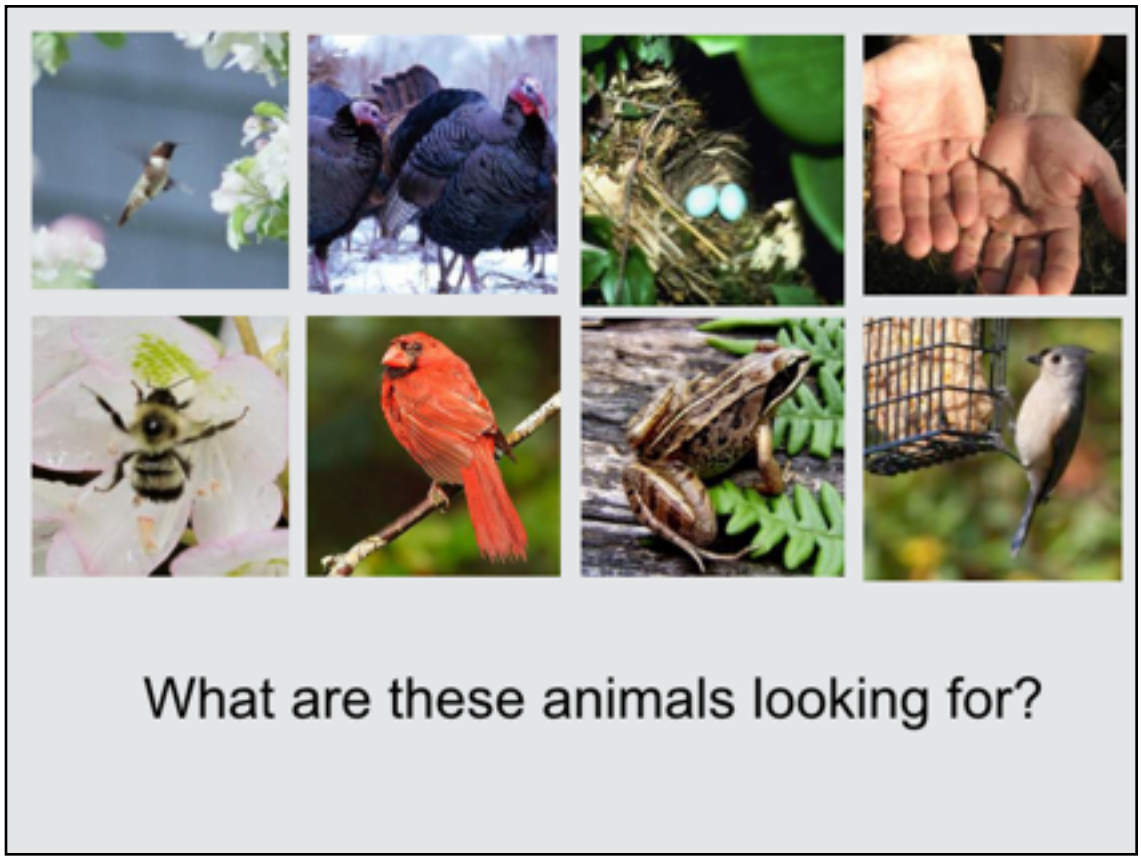
Welcome everyone, thank you for coming. My name is ___. I'm with *Speaking for Wildlife*, a program run by the University of New Hampshire Cooperative Extension. *Speaking for Wildlife* is a program that brings volunteer-led wildlife presentations and nature walks to communities throughout New Hampshire.

In today's *Speaking for Wildlife* presentation, I'll be talking about how to make your backyard better for wildlife. Everyone's backyards, no matter how big or small, how rural or urban, can provide habitat for some kind of wildlife.

In New Hampshire, as human development covers more of our state, gardeners can play an important role as managers of our state's wildlife and habitats. Our backyards are shared by many wildlife species, and we can do a lot to benefit wildlife based on the landscaping practices we choose.

In this talk, I'll provide information about how wildlife respond to the land around them, particularly in the areas directly around our homes. This will also help us understand why wildlife that we may consider to be a nuisance are using our property, and how we can learn to co-exist with them.

I'll talk for about 35 minutes, and then we'll have some time for questions at the end. But if you have questions about the slides I'm showing, feel free to raise your hand during the presentation.



[To Audience:] What are some of the basic things you think these animals need to survive? (wait for answers, fill in what they may have missed)

-food

-cover

-water

-a place to raise their young

What each type of animal is looking for to meet these needs makes up that animal's "habitat." And no matter what species you are hoping to see on your property, they all require food, cover, water and a place to raise young.

We think of the animals we see – like those shown here – as living in the woods or in natural areas. But the truth is, wildlife can be found everywhere, from the most remote mountaintop to the most urban backyard.

Depending on your yard, and depending on what kind of habitats are near your yard, you may not need to make a special trip to a natural area to see these animals. They may, literally, be able to live in your backyard!

[Speaker's note: Species shown (clockwise from top left): ruby-throated hummingbird, wild turkey, robin's nest w/ eggs, red-back salamander, tufted titmouse at suet feeder, wood frog, Northern cardinal, bumblebee)

Here's a typical example of residential landscaping in New Hampshire. We see this everywhere: landscape practices that are unhealthy for the plants. The shrubs are sheared rather than pruned. The lawn is all one species of grass cut too short. There is one tree, but it's buried in mulch. The mulch holds moisture against the trunk and smothers the root system.

[To Audience:] Do you think this landscape has much to offer wildlife?

What about **food**? (maybe fruit on one of the shrubs?). **Water**? (none). What about **shelter or cover**? If you were a frog or a mouse or a deer, could you find a place to hide? Probably pretty hard.

This type of landscaping is accepted as the norm in many communities, businesses, and homes. We plant a tree, add a few shrubs and call it "landscaping." And more than that, we spend a lot of time and money recreating this scene – we buy and spread mulch every year, trim hedges, rake leaves, apply fertilizer, plant annuals…

Is there a better way, that is more beautiful, easier, and cheaper? Yes. And the good news is it will also benefit wildlife.

This picture is very different, isn't it? It's still a man-made landscape, but it's much more inviting.

The first thing you may notice is that it's green everywhere. All that mulch is nowhere to be found.

[To Audience:] What else makes this an inviting landscape to people? (audience will name some things… fill in as needed)

•shade under trees

•Layers of different types of plants from ground cover to understory shrubs, to big shade trees

•Flowers

•Plant variety

•small patch of grass,

•easy to walk path

•Nice bench to sit on

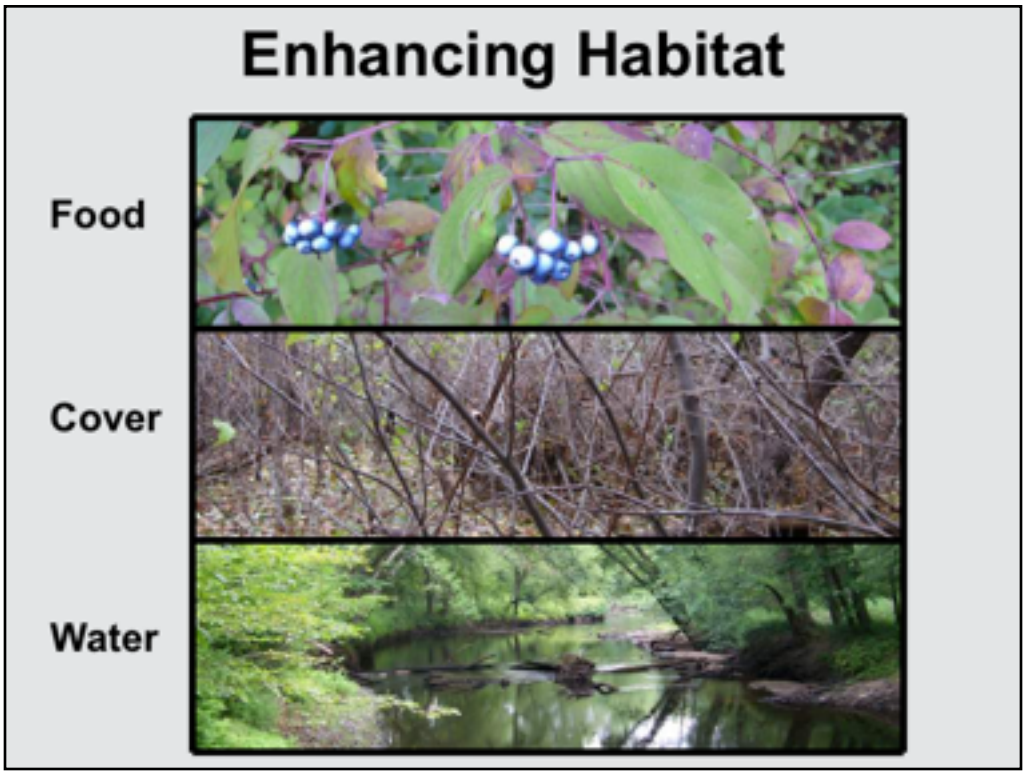
•Maybe a small pond somewhere off the path

[To Audience:] Would you agree that you might like to spend time here?

Many of these features are the same things that make this landscape inviting for wildlife.

For the rest of this talk, we'll look at the habitat needs of wildlife, so that by the end, we can look at this same landscape and understand how the components benefit wildlife, not just humans.

After that, you can look at your own yard, community space, or park in a different light, and hopefully make some of your own improvements to benefit wildlife.



Of the four components of wildlife habitat (food, cover, water and a place to raise young), the first three components are the easiest for us to change and manipulate. The fourth is harder, since short of buying more property, it's hard to create more space.

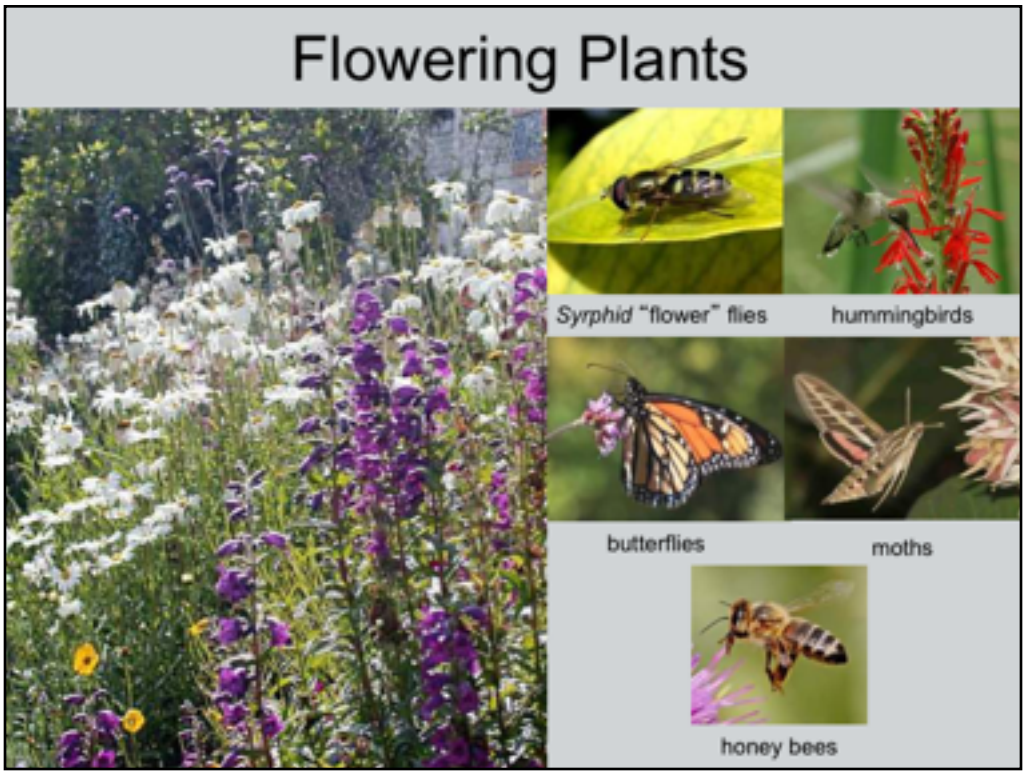
I'll go through each of these three components and give some specific examples of how we might incorporate them into our backyards.

[Speaker's Notes: Top photo = silky dogwood]

One of the best things you can do for wildlife is to provide different kinds of foods in your yard. The good news is that there are so many plants that have fruits, nuts and seeds eaten by wildlife, that every tree and shrub in your yard should offer something: blueberries, crabapples, juniper, oaks, cranberries, ash seeds, even poison ivy has berries eaten by birds.

UNH Cooperative Extension has a publication called "NH's Trees, Shrubs & Vines with Wildlife Value" that provides a list of plants, and the wildlife that eat them. I have copies here for you to take.

[Speaker's Notes - Pictures clockwise from top left: white oak acorns, chipmunk eating dogwood berries, robin eating crabapple, white ash seeds, blueberries, cedar waxwing eating holly berries)



Now you may not think of insects as wildlife, and you may not want to attract them to your backyard, BUT insects are an incredibly important part of our natural world – they are pollinators, they are food for other animals, and they can be beautiful. Really, without insects in your yard, you aren't likely to have much in the way of other wildlife visiting your property. AND It's easy to attract them!

The best way to attract insects, particularly pollinators such as bees, butterflies and moths, is to have a lot of flowering plants. If you can attract a variety of insects, this will lead to a diversity of things that eat insects, such as bats, birds, amphibians, and many others.

For insects, it is best to plant 4 by 4 foot blocks of the same color blooms, and to have many different types of flowers blooming at the same time.

Also, try to have lots of plants fruiting and in bloom throughout the growing season:

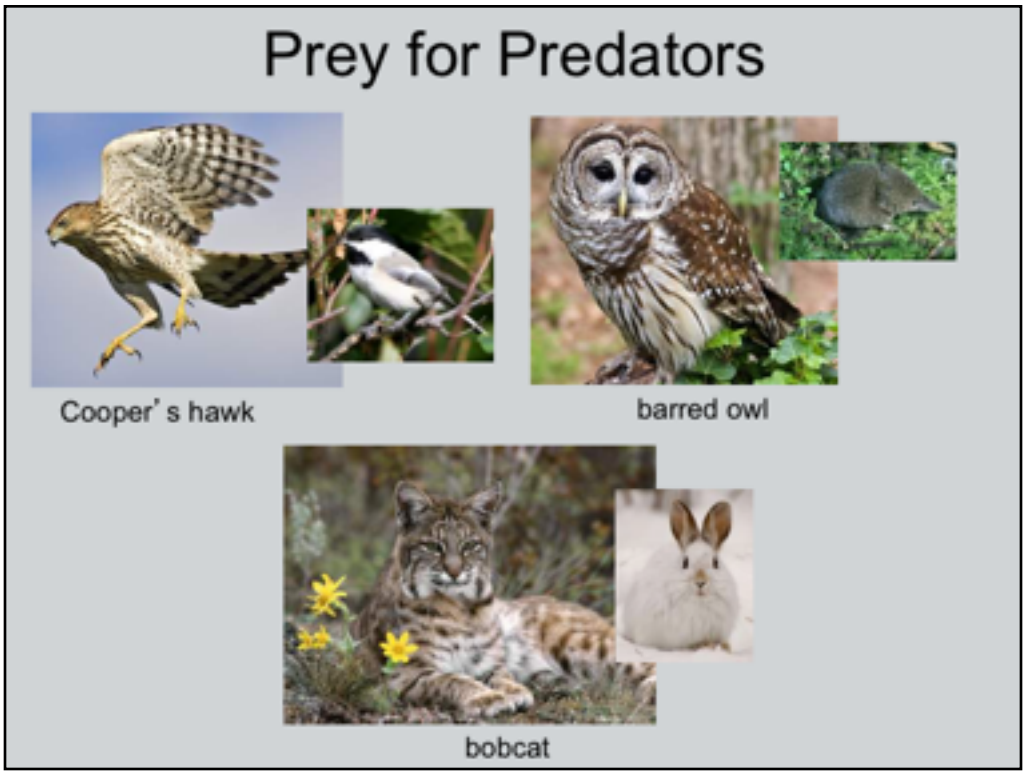
Start with spring wildflowers and bulbs for the early pollinators..

…then early and late summer flowers like bee balm or phlox or cone flowers…

…and then fall blooming flowers such as asters, sedums (SEE-DUMS) and chrysanthemums.

Fall is when nuts and seeds ripen too – so if you have oaks, hickories, or other nut trees, maintain them. They are great for helping wildlife make it through our tough winters.

Also important to keep in mind, is that insects are particularly sensitive to the types of chemicals people typically use in their yards. These include pesticides, herbicides, fungicides, and chemical fertilizers. Eliminating the use of these chemicals will not only promote insect diversity but will benefit a lot of other sensitive wildlife as well.



When we think of food for wildlife, we can't forget that for many animals, other wildlife are their most important food. Most insects, small mammals, birds, amphibians and reptiles are eaten by other wildlife.

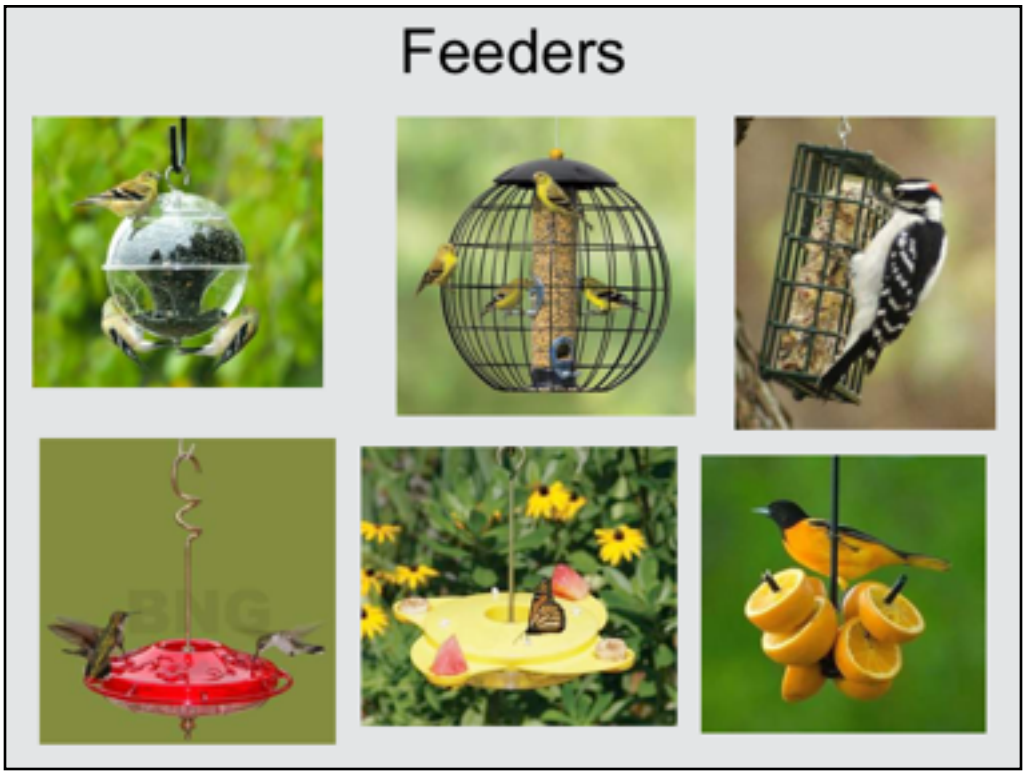
By creating habitat for these prey species on your property you might see hawks, owls, fox, coyote, fisher, and other interesting predators visiting your property to hunt.

Some people are scared of having predators on their property, but unless you own a very large or very rural property, it's unlikely that these top predators will nest or breed on your land, they'll only be occasional visitors, and most of them are wary of people. It can be thrilling to see an owl perched on a tree, a Cooper's hawk watching your bird feeder, or a fox slink through the edge of your yard hunting for small mammals.

[Speaker's note: Prey species are (clockwise from top left) a chickadee, shrew, and snowshoe hare.]

If you want to attract predators to your property, make sure you have these features:

- dense patches of shrubs
- thick leaf litter
- fallen logs and tree limbs
- and what we've already talked about; a diversity of plants that supply fruits, nuts, seeds & insects

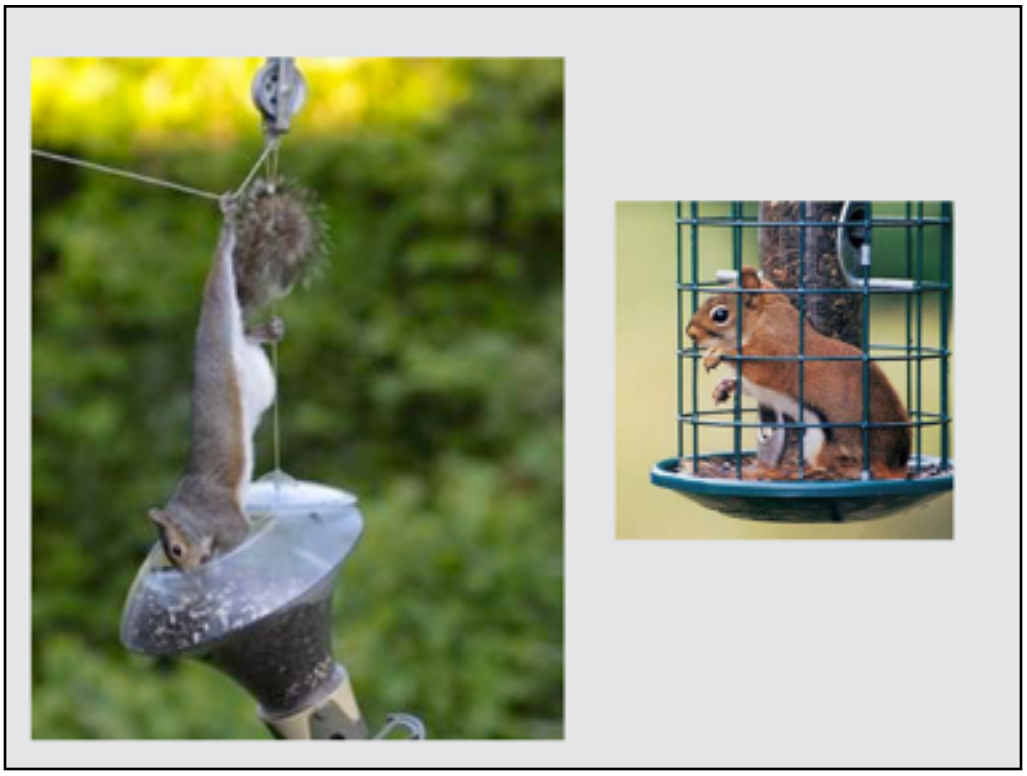


Feeders help bring birds and butterflies up close, for our enjoyment.

There are many different types of feeders for many different types of birds, but keep in mind that feeders all require maintenance, and it's important to take them down in the spring so they don't attract bears.

They will, nevertheless, attract other ambitious critters [click]

[Speaker's note: Feeder examples include regular seed feeders (top left and center) shown here with goldfinches, suet feeders (top right and bottom center) particularly good for woodpeckers, hummingbird feeders (bottom left) which will attract ruby-throated hummingbirds in NH, and feeders to hang fresh fruit (bottom right). Oranges are a favorite to Baltimore orioles).]



People go through great lengths to keep rodents out of their feeders, but most of us just accept the inevitable.

[Speaker's note: gray squirrel on left, red squirrel on right]

For some landowners, deer can be considered a nuisance. They are attracted to feeders, but also to vegetable gardens, shrubs, and young trees. If you have a lot of deer in your neighborhood, you may want to choose plants that are not favored by deer such as dogwood, holly, Eastern redbud, yarrow, milkweed, and marigolds. However, hungry deer will eat just about anything!

Since we're on the subject, it's not just bears in your birdfeeders and deer in your garden, right?

[To Audience:] How many people have had other problems with wildlife?

[answers might include: Squirrels in attic, bats in barns, skunks under the porch, groundhog in garden… fill in blanks]

Our problems with wildlife underscore that we share our properties – and our state – with a lot of animals, even if we don't always see them.

The wisest advice is to accept wildlife as co-inhabitants of your yard and be conscious of your behavior so you don't attract unwanted visitors. We are sharing their habitat, after all.

For edible gardens or special plants, fencing is your best option. Some gardeners plant extra garden beds to share with wildlife. They build sturdier chicken coops, secure their garbage, and take their birdfeeders down after winter. You can repair your house to remove access for squirrels and bats, and think about it as *exclusion* rather than *extermination*.

No matter what you do, the habitat and food sources in the larger landscape around your property are what control populations of wildlife. In other words, trying to rid your property of groundhogs, beavers, woodpeckers or deer will NOT work if there is suitable habitat nearby for them. It's a losing battle, and most landowners only learn this after many years of trapping, or transferring, or poisoning.

And keep in mind this story: One landowner found his deer–eating–his–garden problems alleviated when the 2010 tornado hit his town. The tornado created a swath of young forest habitat close by, perfect browse for deer. And since then, he hasn't had to fence anything on his wooded property, because the deer are all feeding in the patch created by the tornado. It's a good lesson to remember -- many of these wildlife population issues aren't controllable by what's happening in your backyard.

Another thing you DO have a lot of control over in your backyard is how much **cover** is available for wildlife.

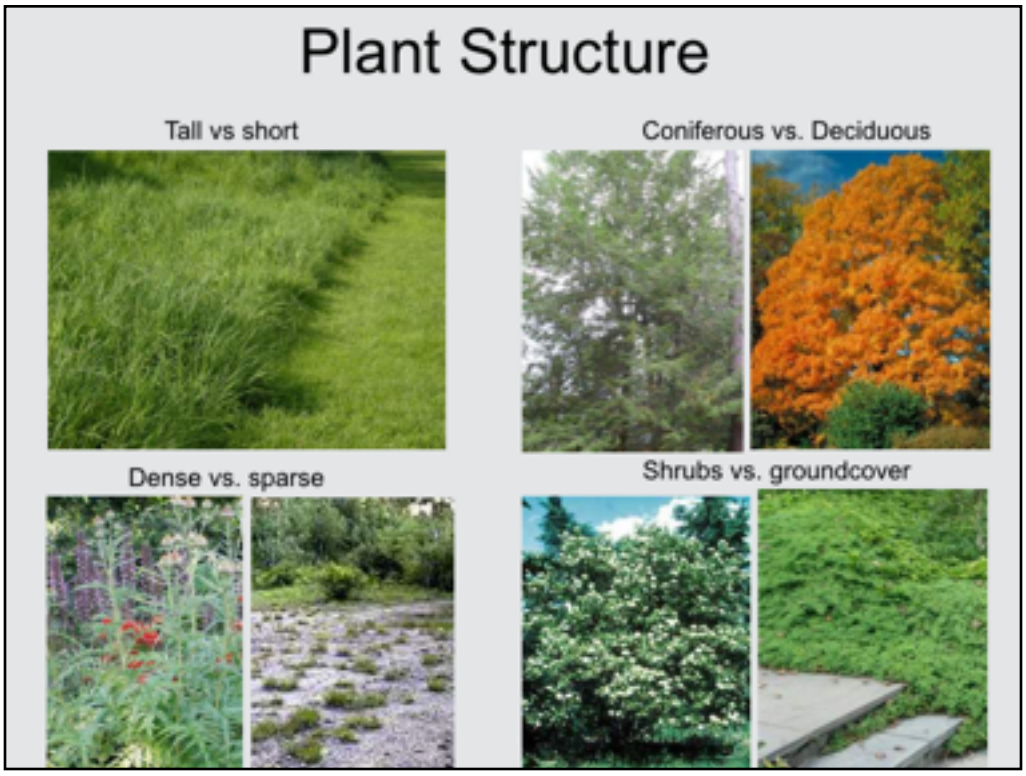
[To Audience:] It's obvious why food is important, but why do you think animals need cover?

[weather, predators, cold, heat, keep their skin moist, etc.]

Cover is just what it sounds like – places for animals to hide and be safe and be protected from the elements.

Most animals need to hide from something or someone. Usually other animals, but many animals are also afraid of - and need cover from - us humans. We see the animals that aren't as afraid of us, but there are lots of others we never see.

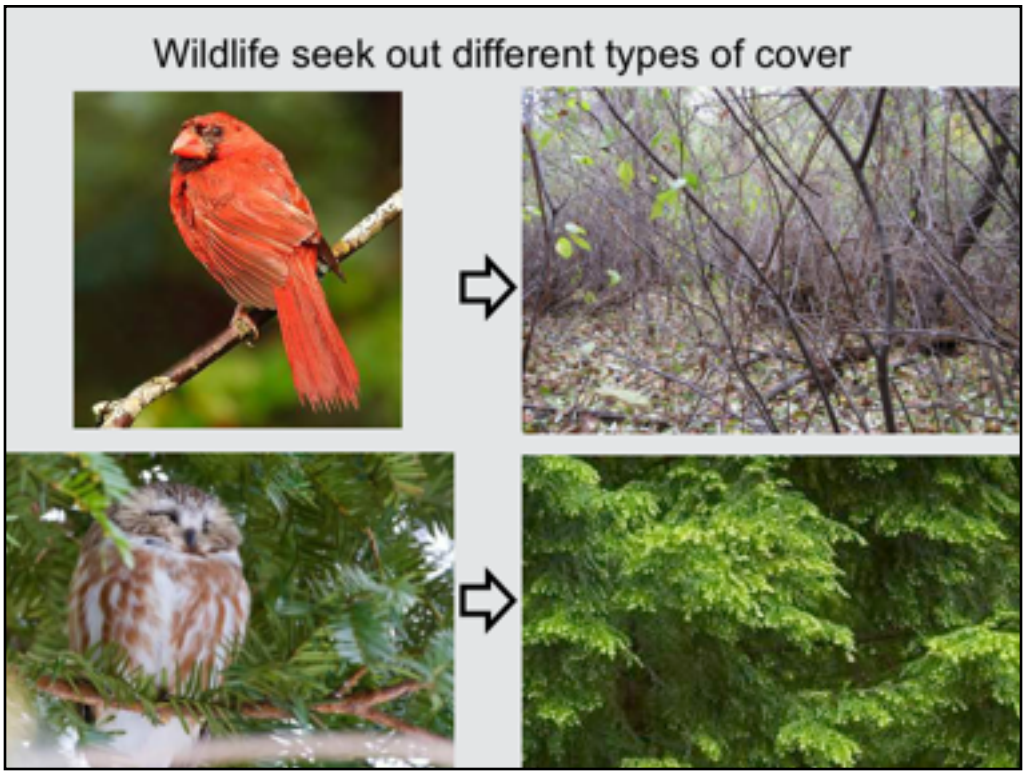
You will provide more habitat for wildlife on your property if your backyard provides many options for cover.



One of the first things wildlife biologists think about for cover is plant structure.

Structure just means the way a plant grows – tall, short, keeps its leaves all year or not, dense or sparse, shrub or groundcover.

The more different plants you have – especially those with different structures – the more layers and variety of cover you will have for wildlife to use on your property. And because different species of wildlife require different types of structure, you'll also have more wildlife.



Here are just two quick examples of how two very different species use two very different types of plant structure.

Cardinals look for shrubs where they take cover and build their nests.

Saw-whet owls (at bottom) look for dense conifer trees to roost in.

If you have the right food and cover, and animals can make it to your property, there's a good chance you'll have visitors.

Here's an example of a landscape with a diversity of plant structure. This is the Blaisdell Memorial Library in Nottingham. They have trees, shrubs, groundcovers, and a small bit of lawn. It's both pleasing to the eye, and offers a variety of layers. It's clearly landscaped, but don't you think there are a lot of places for animals to hide in this photo?

This landscape brings up the topic of lawn, since it's right there in the middle of the photo. So let's talk about lawns for a moment.

In small amounts, like you see here, lawn is great. We like the look of it, it's great to play on, or to have a picnic, but how much lawn do we really need?

Consider this quote by Doug Tallamy, author of Bringing Nature Home…

[read quote]

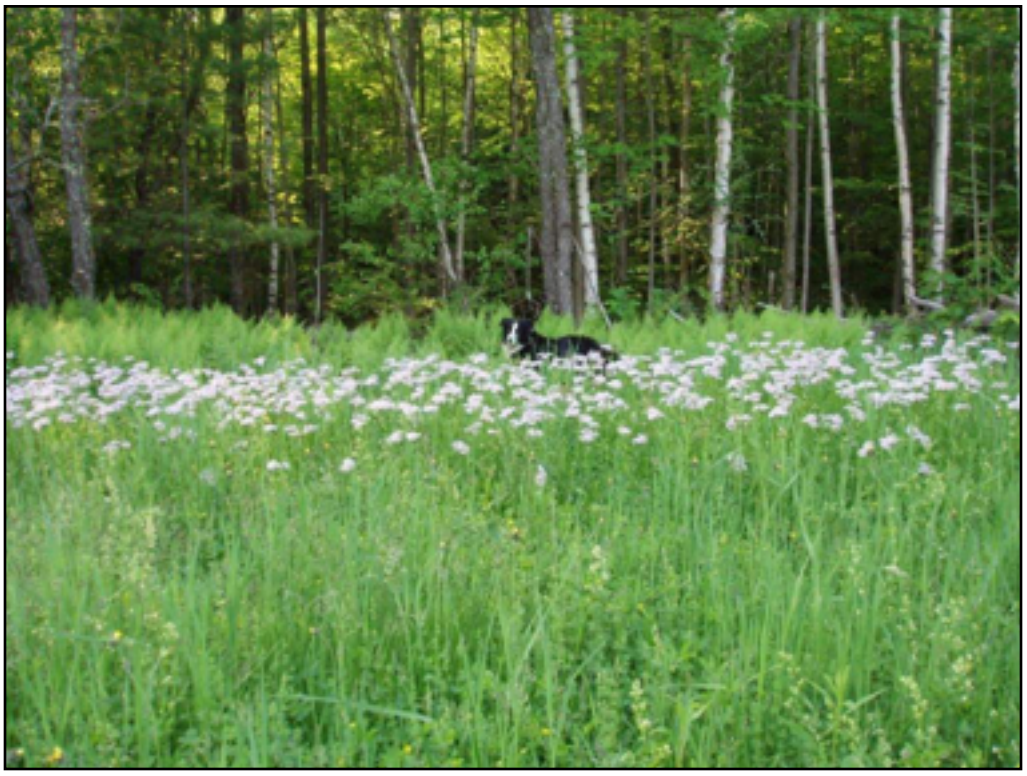
The landscape in this photo offers very little to wildlife, very little food and no cover. We can do a lot more for wildlife by decreasing the amount of lawn, and increasing the variety of layers in and around our lawns. And it's easy to do, and often means less work for you!

For those areas where you do want lawn, think about diversity. A diversity of grasses and flowers growing in your lawn can be great for wildlife even if it's mowed frequently. Some of the plants we think of as weeds, like violets and dandelions, grow readily in mowed lawns and can be great for pollinators and they are pretty too!

[To audience:] How many of you have tried pulling up dandelions? It's not easy, is it?

[wait for answers: It's difficult because of the long tap root, you can never get the whole thing, etc]

Believe or not, dandelions are actually good for your lawn. Their deep tap root helps aerate the soil and draw nutrients like calcium from deep in the soil to the surface and make it available to other plants. Dandelions actually help fertilize your lawn naturally, no chemicals needed!



You may also choose to mow certain parts of the lawn less frequently, allowing for areas of taller grass, especially around the edges of your yard. Areas that are only mowed once a year make beautiful wildflower meadows. A lot of our native wildflowers such as golden rod, phlox, milkweed, clover, and asters will grow on their own if an area is left unmowed, no seeding necessary, but you can certainly supplement these areas with a native wildflower seed mix appropriate for the soil type in your yard.

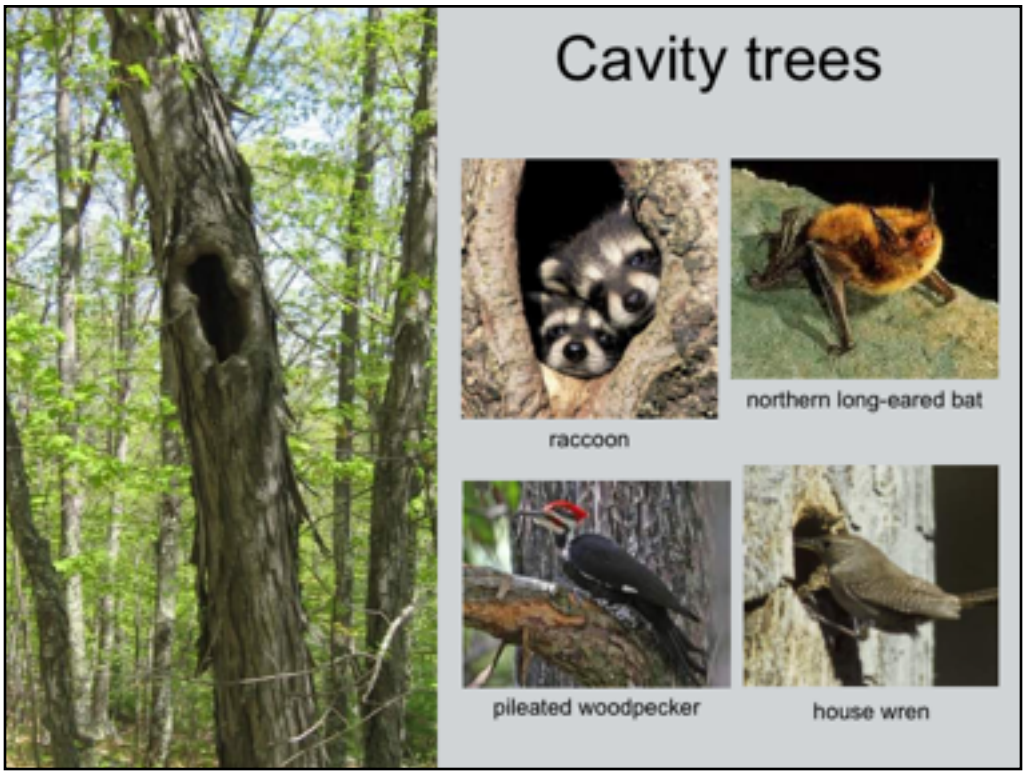
This photo show the difference between mowed and unmowed parts of a yard. The edge areas are full of flowering plants that have seeded in naturally.

Can you think of places in your yards where you could let the grass grow taller?

(Presenter's Note: Attendees may have questions about ticks in areas where yards are left unmowed. One way to balance this concern is to mow areas around your house and in areas your family uses most frequently, and let areas a good distance from those places remain unmowed.)

You can also reduce the amount of lawn by planting shaded areas (that don't grow grass very well anyway) with moss, ferns, or other groundcovers that flourish in the shade.

Or add flower beds, shrubs and trees along the edges.



Plant structure is not the only thing to consider when thinking about wildlife cover. Another habitat feature to look for, especially on large trees, are **natural cavities** that provide nesting and denning habitat to many wildlife, including mammals, but also birds.

Both cavity trees and standing dead trees ("snags") are like hotels for wildlife, and without them, you may not get certain species even if your land seems suitable. And the insects that help dead wood decompose are excellent food for woodpeckers.

So if you have snags or cavity trees, and it's safe to do so, maintain them on your property.

Where you don't have any natural cavities, nest boxes are worth a try. There are lots of books and websites that show correct measurements for many types of bird boxes - and for bat houses too.

Be sure to build and place boxes accurately. They also require regular maintenance if they are going to be safe and effective.

[Speaker's Notes – Bat box (left), and eastern bluebird box (right)]

Cover is also important at ground level – for animals like snakes, mice, voles, salamanders and other small creatures.

Consider incorporating some logs into your landscape. You may not think of them as landscaping materials, but dead logs hold a lot of moisture for animals like red-backed salamanders. If you turn over almost any large log, you are likely to find a red-backed salamander. They are incredibly common, but they need a moist site for cover.

[Speaker's notes: Garter snake (left), white-footed mouse (center), red-back salamander (right)]

Brushpiles can also provide cover for wildlife.

Chipmunks, toads, and salamanders will hide and feed on insects in brushpiles, and winter wrens and white-throated sparrows will nest there too.

Brushpiles make a great place to watch wildlife. Look for tracks in and out of the pile in the winter. You'll see just how many critters make use of good cover.

Resist the temptation…skip fall clean up!

Like logs and brush, leaf litter can also keep soil cool and moist and serve as cover for small wildlife…but only if you don't clean it up!

Another benefit of not raking is that we build soil by leaving litter on the ground – instead of raking it up each fall and going out to buy it in the spring in the form of compost.

Resist the temptation to rake in the fall! It might look messy in November, but most of it will break down over the winter and then you can do some cleanup in spring if you need to.

In winter, the seed heads of standing dead plants can house insects and feed birds. And those dead logs and brush can also be den sites for hibernating animals.

So go easy on yard clean-up in the fall. Aren't we making your life easier here? Less lawn, less raking, less mulching!

That's a lot about food and cover. But adding or enhancing water features on your property can also attract wildlife.

You are lucky if you already have a natural water feature on your property – a pond, stream, or wetland. If you do, try to keep it in a natural state. You may find green frogs, dragonflies, turtles or snakes using the area, especially if you don't mow right to the edge and leave some taller cover.

If you don't have any water feature on your land, adding a man-made pond to your landscaping can attract amphibians and reptiles that wouldn't otherwise use your property.

And providing something as simple as a bird bath, or a rock that collects a puddle of rain after a good storm, can still benefit wildlife.

[Speaker's notes – Photos: Bull frog, green darner dragon fly]

I have a few more things for you to consider when thinking about wildlife gardening, and then we'll have some time for questions and discussion at the end of this talk.

Let's talk about native plants. By native plants I mean plant species that have existed in the northeast for hundreds if not thousands of years.

Although you can buy lots of exotic plants from around the world, we suggest focusing on native plants as a starting point. Native plants are better for wildlife than creating a whole new novel landscape from scratch (and will require less work for you to maintain!).

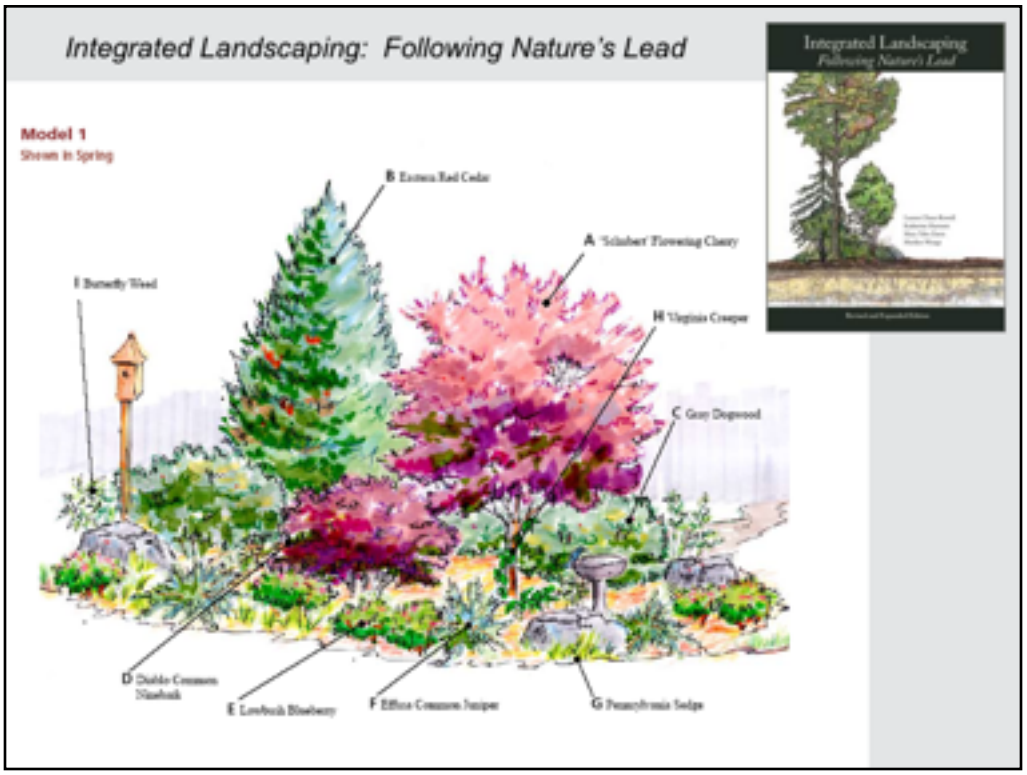
And research shows that native plants support 29 times more life forms than exotic landscaping plants (this could mean insect, bacteria, and other forms of life).

Look at this example of a landscape made up of many native plants (red pine, hobblebush, Eastern hemlock). It's beautiful, inviting, and makes excellent habitat for wildlife.

Native plants tend to support many more types of insects than exotic plant species – and we already learned that a variety of insects means more prey for other wildlife.

As an example, our native flowering dogwood (shown in picture) supports 117 species of moths and butterflies. The Kousa dogwood from China, another popular landscaping tree, supports *none.*

[Speaker's notes – Photos: Polyphemos caterpiller and moth]

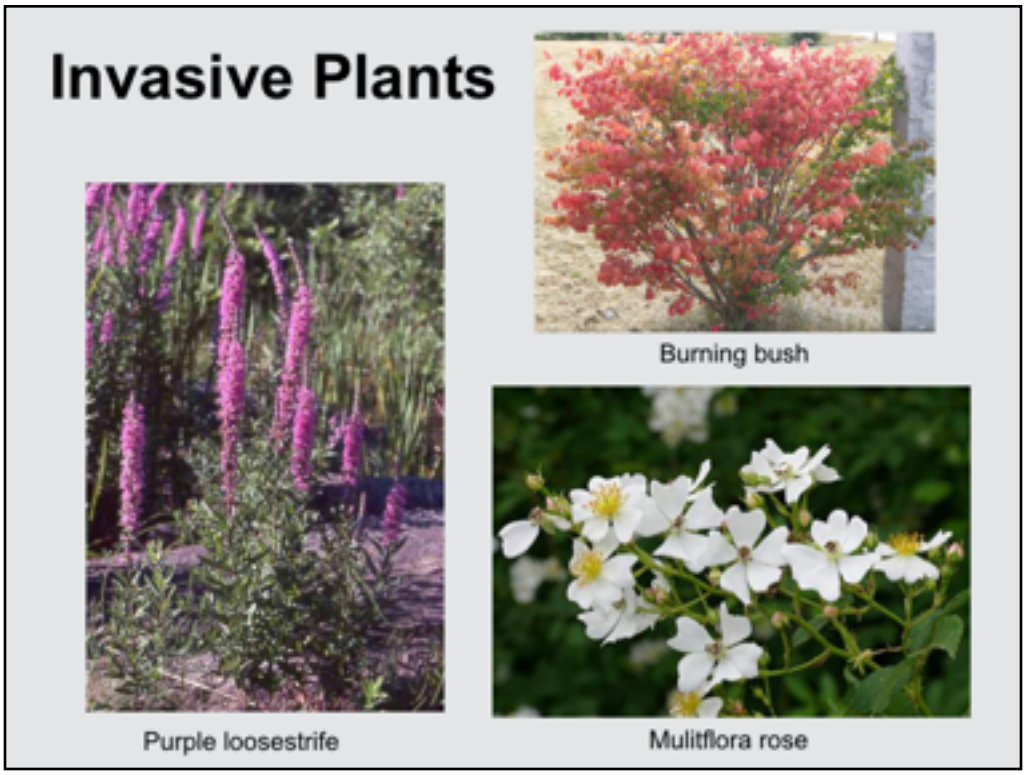


Using native plants will benefit wildlife, but native plants can also make gardens look unique, dramatic and beautiful.

This is a sample drawing from "Integrated Landscaping: Following Nature's Lead," a book published by UNH Press. All of the plants shown are native to the northeast, and are available from many nurseries – look for blueberries, cedar, Pennsylvania sedge, gray dogwood, and ninebark.

And you don't have to spend a fortune on new plants either. The State Forest Nursery in Boscawen is a great source for native-grown tree and shrub seedlings at very reasonable prices. **(www.nhnursery.com)**

[Speaker's Note and Cool Fact: Purple lilac, our state flower, is an exotic species native to China]



There are native plant species, and there are exotic plant species whose place of origin is not New Hampshire. But there is also a special category of exotics called invasive plants (or "invasive exotics").

Invasive plants crowd out our native plants in many natural areas. In fact, they are so competitive that they'll crowd out your landscaping plants too. Ecologists are worried about their effect on the natural world, but they also affect farming, forestry, and our parks.

Problems associated with invasive plants add up to billions of dollars spent each year across the United States.

You'll probably recognize some of these invasive plants:

•Purple loosestrife (left)

•Burning bush (upper right)

•Multiflora rose (lower right)

•And others like Norway maple, common buckthorn, and Japanese knotweed

There are currently over 25 invasive plants that are banned from sale or transport within the state of New Hampshire, including those I've just mentioned. UNH Cooperative Extension's website - **NHInvasives.org** – has lots of references to help you recognize invasive plants.

So why do we have so many invasive plants? In many cases, we imported them on purpose because they have characteristics we like, such as the purple foliage on this Crimson Pygmy barberry. Most of them are also very tough and will grow anywhere, so landscapers have used them widely. Many have lots of fruit and seeds which are eaten – and spread – by birds, so at one time we planted them for wildlife.

However, the negative effects invasive plants have on our natural areas should give us pause.

For example, oriental bittersweet is easily spread by people making autumn wreaths from it's vine-like branches. The orange fruits are nice to look at, but what happens when people take down the wreath? They throw it in the woods.

And years later, this is what can happen! The vines strangle every other tree and shrub in the vicinity.

What can you do to help? Learn to identify the most common invasives in New Hampshire, and work to replace those in your yard or local parks with other plants, when possible. Don't move them from place to place, and try to teach your neighbors who might not recognize them.

We could make a big impact on wildlife habitat if everyone chose to use a few more native plants in their landscaping.

Here are just a couple examples of native plants you can use to replace invasives in your yard…

You can replace burning bush (CLICK) with high bush blueberry.

Replace Japanese barberry (CLICK) with common ninebark.

Or if you have a Norway maple, consider replacing it with (CLICK) a red maple!

We have posters here that show native alternatives to some of the most common invasive landscaping plants.

Public Service of NH - Manchester Energy Park (Before)

Creating good wildlife habitat can also happen beyond your backyard. Public areas around buildings and businesses in your community, like the Blaisdell Public Library I showed earlier, can also provide opportunities to landscape for wildlife. These sites can showcase what good landscaping practices look like! Consider working with a local garden club, Master Gardener, or other extension volunteer to improve landscaping in your town's public places.

Here's an example from a project at the PSNH Manchester Energy Park, before a landscaping project:

There are almost no layers present in this landscape. A single pin oak is growing in the middle of a dry, hot lawn. It's not very inviting to wildlife. And even though there are a couple benches there, it isn't very inviting to people, so it wasn't used.

Public Service of NH - Manchester Energy Park (After)

It was re-designed by a group of PSNH engineers with some help from UNH Cooperative Extension using the Integrated Landscaping book [mentioned earlier] creating a landscape now used by both people and wildlife.

You'll notice that we see a lot of mulch here, but that's because this isn't a mature landscape. In another year or two, once the plants have filled in, no mulch will be needed. And that's just the way we should think about mulch – as a temporary covering to hold soil in place.

But let's go back to our original landscape photo.

We already listed all the features that made it appealing to people… now what do you see that might be appealing to wildlife?

(audience might say: shrubs, conifers, flowers, layers, structure, tall grasses, maybe some fruiting trees or shrubs, etc).

Exactly … so we might find…

(CLICK) Spiders in the tall grass.

(CLICK) A turtle crossing through or using some bare ground for nesting.

(CLICK) An owl roosting in your evergreen trees.

(CLICK) Pollinators enjoying your flower beds.

(CLICK) Wild turkeys eating grasshoppers in the grass.

(CLICK) A gray catbird calling from your shrubs.

(CLICK) A cedar waxwing enjoying the fruits on your crabapple tree.

(CLICK) OR a green frog visiting from a nearby wetland.

[To Audience:] So can you all think of some specific things you could do for wildlife in your own backyard?

[answer's could include: make a pond, put up a feeder, plant natives, pull up invasives, etc]

Wow, great! OK well it sounds like you are all on the right track, but just to be sure… (advance slide)

Here are our "top ten" tips for better backyard wildlife habitat (and this is on the handout too)…

1) Plant native wild flowers to benefit pollinators. I have a list here that has some good recommendations.

2) Plant native shrubs and trees that have important fruit and seeds eaten by birds and mammals. Remember I have that list of NH's Native Trees, Shrubs and Vines with Wildlife Value here for you to take, and the NH State Nursery or your local conservation district plant sales are a great place to get these plants.

3) Less lawn– think about how much lawn you really need and consider allowing some areas to grow into a meadow, or plant flower beds or shrubs. Remember the less lawn you have, the less mowing you have to do!

4) Reduce fall cleanup –Try to minimize the amount of raking and clipping you do in the fall. Leaving plant material (like leaves) on the ground through the winter will help build soil. You can always clean up what's left in the spring.

5) Build a brush pile – this is an easy way to provide cover for wildlife on your property.

[CLICK]

6) Install bird boxes – do some research to find out what bird boxes will best suit your yard based on the habitat and bird species you already have on your property.

7) Put up a bird feeder in the winter to bring birds closer to you! Just remember to always take your feeder down in the spring to avoid problems with bears.

8) Consider including a water feature for wildlife, and again this can be as simple as a bird bath or a rock with a depression that fills with water after a good rain.

9) If you have questions or need ideas, try calling or emailing the UNH Cooperative Extension Education Center and Info line, which is staffed by trained Master Gardener volunteers. They can answer your gardening and wildlife questions as you start working on providing habitat for wildlife in your yard – and we've included a whole long list of resources for you on the handout as well.

And last but certainly not least… (advance slide)

Make sure you get out and enjoy your backyard habitat. Make a place to sit and spend time watching all the wildlife that are going to be using it!

I hope you'll take a closer look at your own garden, or at landscaping in the public areas in your community and see if you can identify ways to improve habitat for the wildlife around you.

That's the end of my presentation. Before I take questions, I'd like to thank the organizations who sponsored this program:

•The **New Hampshire Charitable Foundation** and the **Davis Conservation Foundation** for grants that helped create Speaking for Wildlife,

•**UNH Cooperative Extension** for supporting our volunteer programs, and

•**New Hampshire Fish and Game** for ongoing support of the program.

Thank you for listening! Questions or comments?

[Speaker's note: If you have other partners (such as US Forest Service, SPNHF, etc.) please change this slide as needed]