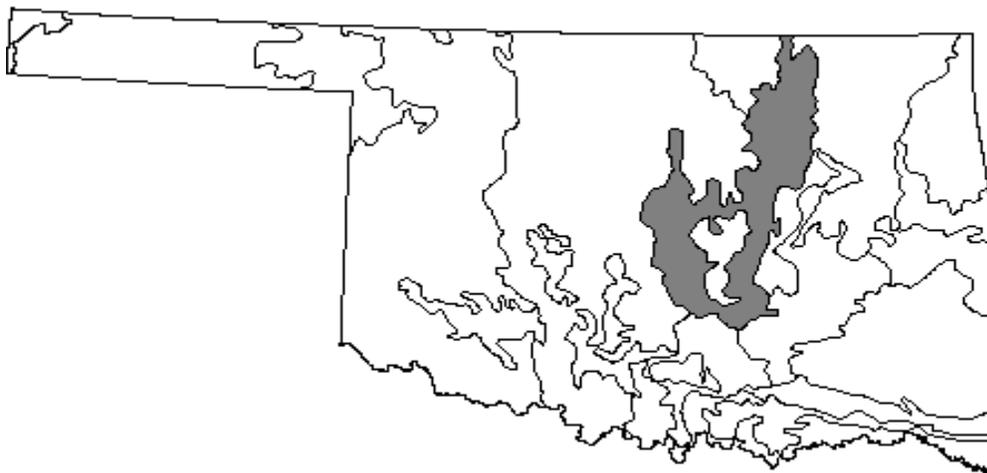


UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION - RANGE

ECOLOGICAL SITE CHARACTERISTICS



Site Type: Rangeland

Site ID: 084AY089OK

Site Name: Shallow Savanna (PE 52 - 64)

Precipitation or Climate Zone: 33 - 39 inches rainfall

Original Site Description Approval:

Site Date: July 1961

Site Author: Henry Stidham, Fred Whittington, Clarence Kingery, Clifford Carberry

Site Approval: Ernest Snook

Approval Date: 8/3/73

Revisions:

Revision Date: April 2001

Reviser: Mark Moseley

Revision Approval: Mark Moseley

Revision Notes: This site description is being updated to reflect new technology and to document vegetative states on the site.

PHYSIOGRAPHIC FEATURES

Narrative: Rolling savanna with post oak and blackjack oak the dominant woody vegetation. Medium textured soils with some exposed ledge rock and some areas of deeper soils.

Land Form: Upland Hills

	<u>Minimum</u>	<u>Maximum</u>
<u>Elevation (feet):</u>	800	1200
<u>Slope (percent):</u>		1 - 45
<u>Water Table Depth (inches):</u>	None	
<u>Flooding:</u>	None	
<u>Ponding:</u>	None	
<u>Runoff Class:</u>	Medium to Rapid	

CLIMATIC FEATURES

Narrative: Seventy five percent of the precipitation occurs during the warm season, which is favorable to warm season plants. High intensity storms are common, particularly during the spring and early summer. If ground cover is depleted, runoff is high.

	<u>Minimum</u>	<u>Maximum</u>
<u>Frost-free period (days):</u>	213	221
<u>Freeze-free period (days):</u>	237	245
<u>Mean annual precipitation (inches):</u>	25	36

Monthly moisture (inches) and temperature (°F) distribution:

Month	Precipitate Minimum	Precipitate Maximum	Temperature Minimum	Temperature Maximum
January	.9	1.35	25	46
February	1.21	1.74	30	52
March	1.94	3.14	38	61
April	2.84	4.15	49	72
May	5.12	5.14	58	80
June	3.09	4.57	67	88
July	2.52	3.51	71	94
August	2.52	3.01	69	93
September	3.48	4.37	61	85
October	2.71	3.41	49	75
November	1.55	2.56	37	60
December	1.08	1.82	29	50

Information from the Chandler Climate station OK1684, 1961-1990.

INFLUENCING WATER FEATURES

Narrative: None

REPRESENTATIVE SOIL FEATURES

Narrative: The soils are sandy and have a favorable textural characteristic for plant growth. The shallow depth, which limits moisture storage capacity, is the principal productivity limitation. Stoniness also limits the area of productivity. Typically, 25 percent of the site produces very little vegetation. Representative soils are Darnell and Darsil.

Parent Material Kind: Sandstone

Parent Material Origin: Permian Age

Surface Texture: (1) fine sandy loam
(2) loamy fine sand
(3) loam

Surface Texture Modifier: (1) None
(2) Stony

Subsurface Texture Group: fine sandy loam, loam, gravelly fine sandy loam, gravelly-loam

Surface Fragments <=3" (% Volume): 0 - 25

Surface Fragments >3" (% Volume): 0 - 15

Subsurface Fragments <=3" (% Volume): 0 - 20

Subsurface Fragments >3" (% Volume): 0 - 5

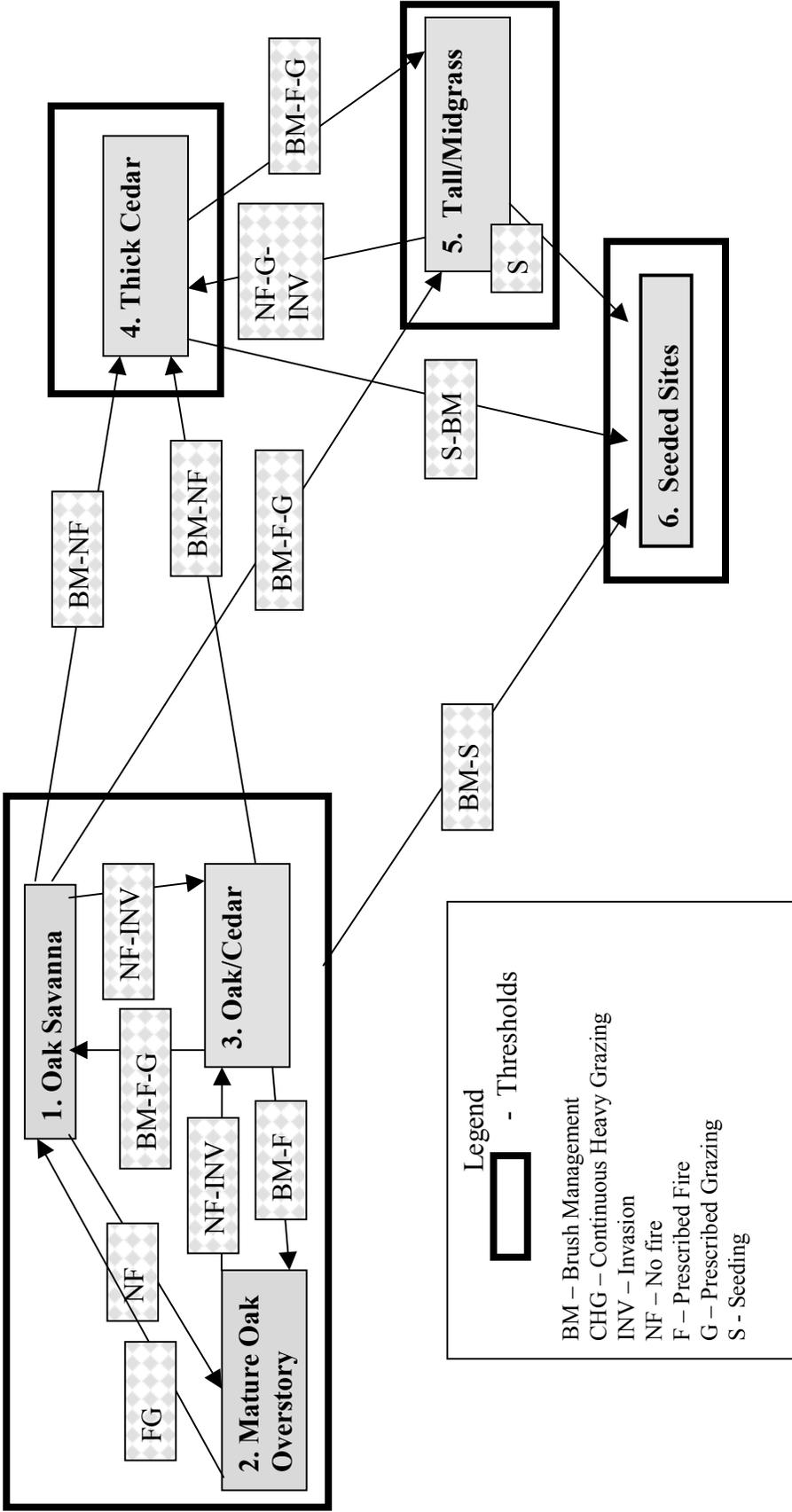
	<u>Minimum</u>	<u>Maximum</u>
<u>Drainage Class:</u>	Well	Excessive
<u>Permeability Class:</u>	Mod. Rapid	Rapid
<u>Depth (inches):</u>	10	20
<u>Electrical Conductivity (mmhos/cm):</u>	-	-
<u>Sodium Absorption Ratio:</u>	-	-
<u>Soil Reaction (1:1 Water):</u>	-	-
<u>Soil Reaction (0.1M CaCl₂):</u>	-	-
<u>Available Water Capacity (inches):</u>	1	2
<u>Calcium Carbonate Equivalent (%):</u>	-	-

PLANT COMMUNITIES

Ecological Dynamics of the Site: This site is a savanna and was anticipated to have had an average 15 percent canopy of post oak, blackjack oak, and associated scrub woody species such as sumac, dwarf chinkapin oak and roughleaf dogwood in the historic plant community. It is recognized that there were areas of thick oak also in the historic plant community. Fire was common in this plant community probably occurring at least on a three-year interval. Bison and elk were the primary ungulates. Principal grasses are little bluestem, big bluestem, switchgrass, Indiangrass, and Canada wildrye, which represent 55 to 65 percent of the vegetation. Other common grasses include hairy grama, tall dropseed, meadow dropseed, purpletop, and splitbeard bluestem. Forbs and legumes include perennial sunflowers, roundhead lespedeza, slender lespedeza, prairieclovers, western ragweed, and white sagewort.

This site will also support other plant communities. These include a mature oak overstory, oak with an understory of eastern redcedar, a tall/midgrass community, or thick cedar. Listed below is a schematic diagram of the plant communities and the pathways between communities.

The oak savanna will thicken up with small sprouts during periods of prolonged rest or abusive management. In time, the canopy will close with a corresponding reduction in warm season grasses and forbs. There will then be a small component of understory cool season plants. Birds and animals that eat juniper berries will deposit seeds underneath the trees. The understory leaf litter makes an excellent seedbed for eastern redcedar. Eastern redcedar will germinate and in a few years grow to dominate the understory and potentially replacing the oak forest and adversely affecting species diversity.



Plant Communities and Transitional Pathways Sequence Diagram

Plant Community Name: Historic
Plant Community Sequence Number: 1



Plant Community Narrative:

This plant community was formed by the collective influence of fire, herbivory, drought, and extremes of temperature. Historically, most herbivory was from bison, elk, and deer. A variety of other wildlife inhabited the site such as black bear, coyotes and a variety of birds and small mammals. Heavy grazing pressure results in a quick reduction of tall grass species. Sideoats grama, blue grama, hairy grama, fringed leaf paspalum, tall dropseed, Carolina joint-tail, purpletop, Scribner's panicum, and sand lovegrass then dominate. The major woody species are oaks, elms, hickory, sumacs, wild plum, redbud, and understory species. Without fire on a 3 – 5 year interval, cedar may become established. Also, frequent hot fires will top-kill the oak, predispose the oak to secondary organisms such as fungus, and result in many resprouts. The site can transition from a savanna to an overstory condition in 40 – 50 years if left alone. If a seed source for eastern redcedar is available, the understory will contain 10 – 15 ft. high cedar within 10 – 15 years without burning. Grazing management is important to maintain fuel loads and to keep the grasses competitive.

Ground Cover and Structure:

	% canopy 0 - 6"	% canopy 6" - 12"	% canopy 12" - 24"	% canopy 24" - 48"	% canopy 48" - 96"	% canopy 96" +
Trees						15
Shrubs			3	8	5	
Forbs	1	3	10	3		
Grasses	3	5	15	60	2	

	% ground cover
Litter	60
Cryptogams	NA
Coarse fragments	20
Bare Ground	10

Plant Community Annual Production (by plant type):

<u>Plant Type</u>	<u>Annual Production (lbs./ac)</u>		
	<u>Low</u>	<u>RV</u>	<u>High</u>
Grass/Grasslike	980	2100	2600
Forb	70	320	400
Shrub/Vine	60	300	375
Tree	350	480	600

Plant Community Composition and Group Annual Production: (3200 pounds per acre)

Plant Type - Grass/Grasslike (2100 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	ANGE	big bluestem	400	720
1	SONU2	Indiangrass	400	
1	PAVI2	switchgrass	300	
2	SCSC	little bluestem	900	900
3	ELCA4	Canada wildrye	160	160
4	BOCU	sideoats grama	150	320
4	BOGR2	blue grama	150	
4	BOHI2	hairy grama	100	
4	SPASA	tall dropseed	200	
4	TRFL2	purpletop	150	
4	ERTE3	sand lovegrass	100	
4	ERPEP2	purple lovegrass	50	
4	DIOLS	Scribner's panicum	100	
4	COCY	Carolina jointtail	75	

Plant Type - Forb (320 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
5	ECAN2	Black samson	50	160
5	HEMO2	ashy sunflower	50	
5	LIPU	dotted gayfeather	50	
5	ASER3	heath aster	50	
5	SOLID	goldenrod	50	
5	ARFR4	sagewort	50	
5	RUCI4	fringeleaf ruella	50	
5	AMPI	western ragweed	50	
6	DEIN3	tickclover	50	160
6	DALEA	prairie clover	50	
6	LESPE	lespedeza	50	
6	SCHUH2	catclaw sensitivebrier	50	

Plant Type - Shrub/Vine (300 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
7	TORY	poison ivy	30	100
7	VITIS	grape	30	
7	SMBO2	greenbrier	30	
7	PAQU2	Virginia creeper	30	
7	AMCA6	leadplant	30	
8	SYRO	buckbrush	100	200
8	RHUS	sumac	100	
8	CEAM	Jerseytea	100	
8	PRUNUS	plum	100	
8	RUBUS	blackberry	75	
8	QUPR	dwarf chinkapin oak	70	

Plant Type - Tree (480 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	QUST	post oak	300	480
9	QUMA3	blackjack oak	300	
9	CATE9	hickory	50	
9	ULAM	elm	50	
9	CECA4	redbud	50	

Plant Type - Lichen - Not available

Plant Type - Moss - Not available

Plant Type - Microbotic Crusts - Not available

Plant Growth Curves

Growth Curve ID: OK84A001

Growth Curve Name: warm season savanna, historic condition

Growth Curve Description: MLRA 84A Northern Cross Timbers

Jan.	Feb.	March	April	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
0	0	2	10	20	25	15	5	15	5	4	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community: This community has value for grazing by cattle. It also provides cover and mast for many species of wildlife.

Utilization

Animal Kind: Cattle

Animal Type: Cows

Forage preference (P = preferred, D = desirable, U = undesirable)

(No entry implies dormancy or unavailable during this month)

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Big bluestem	Andropogon gerardii	leaves				P	P	P	P	P	P	P	P	
Indiangrass	Sorghastrum nutans	leaves				P	P	P	P	P	P	P	P	P
switchgrass	Panicum virgatum	leaves	D	D	D	P	P	P	P	D	D	D	D	D
little bluestem	Schizachyrium scoparium	leaves	D	D	D	P	P	P		D	D	D	D	D
Canada wildrye	Elymus canadensis	leaves	P	P	P	P	P				P	P	P	P
sideoats grama	Bouteloua curtipendula	leaves	D	D	D	D	D	D	D	D	D	D	D	D
blue grama	Bouteloua gracilis	leaves	D	D	D	D	D	D	D	D	D	D	D	D
hairy grama	Bouteloua hirsuta	leaves	U	U	U	D	D	D	U	U	U	U	U	U
tall dropseed	Sporobolus asper	leaves	U	U	U	U	D	D	D	D	D	U	U	U
purpletop	Tridens flavus	leaves	U	U	U	U	U	U	U	D	D	D	U	U
sand lovegrass	Eragrostis trichodes	leaves				P	P	P	P	D	D	D	D	
purple lovegrass	Eragrostis spectabilis	leaves				U	U	U	U	U	U	U	U	
Scribner's panicum	Dicanthelium oligosanthos	leaves			D	D	D	U	U	U	U	U	U	
Carolina jointtail	Coelorachis cylindrica	leaves				U	U	U	U	U	U	U	U	
blacksamson	Echinacea angustifolia	leaves				U	U	U	U	U	U	U	U	
ashy sunflower	Helianthus mollis	leaves				D	D	D	D	U	U	U	U	
dotted gayfeather	Liatris punctata	leaves				D	D	U	U	U	U	U	U	
heath aster	Aster ericoides	leaves				D	D	U	U	U	U	U	U	
goldenrod	Solidago spp.	leaves				U	U	U	U	U	U	U	U	
sagewort	Artemisia ludoviciana	leaves				D	D	D	U	U	U	U	U	
fringeleaf ruella	Ruellia ciliiosa	leaves				D	D	D	U	U	U	U	U	
sessile tickclover	D. sessilifolium	leaves				P	P	D	D	D	D	D	D	
prairie clover	Dalea spp.	leaves				D	D	D	D	D	D	D	D	
lespedeza	Lespedeza spp.	leaves				D	D	D	D	D	D	D	D	
catclaw	Schrankia uncinata	leaves				P	P	P	P	P	P	P	P	
sensitivebrier														
leadplant	Amorpha canescens	leaves				D	D	D	D	U	U	U	U	
poison ivy	T. radicans	leaves				P	P	P	P	D	D	D	D	
grape	Vitis spp.	leaves				D	D	D	D	D	D	D	D	
greenbrier	Smilax bona-nox	leaves	U	U	U	P	P	D	D	D	U	U	U	U
Virginia creeper	Parthenocissus	leaves				D	D	U	U	U	U	U	U	
	quinquefolia													
buckbrush	Symphoricarpos	leaves				U	U	U	U	U	U	U	U	
	orbiculatus													
sumac	Rhus spp.	leaves				D	D	U	U	U	U	U	U	
Jerseytea	Ceanothus americanus	leaves				P	P	P	P	P	P	P	P	
plum	Prunus spp.	leaves				U	U	U	U	U	U	U	U	
blackberry	Rubus spp.	leaves				D	D	U	U	U	U	U	U	
dwarf chinkapin oak	Quercus prinoides	leaves				U	U	U	U	U	U	U	U	
post oak	Quercus stellata	leaves				U	U	U	U	U	U	U	U	
blackjack oak	Quercus marilandica	leaves				U	U	U	U	U	U	U	U	
hickory	Carya spp.	leaves				U	U	U	U	U	U	U	U	
elm	Ulmus americana	leaves				P	P	P	P	D	D	D		
redbud	Cercis canadensis	leaves				D	D	U	U	U	U	U	U	

Animal Kind: White-tailed Deer

(C = cover, P = preferred forage, D = desirable forage, U = undesirable forage)

(Refer to habitat appraisal guides for more specific guidance)

(No entry implies dormancy, or unavailable during this month)

Common Name	Scientific Name	plant part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
big bluestem	Andropogon gerardii	all	C	C	C	U	U	U	U	U	U	U	C	C
Indiangrass	Sorghastrum nutans	all	C	C	C	U	U	U	U	U	U	U	C	C
switchgrass	Panicum virgatum	all	C	C	C	U	U	U	U	U	U	U	C	C
little bluestem	S. scoparium	all	U	U	U	U	U	U	U	U	U	U	U	U
Canada wildrye	Elymus canadensis	all	D	D	D	D	U	U	U	U	U	U	D	D
sideoats grama	Bouteloua curtipendula	all	U	U	U	U	U	U	U	U	U	U	U	U
blue grama	Bouteloua gracilis	all	U	U	U	U	U	U	U	U	U	U	U	U
hairy grama	Bouteloua hirsuta	all	U	U	U	U	U	U	U	U	U	U	U	U
tall dropseed	Sporobolus asper	all	U	U	U	U	U	U	U	U	U	U	U	U
purpletop	Tridens flavus	all	U	U	U	U	U	U	U	U	U	U	U	U
sand lovegrass	Eragrostis trichodes	all	U	U	U	U	U	U	U	U	U	U	U	U
purple lovegrass	Eragrostis spectabilis	all	U	U	U	U	U	U	U	U	U	U	U	U
Scribner's panicum	D. oligosanthos	all	D	D	D	D	U	U	U	U	U	U	U	D
Carolina jointtail	Coelorachis cylindrica	all	U	U	U	U	U	U	U	U	U	U	U	U
blacksamson	Echinacea angustifolia	all	U	U	U	U	U	U	U	U	U	U	U	U
ashy sunflower	Helianthus mollis	all	U	U	U	U	U	U	U	U	U	U	U	U
dotted gayfeather	Liatris punctata	all	U	U	U	U	U	U	U	U	U	U	U	U
heath aster	Aster ericoides	all	D	D	D	U	U	U	U	U	U	U	D	D
goldenrod	Solidago spp.	all	U	U	U	U	U	U	U	U	U	U	U	U
sagewort	Artemisia ludoviciana	all	U	U	U	U	D	D	U	U	U	U	U	U
fringeleaf ruella	Ruellia ciliosa	all	U	U	U	U	U	U	U	U	U	U	U	U
sessile tickclover	D. sessilifolium	all	U	U	U	U	U	D	D	D	D	U	U	U
prairie clover	Dalea spp.	all	U	U	U	U	U	U	U	U	U	U	U	U
lespedeza	Lespedeza spp.	all	U	U	U	U	P	P	P	D	D	D	U	U
catclaw sensitivebrier	Schrankia uncinata	all				P	P	P	P	D	D	D		
leadplant	Amorpha canescens	all	U	U	U	D	D	D	D	D	U	U	U	U
poison ivy	T. radicans	all	D	D	D	P	P	P	P	P	P	P	D	D
grape	Vitis spp.	all				P	P	P	P	D	D	D		
greenbrier	Smilax bona-nox	all	D	D	D	P	P	P	D	D	D	D	D	D
Virginia creeper	Parthenocissus quinquefolia	all	U	U	U	U	U	U	U	U	U	U	U	U
buckbrush	S. orbiculatus	all	P	P	P	U	U	U	U	U	D	D	D	P
sumac	Rhus spp.	all	D	D	D	D	D	D	D	D	D	D	D	D
Jerseytea	Ceanothus americanus	all	U	U	U	U	U	D	D	D	D	D	U	U
plum	Prunus spp.	all	D	D	D	D	D	P	P	P	D	D	D	D
Blackberry	Rubus spp.	all	U	U	U	U	U	D	D	D	D	D	U	U
dwarf chinkapin oak	Quercus prinoides	Leaf	U	U	U	U	U	D	D	D	D	D	D	U
		mast	P	P	P	P					P	P	P	P
post oak	Quercus stellata	leaf	U	U	U	U	U	D	D	D	D	D	D	U
		mast	P	P	P	P					P	P	P	P
blackjack oak	Quercus marilandica	leaf	U	U	U	U	U	D	D	D	D	D	D	U
		mast	P	P	P	P					P	P	P	P
Hickory	Carya spp.	all	U	U	U	U	U	U	U	U	U	U	U	U
Elm	Ulmus americana	all	U	U	U	P	P	D	D	D	U	U	U	U
Redbud	Cercis canadensis	all	U	U	U	U	U	D	D	D	U	U	U	U

Animal kind: Bobwhite Quail
(F = desirable food, C = desirable cover)
(Refer to bobwhite quail habitat appraisal guides for more specific guidance)

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
big bluestem	Andropogon gerardii	ALL	C	C	C	C	C	C	C	C	C	C	C	C
Indiangrass	Sorghastrum nutans	ALL	C	C	C	C	C	C	C	C	C	C	C	C
Switchgrass	Panicum virgatum	ALL	C	C	C	C	C	C	C	C	C	C	C	C
little bluestem	S. scoparium	ALL	C	C	C	C	C	C	C	C	C	C	C	C
Canada wildrye	Elymus canadensis	ALL	C	C	C	C	C	C	C	C	C	C	C	C
sideoats grama	Bouteloua curtipendula	ALL	C	C	C	C	C	C	C	C	C	C	C	C
blue grama	Bouteloua gracilis													
hairy grama	Bouteloua hirsuta													
tall dropseed	Sporobolus asper	ALL	C	C	C	C	C	C	C	C	C	C	C	C
purpletop	Tridens flavus													
sand lovegrass	Eragrostis trichodes	ALL	C	C	C	C	C	C	C	C	C	C	C	C
purple lovegrass	Eragrostis spectabilis													
Scribner's panicum	D. oligoanthes	SEED	F	F	F					F	F	F	F	F
Carolina jointtail	Coelorachis cylindrica													
blacksamson	Echinacea angustifolia													
ashy sunflower	Helianthus mollis	SEED	F	F	F					F	F	F	F	F
dotted gayfeather	Liatris punctata	ALL	C	C	C	C	C	C	C	C	C	C	C	C
heath aster	Aster ericoides	ALL	C	C	C	C	C	C	C	C	C	C	C	C
goldenrod	Solidago spp.	ALL	C	C	C	C	C	C	C	C	C	C	C	C
sagewort	Artemisia ludoviciana	ALL	C	C	C	C	C	C	C	C	C	C	C	C
fringeleaf ruella	Ruellia ciliosa													
sessile tickclover	Desmodium sessilifolium	SEED								F	F	F	F	F
prairie clover	Dalea spp.	SEED								F	F	F	F	F
lespedeza	Lespedeza spp.	SEED								F	F	F	F	F
catclaw sensitivebrier	Schrankia uncinata	SEED								F	F	F	F	F
leadplant	Amorpha canescens	ALL	C	C	C	C	C	C	C	C	C	C	C	C
poison ivy	T. radicans	SEED	C	C	C	C	C	C	C	C	C	C	C	C
grape	Vitis spp.	ALL	C	C	C	C	C	C	C	C	C	C	C	C
greenbrier	Smilax bona-nox	ALL	C	C	C	C	C	C	C	C	C	C	C	C
Virginia creeper	P. quinquefolia	ALL	C	C	C	C	C	C	C	C	C	C	C	C
buckbrush	S. orbiculatus	ALL	C	C	C	C	C	C	C	C	C	C	C	C
sumac	Rhus spp.	ALL	C	C	C	C	C	C	C	C	C	C	C	C
Jerseytea	Ceanothus americanus	ALL	C	C	C	C	C	C	C	C	C	C	C	C
plum	Prunus spp.	ALL	C	C	C	C	C	C	C	C	C	C	C	C
blackberry	Rubus spp.	ALL	C	C	C	C	C	C	C	C	C	C	C	C
dwarf chinkapin oak	Quercus prinoides	MAST	C	C	C	C	C	C	C	C	C	C	C	C
post oak	Quercus stellata	MAST	C	C	C	C	C	C	C	C	C	C	C	C
blackjack oak	Quercus marilandica	ALL	C	C	C	C	C	C	C	C	C	C	C	C
hickory	Carya spp.	ALL	C	C	C	C	C	C	C	C	C	C	C	C
elm	Ulmus americana	ALL	C	C	C	C	C	C	C	C	C	C	C	C
redbud	Cercis canadensis	ALL	C	C	C	C	C	C	C	C	C	C	C	C

Hydrology Functions: NA

Recreational Uses: Savanna sites offer scenic opportunities for outdoor recreation including photography, trail rides, camping and hunting.

Wood Products: Firewood is the major wood product from this site. This site index is not sufficient to support commercial harvest.

Other Products:

Plant Community Name: Mature Oak Overstory



Plant Community Sequence Number: 2

Plant Community Narrative:

This plant community is composed of an overstory of post oak and blackjack oak. It takes approximately 50 years for the overstory to close once saplings start in the savanna stage. There are occasional elm, hackberry, and hickory. The understory is composed of buckbrush, dwarf chinkapin oak, sumac, and other shrubby woody plants. The grasses include shade tolerant species such as Canada wildrye, stout woodreed and others. Some warm-season grasses occur where sunlight penetrates the overstory. Forbs include ironweed, goldenrod, and others. The soil is covered with a 2 - 6 inch layer of leaf litter. To restore this community to an oak savanna, an integrated treatment with burning, mechanical treatments, spot chemical treatments, and possibly browsing animals can open up the canopy and release warm-season plants. Also, the fire will remove the litter that is suppressing herbaceous production and scar the mature trees, predisposing them to secondary diseases which initiate rot. Cedar can invade the understory and reach tree heights of 20 ft in 15 years. Periodic fires will prevent this.

This plant community has little value for cattle grazing due to lack of forage. Small mammals, deer, and turkeys utilize the acorns and cover afforded by the site.

Soil applied herbicides tend to kill oaks for 15 – 20 years, whereas foliar applied herbicides tend to cause resprouting within 3 – 5 years. Foliar applied herbicides would be more beneficial for deer habitat.

Ground Cover and Structure:

	% ground cover	% canopy 0 - 6"	% canopy 6" - 12"	% canopy 12" - 24"	% canopy 24" - 48"	% canopy 48" - 96"	% canopy 96" +
Trees	2					5	55
Shrubs	1				5	10	
Forbs	1	3	5	8	4		
Grasses	1	3	3	5			

	% ground cover
Litter	75
Cryptogams	NA
Coarse fragments	25
Bare Ground	0

Plant Community Annual Production (by plant type):

Annual Production (lbs./ac)

Plant Type	Low	RV	High
Grass/Grasslike	150	160	170
Forb	280	320	352
Shrub/Vine	280	320	352
Tree	2160	2400	2640
Lichen			
Moss			
Microbiotic Crusts			

Plant Community Composition and Group Annual Production: 3200 pounds per acre

Plant Type - Grass/Grasslike (160 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	ANGE	big bluestem	100	100
1	PAVI2	switchgrass	100	
1	SONU2	Indiangrass	100	
1	SCSC	little bluestem	100	
2	ELCA4	Canada Wildrye	60	60
2	DIOLS	Scribner's panicum	40	

Plant Type - Forb (320 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
3	ASER3	heath aster	100	320
3	SOLID	goldenrod	100	
3	LESPE	lespedeza	100	
3	VEBA	Baldwin's ironweed	100	
3	PPFF	other perennial forbs	100	

Plant Type - Shrub/Vine (320 pound per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
4	TORY	poison ivy	100	320
4	VITIS	grape	100	
4	SMILA2	greenbrier	100	
4	PAQU2	Virginia creeper	100	
4	SYRO	buckbrush	100	
4	RHUS	sumac	100	
4	PRUNUS	plum	100	
4	QUPR	dwarf chinkapin oak	100	

Plant Type - Tree (2400 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
5	QUST	post oak	1800	2400
5	QUMA3	blackjack oak	1500	
5	CATE9	hickory	800	
5	ULAM	elm	500	
5	CECA4	redbud	500	

Plant Type - Lichen not available

Plant Type - Moss- Lichen Not available

Plant Type - Microbiotic Crusts- Lichen not available

Plant Growth Curves

Growth Curve ID: Mature oak overstory

Growth Curve Name: OK84A002

Growth Curve Description: Mature oak overstory with little understory

Jan.	Feb.	March	April	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
0	0	2	10	20	25	15	5	15	5	4	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community: This site offers very little forage for cattle. Deer, turkey, and other wildlife species use the site for mast and cover. Hollow trees provide shelter for small mammals.

Hydrology Functions:

Recreational Uses: Outdoor recreation is the primary use. Enterprises such as paintball, camping, hiking, birdwatching, and hunting are done in this vegetative state.

Wood Products: This site produces mainly firewood products.

Other Products:

Plant Community Name: Oak/Cedar**Plant Community Sequence Number:** 3**Plant Community Narrative:**

This plant community is composed of an overstory of mature post oak and blackjack oak with a midstory of eastern redcedar. Birds sit in the oak trees and through defecation, deposit eastern redcedar seeds into the leaf litter. The leaf litter makes an ideal site for winter germination of the cedar. There is very little herbaceous plant cover. Herbaceous cover is represented by shade tolerant species such as Canada wildrye and Scribner's panicum. Some warm season grasses include little bluestem, purpletop, and big bluestem where sunlight is sufficient. Goldenrod, sagewort, and ragweeds are the main forb components. To return the site to an oak savanna, prescribed burning must be used before eastern redcedar seedlings reach 3-6 ft. tall, which usually takes about three years. This will allow a cool fire that will not significantly damage the oaks. Hand removal of cedar is another option. This site is vulnerable to catastrophic wildfires that will top-kill the oak and destroy structures such as residences and barns.

Ground Cover and Structure:

	% ground cover	% canopy 0 - 6"	% canopy 6" - 12"	% canopy 12" - 24"	% canopy 24" - 48"	% canopy 48" - 96"	% canopy 96" +
Trees	10				10	25	70
Shrubs	5				5	10	
Forbs	1		3	3			
Grasses	1	2	5	5			

	% ground cover
Litter	82
Cryptogams	NA
Coarse fragments	10
Bare Ground	NA

Plant Community Annual Production (by plant type):

Plant Type	Annual Production (lbs./ac)		
	Low	RV	High
Grass/Grasslike	150	160	170
Forb	200	250	300
Shrub/Vine	250	300	400
Tree	2500	4290	5000
Lichen			
Moss			
Microbiotic Crusts			

Plant Community Composition and Group Annual Production: 5000 pounds per acre**Plant Type - Grass/Grasslike (160 pounds per acre)**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	ANGE	big bluestem	100	100
1	PAV12	switchgrass	100	
1	SONU2	Indiangrass	100	
1	SCSC	little bluestem	100	
2	ELCA4	Canada Wildrye	60	60
2	DIOLS	Scribner's panicum	40	

Plant Type - Forb (250 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
3	ASER3	heath aster	100	250
3	SOLID	goldenrod	100	
3	LESPE	lespedeza	100	
3	VEBA	Baldwin's ironweed	100	
3	PPFF	other perennial forbs	100	

Plant Type - Shrub/Vine (300 pound per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
4	TORY	poison ivy	100	300
4	VITIS	grape	100	
4	SMILA2	greenbrier	100	
4	PAQU2	Virginia creeper	100	
4	SYRO	buckbrush	100	
4	RHUS	sumac	100	
4	PRUNUS	plum	100	
4	QUPR	dwarf chinkapin oak	100	

Plant Type - Tree (4290 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
5	QUST	post oak	1800	2400
5	QUMA3	blackjack oak	1500	
5	CATE9	hickory	800	
5	ULAM	elm	500	
5	CECA4	redbud	500	
6	JUVI	eastern redcedar	1890	1890

Plant Type - Lichen

Plant Type - Moss - Not available

Plant Type - Microbiotic Crusts - Not available

Plant Growth Curves

Growth Curve ID: Oak/Cedar

Growth Curve Name: OK84A003

Growth Curve Description: Mature oak overstory with eastern redcedar in the midstory.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
2	3	5	10	18	25	10	5	8	5	4	5

ECOLOGICAL SITE INTERPRETATIONS

Animal Community: This site offers very little forage for cattle. Deer and other wildlife species use the site for some mast. Cover is the main attribute benefiting wildlife. However, with the encroachment of eastern redcedar, wildlife species such as wild turkeys leave the site due to vulnerability to predators. In severe cases with thick cedar, there is an overabundance of cover and many wildlife species will avoid the area. Cattle will avoid the site because of flies and the fact that there are limited summer breezes. Dense cedar will limit grazing accessibility as well. In the winter time, cattle will use the area for thermal cover.

Hydrology

Recreational Uses: Outdoor recreation is the primary use. Enterprises such as paintball, camping, hiking, birdwatching, and hunting occur in this plant community. As the cedar tree cover increases, other uses decrease because of the cover being too thick.

This plant community is a severe fire hazard to housing.

Wood Products: This site produces mainly firewood products. Eastern redcedar can be used for some wood products, but the heartwood produced on this site is generally not of sufficient quality to be significant.

Other: An increase in cedar will aggravate those with allergies during the spring pollination.

Plant Community Name: Thick Cedar



Plant Community Sequence Number: 4

Plant Community Narrative: This plant community is a result of either chemical and/or mechanical treatment with no fire. The removal of the oak releases the eastern redcedar. In the early stages of this vegetation state, warm season grasses with seedling cedar dominate the site. When cedar is less than 50 trees per acre, herbage production is not materially reduced. As time advances, usually about 10 - 15 years, this vegetation state becomes dominated by eastern redcedar. The amount of grass production is a function of cedar coverage. Once cedar reaches about 35%, herbaceous vegetation is sparse. Not only is forage severely reduced, but livestock access to the forage is limiting. In order to change this community to a native rangeland community, prescribed burning on a 3 - 5 year interval is needed. Once cedar gets to be greater than 10' tall, mechanical methods such as clipping, chaining, or dozing will be needed to reduce the canopy. Under severe weather conditions, this vegetative state is subject to catastrophic wildfires that can damage structures such as buildings as well as threaten personal safety.

Ground Cover and Structure:

	% ground cover	% canopy 0 - 6"	% canopy 6" - 12"	% canopy 12" - 24"	% canopy 24" - 48"	% canopy 48" - 96"	% canopy 96" +
Trees	5			35	40	35	30
Shrubs	1				2	5	
Forbs	1		3	3			
Grasses	1	2	5	5			

	% ground cover
Litter	82
Cryptogams	NA
Coarse fragments	10

Plant Community Annual Production (by plant type):

Plant Type	Annual Production (lbs./ac)		
	Low	RV	High
Grass/Grasslike	1000	1520	1700
Forb	200	300	300
Shrub/Vine	50	100	150
Tree	1000	1280	1500
Lichen			
Moss			
Microbiotic Crusts			

Plant Community Composition and Group Annual Production: 3200 pounds per acre

Plant Type - Grass/Grasslike (1520 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	ANGE	big bluestem	400	950
1	PAVI2	Switchgrass	400	
1	SONU2	Indiangrass	400	
1	SCSC	little bluestem	450	
2	ELCA4	Canada Wildrye	60	160
2	DIOLS	Scribner's panicum	100	
3	BOCU	Sideoats grama	200	410
3	BOGR2	blue grama	200	
3	BUDA	Buffalograss	200	

Plant Type - Forb (300 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
4	ASER3	heath aster	100	300
4	SOLID	Goldenrod	100	
4	LESPE	Lespedeza	100	
4	VEBA	Baldwin's ironweed	100	
4	AMPI	western ragweed	100	
4	PPFF	other perennial forbs	100	

Plant Type - Shrub/Vine (100 pound per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
5	TORY	Poison ivy	100	100
5	VITIS	Grape	100	
5	SMILA2	Greenbrier	100	
5	PAQU2	Virginia creeper	100	
5	SYRO	Buckbrush	100	
5	RHUS	Sumac	100	
5	PRUNUS	Plum	100	
5	QUPR	dwarf chinkapin oak	100	

Plant Type - Tree (1280 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
6	CECA4	Redbud	500	
7	JUVI	eastern redcedar	1890	1890

Plant Type - Lichen - Not available

Plant Type - Moss - Not available

Plant Type - Microbiotic Crusts- Not available

Plant Growth Curves

Growth Curve ID: eastern redcedar

Growth Curve Name: OK84A004

Growth Curve Description: Eastern redcedar dominated community.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
2	3	5	10	18	25	10	5	8	5	4	5

ECOLOGICAL SITE INTERPRETATIONS

Animal Community: This site offers very little forage for cattle. Flies are a problem for cattle during the summer. Deer and other wildlife species use the site for thermal cover in the winter. A variety of birds use the trees for perching and to eat the berries. However as the cedar thickens, the diversity of plants decreases, which decreases the diversity of animal usage.

Hydrology Functions:

Recreational Uses: Outdoor recreation is the primary use. Enterprises such as paintball, camping, hiking, birdwatching, and hunting occur in this plant community. Due to the sticky nature of cedar and the heat, summer usage of cedar is limited. This plant community is prone to catastrophic wildfire, which constitutes a danger to housing and personal safety.

Wood Products: Beneficial uses of cedar wood on this site are limited because very little heartwood is produced.

Other: For those with cedar allergies, this vegetative state is very undesirable.

Plant Community Name: Tallgrass/Midgrass



Plant Community Sequence Number: 5

Plant Community Narrative:

A native tall/midgrass plant community results following the removal of woody species with fire, herbicides, biological or mechanical methods. In most cases, combinations of treatments are needed. With soil applied herbicides, regrowth of oak will be suppressed for over 15 years. For other treatments, frequent repeat treatments on a 2 - 3 year interval will be needed to keep the oak from re-dominating the site.

Ground Cover and Structure:

	% ground cover	% canopy 0 - 6"	% canopy 6" - 12"	% canopy 12" - 24"	% canopy 24" - 48"	% canopy 48" - 96"	% canopy 96" +
Trees	1						
Shrubs	1						
Forbs	1	1	3	5	8		
Grasses	1	2	5	15	65	2	

	% ground cover
Litter	60
Cryptogams	
Coarse fragments	20
Bare Ground	10

Plant Community Annual Production (by plant type):

Plant Type	Annual Production (lbs./ac)		
	Low	RV	High
Grass/Grasslike	980	2100	2600
Forb	70	250	400
Shrub/Vine	20	50	100
Tree	50	100	200
Lichen			
Moss			
Microbiotic Crusts			

Plant Community Composition and Group Annual Production: (2500 pounds per acre)**Plant Type - Grass/Grasslike (2100 pounds per acre)**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	ANGE	big bluestem	400	820
1	SONU2	Indiangrass	400	
1	PAVI2	switchgrass	300	
2	SCSC	little bluestem	800	800
3	ELCA4	Canada wildrye	160	160
4	BOCU	sideoats grama	150	320
4	BOGR2	blue grama	150	
4	BOHI2	hairy grama	100	
4	SPASA	tall dropseed	200	
4	TRFL2	purpletop	150	
4	ERTE3	sand lovegrass	100	
4	ERPEP2	purple lovegrass	50	
4	DIOLS	Scribner's panicum	100	
4	COCY	Carolina jointtail	75	

Plant Type - Forb (250 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
5	ECAN2	blacksamson	50	180
5	HEMO2	ashy sunflower	50	
5	LIPU	dotted gayfeather	50	
5	ASER3	heath aster	50	
5	SOLID	goldenrod	50	
5	ARFR4	sagewort	50	
5	RUCI4	fringeleaf ruella	50	
6	DEIN3	tickclover	50	70
6	DALEA	prairie clover	50	
6	LESPE	lespedeza	50	
6	SCHUH2	catclaw sensitivebrier	50	
6	AMPI	western ragweed	100	

Plant Type - Shrub/Vine (50 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
7	TORY	poison ivy	30	50
7	VITIS	grape	30	
7	SMILA2	greenbrier	30	
7	PAQU2	Virginia creeper	30	
8	SYRO	buckbrush	30	
8	RHUS	sumac	30	
8	CEAM	Jerseytea	30	
8	PRUNUS	plum	30	
8	RUBUS	blackberry	30	
8	AMCA6	leadplant	50	
8	QUPR	dwarf chinkapin oak	30	

Plant Type - Tree (100 pounds per acre)

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	QUST	post oak	75	100
9	QUMA3	blackjack oak	75	
9	CATE9	hickory	50	
9	ULAM	elm	50	
9	CECA4	redbud	50	

Plant Type - Lichen - Not available

Plant Type - Moss - Not available

Plant Type - Microbiotic Crusts - Not available

Plant Growth Curves

Growth Curve ID: OK84A005

Growth Curve Name: warm season plants

Growth Curve Description: MLRA 84A Northern Cross Timbers

Jan.	Feb.	March	April	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
0	0	2	10	20	25	15	5	15	5	4	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community: This site offers excellent forage potential for cattle. Deer and other wildlife species use the site for forbs. In the winter, the tall grasses will provide thermal cover for livestock and wildlife. Goats have been used to maintain the woody plants.

Hydrology Functions:

Recreational Uses: Hunting, camping, hiking, bike riding, horseback riding, photography, and other similar activities are the main choices for outdoor recreation.

Wood Products: None

Other Products:

Plant Community Name: Seeded sites**Plant Community Sequence Number:** 6

Refer to Forage Suitability Group

Plant Community Narrative: With mechanical preparation and seeding, this site can support a variety of introduced forages for supplemental pasture. To maintain the introduced plant community, fertilization, weed control, grazing management, and occasionally reseeding will be needed.

SUPPORTING INFORMATION**Associated sites:**

<u>Site Name</u>	<u>Site ID</u>	<u>Site Narrative</u>
loamy prairie	080AY056OK	
very shallow	080AY096OK	

Similar sites:

<u>Site Name</u>	<u>Site ID</u>	<u>Site Narrative</u>
sandy savanna	084AY075OK	
sandy savanna	084AY076OK	
sandy savanna	084AY077OK	
shallow savanna	084BY088OK	

Inventory Data References (narrative):

Information presented here has been derived from limited NRCS clipping data, research from Oklahoma State University, and field observations of range trained personnel. Clipping data is in the NRCS State Office in Stillwater, OK.

Inventory Data References:

<u>Data Source</u>	<u># of Records</u>	<u>Sample Period</u>	<u>State</u>	<u>County</u>
417	1	11/69	OK	Osage
417	1	04/70	OK	Osage
417	1	09/70	OK	Noble
417	1	06/71	OK	Noble
417	2	10/66	OK	Osage
417	1	11/65	OK	Osage
417	1	10/64	OK	Osage
417	1	10/63	OK	Osage

