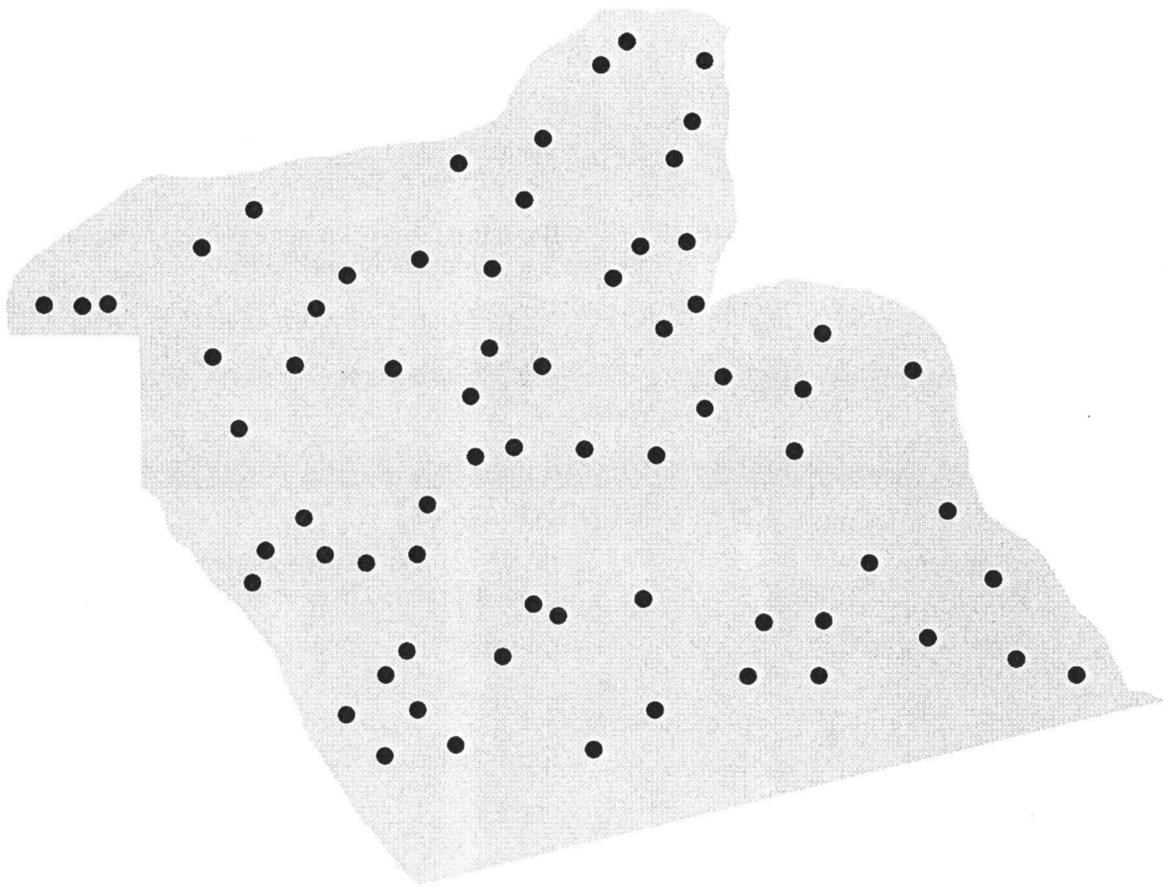


Figure 11-1 Vegetative plot locations for Site 3

File Name: vegplot#

(# is MOFEP site number)

Data Theme:	Vegetative Samples
Data Source:	USGS 1:24,000 scale topographic maps
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange, Fremont, Powder Mill Ferry, Stegal Mountain, Van Buren North
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Brian Brookshire, Forestry Division, Missouri Department of Conservation
File Description:	Points which correspond to plot locations
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: vegplot#

(# is the MOFEP site number)

Data File Structure

Field Name	Type	Width	Description	Values
vegplot#-id	4	binary	Extended Plot Number	Site + Plotnum (310)
plotnum	3	integer	Plot Number	0-99

Vegetative History

Change in Pine Abundance	12-1
Pine Stumps	12-4
Release Dates	12-6

Change in Pine Abundance

This layer consists of points which represent the location of pine sampling to determine historic levels of pine abundance. These were digitized using digital United States Geological Survey 1:24,000 scale topographic contour lines. At each point, a measure of abundance was developed.

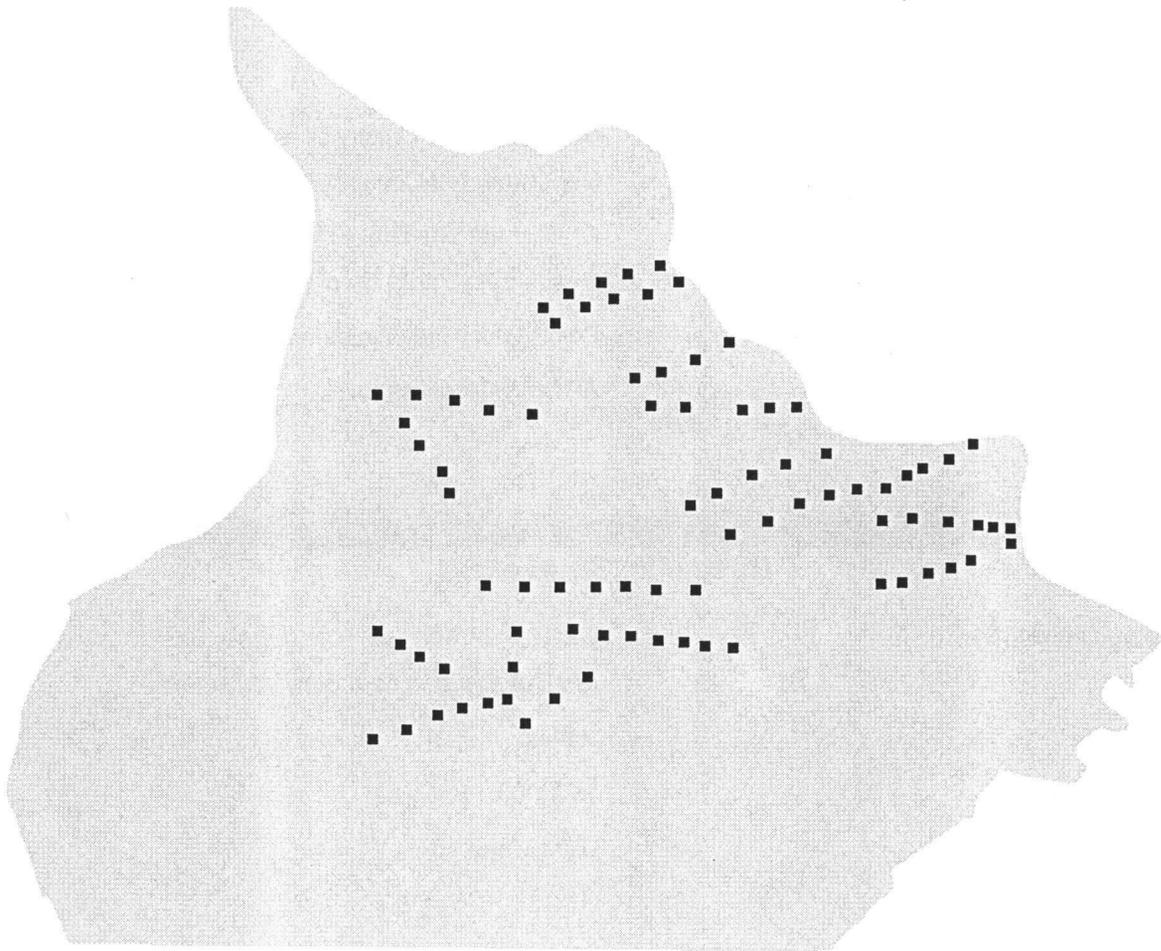


Figure 12-1 Change in abundance of pine

File Name: pinechng

Data Theme:	Change in Pine Abundance
Data Source:	USGS 1:24,000 digital scale topographic maps
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Stegal Mountain
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Dr. Richard Guyette, School of Natural Resources, University of Missouri, Columbia
File Description:	Points which indicate sampling locations
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: pinechng

Data File Structure

Field Name	Type	Width	Description	Values
pinechng-id	binary	4	Change in Pine Abundance	1--increase 2--decrease 3--no change
pine abundance	character	16	Change in Pine Abundance	"increase" "decrease" "no change"

Pine Stumps

This layer consists of points which represent the location of pine stumps. These were digitized using digital United States Geological Survey 1:24,000 scale topographic contour lines.



Figure 12-2 Pine stump locations

File Name: pinestmp

Data Theme:	Pine Stump Location
Data Source:	USGS 1:24,000 digital scale topographic maps
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Dr. Richard Guyette, School of Natural Resources, University of Missouri, Columbia
File Description:	Points which indicate pine stumps
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

Release Dates

This layer consists of points which represent the location of tree ring sampling. These were digitized using digital United States Geological Survey 1:24,000 scale topographic contour lines. The date of release, indicated by change in density of growth rings, is indicated at each point.

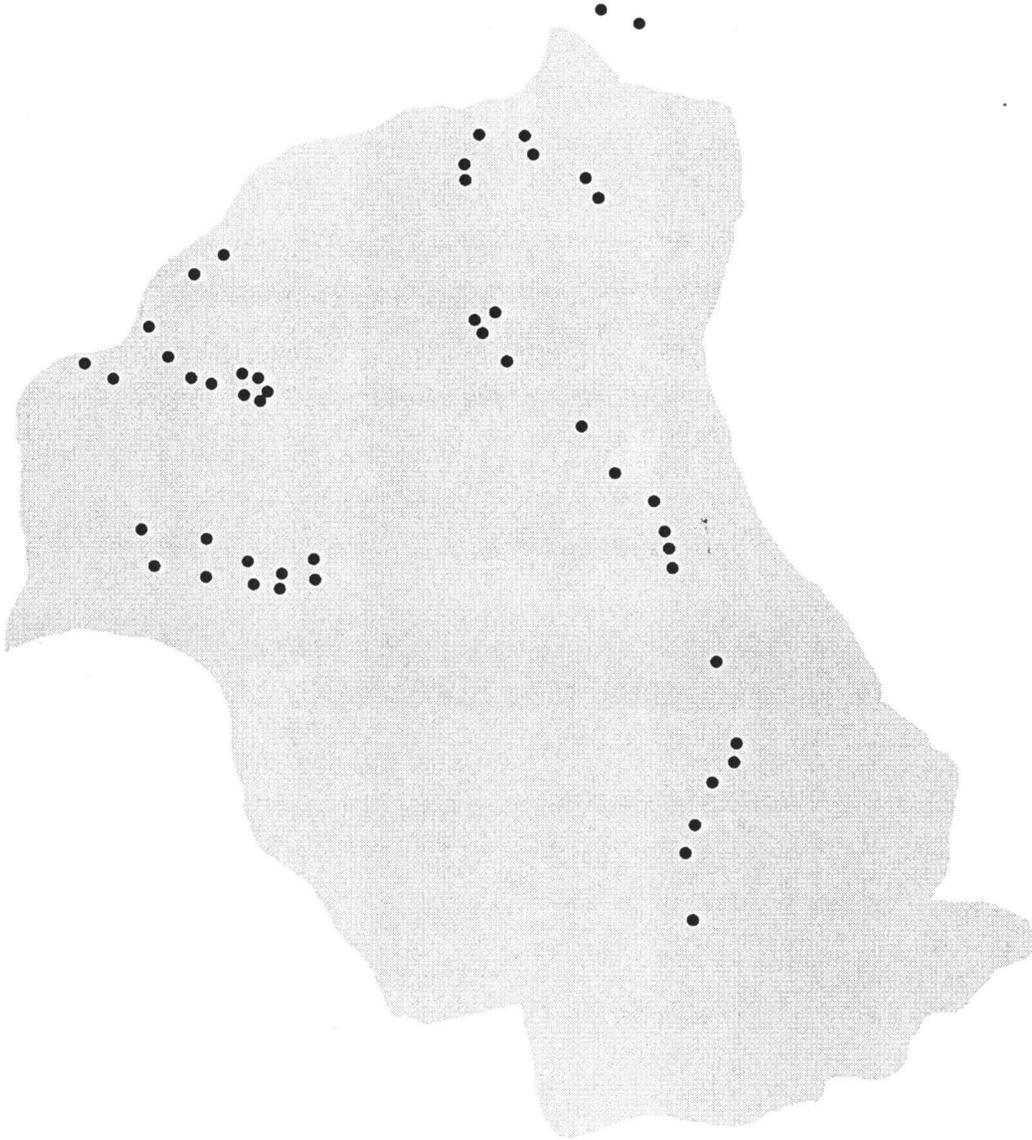


Figure 12-3

Release Dates

File Name: release

Data Theme:	Release Dates
Data Source:	USGS 1:24,000 digital scale topographic maps
Feature Type:	Points
Co-ordinate System:	Universal Transverse Mercator
Projection Parameters:	Zone 15
Datum:	North American Datum of 1927
Map Unit:	Meters
7.5' Quads:	Exchange
Release Date:	June 7, 1997
Contact Person (GIS Related):	Steve Westin, Forestry Division, Missouri Department of Conservation
Contact Person (Content Related):	Dr. Richard Guyette, University of Missouri- Columbia
File Description:	Points which indicate tree sample locations
Available GIS Format:	ARC/INFO coverage

Base Map Source(s)

Base Map Description:	USGS 1:24,000 7.5' Topographic Sheets (both digital and hard copy versions)
Vintage:	Varies
Scale:	1:24,000
Projection Parameters:	UTM, Zone 15
Source:	USGS

File Name: release

Data File Structure

Field Name	Type	Width	Description	Values
release-id	binary	4	last two digits of year tree was released	00-99
release date	integer	4	year of release	19 + release-id

Directory Listing

/defineit

boundef.text
definvnt.text
eltdef.text

geodef.text
hydrodef.text
mandef.text

usgshydr.text
usgsroad.text

/general

bound1
bound2
bound3
bound4
bound5
bound6
bound7
bound8
bound9
cent1
cent2
cent3
cent4
cent5
cent6
cent7
cent8
cent9
elt1
elt2
elt3
elt4
elt5
elt6
elt7
elt8
elt9
grop962
grop964
hydro1
hydro2
hydro3
hydro4
hydro5
hydro6
hydro7
hydro8
hydro9
hypso1
hypso2
hypso3
hypso4
hypso5

hypso6
hypso7
hypso8
hypso9
invent1
invent2
invent3
invent4
invent5
invent6
invent7
invent8
invent9
landing1
landing2
landing3
landing4
landing5
landing6
landing7
landing8
landing9
mofepclip
mofephyp
mrclip
mrellroad
mrexroad
mrhighway
mrhydro
mrhydro2
mrroad
points12
points12dd
points16
points16dd
points34
points34dd
points56
points56dd
points78
points78dd
points79
points79dd

points9
points9dd
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ponds4
ponds5
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ref3
ref4
ref5
ref6
ref7
ref8
ref9
roads1
roads2
roads3
roads4
roads5
roads6
roads7
roads8
roads9
sale961
sale962
sale963
sale964
sale965
sale966
sale967
stands1
stands2
stands3
stands4
stands5
stands6
stands7
stands8
stands9
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trails2
trails3

trails7
trails8
trails9
treat962
treat963

treat964
treat965
treat967
treat969

/genetics

genall
genetic1
genetic2
genetic3
genetic4

genetic5
genetic6
genetic7
genetic8

genetic9

/hardmast

acorn1
acorn2
acorn3
acorn4
acorn5

acorn6
acorn7
acorn8
acorn9

acornall

/herps

herplot1
herplot2
herplot3

herplot4
herplot5
herplot6

herplot7
herplot8
herplot9

/inverts

lilplot1

lilplot2

lilplot3

/land

geology1
geology2
geology3
geology4
geology5
geology6
geology7
geology8
geology9
grid15
grid25
grid35
grid45
grid55
grid65
grid75
grid85
grid95

slope1
slop1e25
slope2
slop2e25
slope3
slop3e25
slope4
slop4e25
slope5
slop5e25
slope6
slop6e25
slope7
slop7e25
slope8
slop8e25
slope9
slop9e25

soil1pt
soil2pt
soil3pt
soil4pt
soil5pt
soil6pt
soil7pt
soil8pt
soil9pt
soilpit1
soilpit3
soilpit4
soilpit5
soilpit7
soils1
soils2
soils3
soils4

soils5
soils6

soils7
soils8

soils9

/mammals

mammal1
mammal2
mammal3

mammal4
mammal5
mammal6

mammal7
mammal8
mammal9

/nutrient

nutrient1
nutrient2
nutrient3

nutrient4
nutrient5
nutrient6

nutrient7
nutrient8
nutrient9

/usgs24k

exbound
exhydro
exhypso
exnman
exnveg
expipe
explss
exroad
exsurv
exveg
frebound
frehydro
frehypso
freman

freplss
freroad
pmfbound
pmfhydro
pmfhypso
pmfman
pmfnveg
pmfpipe
pmfplss
pmfroad
pmfsurv
steroad
stehydro
stehypso

steman
steplss
steroad
steutility
vbnbound
vbnhydro
vbnhypso
vbnman
vbnveg
vbnpipe
vbnplss
vbnroad
vbnsurv
vbnveg

/veg

vegplot1
vegplot2
vegplot3

vegplot4
vegplot5
vegplot6

vegplot7
vegplot8
vegplot9

/veghist

pinechng

pinestmp

release

