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HABITAT MANAGEMENT

Creating a Wildlife Habitat Management Plan for Landowners

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Introduction

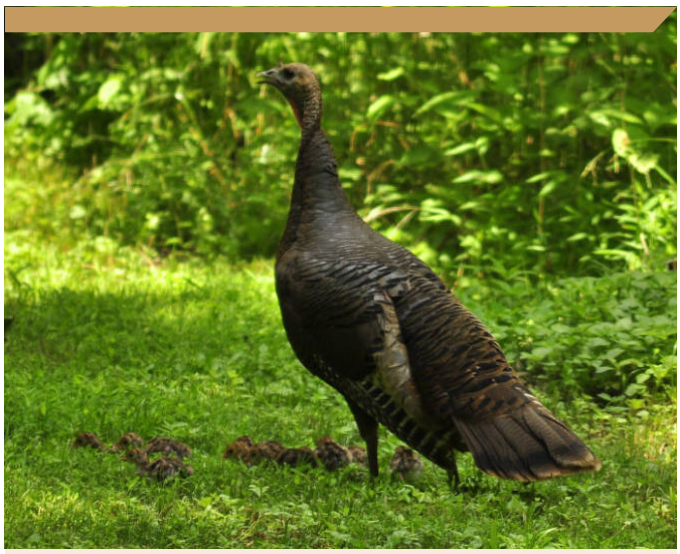
Many Indiana landowners are interested in enhancing their property for wildlife. An important first step in that process is creating a plan. As the adage goes, "failing to plan, is planning to fail." Just as you would have a blueprint if you were building a house or a map if you were starting a road trip, the same is true when you are managing habitat for wildlife on your land.

Landowners can tailor a wildlife habitat management plan to their own personal goals for their property. Maybe a hunter wants to increase the population of upland birds on their property, or a bird-watcher would like to improve the overall diversity of songbirds in their woodlands. Management plans help turn these goals into reality.

Wildlife habitat management plans are documents that guide landowners through the process of improving their land for wildlife. Having a written plan helps a landowner visualize the time, effort, money, equipment, and necessary steps to improve wildlife habitat on their property. It's important to note that managing habitat for wildlife is an exercise in patience. The results won't happen overnight, but with the right plan, you can ensure your hard work and effort will pay off.

A wildlife habitat management plan may be as simple or as extensive as you like, but greater detail typically promotes greater success. The plan should be written with short- (1-2 years) and long-term (5-10 years) goals in mind.

Management plans are living documents. They can evolve to meet the specific needs of each landowner or fit within whatever constraints there may be with equipment, labor, time, or budget. Revisit the plan every year or two to check your progress and revise or update the plan as often as needed.



Management plans can help you improve your property for a variety of wildlife species, such as this wild turkey and her brood. Photo by Alvin Freund, USFWS

Some landowners choose to write their own wildlife habitat management plan. For those landowners, we have created a template that accompanies this publication, FNR-417-W *A Template for Your Wildlife Habitat Management Plan*. This template can be found at https://extension.purdue.edu/pondwildlife/. Others may enlist the help of a professional wildlife biologist. For these landowners, contact information for wildlife biologists in your county can be found at the above website. Regardless of the route you choose, understanding the components of a wildlife habitat management plan, described below, will help you reach your wildlife goals.

Property Information

Think of this section as an introduction to your property, which will provide information that will help you complete the other sections of your management plan. For example, creating a list of equipment you own or have access to (e.g. chainsaw, tractor, ATV, etc.) will determine the management practices you can use.

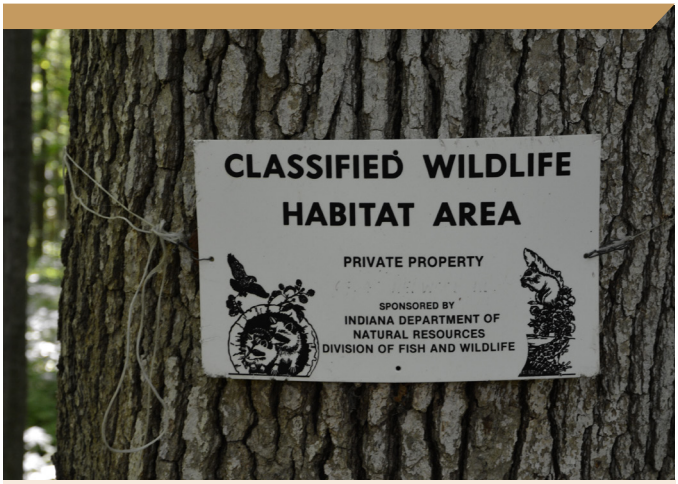
Some habitat management practices such as planting food plots or native grasses and wildflowers may require specialized equipment like this no-till drill. It's important to make a list of equipment you have available (or can rent) to know what management practices you can use on your property. No-till drills can often be rented from your local Soil and Water Conservation District.

Property history is also another important piece of information to include in this section. Consider questions like:

- When did you take ownership of the property?
- Were sections of your woods grazed in the past?
- When was the last timber harvest?
- Have invasive plants been controlled in the past?
- What types of wildlife have you observed?

Answers to questions like these can help guide you as you create your management plan. If you are a relatively new owner of your property, you can look at old aerial photos or talk to the previous owners or neighbors to learn about the property's history. Historical aerial photos for parts of Indiana can be found at https://igws.indiana.edu/IHAPI/.

If your property is enrolled in a conservation program like the USDA Conservation Reserve Program (CRP) or the Indiana DNR Classified Forest and Wildlands Program, it's good to include that information in this section. Many conservation programs have management guidelines or restrictions for enrolled properties. Putting this information into your plan can help ensure the management practices you decide upon later fit within the program guidelines.



Listing which conservation programs your property is enrolled in (such as the Classified Forest and Wildlands Program) is important to ensure your management is within the program guidelines.

Property Goals and Objectives

If a management plan is like a road map you would use to get from point A to point B on a road trip, then the goals for your property represent the destination – the place you want to ultimately end up. Your objectives, then, are the directions to your destination. They are a collection of smaller steps that guide you to your overall endpoint.

Determining your goals and objectives is one of the most important parts of the planning process. Without clear directions, you can end up spending time and money heading in the wrong direction or arriving at the wrong destination.

GOALS

First, list your goals. Goals relate to what is important to you about your property. With goals, think long-term, 5 or 10 years into the future. Goals can be broad such as generating income, providing recreation, attracting wildlife, or general enjoyment of the property. But, more specific goals are often easier to reach than broad undefined goals. For example, goals like *improving habitat for deer to enhance hunting opportunities* or *improving habitat for forest songbirds* are more specific and achievable than a goal of *providing habitat for wildlife*. Defining goals clearly will help guide your management decisions.

Once listed, prioritize your goals. Prioritizing your goals will help you determine what is most important for you if your goals do not overlap. Often, the same management action can achieve various goals, but how the action is implemented can change based on your priorities. For example, harvesting timber can improve habitat for many wildlife species by creating forest openings, and it can also provide income from the property. However, *how* a woodland is harvested may differ if creating wildlife habitat is the top priority compared to generating income and vice-versa.

If wildlife is one of the goals of your property, it is important to decide which species of wildlife are most important to you. Many landowners have the goal of "improving their property for wildlife," however, this goal is too broad and hard to achieve. All wildlife species have their own habitat needs. The needs of some species overlap, but the needs of others do not. Management actions you take on your property will benefit some species over others.

Determining which species are of most interest to you will help you decide which management actions will provide the best habitat for your species of interest. It will also help you consider tradeoffs with each management practice, or how the practice will affect different wildlife species.

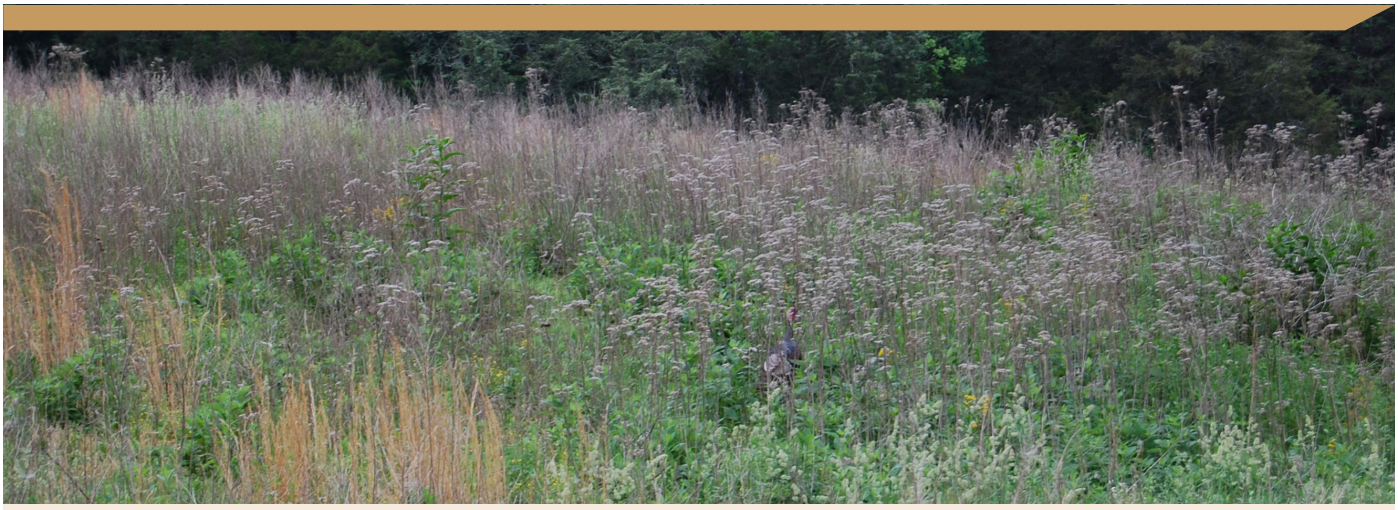
OBJECTIVES

Objectives can be thought of as a list of directions on your road map, or in the case of the management plan, the strategies that will help you achieve your goals. Every goal will have its own set of objectives, which are specific, measurable, and achievable. Your goal may be to improve habitat for the wild turkeys you see on your land. But, how are you going to achieve it?

Consider this example; after you do some research you decide in order to improve wild turkey habitat you need to create more nesting and brooding areas for turkeys. Those are your objectives – creating nesting and brooding areas for wild turkeys. They link directly to your goal of improving habitat for turkeys. But, they also help determine which habitat management practices (actions) you should use to achieve these objectives. (You will decide the management practices, or actions, in Section 4 of the management plan.)

REMEMBER. Don't overwhelm yourself - just start with 1-3 simple objectives that you can achieve and will improve your property for your species of interest. More can be added to the plan later.

There are many resources online from university extension, government agencies and conservation organizations about individual wildlife species, their habitat needs, and recommended habitat management practices. It's beneficial to research the needs of wildlife and match your objectives to those needs. During your research, you may also generate questions to ask your local wildlife biologist.



If improving turkey habitat is your goal, creating nesting and brooding areas for turkeys like the old field in the picture above may be one of your objectives.

Goals -> Objectives -> Management Actions

How do goals, objectives, and management actions relate? Here is an example:

A landowner in southern Indiana reminisces about the days when they were awoken by the whistles of northern bobwhite around their farm. They own a 200-acre farm that includes row crops, tall fescue hayfields, and fencerows between the fields. They are interested in improving their farm for northern bobwhite, but still need income from the property.

GOAL:

Improving habitat for northern bobwhite, but still generate income from the farm.

After doing some research and talking with their local wildlife biologist, the landowner determines they need to improve nesting and brooding areas and increase woody cover for northern bobwhite on their farm.

OBJECTIVES:

1. **Improve brooding and nesting areas for bobwhite.**
2. **Increase woody cover for loafing and escape from predators and weather.**

Once they determined their objectives, the landowners can now decide which management practices (actions) they can take to reach their objectives.

ACTIONS:

Improve brooding and nesting areas for bobwhite.

1. Create native grass and wildflower field borders around crop fields through the Conservation Reserve Program (CRP).
2. Convert pastures to native grasses and wildflowers by killing the tall fescue.

Increase woody cover for loafing and escape from predators and weather.

1. Plant shrubs in the fence rows.
2. Create brush piles or plant shrubs in the pastures.

Property Assessment

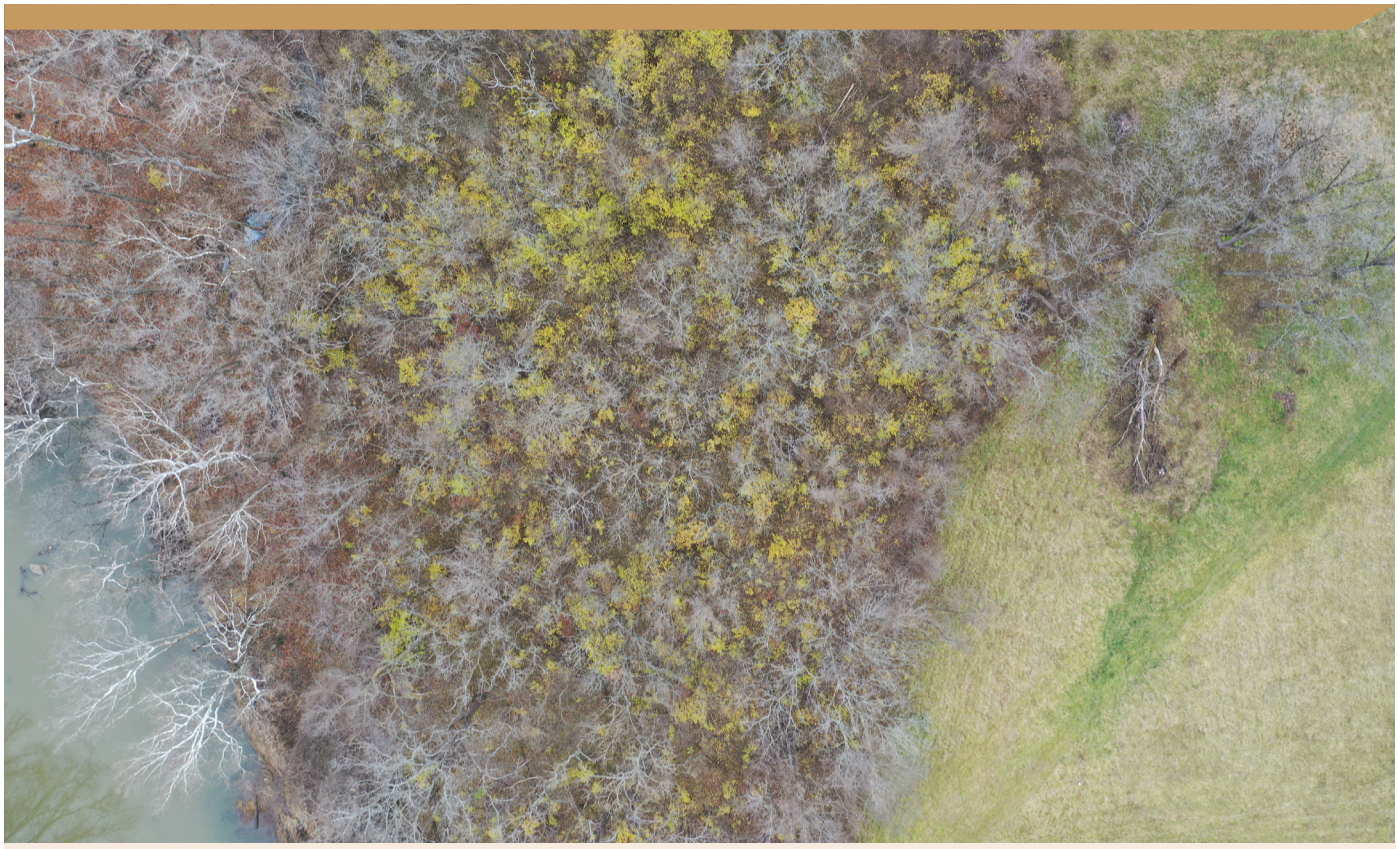
If we continue with the analogy that a management plan is like a road map, then the property assessment is like the starting point on the map. Knowing the starting point helps you to decide the directions (objectives) and turns (actions) you need to take to reach your destination (goals).

Consideration should be given to:

- Vegetation types (woodlands, grasslands, etc.)
- General description of your property and the surrounding properties (topography, geographic features, etc.)
- Important features of the property (rare plants and animals, wetlands, ponds, etc.)
- Wildlife species currently observed on the property
- Current condition of the property for your priority wildlife species
- Limiting factors for your priority wildlife species – what is missing from the property?

To start your property assessment, take a broad "birds-eye view" of the property (and surrounding area) by looking at aerial photographs. This can help you identify vegetation types, water sources, soil types, and other natural features on your property and neighboring properties. Google Earth, USDA Web Soil Survey, and Indiana Map (maps.indiana.edu) are good resources to use to get free aerial, soil, and topography maps for your property. You can even use an unmanned aerial vehicle (UAV) or better known as drones (where legal) to get up-to-date visuals and aerial imagery for your property. Contact your county Purdue Extension educator or Soil and Water Conservation District to see if they or neighboring counties have drones to fly your property.

The next step in conducting a property assessment is to get "boots on the ground" and walk your property. This walk can confirm things you saw on the aerial photographs or reveal things that are otherwise hidden, like a forested wetland not visible from above. There is nothing more educational than walking through your property. You should walk as much of the property as possible during different times of year to get the best assessment of your property. Be sure to



Drones can be useful tools to provide up-to-date assessment of your property. This image from a drone taken in late November highlights a woodlot with an invasion of bush honeysuckle (yellow vegetation in the woods) and an exotic cool-season grass pasture (green and brown vegetation in field). Both of which are areas that need improvement for wildlife.

take your time, take notes about what you are seeing, and take lots of photographs. You might be looking for things like:

- What trees, shrubs, grasses, and forbs are present in your woodlands? (If you are not sure of what they are, take photographs or even press them between sheets of paper. These can be used by your county Purdue Extension educator to identify the plants. Or use a free plant identification application like Seek on a smartphone)
- Do you see downed woody debris, invasive species, canopy gaps, snags (standing dead trees), and/or living trees with cavities are in the woodlands?
- What plant species are in your fields or grasslands? Any invasive species? Is the field all one species or does it have a diversity of species?
- Did you see or hear any wildlife or signs of wildlife (scat, tracks, etc.) during your walk?

When reviewing your notes from your walk or looking at aerial photos, consider how well your property will support the wildlife species of interest to you. This will help determine missing features or limiting factors on your property that will have to be addressed. Limiting factors are often related to the amount of food, cover, water, and space available to wildlife. For example, a forest with a completely closed canopy (no sunlight to forest floor) can have a limited understory and diversity of plants. Without action on your part, the lack of cover and food plants near the ground for ruffed grouse, white-tailed deer, and many other species will limit their numbers. Other examples of limiting factors may be a lack of snags for bats and woodpeckers, limited wetlands or vernal pools for amphibians, or a lack of woody cover in a field for northern bobwhite. Often, you may need to speak to a biologist to help determine limiting factors on your property.

Getting boots on the ground and walking your property helps you confirm things seen when assessing your property from aerial photos. And will also help you see things that are hidden or not obvious from above. This image is from the same woodlot as the previous drone picture. It confirms the plants with yellow leaves are the invasive bush honeysuckle. But, walking the property also lets us identify which species of trees are in the woodlot and identify other important features like the downed woody debris.

Aerial maps are very useful when creating a management plan. These images are from the same property, but use different techniques to create a map. You can use free services like Google Earth (left), but you can also use drones (right) to create aerial photos. Using drones to create a map has the benefit of being up-to-date with high resolution, and can be created at different times of year.

Maps

Maps are extremely useful to your habitat management plan. They can help you visualize your property and its current condition. Maps can help you delineate your property into separate habitat management units based on the property's natural features. Having maps of your property will be helpful to foresters and biologists if you use their services. Drones can also be used to create up-to-date maps of your property.

You can create maps of your property using free services like:

- Google Earth (https://www.google.com/earth/)
- IndianaMap (https://maps.indiana.edu/)
- USDA Web Soil Survey (https://websoilsurvey.nrcs.usda.gov/)
- My Land Plan (https://mylandplan.org)

Important maps to have for your property are:

- Map with property boundary and property description
- Soil map (USDA Web Soil Survey)
- Topographic map
- Hand-drawn map with habitat management units outlined

Habitat Management Units and Practices

HABITAT MANAGEMENT UNITS

Best management practices for your property will vary based on several factors such as vegetation type, soil, and other factors, which change over the property. Therefore, it's helpful to divide your property into areas with similar features, or *Habitat Management Units*.

An easy way to approach this task is to divide your property by vegetation type – woodland, grassland, wetland, and cropland. Next, split those vegetation types into smaller units that are similar in soils, vegetation, slope, aspect, etc. Give those areas a descriptive name and label them on the map.

Creating habitat management units can help you choose the right management practices for the right place. For example, if invasive species such as bush honeysuckle are more prominent in one section of a woodlot, you could make that area a specific habitat management unit and focus invasive control efforts there.

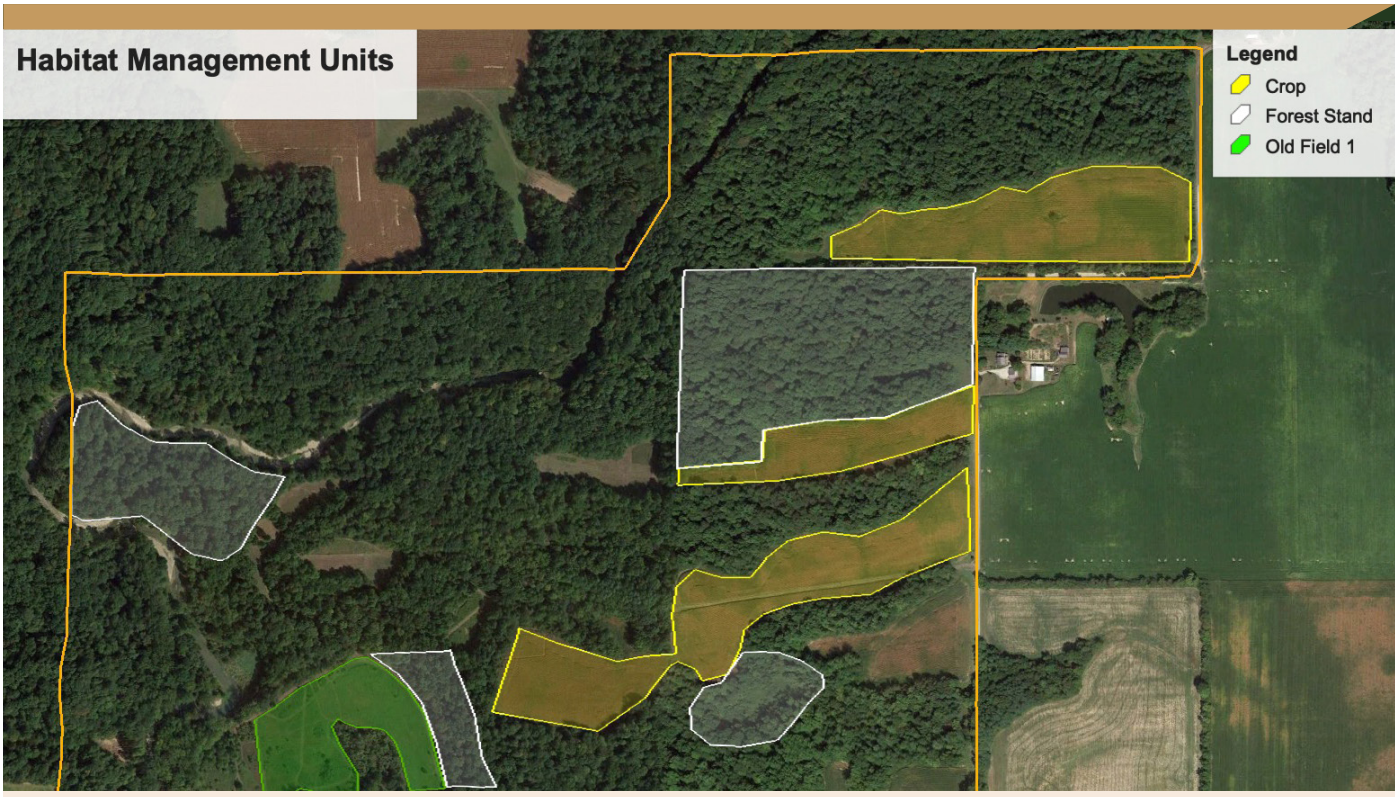
You should record key characteristics like size, soil type, and current habitat condition for all your management units. The more detail you provide, the more targeted your management can be. In a woodland, you may record the size (acres) and soil type, but you would also want to record the species of trees, invasive species, the number of snags, the presence of a wetland, and other important features.

HABITAT MANAGEMENT PRACTICES

Once you have divided your property up into management units, you can now decide which practices – or actions – are necessary to improve your property. In this step, you will combine information from several other parts of the plan. The practices you choose should be based on your goals and objectives, the current and desired condition of the area, and habitat requirements for wildlife species of interest.

Focusing your efforts on 1-2 habitat management units at a time and then moving to other parts of the property will help to ensure implementation of the plan is not too overwhelming. For each habitat management unit, keep a record of the habitat management practices you plan and complete.

To find out more information about individual habitat management practices, consult some of the resources in the *Additional Resources* section at the end of this document.



Creating a map with habitat management units is an important step. You don't have to create habitat management units over the entire property, but should start with a few areas and then move to others as your plan progresses.

Prescribed fire, in the woods and fields, can be a great habitat management tool. But, it may be one that is beyond the capability or comfort of many landowners. You can hire private consultants to conduct a prescribed fire or other habitat management practices on your property for a fee.

There are a variety of habitat management practices you can do yourself with as little as a chainsaw and some time, knowledge, and sweat equity. But, many practices (such as prescribed fire) may require time, equipment, and knowledge beyond the scope of most landowners. In this case, there are private forestry and wildlife consultants that will implement habitat management practices for a fee.

Inventorying and Monitoring Wildlife

Understanding how wildlife populations change over time is an important step in determining the success of your habitat management efforts. There are many ways you can inventory and monitor wildlife on your property. Techniques differ depending on what you are monitoring. For example, trail cameras are a great tool for monitoring deer, turkeys, or other medium to large wildlife. However, they would not be useful in monitoring songbirds, amphibians, and reptiles. You should consider monitoring wildlife before and after habitat management actions are completed. Monitoring wildlife before the action will give you a baseline and after will indicate successes or failures of the action. You may also consider monitoring the vegetation with before and after pictures or plant surveys to see how it changes over time.

Trail cameras are a great tool to monitor medium to large wildlife like coyotes, wild turkeys, and white-tailed deer.

Should I Work with a Wildlife Biologist on My Plan?

Working with a professional wildlife biologist on your habitat management plan can be beneficial for many reasons.
Photo by Joel Wahlman

The short answer is yes. Professional wildlife biologists can help in many different ways throughout the planning process. Many state wildlife agencies and conservation organizations (e.g., Pheasants and Quail Forever, National Wild Turkey Federation) offer free consultations with biologists and/or foresters (virtually or in-person) to help you in the habitat management process. You can also enlist the help of a private consultant, for a fee, in the planning process.

You can involve a biologist in the planning process as little or as much as you would like: from as simple as calling to ask them questions over the phone, to having them write an entire plan for your property. Biologists can help you determine what your property is missing and how best to improve it for your focal wildlife species. They can also help you determine what cost-share or technical assistance programs (e.g., CRP) are available to help you meet your goals. In many cases, you can even hire biologists and foresters to implement some of the habitat management practices on your property.

When looking for professionals (foresters or biologists) to help on your property, it can be beneficial to look for individuals that are certified by professional organizations like The Wildlife Society (Certified Wildlife Biologist®) or Society of American Foresters (Certified Forester®). This will ensure the biologist or forester you pick has met the education and experience requirements of their professional organization. You can find professionals in your county by using the Find Your County Contact tool at https://extension.purdue.edu/pondwildlife/.

Plan or Goal Change

Habitat management plans are ever-changing. As your property progresses through the management plan, your goals, objectives, and actions may change. Your management plan is adaptable to any changes you might want to make throughout the management process. Keeping a timeline of all the management practices performed and what objectives they were trying to achieve will help you remember and make it easier when changing plans or creating new ones.

Remember habitat management is an exercise in patience. It will take time to see results – at least a year or two, but often longer. Be sure not to change course too quickly.

Additional Resources

Creating a wildlife habitat management plan may seem daunting. But luckily, there are plenty of resources available to help landowners through the planning process. These available resources include publications, videos, websites, and even professional biologists and foresters. When going through the tasks of completing a habitat management plan, keeping a list of resources you use will be helpful so you can refer to them later.

Here are a few resources that may be helpful to the wildlife planning process.

Purdue Extension Pond and Wildlife Habitat Management Website - https://extension.purdue.edu/pondwildlife/

Find Your County Pond and Wildlife Management Contact - https://extension.purdue.edu/pondwildlife/county-resources/

Managing Your Woods for White-Tailed Deer – Purdue Extension FNR-596-W - https://edustore.purdue.edu/item.asp?Item_Number=FNR-596-W

Renovating Native Warm Season Grasses for Wildlife: A Land Manager's Guide – Purdue Extension FNR-548 - https://mdc.itap.purdue.edu/item.asp?Item_Number=FNR-548

Assessing Your Land's Potential for Wildlife – Purdue Extension FNR-175-W - https://www.extension.purdue.edu/extmedia/FNR/FNR-175-W.pdf

Indiana DNR Habitat Factsheets - https://www.in.gov/dnr/fishwild/3025.htm

My Land Plan – https://mylandplan.org/

Property Boundary Maps - https://beacon.schneidercorp.com/

Soil Maps - https://websoilsurvey.nrcs.usda.gov/

Property and Topography Maps - https://maps.indiana.edu/

Conclusion

Creating a plan, or at least understanding the parts of a plan, is important for any landowner interested in improving their property for wildlife. You can use this publication in conjunction with FNR-617-W *A Template for Your Wildlife Habitat Management Plan* to create your own wildlife habitat management plan, or you can enlist the help of a professional wildlife biologist. Either way, a plan will help guide your time and effort to ensure you meet your management goals.

Acknowledgments

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Example Management Plan

An example wildlife habitat management plan can be found at https://extension.purdue.edu/pondwildlife/

Find Out More

The Purdue Extension Education Store offers a variety of publications related to forestry and wildlife management.

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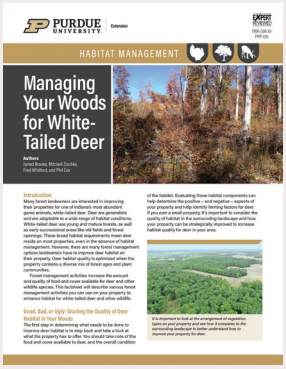

Managing Your Woods for White-Tailed Deer
(FNR-596-W)

A Template for Your Wildlife Habitat Management Plan
(FNR-617-W)

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