

The stewardship goals for this property are:

- **To improve timber production**
- **To improve wildlife habitat**
- **To improve forest health**

PROPERTY OVERVIEW

PROPERTY ACCESS AND FOREST ROADS & TRAILS: This property is accessible from the north side of 136th St. via the paved driveway. Woodland access may be limited based on recent rainfall, but a trail system loops around the woods.

BOUNDARY MARKINGS: The west and south boundaries currently have standing fence on or near the legal boundary. The north and east boundaries have some fallen fencing and other evidence of the approximate legal boundary location.

Marking your property lines is highly beneficial for forest management activities and for protecting your property. As of July 1, 2018, it is considered a legal form of a “no trespassing” sign to have a stripe of purple paint on trees and posts near the boundary. The markings must be between 3-5 feet from the ground and must be clearly visible. Consult your direct neighbors when marking your property lines. For more detailed information go to this link:

<https://www.purdue.edu/fnr/extension/blog/2018/07/20/what-can-you-do-with-purple-paint/>

TOPOGRAPHY AND SOILS: This property is located within the Central Till Plains natural region of the state. Topography is flat with some areas that hold water for brief durations. Soils on site are well suited for timber growth. Soils present include Brookston silty clay loam (Br, poorly drained, 0-2% slopes) and Crosby silt loam (CrA, somewhat poorly drained, 0-2% slopes, fine-loamy subsoil). For more detailed soils information, please refer to the Web Soil Survey which is maintained by the USDA Natural Resources Conservation Service (NRCS).

WATER RESOURCES: Forest and natural areas like this one are extremely good at filtering pollutants (fertilizers, pesticides, sediment, etc.) from flowing water. They also do a great job holding the soil in place along streams and on steep slopes. This prevents severe erosion and loss of your topsoil. By following basic Best Management Practices (BMP's), you can reduce the amount of pollutants and sediments entering nearby streams and rivers. BMPs are especially important during timber harvesting operations. For more information on BMPs, go to www.DNR.in.gov/forestry.

PAST USE OF PROPERTY: This property has been maintained as a woodland for quite a while. Evidence of open-grown, overmature oaks and old fencing suggest that this woodland was once used as a livestock pasture. In the early fall of 2019, the second house that was in the northeast part of the property was demolished and removed from the property. An assortment of trees,

wildflowers, forbs, and grasses were planted in the old home site. Due to the presence of Emerald ash borer in the area, ash trees that are dead and dying have been actively removed from the property and donated as firewood to a local church mission to provide fuel for less fortunate families through the winter.

PREHISTORIC & HISTORIC FEATURES: Most land parcels within the State of Indiana may be environmentally suitable to contain archaeological deposits but have not been investigated in order to verify the presence or absence of cultural deposits. Indiana Code 14-21-1 provides protection to archaeological sites and cemeteries on both private and public land by prohibiting digging anywhere with the intent to recover artifacts and disturbing the ground within 100 ft. of a cemetery without an approved plan from the IDNR – Division of Historic Preservation and Archaeology. In addition, if archaeological artifacts (an object made or modified prior to 1870), features (non-portable evidence of human occupations, such as a well), or human remains are uncovered during ground disturbing activities, state law requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. Landowners who need to report archaeological sites or who are interested in learning more about cultural sites should contact the Division of Historic Preservation and Archaeology at 402 W. Washington St., Rm. W274, Indianapolis, IN 46204, 317-232-1646, dhpa@dnr.in.gov, or at <http://www.in.gov/dnr/historic/index.htm>.

UNIQUE ANIMALS, PLANTS, & HABITATS: The DNR Natural Heritage Data Center is a program designed to tract Indiana's special plants, animals, and natural communities. It was contacted on the date this plan was written and there were no recorded rare plants, wildlife, or unique communities on or in the immediate vicinity of your property. This does not eliminate the possibility of species of concern existing on your property. Often, features on private lands, in particular, are missing from the database. You can find more information on this subject at the Division of Nature Preserves' website: <http://www.in.gov/dnr/naturepreserve/4725.htm>

WILDLIFE RESOURCES: This property provides shelter and food for many types of wildlife. White-tailed deer is one species that is abundant in this area. The large numbers of deer can have a negative effect on forest regeneration since they eat nearly all of the seed produced and seedlings that manage to germinate. Managing the deer herd, especially the doe population, will help keep the population at a sustainable level.

EXOTIC AND INVASIVE SPECIES CONCERNS: There is a growing population of invasive species on this property. Species present include Asian bush honeysuckle, multiflora rose, autumn olive, wintercreeper, Callery pear, Oriental bittersweet, and white mulberry. It is extremely important to monitor your forest for these species and prevent them from becoming established. Otherwise, these species will take over the site, replacing high quality native species.

Bush honeysuckle is an invasive exotic shrub that is extremely shade tolerant and will spread throughout the entire understory of this stand. As it spreads, it will create a very thick canopy that will shade out the forest floor making it nearly impossible for native trees to grow. As the larger trees die out over time, there won't be any small trees to replace them.

Multiflora rose is an invasive exotic shrub that readily spreads through open areas. It is extremely thorny and birds spread it widely. If it is left to grow, it will spread throughout the understory of this stand making it extremely difficult to access to the property or for trees to regenerate. Eliminating it from the property will allow the native plants to germinate and grow.

Autumn olive is an invasive exotic shrub that tends to take over open areas like pastures or grasslands. As it spreads, it will create a very thick canopy that will shade the ground, making it nearly impossible for native plants to grow. Over time, this shrub can change a grassland into a shrubland.

Winter creeper is an invasive exotic perennial vine that was commonly used as a ground cover in landscaping. It is capable of growing in a wide variety of soil and sunlight conditions which gives it a competitive advantage in many habitats. Over time it will replace all understory plant species and form a carpet of vines. It has a very waxy, evergreen leaf that can be difficult to penetrate with herbicides.

Callery Pear is an invasive exotic tree that can spread rapidly in open areas. It is a common ornamental tree in urban areas. Birds are known to disperse the seeds in their droppings. It can become established and quickly take over areas with plenty of sunlight including grasslands, shrublands and forest understories. Given enough time, this invasive tree can completely dominate a site and prevent any native plants from growing.

Oriental bittersweet is an invasive exotic vine that tends to grow into the canopy of trees. When it gets into the canopy, the vine spreads out over the trees leaves and shades the tree. This stunts the trees growth and can eventually kill the tree. The vines will eventually create a thick matting in the canopy. This thick matting will collect snow and ice during winter and cause the trees to break. Then the thick vine matting will fall to the forest floor and prevent anything from growing due to lack of sunlight. It will then spread into the adjacent trees.

White mulberry is an invasive exotic tree that was introduced to North America in the 1600s. It is ubiquitous across the eastern U.S. It is known for dominating disturbed landscapes as well as fence rows and woodland edges. White mulberry's glossy leaves can help distinguish it from our native Red mulberry.

CONSERVATION-BASED ESTATE PLANNING: The first step to ensuring the personal and family legacy of your land is to talk about its future. This includes the co-owners, heirs, or others affected by the transfer of ownership. Common legacy tools include Family Partnerships; Gift or Sell to Heirs; Land Trusts; Last Will and Testament; Limited Liability Company (LLC); and Conservation Easement among others. Each method of transfer has its advantages and drawbacks. Discussion of these tools with the future owners is necessary to ensure the land is conserved for future generations.

FOREST RESILIENCE AND CARBON SEQUESTRATION: Harvesting and regenerating forests can also result in net carbon sequestration in wood products and new forest growth.

AREA DESCRIPTION AND MANAGEMENT RECOMMENDATIONS

RESOURCE DESCRIPTION: This woodland hosts a variety of native tree species including pin oak, bur oak, shagbark hickory, bitternut hickory, American basswood, black cherry, black walnut, hackberry, silver maple, sugar maple, Ohio buckeye, musclewood, paw paw, and other assorted species. This is a mixed hardwood forest stand, and it is uneven-aged in structure. The timber quality of the trees in this stand is ok. This stand is well stocked with around 80-100 average basal area per acre. Most of the trees are tall and straight with few lower branches. These characteristics correspond to higher value timber. Some of the older trees, however, tend to have many large lower branches and appear to be hollow and/or crooked. These trees have limited value as timber though they do produce large amounts of seed for wildlife and for tree regeneration.

The overstory trees in this stand range from post to large sawtimber sizes. Due to ash falling out of the stand the estimated average DBH is in the pole-small sawtimber size range. Common overstory species include basswood, hickories, oaks, and maple. The oak are well represented in the overstory at this time, however, the younger cohorts are lacking any substantial number of oak trees. If the current overstory oaks are allowed to fade out of the stand without producing any regeneration first, then oak will disappear from the stand. Bur, swamp white, shumard, and pin oaks would thrive on this site, providing a great food source for wildlife while also producing valuable timber.

The midstory is made up of sugar maple, basswood, hickories, walnut, and other assorted species. It is highly beneficial to manage the species composition of the midstory and understory now so that the most desirable trees can be ready to grow into canopy gaps as they appear. These trees can be desirable for preservation, timber, wildlife habitat, or aesthetic values.

The understory of this stand is heavily shaded in most areas. Because of this, common woody species in the understory of this woodland include maples, hickories, ash, and spicebush. There is a good presence of native herbaceous plants as well. The invasive cover on this property is negatively affecting the quality of the habitat by displacing native plant species. Invasive cover varies in intensity across the property but is generally worse on the south end and in canopy openings where sunlight is present on the forest floor.

In many areas, the trees are competing heavily with each other for resources including water, nutrients, and especially sunlight. This competition is having a negative effect on tree growth, seed production, and the overall health and vigor of the stand. As the current overstory trees disappear from the stand, whether through harvesting or natural means, the current midstory and understory trees will replace them. A dense canopy in this stand will make it impossible for shade intolerant species like oak, walnut, cherry, and tulip to regenerate on this site. Instead, shade tolerant species like sugar maple, buckeye, and paw paw are taking over the understory. Over time, the shade intolerant overstory trees will die off and the shade tolerant species will take their place. This will have a negative impact on tree diversity, timber value, and wildlife value of the site.

DESIRED FUTURE CONDITION:

The desired future condition is to sustainably manage this stand for hardwood timber production while maintaining high quality wildlife habitat.

ACTIVITIES TO ACHIEVE DESIRED FUTURE CONDITION:

Create and Maintain Roads and Trails: Establishing and maintaining a network of roads and trails in this stand will make maintenance and enjoyment much easier. The trails could be anything from simple walking paths, somewhat wider trails for ATV's, or roads suitable for four wheeled drive vehicles. These trails will allow you to easily access your property, which will make working on it and enjoying it much easier.

Avoid making trails in perpetually wet areas. This can lead to rutting and severe erosion. Also avoid using heavy equipment on this site unless the ground is hard and dry or frozen.

Exotic Removal: It is highly recommended that the invasive plant populations in this woodland be removed as soon as possible. Invasive removal will improve the quality of this habitat for wildlife and for timber management. It is very important to learn how to identify the species you are targeting for removal. Generally, it is in your best interest to remove the larger seed-producing invasives first. However, it may be helpful to get started by controlling some of the less infested areas so that you can get a feel for what this work requires from you. Always check back on treated areas to ensure that your efforts were successful. Invasive removal is a process that often takes multiple years to complete.

Starting treatment in either early spring or late fall when all of the native species are dormant would be ideal. Begin your work by starting in one corner of the property and working in a grid-like manner across all infested areas. Be thorough with your work and don't be discouraged if you need to go back for plants that were missed. This is a normal part of the treatment process even for professionals.

To kill plants larger than chest-high, cut the stumps near the ground and treat the live portion of the stump (cambium) with herbicide. Cut-stump treatments can be done year round, but are often done in the cooler months by professionals. The smaller invasives can generally be pulled if they are less than waist high. However, certain species have characteristics that can make this difficult. Additionally if you have a large population of small plants this can be exhausting work. Foliar spraying the smaller bushes with herbicide is often the least demanding option. Foliar treatments can often be done as long as the plant has a live leaf area that can be sprayed.

Care should be taken with any herbicide product that is used. It is highly recommended that you read and follow the product label for each individual herbicide that is utilized. Please be sure to follow the labels on these herbicides closely since improper application of these chemicals in your woods can damage your property and even your neighbors' properties.

It is extremely important that the exotics are removed from this site **BEFORE** any thinning or harvesting is done. Otherwise, the increased sunlight in the understory will promote the spread of the exotics, making it even more difficult to remove them from the site. After invasive species control work is finished the expected invasive cover should be <5% on any

treated acre. If you have any questions or need any tips on how to approach invasive removals please contact your local District Forester. If you do not wish to do the work yourself, you can always hire a professional forester or other contractor to help you eradicate invasive species.

Timber Stand Improvement: The trees in this stand are competing fairly heavily with each other for available resources, including water, nutrients and especially sunlight. This competition is having a negative effect on tree growth, hard mast (nut) production, and quality of habitat.

TSI is the process of selecting future “crop” trees and then deadening the lower quality trees that are competing with them. It’s very similar to weeding a garden. Removing the weeds will allow your vegetables to grow much faster and produce more fruit. The same applies to trees. Removing lower quality trees will allow the higher quality trees to grow faster and produce more seed.

If nature thins this forest over time, the lower quality trees tend to slow the growth of the desirable trees. The intensity of this work should vary across the property. Some areas will need more work than others, and it is likely that some areas won’t need much work at all. Having a forester choose which trees to keep and which to deaden will ensure that the forest is growing well and any future harvest will happen sooner rather than later. TSI on this property should remove a minimum of 10 basal area per acre over 11.44 acres.

Get Classified: Lands enrolled in the Classified Forest and Wildlands Program received a significantly lowered property tax assessments, periodic forester inspections, and an option to participate in and sell forest products as being ‘green certified’. In return, you agree to care for the land and its resources according to program standards and the approved plan tailored to your objectives and property resources. There are 12.24 acres within this property that can be classified at any time. An application has already been processed and Recorded at the County Courthouse.

In the case of storm, fire, pest outbreak, or other widespread damage, consult with your forester to adjust management activities and recommendations to put the property back on track to meet goals.

CONTACTS

This plan offers general guidelines to manage your natural resources and some recommend or required action to take. The use of a professional forester is encouraged as you undertake significant or unfamiliar land management actions. This is especially true with timber resources, where missteps can have consequences lasting decades. A list of consultant foresters and industry foresters is available at <http://www.findindianaforester.org/>

Wildlife biologist can help refine plans and provide detailed guidance where needed for specific wildlife issues and habitats of interest. You can reach the District Biologist for your county, Megan Dillon at 765-320-0517.

MANAGEMENT PROJECT SUMMARY

SCHEDULED YEAR	AREA NAME or NUMBER	PROJECT DESCRIPTION	ACRES	Importance
2020-2022	Whole property	Invasive removal	12.24	High
2020	Woods	TSI	11.44	Medium
				N/A
				N/A
				N/A

ADDITIONAL RESOURCES:

The links listed below will provide more detailed information about subjects listed in this plan.

- SICIM Calendar of Control
 - o <https://static1.squarespace.com/static/559d59d6e4b03b77d9cd5e00/t/5ceee8d27817f7ca099066b5/1559161042849/Calendar+of+Control+2019+Landscape.pdf>
- Bush Honeysuckle Fact Sheet – IPSAWG
 - o www.in.gov/dnr/files/Bush_Honeysuckle.pdf
- Multiflora Rose Fact Sheet – NPS
 - o https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_018028.pdf
- Autumn Olive Fact Sheet – IPSAWG
 - o www.in.gov/dnr/files/Autumn_Olive.pdf
- Oriental Bittersweet Fact Sheet – IPSAWG
 - o www.in.gov/dnr/files/Oriental_Bittersweet.pdf
- Winter Creeper/Climbing Euonymus Control – USFS
 - o <https://mdc.mo.gov/sites/default/files/downloads/WinterCreeper.pdf>
- Callery Pear
 - o <http://niipp.net/files/niipp/files/2011/01/Callery%20pear%20homeowners%20fact%20sheet%20FINAL.pdf>
- Why Should I Care About Invasive Plants? – Booklet
 - o <http://bugwoodcloud.org/mura/mipn/assets/File/InvasivesBrochure.pdf>
- Classified Forest and Wildlands Stewardship Note
 - o <http://www.in.gov/dnr/forestry/files/fo-ClassifiedForestBrochure.pdf>
- FNR-IDNR-414 Forest Improvement Handbook
 - o <https://www.extension.purdue.edu/extmedia/FNR/FNR-IDNR-414.pdf>
- The Consultant Forester – Stewardship Note
 - o www.in.gov/dnr/forestry/files/theconsultantforester.pdf
- Directory of Professional Foresters
 - o <http://www.findindianaforester.org/>

ACKNOWLEDGEMENTS

I have reviewed the attached Stewardship Plan and agree with its recommendations for reaching my management objectives. I also agree to follow this plan as written, unless circumstances arise that amendments need to be made. The administrating State District Forester must agree upon any amendments in the plan.

Landowner's Name: Mark & Nancy Jungemann

County: Hamilton

Landowner's Acceptance: _____
(Signature)

Date Signed: _____

District Forester: _____

(Signature)

Date Signed: _____ 12/17/2019

Please sign this page and return it to:

Zach Musser, District Forester

15508 W 700 N

Medaryville, IN 47957

zmusser@dnr.in.gov

Scanned/emailed copies are acceptable.