Where do I turn for more information & help?

RI DEM Division of Forest Environment
(401) 647-3367 • www.dem.ri.gov
- Talk with a state forestry wildlife biologist.
- Obtain assistance with woodland wildlife habitat planning; a list of consulting foresters and licensed wood operators.

RI DEM Division of Fish & Wildlife
(401) 789-3094 • www.dem.ri.gov
- Information on hunting rules, regulations and safety education training.
- To talk with a state wildlife biologist.

RI DEM Office of Water Resources
(401) 222-3961 • Permitting: (401) 222-2306
www.dem.ri.gov

URI College of Environment and Life Sciences, Department of Natural Resources Science
- Rhode Island Critical Resources Atlas Map and Orthophotos available on-line, www.edc.uri.edu
- Watershed Hydrology Laboratory – The Role of Riparian Buffer Zones in Watershed Nitrogen Cycling; www.uri.edu/cels/nrs/whl
- Rhode Island Vernal Pools; www.uri.edu/cels/nrs/paton

The Audubon Society of Rhode Island
(401) 949-5454 • www.asri.org
- Information, publications and programs about birds and other wildlife, environmental conservation, education and advocacy.

The RI Natural History Survey
(401) 874-5800 • www.uri.edu/ce/rinhs
- Information about invasive species, Rhode Island's ecology, biodiversity protection, and extensive links to many related organizations and publications.

U.S. Fish & Wildlife Service, Rhode Island Field Office
(401) 364-9124
http://northeast.fws.gov/ri.htm

Cornell Cooperative Extension, Department of Natural Resources
(607) 255-2115
www.dnr.cornell.edu/ext/ext/index.htm
publications:
www.dnr.cornell.edu/ext/ext/publications.htm
- Publications on wildlife management of private lands and small woodland properties

A Forest Landowner's Guide to Internet Resources: States of the Northeast
www.na.fs.fed.us/pubs/misc/ir/index.htm
- Publications and factsheets for: Recreation; Wildlife/Hunting; Riparian Forest & Wetland Mgmt; Biodiversity & Endangered Species.

USDA Forest Service, Northeastern Area, State and Private Forestry
www.na.fs.fed.us
Links to Durham, NH Field Office
(603) 868-7600
www.fs.fed.us/na/durham

U.S. Fish and Wildlife Service, New England Regional Office, (413) 253-8200
http://northeast.fws.gov/index.html
Endangered Species Act
http://endangered.fws.gov

One example would be a brush pile that is constructed too close to a property boundary where the neighbor raises vegetable gardens and poultry. Brush piles attract cottontail rabbits, weasels, chipmunks and other similar mammals that would naturally feed on vegetables and prey on poultry. These mammals could become serious pests to the neighbor, and this scenario could possibly result in great discord between neighbors.

Other factors to consider in keeping with the big picture include:

- Again, beware of introducing non-native, invasive plants, animals, and other species. See our factsheet *Working for Biodiversity and Protection from Invasive Species* for more information.
- Observe and appreciate your wildlife from a distance. There are laws against domesticating or otherwise "keeping" wildlife as pets. If a wild animal becomes injured or orphaned, contact the RI DEM Division of Fish and Wildlife for direction and assistance with professional wildlife rehabilitation. In many cases, a baby animal is "mistaken" as orphaned and "rescuing" it causes the most harm.
- If you are interested in using your woodlands to hunt, see factsheet *Working for Alternative Forest Products* for more information about laws and legal issues.
- Learn more about Rabies and other public health diseases of concern such as Lyme Disease and Hoof and Mouth Disease, which can be transmitted by wild animals. Again, the best advice is to avoid approaching wild animals or encouraging them to invade your "backdoor step" by not leaving food scraps, garbage, and pet food in these areas.

What are some examples of things I can do to enhance wildlife habitat on my property?

Use the *Record of Woodland Area Plans and Activities* sheet to record actions you plan to take and develop a time frame for accomplishing activities. Refer to the list of contacts and resources listed at the end of this factsheet for specific information and assistance with these activities.

- Properly locate and construct a brush pile to provide wildlife cover.
- Locate, protect and enhance mast, den, and cavity trees.
- Encourage the growth of wild apple trees through proper pruning and crop tree management.
- Plant a fruiting tree, shrub, or vine.
- Deem an area in your woodlands to be left "wild" or "as is."
- Create or maintain an opening or "edge" area when nearby early successional habitat is severely lacking and in a manner that limits forest fragmentation. See factsheet *Working with your Neighbors – Reconnecting Forest Fragments* for more information.
- Seed an existing opening, roadway, or landing to provide food and cover.
- Enhance or maintain Riparian Buffer Areas.
- Delay the mowing of grass openings until mid-July.
- Build a nest box, bat box, or bird feeder.
- Create a snag (standing dead tree) or a "downed" tree or tree limbs to provide nesting and perching sites, and nutrient recycling.
- Provide a shallow water source such as a birdbath, constructed garden pool, or water fountain.
- Keep a record or journal of the wildlife observed on your property.

*This project is a collaboration of the Southern New England Forest Consortium, Inc.®, and the University of Rhode Island Cooperative Extension Home*A*Syst Program©. Written by Holly K. Burdett†, Christopher Modisette, Alyson McCann© and Brianne Neptin©. Special thanks to all publication reviewers. Funding for this project was provided by the USDA Forest Service in cooperation with the Rhode Island Department of Environmental Management Division of Forest Environment and the USDA Renewable Resources Extension Act, URI Cooperative Extension.*

A word about domestic pets and wildlife

Cats, dogs, and other small or exotic pets are best factored out of your wildlife habitat plans. Your pets may be both predator and prey depending on the wildlife that inhabits or visits your property. Your cat may cause devastating damage to ground-nesting birds during the spring and early summer before falling victim to a coyote or even an owl. In fact, it is estimated that household pets kill millions of nesting birds each year.

The best approach is to keep your household pets under control. This includes keeping your dog on a leash and confined to a certain "run area" in your backyard. This may also include turning your cat into an "indoor" cat. Consult with your local veterinarian or animal welfare organization for more information and guidance on properly controlling your pets.

Working for Wildlife Habitat

The things you can do to create or enhance wildlife habitat within and around your backyard and woodlands are endless. They simply depend on what you ultimately want to achieve and the amount of time, effort and expense you wish to devote.

Here are some questions you might ask in determining your wildlife habitat goals:

- Am I trying to attract a specific wildlife species or group of species such as songbirds, small mammals, or game, or do I just want to enhance overall wildlife diversity, or both?
- Is my major goal the protection of rare or endangered species, species of special interest, or species that may be sensitive to human disturbance?
- Am I planning to allow hunting in my woodlands?
- Will I be interested in wildlife viewing, and if so, where do I want to view them from and at what time of year?
- Is my main goal to encourage wildlife that will provide added benefits around my property by serving, for example, as a natural form of pest control? An example would be birds that feed on insects or grubs within lawns and gardens.
- How concerned do I have to be about inadvertently creating new problems such as unwanted predators or pest problems, encouraging the spread of disease, and introducing non-native, invasive species?
- What amount of time, money, & effort am I willing to invest into this project?
- What type of skills and equipment do I have available to help me meet my goals?
- How will my neighbors feel about the new habitat created and the species that use it, and how important is that to me? Can I get them interested in managing their parcel(s) as well to meet mutually desirable goals?
- Do my neighbors already have valuable habitat features such as an open field, water resources, sources of food and cover that will adequately serve the wildlife species that I'm interested in attracting?
- Will the cultivation and or harvesting of traditional forest products such as logs and firewood, or alternative forest products such as Christmas greens, mushrooms, witch hazel and blueberries be part of my goal?
- How important is the way my property looks when I'm done? From my deck? The street?

Once you have established clear wildlife goals you need to determine what you will need to do to reach these goals. Careful consideration needs to be given to the needs of the species desired, and the ability of your parcel to provide it.

Wildlife Habitat…

Basically consists of four main elements:
- Food
- Water
- Cover (protection or "shelter" from the elements and predators, and for nesting)
- Space (the territory that species must roam to find adequate food, water, and cover, as well as mate and reproduce)

Finding, and then providing the elements that are lacking for the desired species, in the right quantities, in the proper location, and at the right time of year, is the key to your success! The key element that is in short supply is referred to as the "limiting factor." It may be rather easy to provide the limiting factor for some species, such as a gray squirrel, within a couple of acres located right on your property. Other species, such as ruffed grouse, may require larger tracts of land and the need for you to work jointly with your neighbors.

Again, it is always recommended that you look at the surrounding landscape, as certain valuable elements may already be present in a close enough range to aid in your own plans. An example would be a nearby stream or

pond that may serve as an adequate water source, or a nearby cornfield that provides an edge and supplemental food, in which you may then only need to provide a source of cover to attract or encourage the desired species. In other cases, you may find it necessary to install a small garden pool or birdbath and plant certain native or other non-invasive shrubs and trees to attract the desired species.

Rhode Island Critical Resources Atlas Maps and Orthophotos are on-line at www.edc.uri.edu or contact RI DEM Division of Forest Environment at (401) 647-3367 to view various maps of your property and surrounding areas.

Where Do I Begin?

By now, you may have already taken some of the suggestions given in the other factsheets about getting to know your woods and gaining awareness of the soil, water, tree species and other features that exist on your land. If you need to revisit this information, review the factsheets *Why Do Foresters Talk The Way They Do?, Where Do I Begin? A Forest Is More Than a Bunch of Trees,* and the *Woodland Area Inventory Sheet*.

A very general rule of thumb when evaluating your land for wildlife objectives is to consider an area ten times the size of the area that you will manipulate. What habitat types are contained there? What land uses? What habitat elements are provided on those surrounding lands, and now what are the limiting factors?

When familiarizing yourself with your woodlands, another important factor to consider is whether your land and the surrounding land (your neighbors', nearby public conservation lands, etc.) already provide crucial habitat for certain wildlife species. These species may be endangered, threatened, or species of statewide concern (see factsheet *Working for Forest Resources and Health* for more information), or they may be heading in that direction if more and more of their valuable habitat continues to be lost or significantly altered. Again, viewing maps such as aerial photomaps, USGS Topographic Maps and other natural resource features is suggested to aid you in this step. See the contact information at the end of this factsheet for more information.

Keeping sensitive species in mind, you may find that you would like to create, enhance or further protect certain features to attract and/or further protect a variety of wildlife species. These features may include:

Providing for an edge. An edge is the location where two different natural areas or habitats meet. Examples include:

- Where woodlands border a field, your own yard, or other opening
- Where there is a transition between pine trees and hardwood trees
- **Riparian** areas--where streams, ponds and vernal pools border woods, fields, or transitional "brushy" areas

Closed forest canopy dominates the landscape throughout most of the northeast. Grassland, shrubland, and early forest successional habitat is severely lacking. A large number of species depend on "edge" habitat for some part of their life history. As a result the numbers of these species have been seriously declining. For these reasons activities and strategies that increase "edge" habitat will result in immediate benefits to a wide range of desirable wildlife species. Ideally, edge areas that are "created" to enhance wildlife habitat should be as irregular in shape as possible.

Riparian edges, especially around vernal pools, provide crucial habitat. A majority of the plants, animals and other species that live in these areas cannot survive in any other habitat. **Riparian Buffer Areas** are also crucial for many aquatic species, such as salmon and trout, because they help to regulate water temperature, provide woody debris along stream edges and reduce sedimentation. See factsheet *Working for Clean, Plentiful Water* for more information on Riparian Buffer Areas, vernal pools and water quality protection.

One of the first steps in working for wildlife habitat is becoming aware of and protecting the valuable habitats your property & nearby lands already provide.

Providing food. **Mast** trees & shrubs, and other plants naturally produce fruit, nuts and seeds that are eaten by wildlife. Planting mast trees and shrubs or encouraging them through crop tree management--especially along edge areas, can help provide food and attract several species of wildlife including Wild Turkey, Gray Squirrel, Fisher, Porcupine, and White tailed deer. This method is preferred to direct or artificial feeding of wildlife for several reasons:

- Wildlife species become too dependent on artificial food sources.
- Less aggressive species often "miss out" and don't get an adequate share.
- Diseases can spread rapidly at these "feeding stations".
- A larger population than can be sustained under "natural" conditions may be attracted and could starve if artificial feeding is not sufficient or too sporadic.

Artificial feeding stations, such as bird feeders, are best when used to supplement natural food sources and to attract, for example, specific songbirds to a designated viewing area in your woods or backyard.

Words of caution about "creating" edges

Beware: disturbing natural vegetation creates prime conditions for non-native invasive plants to invade and take hold, thus reducing the value of the planned benefit. Refer to factsheet Working for Biodiversity and Protection from Invasive Species *for more information.*

Forest fragmentation, or loss of large expanses of contiguous forest habitat, is one of the most critical issues facing our forests today. See factsheet Working with your Neighbors—Reconnecting Forest Fragments *for more information. The creation of many small edge areas or openings can contribute to forest fragmentation. Your own yard and nearby fields and water bodies can serve as valuable edges. Remember the rule of thumb – look at an area 10 times the size of the area you want to manipulate. Do edge or early forest successional habitats already exist?*

Providing cover for shelter, nesting, perching, escape, species interaction (mating and reproductive rituals). **Snags** are standing dead trees. Snags can become **den trees** or **cavity trees**, which are trees that have been hollowed out due to rotting heartwood, or that have had cavities excavated in them. Not all den and cavity trees, however, are "dead" (considered snags), and they may even be continuing to serve as mast trees.

Snags provide nesting sites and shelter to several species of wildlife, including moles that burrow beneath their roots. Some species, such as owls, may use the same snag as a nesting site year after year. Snags are also a source of food for certain birds such as woodpeckers and chickadees that eat the insects which feed on the decaying tree bark. Furthermore, snags serve as excellent perching sites, especially for hawks that use them for hunting viewpoints.

Not all trees are created equal when it comes to their value as a snag or as a live den/cavity tree. Tree species makes a difference depending on the type of wildlife you wish to attract. The number and size of snags and/or live den/cavity trees located throughout your woodlands is also important and needs to be part of your wildlife habitat plan.

Downed trees, logs, and limbs provide hiding places and dens for small mammals and amphibians. As they decompose, they also provide a rich source of recycled nutrients to the forest soils and often sprout new seedlings.

Properly constructed brush piles, tall grasses, and dense stands of foliage are all valuable sources of nesting and escape for many birds and mammals.

About Water… All animal species need clean, fresh water to survive. Your woodlands may have adequate food, cover, and other habitat features, but if it is located too far away from running or standing water, a variety of wildlife may not inhabit or visit your property. A project as simple as providing a birdbath, man-made garden pool, or shallow tub of water may be all that is necessary to encourage a variety of birds and other wildlife. Depending on the wildlife species you wish to attract, you may wish to have a couple of these water sources placed at varying heights. You may also wish to think about ways to prevent water from freezing during the cold winter months.

Other more involved projects may include the development of a natural spring or the construction of a wildlife pond. These activities would require a higher level of financial resources, and most would also require a permit from the RI Department of Environmental Management Office of Water Resources. Professional assistance will be needed to ensure that existing wetlands and water resources are not significantly impacted or altered. See the list of contacts and resources at the end of this factsheet for more information. See factsheet *Working for Clean, Plentiful Water* for more information on protecting water quality.

Remember to think about the big picture

As we have already suggested, it is important to think about whether or not

1) Your woodlands and the surrounding area already provide valuable habitat for certain species of wildlife.
2) Introducing or encouraging new species could potentially impact the long term surrounding environment or at a minimum, result in unwanted "side effects".

The following are some important, non-invasive tree, shrub and plant species that attract wildlife, providing food or cover or both.

- *Trees: Oak, Hickory, Beech, Beach Plum, Wild Apple, Gray Birch, Red Cedar, and Dogwood (flowering and red-panicled)*
- *Shrubs and Vines: Highbush Blueberry, Sumac, Elderberry, Serviceberry, Witch Hazel, Inkberry, Winterberry, Green Brier, Huckleberry, Viburnums, Red Chokeberry, American Holly, Bayberry, Virginia Creeper, Trumpet Honeysuckle, Common Juniper, Wild Clematis, Sweet Pepperbush, Mountain Laurel, Great Rhododendron, Rose Azalea, Swamp Azalea, Pussy Willow, and Arrowwood*
- *Other Grasses and Plants: fescue grasses, Little Bluestem, Deertongue, Black-eyed Susan, Bearberry, Lowbush Blueberry, Pennsylvania Sedge, Dwarf Cornel (Brunchberry), New Jersey Tea, and Wintergreen*
- *Additional wetland plants that are also high in food value include Cattail, Bulrushes, Sedges, Pondweeds, Arrowhead, Arrow-arum, Sweet Flag, Buttonbush, Viburnum, Shadbush, Water-lily, Swamp White Oak, and Tupelo*

List provided by RI DEM Division of Forest Environment and Lisa Gould, Executive Director of the Rhode Island Natural History Survey and Coordinator for the Rhode Island Invasive Species Council. You can also contact the URI cooperative Extension GreenShare Program at (401) 874-2900 for the Sustainable Trees and Shrubs Manual, www.uri.edu/ce/factsheets/sheets/sustplant.html or the Rhode Island Wild Plant Society at (401) 783-5895, www.riwps.org