

Woodland Stewardship Management Plan



BUCKEYE FORESTRY SERVICES LLC

“Representing the best interest of the Forest Landowner since 1979”

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Owner's Information:

Owner: Jerry & Patti McKibben

Signed: *Jerry McKibben Patti McKibben*

Date: 11-8-2018

Case Number: N/A

RECEIVED

NOV 09 2018

Jill Thompson
Athens County Auditor

Preparer's Information:

Prepared by: Tim James

Signature: *Tim James*

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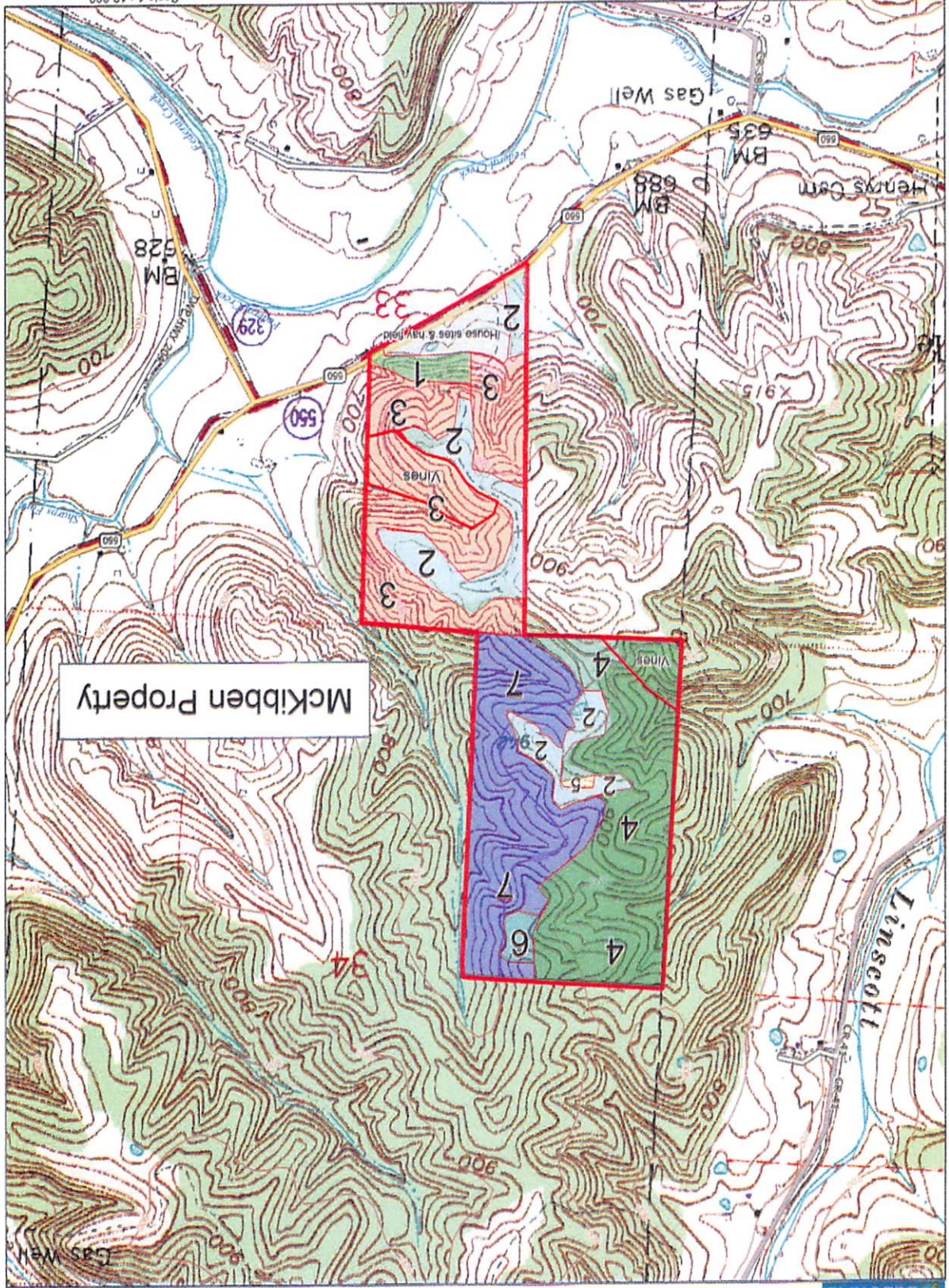
Date: November 8, 2018

This plan is valid for the period beginning November 2018 and ending November 2028.

Plan Status: New

Scale 1 : 12,800
1" = 1,066.7 ft
Data Zoom 14-0

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Woodland Stand Description and Management Recommendations

Stand # 1 - 4 acres

Dominant Species: Walnut, hickory, elm, black locust, others.

Forest Type or Dominant Vegetation: As Listed in Dominant Species

Stand Diameter or Size Class: Small sawtimber with widely scattered medium sawtimber

Stocking Level: Adequate

Stand History: Single tree selection & salvage harvest 2017

Topography: Steep south facing slope.

Invasive plants or insects impacting this stand: Invasive plants include autumn olive (moderately stocked) and a few stems of tree-of-heaven (ailanthus) that were also noticed. Emerald ash borer has eliminated any ash that were found remaining in the overstory.

Present conditions for you to consider: Grapevines are moderately stocked and need cut. Consider an autumn olive and ailanthus eradication program.

<i>Management Recommendations:</i>
Grapevine control.
Consider autumn olive and ailanthus eradication.

Is a timber harvest is recommended? No

Comments: Grapevine Control – Cut the grapevines at chest height and wherever they enter the ground. If the forest floor is shaded, cutting of the vines is all that is needed. If sunlight can reach the forest floor, application of herbicide to the cut stump is recommended. The herbicides Garlon 4 and Banvel work well. Use herbicides year round with exception to spring when sap is high, unless an oil-based herbicide is used. An oil based herbicide, such as Garlon 4, may be used all year round. Apply herbicide directly to the cut surface of the severed vine wherever they enter the ground.

Invasive Species Control – Consult with the service forester before initiating this project. Control Ailanthus by basal application of herbicide only and Bush Honeysuckle by cutting down or girdling all invasive trees and shrubs. Apply herbicide such as Garlon 4, Pathway, Arsenal, Stalker, Chopper, or other acceptable herbicide directly to the stump, or inside the girdle rings. -or- Basal bark spray the bottom 18 inches of the invasive trees and shrubs with a mixture of 20% Garlon, 2% Stalker, and 78% crop oil. Bush Honeysuckle can also be killed by applying a 3% solution of glyphosate based chemical (round-up, or generic equivalent). Simply spray the herbicide solution directly onto the foliage using a hand or backpack sprayer while foliage is on. Honeysuckle leafs out earlier than most native hardwoods so consider spraying during the window of time when the honeysuckle is fully foliated, but native hardwoods are not. Spray during dry days with low wind.

Woodland Stand Description and Management Recommendations

Stand # 2 - 21 acres

Dominant Species: Autumn olive, various hardwoods.

Forest Type or Dominant Vegetation: As Listed in Dominant Species

Stand Diameter or Size Class: Seedling

Stocking Level: Under stocked

Stand History: Old pasture/ag land that was abandoned approximately three years ago.

Topography: Gentle to moderate slopes.

Invasive plants or insects impacting this stand: Autumn olive.

Present conditions for you to consider: Consider autumn olive eradication. Consider a tree plantation.

<i>Management Recommendations:</i>
Consider an autumn olive eradication program.
Consider a tree plantation.

Is a timber harvest is recommended? No

Comments: See stand one comments for autumn olive control.

It may take several decades for this stand to become well stocked if left to regenerate naturally. Establishing a tree plantation will enable it to become fully stocked in a short period of time. White pine is well suited for this project. A 9' by 7' spacing requires approximately seven hundred seedlings per acre.

Woodland Stand Description and Management Recommendations

Stand # 3 - 45 acres

Dominant Species: Red, white, & black oaks, poplar, hickory, others present.

Forest Type or Dominant Vegetation: As Listed in Dominant Species

Stand Diameter or Size Class: Small sawtimber with scattered widely medium sawtimber

Stocking Level: Adequate

Stand History: Single tree selection & salvage harvest 2017

Topography: Ravines and steep slopes.

Invasive plants or insects impacting this stand: Autumn olive is found mostly around the open edges of the stand. Other invasive plants were not noticed but may be present. Emerald ash borer has eliminated any ash that were found remaining in the overstory.

Present conditions for you to consider: Grapevines are widely scattered excepting a 9.5 acre area that is moderately stocked and located on the east side of the stand as delineated on the stand map. Initiate grapevine in the moderately stocked area and consider grapevine control in the rest of the stand. Consider autumn olive control.

<i>Management Recommendations:</i>
Grapevine control (9.5 acres).
Consider grapevine control in remainder of stand.
Consider autumn olive control.

Is a timber harvest is recommended? No

Comments: See stand one comments for autumn olive and grapevine control.

There may be a few grapevines widely scattered grapevines in the remainder of the stand that are affecting crop trees. Consider removing grapevines in these areas, but it is not required.

Woodland Stand Description and Management Recommendations

Stand # 4 - 52 acres

Dominant Species: Red, white, chestnut, & black oaks, poplar, sugar maple, beech, others present.

Forest Type or Dominant Vegetation: As Listed in Dominant Species

Stand Diameter or Size Class Small sawtimber with widely scattered medium sawtimber.

Stocking Level: Adequate

Stand History: Single tree selection & salvage harvest 2017

Topography: Ravines and steep slopes.

Invasive plants or insects impacting this stand: Invasive plants include scattered autumn olive and one area where a few stems (seedling/poletimber size) of tree-of-heaven (ailanthus) were noticed. Emerald ash borer has eliminated any ash that were found remaining in the overstory.

Present conditions for you to consider: Grapevines are widely scattered excepting a 4.5 acre area that is moderately stocked and located in the southwest corner of the stand as delineated on the stand map. Initiate grapevine control in the moderately stocked area and consider grapevine control in the rest of the stand. Consider autumn olive & ailanthus control.

<i>Management Recommendations:</i>
Grapevine control (4.5 acres)
Consider grapevine control in remainder of stand.
Consider autumn olive & ailanthus control.

Is a timber harvest is recommended? No

Comments: See stand one comments for autumn olive and grapevine control.

There may be a few grapevines widely scattered grapevines in the remaining acreage of the stand that are affecting crop trees. Consider removing grapevines in these areas, but it is not required.

Woodland Stand Description and Management Recommendations

Stand # 5 - 1 acres

Dominant Species: White pine

Forest Type or Dominant Vegetation: White pine plantation.

Stand Diameter or Size Class: Small sawtimber.

Stocking Level: Well stocked.

Stand History: Planted

Topography: Gently sloping

Invasive plants or insects impacting this stand: None found.

Present conditions for you to consider: Nothing at this time.

<i>Management Recommendations:</i>
None at this time.

Is a timber harvest is recommended? No

Comments: There is not enough pine to justify a commercial harvest.

Woodland Stand Description and Management Recommendations

Stand # 6 - 2 acres

Dominant Species: Red Pine

Forest Type or Dominant Vegetation: As Listed in Dominant Species

Stand Diameter or Size Class: Small sawtimber

Stocking Level: Over stocked

Stand History: Planted

Topography: Gently sloping

Invasive plants or insects impacting this stand: None found.

Present conditions for you to consider: Consider a thinning or leave alone.

<i>Management Recommendations:</i>
Consider thinning or leave alone.

Is a timber harvest is recommended? Yes

Comments: Cut smaller diameter and unhealthy trees, leaving a spacing of the remaining trees approximately 16 feet in distance apart or leave the stand alone. There is not enough pine to justify a commercial harvest.

Woodland Stand Description and Management Recommendations

Stand # 7 - 42 acres

Dominant Species: Northern red, white, & black oaks, hickory, others present.

Forest Type or Dominant Vegetation: As Listed in Dominant Species

Stand Diameter or Size Class: Small sawtimber with widely scattered medium sawtimber

Stocking Level: Adequate

Stand History: Single tree selection & salvage harvest 2017

Topography: Ravines and steep slopes

Invasive plants or insects impacting this stand: Autumn olive is lightly scattered throughout the stand. Emerald ash borer has eliminated any ash that were found remaining in the overstory.

Present conditions for you to consider: Consider controlling grapevine that were found widely scattered. Consider autumn olive eradication.

<i>Management Recommendations:</i>
Consider grapevine control.
Consider autumn olive eradication.

Is a timber harvest is recommended? No

Comments: There may be a few grapevines that are affecting crop trees. Consider removing grapevines in these areas, but it is not required.

See stand one comments for autumn olive and grapevine control.

Stand Description

Stand # House sites & hay field - 8.11 acres

Management Activity Schedule

Year(s) Suggested	Mgmt. Unit	Required Task?	Acres	Recommendations
2018	All	<input checked="" type="checkbox"/>	All	Establish and maintain permanent boundary markers.
2019-2020	3,4	<input checked="" type="checkbox"/>	14	Grapevine control as delineated on the map.
2021-2028	1,2,3,4,7	<input type="checkbox"/>	164	Consider autumn olive & ailanthus eradication.
2021-2028	1,2,3,4,7	<input type="checkbox"/>	150	Consider grapevine control.
	6	<input type="checkbox"/>	2	Consider thinning or leave alone.
		<input type="checkbox"/>		
		<input type="checkbox"/>		
		<input type="checkbox"/>		
		<input type="checkbox"/>		
		<input type="checkbox"/>		
	Whole Property	<input checked="" type="checkbox"/>	Next Site Visit – Woodland reviews are recommended at least once every five years, and plan updates once every ten years (to continue CAUV), based upon the date of the last woodland evaluation conducted by your forester	

Before entering a timber sale agreement, or conducting other forestry work that is not listed in your activity schedule, contact your forester first to ensure compliance with your approved woodland stewardship management plan

Addendums

Woodland Resource Descriptions

General Soils Information – a general description of the soil type(s) and the general productive capacity of the soil:

Soil Type(s): See Map Unit Legend.

Soil Drainage Class: Moderately well drained (Brookside & Guernsey Soils), Well drained (Elba, Upshur, Vandalia, & Westmoreland Soils)

Site Class: (using Woodland Productivity): Northern red oak ranges from 65 to 86. Poplar ranges from 76 to 96 depending on soil type. Site index indicates the height that a tree may reach on a given soil with fifty years of growth.

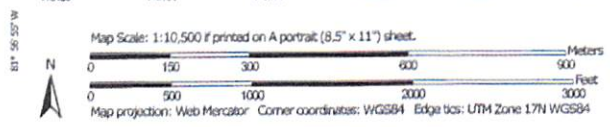
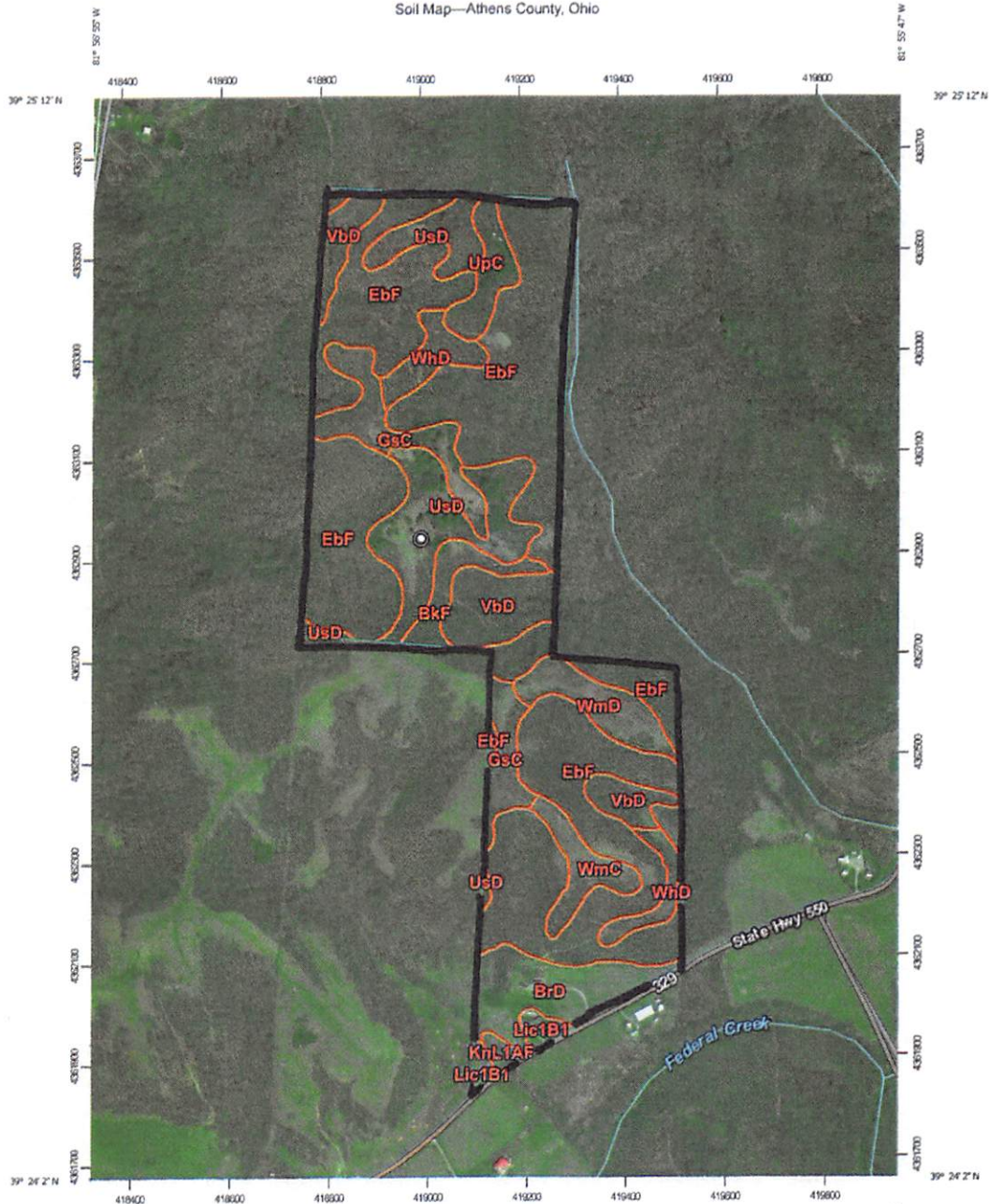
General Description of Main Soils: See "Map Unit Legend" for a general description. Depth to first restrictive layer is as follows: Brookside and Vandalia Soils are greater than 79 inches; Elba soil is 42 inches; Upshur soils are 60 inches; Westmoreland Soils are 45 inches.

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Also see the "Map Unit Legend".

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BkF	Berks-Westmoreland silt loams, 40 to 70 percent slopes	6.4	3.5%
BrD	Brookside silt loam, 15 to 25 percent slopes	10.7	5.8%
EbF	Elba-Brookside-Berks complex, 40 to 70 percent slopes	97.7	52.8%
GsC	Guernsey silt loam, 8 to 15 percent slopes	12.1	6.5%
KnL1AF	Kinnick-Lindsay silt loams, 0 to 3 percent slopes, frequently flooded	0.9	0.5%
Lic1B1	Licking silt loam, 2 to 6 percent slopes	1.9	1.1%
UpC	Upshur silty clay loam, 8 to 15 percent slopes	4.7	2.5%
UsD	Upshur-Elba silty clay loams, 15 to 25 percent slopes	19.5	10.6%
VbD	Vandalia-Brookside complex, 15 to 25 percent slopes	13.2	7.1%
WhD	Westmoreland-Guernsey silt loams, 15 to 25 percent slopes	6.7	3.6%
WmC	Westmoreland-Upshur complex, 8 to 15 percent slopes	4.8	2.6%
WmD	Westmoreland-Upshur complex, 15 to 25 percent slopes	6.4	3.5%
Totals for Area of Interest		185.0	100.0%

Soil Map—Athens County, Ohio



Timber Information - a general description of the timber characteristics of quality and potential:

Timber production is practical for this property. The woodlands are stocked with oak species, hickory, poplar, sugar maple, and others that are valuable wood products and will provide future income. Timber stand improvement (TSI) management practices such as grapevine control will enhance quality & value of your timber resources over time. The selection/salvage harvest that occurred on the property in 2017 has allowed for improved spacing of trees, and removed some of the culls, damaged and diseased trees. This action will allow for improved growth rates and restore the health and vigor of the woodland.

Wildlife – a general description of the wildlife habitat quality and potential:

The woodland is well suited for providing habitat for deer, turkey, squirrel, and grouse. Maintaining of the food plots you have established has enhanced the food source for deer on your property as well as created bugging areas for turkey and grouse. Establishing such food sources on the property, promotes the ability of wildlife to use the woodland for extended periods of time.

Keep in mind that all habitats don't necessarily have to be present on your property. Your neighbor's land may offer a habitat type different than what is available in your forest. You can extend habitat benefits using complimentary cover types beyond your boundaries.

Water - a general description of the water resources on the property:

Ravines and two ponds located on the property will provide a year-round source of water for wildlife. It should be noted that the 2017 timber harvest installed water bars on skidding trails. This water control measure will continue to prevent the movement of sediment from the skid trails and protect the water course on the property.

Best Management Practices – maintaining the integrity and productivity of woodland sites:

In the future, should a timber harvest occur on your property, Best Management Practice guidelines, as recommended by the Ohio Division of Forestry, should be followed and required by specific provision in a Timber Sale Contract.

Logging and skid road control will be exercised, and their location restricted where specific erosion problems are anticipated. When possible, they will follow already established routes. Every effort will be made to confine the harvesting to as few skid trails as possible. Log landings will be subject to the same guideline, restricting both location and number where necessary. Water bars will be constructed in skid roads as necessary, and log landing and skid roads will be re-graded. Seeding of skid roads and log landings will also be required and specified by the contract.

The watershed values of specific stream drainages will be protected by contract provisions restricting logging traffic in or across them, or felling trees into them.

Forest Health – a general description of the health of the woodland:

White oak is in decline. Excluding ash, remaining tree species are in good health. The 2017 single tree selection/salvage harvest has reduced stocking and competition. This will allow for improved growth of the residual stands and that promotes their size development while restoring health and vigor, helping to insure a productive woodland for the future.

Grapevines were observed that would affect future crop trees. It should be noted, however, that grapevines are part of a forest ecosystem: keeping selected vines may be considered a part of maintaining overall forest health, wildlife habitat and species diversity.

Autumn olive was found scattered in most stands and a few stems of tree-of-heaven (ailanthus) were observed. Overall these invasive plants have had limited affect at this time, however, they will become problem as time passes. An eradication program should be implemented to reduce their competition with desired tree species and to prevent further spread into your woodlands. After eradication, future monitoring for the invasion or spread of autumn olive and ailanthus as well as bush honeysuckle and other invasive plants should be employed and eradicated if found.

The emerald ash borer has virtually eliminated any ash found in the overstory. There are other invasive insects such as the asian long horned beetle and others that could pose a future threat to the woodland. The landowner should continue to monitor the woodland for potential health problems and stay informed of the possibilities of invasive insects being located in the general area. The following websites should be checked periodically for the most up-to-date information on the emerald ash borer, long horned beetle and others:

<http://www.invasivespeciesinfo.gov/animals/asianbeetle.shtml>

<http://www.agri.ohio.gov/eab>

<http://www.emeraldashborer.info/>

<http://www.ohiodnr.com/forestry/health/eab.htm>

Wetlands – a general description of any wetland resources and/or vernal pools:

Wetlands are extremely important for water quality, and they provide unique habitats for fish and wildlife. They are an important forest resource component for overall health of the forest ecosystem. Ephemeral or seasonal wetlands - also called vernal pools - are typically small in size, and tucked within the forest cover. Vernal pools periodically dry up and do not contain fish. This drying may occur annually or just during drought years. However, these ephemeral pools provide unique habitat for amphibians like salamanders and frogs, as well as many other species of wildlife. Many landowners find that wetlands improve the aesthetics and overall enjoyment value to their land. It is very important to protect permanent and ephemeral wetland areas for the health of the forest and the environment.

Threatened & Endangered Species – considerations for threatened and endangered species, including the direct relationship with biological diversity:

No specific threatened or endangered species were noted within the property, but a complete biological survey was not conducted. Some threatened or endangered species found in Ohio include the Timber rattlesnake, the Northern Harrier, the Indiana bat, and the American Burying Beetle. Habitat requirements for threatened and endangered species may or may not be found on this forestland; such species have certain habitat requirements. Specific information on threatened or endangered species may be obtained by contacting the Ohio Department of Natural

Resources Division of Natural Areas and Preserves directly to access the Natural Heritage Database.

ODNR – Ohio Division of Wildlife
2045 Morse Road, Bldg. G - 3
Columbus, OH 43229-6693
Phone: 614/ 265-6453

Archeological/Historical Resources – a general consideration and description of such resources:

Historical and cultural resources are non-renewable and can never be replaced once destroyed. These resources provide us a unique glimpse into the past and a look at the people and how they cared for the land. Good stewardship involves recognizing these resources and protecting them. These resources should be conserved whenever possible when they are present on the property.

Recreation – current and potential recreational activities at property:

Each forest has a unique history and character...and this will continue to build as good stewardship continues to be followed. This property can be used for hunting, and wildlife watching. Many landowners find enjoyment in doing improvement work in their woods. Others find pleasure in watching birds or wildlife. Some folks gain gourmet foods from the woods, gathering fruits, nuts, or wild mushrooms. Flowering trees like dogwood, redbud and serviceberry, whenever present, add to the beauty of the forest. Maintaining some trails will improve access and enhance the opportunities for use of the property. A walk in the forest provides a time of learning but it can also be a time to relax. The woodlands can be a quiet place of solitude after a busy day at work, or anytime for that matter.

Maintaining the skid trails will enhance access and use of the property for hiking, hunting, and bird and wildlife viewing. This may require periodic mowing.

Aesthetics – current or future aesthetic considerations for the woodland:

Forest aesthetics is often associated with older, more mature forests. However, it also has been said that beauty is in the eye of the beholder. Many folks enjoy mature forests with big trees...yet other folks see beauty in a young forest that is vibrant with the songs of early successional forest songbirds, or where they can take their favorite bird dog for an autumn hunt for ruffed grouse. Forest stewardship management addresses these and other various aesthetic tastes, and may weigh in visual goals of the neighbors. When weighing aesthetic goals, consider as a "group" 1) visual aesthetics, 2) the aesthetics of a dynamic functioning forest ecosystem, and 3) the particular wildlife species you hope to encourage at your property.

Other Resources – a general description of any other notable woodland resources:

Associated forest resources vary somewhat from woodland to woodland, but typically include a variety of herbaceous plants present within the woodland or old fields within a property. Spring, summer, and fall wild flowers provide non-timber benefits to anyone who takes the time to enjoy the blossoms. Along with the flowers, there is a vast array of insect life - pleasant and sometimes unpleasant - that is essential to good ecosystem function. Native and non-native honey bees and butterflies are examples of beneficial insects. Medicinal shrubs and herbs and maple syrup are more examples of other beneficial forest resources.

Fire – identify hazards, firebreaks, safety zones, note dead trees from insects or disease, etc.:

Properties and homes in Ohio are not immune to the risks of fire and fire-related damage. Spring and fall are Ohio's main "fire seasons". A step one may take to protect one's forest is to have a system of paths that may double as firebreaks. For the home site, maintain good access for fires vehicles, create a defensible space around your home and outbuildings by removing flammable materials as brush, leaves, sticks, and twigs; remove these from roofs and gutters too. Landscape around buildings with less flammable plants and materials, avoid evergreens by or near the home, keep an outdoor water source, and avoid outdoor burning. For more information on outdoor fire safety and fire safety around your home, Firewise brochures are available from the Ohio Division of Forestry (toll-free 877-247-8733. You may also contact your local fires department with questions about Firewise and home safety regarding wildfire.

Ohio Fire Laws: ORC 1503.18 regarding kindled fires prohibits outdoor open burning statewide in unincorporated areas during the months of March, April, May, October and November between the hours of 6:00 am and 6:00 pm. ORC 1503.18 is administered by the Ohio Division of Forestry; call toll-free 877-247-8733 with questions. OAC 3745.19 regarding outdoor burning is administered by the Ohio Environmental Protection Agency (EPA); EPA notification is required for many types of open burns in Ohio. Call 614/644-2270 with questions, or visit www.epa.ohio.gov/dapc/general/openburning.aspx.

As a result of the timber harvesting, the property has some roads that provide excellent access to almost all parts of the property. These should be maintained in an open condition so that they can serve as firebreaks as well as access should there be an outbreak of fire.

Carbon Cycle – Healthy, sustainably managed forests can help to reduce atmospheric carbon:

When you as a forest landowner choose to maintain your forest land rather than convert it to a non-forest use, you are making a significant contribution to the carbon sequestration equation; all forests sequester carbon, but a healthy forest sequesters more carbon. Forest landowners can enhance carbon sequestration on the property by conducting various silvicultural practices that enhance the forest's ability to sequester carbon, and by re-establishing woodland on non-forested land.

Active forest managers may find opportunities for carbon trading and participation in ecosystem service markets. For further information about the requirements of forest carbon sequestration projects and carbon markets, can be found at the web sites for the American Carbon Registry (ACR); the Chicago Climate Exchange (CCX), the Climate Action Reserve (CAR); and the Voluntary Carbon Standard (VCS). Also, there are many organizations (both for- and non-profit, mostly online) that offer carbon credits to individual consumers, families, companies, etc. Reference to these listed organizations does not constitute an endorsement.

Forestry Terms – Forestry terminology for landowners, professional foresters, and others:

Consistent forestry terminology is essential to anyone interested and involved in the science, management, and conservation of forests. The Society of American Foresters (SAF) offers a great resource for such forestry terminology: "The Dictionary of Forestry". This dictionary is an excellent tool available for anyone to learn more about the language used in forestry. The dictionary provides precision, clarity, and consistency in communication of forestry terms. You may access "The Dictionary of Forestry" for free at SAF at www.dictionaryofforestry.org. If internet access is not available, one may purchase a printed version from SAF (toll free 866-897-8760).

References:

Geospatial Data Gateway, Natural Resources Conservation Service, U.S. Department of Agriculture; Online at; <http://datagateway.nrcs.usda.gov/GatewayHome.html>.

Soil Data Mart, Natural Resources Conservation Service, U.S. Department of Agriculture; Online at <http://soildatamart.nrcs.usda.gov>

Forest Inventory Analysis National Program, U.S. Forest Service; Online at <http://fia.fs.fed.us/tools-data>

Forest Soils Handbook for Ohio, Ohio Department of Natural Resources, Division of Forestry. December 1987.