

Creating Your Own Healthy Habitat

The traditionally landscaped yard, complete with a well-kept lawn, manicured flower beds, and sheared shrubs, hinders nature and wild creatures. But “landscaping” these days is redefining itself as more people garden with the goal of *inviting* wildlife into their yards.

The next few pages will help you start your own healthy habitat - a healthy, beautiful garden for your family, and valuable habitat for songbirds, butterflies, and dragonflies.

Gardening for wildlife can be as easy or ambitious as you want. Without planting even one plant, you can make a livelier, healthier, and more enjoyable garden by changing or stopping some common gardening practices. Adopting new methods can benefit endangered salmon and improve the water quality in your community. More ambitious gardeners will find abundant possibilities to provide shelter, space, food, and water for birds and other wildlife.

This chapter offers explanations for new approaches to gardening as well as practical tips about how to garden for wildlife. We hope that you will find it useful whether you are a low-exertion gardener or one with boundless energy.

We tried to keep this chapter brief. Chapter 4, Resources, contains more details on creating healthy habitat. It also includes references for information on building soil, preparing a site, buying native plants, getting bare-root and potted plants into the ground, sowing seed, removing weeds, building a pond, watering and much more.

“When we lose the common wildlife in our immediate surroundings, we run the risk of becoming inured to delight, and eventually, alienated from the land.”

Robert Michael Pyle.



Sketch by Carleen Zimmerman

Simple Steps for the Lively Garden

1. Stop killing things.

Practice peace in the garden.

Gardeners disrupt connections in the web of life in many ways. Most commonly they get rid of unwanted actors in the garden through a variety of pest-control methods. And all too often, they let an introduced predator – the domestic housecat – run freely.



In the natural world of the garden: *insects eat plants*. It is a fact. Some view this as ugly and unhealthy. Insects that eat plants are often called “pests.” And yet *98 percent of all insects are actually beneficial*. Your gardening will change when you accept the fact that it is perfectly natural for insects to eat plants.

Chemical pesticides can harm or kill wildlife directly if exposure occurs during or soon after the application. They can kill indirectly, too, if wildlife eat tainted food or drink tainted water. For example, as pesticide runoff enters our urban streams, fish and riparian wildlife are exposed to the chemicals and may be harmed. In addition, bats and birds that depend on a healthy population of flying insects will suffer as pesticides kill off many or all of this local food supply.

What you can do:

- ❖ **Start with prevention** to lower your chances of even developing a pest problem. Maintain healthy plants and soil to resist pest and disease problems, and encourage beneficial insects.
- ❖ **Dispose of the most harmful pesticides immediately.** These include diazinon, chlorpyrifos (Dursban), malathion, and carbaryl. See www.metrokc.gov/hazwaste for details. Avoid products with label messages like “highly toxic” or “may be fatal if swallowed.”
- ❖ **Try non-toxic alternatives** to address pest problems. Hand removal can be effective for large pests like tomato hornworms and snails. Tent caterpillar infestations, caught early, can be pruned out. Repeated washings of aphids off plants from the strong spray of a hose can reduce

damage. Drown slugs in beer or in a mixture of yeast and water. Use baking soda mix or compost tea for mildew and scab.

- ❖ **Try preventing weeds by smothering them.** Weeds thrive in bare soil and neglected areas. Try preventing them by smothering them with weed barriers and lots of mulch, or by planting a native groundcover that will outcompete them. Pull out weeds before they go to seed, and be persistent in pulling problem weeds. Finally, remember that a “weed” is just a plant in the wrong place, and accept a few weeds in the garden. Target the problem weeds, and forget the others.
- ❖ **Keep your cat indoors,** especially during the dawn and dusk hours and during the bird breeding season. Cats kill millions of birds each year.

Facts about insects and pesticides

- ❖ 98 percent of insects are beneficial, yet few pest control strategies discriminate between “pest” and “beneficial” insects.
- ❖ Pesticides kill an estimated tens of millions of birds every year in the US.
- ❖ A healthy population of beneficial insects keeps populations of insect pests in balance.
- ❖ Spiders, salamanders, frogs, toads, snakes, lizards, voles, shrews, and birds are primarily insect-eaters.
- ❖ Even seed- and nectar-eating birds, such as hummingbirds, rely on a diet of invertebrates when raising their young.
- ❖ Pesticides often kill far beyond their target. Many kill soil organisms that are essential to healthy soil and healthy plants. The traditionally landscaped yard, complete with a well-kept lawn, manicured flower beds, and sheared shrubs, hinders nature and wild creatures. Now, “landscaping” takes on a different definition as more and more people garden with the intent of inviting wildlife into their yards.



2. Stop cleaning up.

In the garden, death is the raw material of life.

A clean and tidy garden is probably a garden without much life. Leaving plant debris as organic mulch benefits plants and wildlife. Seedpods left in place attract seed-eating birds like sparrows and finches. Loosely-stacked brush piles built from pruned or fallen branches offer cover and increased foraging possibilities for wildlife. Dead and snag trees provide food and essential shelter for a multitude of wildlife.

Your garden may contain some waste material that should be removed. Any non-native noxious or invasive plant material that will re-seed or continue to grow should be removed from the garden.

Organic matter improves the health of your soil and your plants in many ways. Using organic matter as mulch conserves moisture, helps prevent weeds, and provides foraging habitat for beneficial wildlife. The abundant

What you can do:

- ❖ ***Avoid chemical fertilizers.*** Using compost will build larger populations of the soil organisms necessary for healthy soil.
- ❖ ***Let organic matter (leaves, needles, cones) decompose*** as a natural mulch on the surface of garden beds. Leave last season’s seed stalks and plant growth in place.
- ❖ ***Resist the urge to cultivate.*** Cultivation disturbs the recycling system set up by soil-processing organisms.
- ❖ ***“Grasscycle” (mulch mow) your lawn*** – leave chopped up grass clippings on the lawn as fertilizer.
- ❖ ***Convert dead or dangerous trees to snags*** so they may provide a home to cavity-nesting birds.
- ❖ ***Use fallen and pruned tree branches to construct a brush pile*** for wildlife, or chip these branches for soil mulch.

microorganisms in organic soil help plants produce complex starches and proteins. (In contrast, soil not enriched by compost contains fewer microorganisms, so plants produce more simple sugars that are tasty to insects.) Organic soil protects plants against disease. Fruits and vegetables growing in organic soil suffer 60–80% less disease.

The secret to healthy soil? Soil organisms. You will need a healthy population of soil-processing organisms, like earthworms, to work the soil and break down the organic matter. This will improve soil drainage and allow the broken down organic matter to be taken up again by the plants as recycled nutrients. Chemical fertilizers and pesticides are frequently toxic to soil organisms, so if you are using these, your soil won't be very fertile. Check with one of the resource organizations listed on page 44 to find out how to assess and improve the health of your soil.

3. Plant more plants

The best way to attract birds to your yard is to have species that grow in their natural habitat. Plants are the foundation of life in the garden. While you can keep the non-invasive ornamental species that you love or that contribute to the liveliness of the garden, be sure to include many native plants that provide food and cover for wildlife. After all, the native plants are the ones our native birds have evolved with, and native plants grow easily in our climate and soil conditions, so they require less maintenance.

Garden Wildlife Features

By following the three steps for a lively garden, you have created a healthy, hospitable habitat for native wildlife. Adding some of these wildlife attractions to your garden will make it even more welcoming to critters.

What you can do:

❖ **Incorporate natives into your garden** as much as possible, and try to select natives from your specific part of the region. Get ideas for natives from a neighborhood park or greenbelt.

❖ **Let plants grow.** Like people, plants are happiest when they are allowed to reach their full potential. Move plants that are too large for their planting area. Prune to look through (rather than over) tall plants.

❖ **Remove your lawn.** To do this, smother it with several thicknesses of newspaper topped with five inches of compost and soil. With the

help of earthworms, this will decompose enough for deep-rooted plants to penetrate through or take root below. A quicker (but more expensive) alternative is to rent a lawn-cutting machine.

❖ **Watch out for invasive and noxious plants.** Invasive plants in the Puget Sound region include Scots broom, English ivy, Himalayan blackberry, English laurel, English holly, Japanese knotweed, evergreen blackberry, herb robert, and morning glory. If not controlled, these plants can create a wildlife-unfriendly monoculture.

Just Add Water

You need a reliable source of clean water for bathing and drinking to attract and keep birds in your yard, and to entice them to nest. Anything from a simple birdbath to a constructed pond will suffice.

Certain features will make your birdbath more popular. Birds prefer shallow baths with gently sloping sides, although if you already have a deep bath you can make it shallow by adding a layer or two of rocks in the bottom. A rough-textured bowl is better for bathing than a slippery surface, and birds love running water—installing a dripper or mister will bring even more birds to your bath.

Change the water every few days, and clean it periodically with a plastic brush. Keep the water thawed as well, as birds need to drink water even on the coldest days. A wooden stick left in the water can help you easily pop out the frozen ice and replace it with fresh water.

Consider water features beyond the traditional birdbath. For example, a well-planned pond can help transform your yard into a magnet for wildlife, including fish, birds, butterflies, dragonflies, and damselflies. There are many factors to consider when planning your pond – permit requirements, safety, location, size, shape, depth, how to line your pond and filter the water, whether to add a cascading waterfall, what vegetation to plant in and around the pond, etc. Many wonderful resources can help you plan your pond, or you may wish to consult a professional.

Dead Trees and Down Wood

Snags and down wood occur naturally in the forest. But in our urban landscapes, we often think of old, dying, fallen, or standing dead trees as unsightly, and remove them. Many native songbirds are cavity-nesters, meaning they excavate their own nest holes in dead or dying trees or use abandoned cavities. Good cavity nesting sites for birds are no longer abundant. Birds and mammals that seek cover and forage for food in dead wood are also suffering.

By leaving snags in place, you create more opportunities for cavity-nesting birds to create a home, and for insect-eating birds to forage for food. These include nuthatches, woodpeckers, and wrens. Safely create and preserve snags from dead, dying, or hazard trees, or add them to your landscape.

By leaving in place some down wood, you enhance your natural landscape and provide small animals with food and shelter. Over time, down wood decomposes and enriches your soil with nutrients. If your yard does not contain down wood, you may add it to your landscape by salvaging dead wood from a construction or logging site.



Bird Feeders

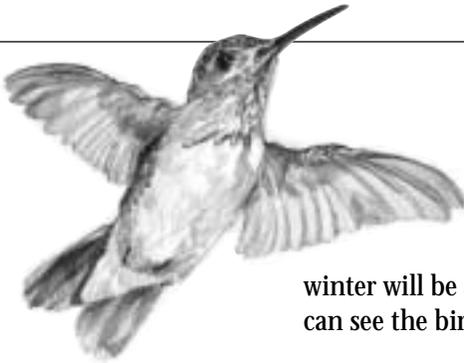
Bird feeders can be a fine supplement to a lively garden. It may surprise you to learn how many bird species visit your yard if you offer a variety of food. Think about the types of food to offer, where to place your feeders, and how to prevent the spread of disease.

Feeder possibilities vary widely. So do the types of bird foods that go with them. Keep in mind the types of birds you wish to attract. Larger birds, like jays, need a wider perching area, whereas smaller birds like chickadees will gladly cling to a tiny perch, even upside-down, to nab a sunflower seed. Insectivorous birds, like all of our woodpeckers, will happily feast on suet (which include animal fat), hummingbirds dine on sugar water, and goldfinches are partial to thistle seed. A platform feeder with cracked corn may bring you Band-tailed Pigeons and California Quail if you live near their habitat. Black oil sunflower seed is perhaps the most popular seed with birds, and inexpensive mixed seed is the least popular – in fact, much of it is undesirable and wasted.

Hummingbird Nectar Recipe

Combine one part sugar and four parts water in saucepan and bring to a boil.

Remove from heat and let cool before filling the feeder. Do not add red food coloring – this can harm the birds. Store excess in refrigerator. Change the nectar frequently to discourage the growth of bacteria, especially in warmer months.



Feeder placement, too, influences what will come to your yard. Make bird safety and comfort a top priority. Place feeders away from pets, traffic, and strong winds. Nearby trees and shrubbery allow birds to seek cover quickly if a predator appears; however, shrubbery too close to the feeder may enable outside housecats to stalk and kill birds that gather on the ground below the feeder. A dry spot will keep your seed from getting wet, and a sunny spot in winter will be appreciated. For your own benefit, choose locations where you can see the birds easily. Many birds will come right up to a window feeder to

Follow these simple rules when buying, building, or maintaining a nest box:

- ❖ **Know which species you are trying to attract.** This will determine the box's style and size, the diameter of the entry hole, and the best location and height for the box.
- ❖ **The box should be free of toxins and preservatives.** This means no paint inside or outside the box. Western red cedar is sturdy with good insulating properties, and contains natural preservatives to keep it from rotting.
- ❖ **Protect the nestlings in your box.** Make sure the box is large enough for the desired species so that the nestlings are not crammed against the entry hole, where they can be nabbed by a predator or fall out. Also, make sure the roof overhangs

the front by at least an inch to keep predators from stalking the entry hole; avoid boxes with entry perches for the same reason.

- ❖ **Keep your box healthy and clean.** A few quarter-inch holes near the top of the box improves ventilation so the nestlings do not suffocate; a few drainage holes in the bottom let out moisture. A slanted, overhanging roof keeps out the rain, as do watertight seams. A smooth entry hole keeps feathers from becoming tattered. With a hinged side or bottom, a box is more easily opened and cleaned of all old nesting material from the previous season.

get food.

Clean your feeders at least twice a year to prevent molds and bacteria from harming the birds. Discard old seed and clean the feeder with a very mild bleach solution. Soak the feeder for about one hour. Some feeders can go directly into the dishwasher. Keep the area around your feeders raked clean of discarded seed shells and excess food. This will help discourage unwanted mammals, such as rats.

Nest Boxes

You may wish to provide some well-designed and maintained nest boxes. Not all “birdhouses” are created equal; in fact, many birdhouses on the market are for decoration only.

See the green box on facing page for tips on selecting or building a good nest box.

Homemade Suet Cakes
<i>1 cup crunchy peanut butter</i>
<i>1 cup lard</i>
<i>2 cups quick cook oats</i>
<i>2 cups cornmeal</i>
<i>1 cup flour</i>
<i>1/3 cup sugar</i>
<i>Melt the peanut butter and lard, add remaining ingredients, and cool.</i>

Keeping a Garden Journal

Start a field journal to track the changes you see in your yard and enrich your connection to nature. Things you might observe or describe:

- ❖ What you see, hear, and smell
- ❖ What you don't see, hear, and smell, but might like to
- ❖ Changes in the garden related to:
 - ◆ changes in gardening practices (look at soil, plant life and wildlife.)
 - ◆ changes in the plant community
 - ◆ changes through the seasons
 - ◆ changes over time: births, growth, deaths, etc.
- ❖ Surprises: volunteer plants, new wildlife, etc.
- ❖ How you feel in the garden - take note of impulses, fears, joys, disappointments

Keeping Cats Indoors

Predation by cats is a leading threat to birds and wildlife in urban and suburban areas. By keeping your cats indoors, you help protect local wildlife, and you help your cat lead a longer, healthier life.

Cat Facts:

- ❖ Outdoor cats (both companion animals and strays) kill millions of song-birds and small mammals per year.
- ❖ Cats are not a natural part of ecosystems; they compete with native predators.
- ❖ Cats transmit disease to wildlife.
- ❖ Even well-fed cats hunt and kill wildlife.
- ❖ Bells do not prevent cats from killing wildlife.
- ❖ Interrupting an attack by a cat usually does not allow the prey to escape and live.
- ❖ Indoor cats live three times longer, on average, than outdoor cats.

Designing your Wildlife Garden

Whether you are ready for a total redesign of your property or prefer to take gradual steps towards a native wildlife garden, you will need a well-designed plan. This section will help you create a basic plan for your property. However, at some point you may wish to contact a landscape professional for more assistance.

“If one way be better than another, that you may be sure is Nature’s way.”

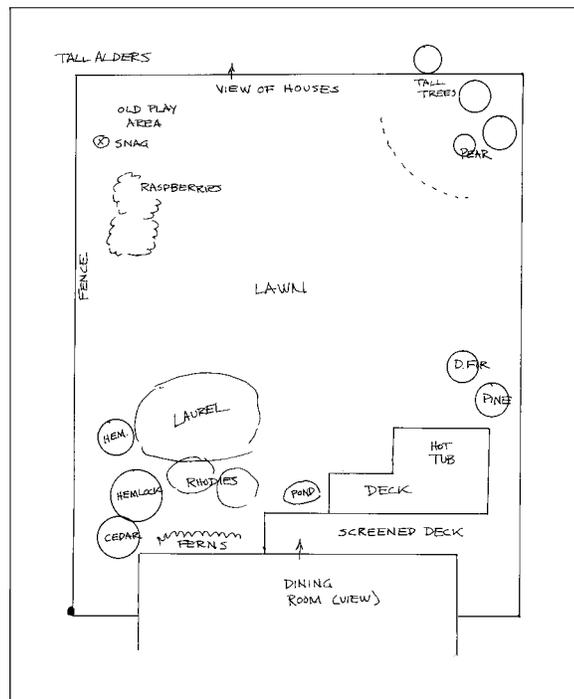
-Aristotle

Before doing anything, get out into your yard and have a look around. What do you see? Is your yard shady or sunny, your soil moist or dry? How many trees do you have, what kind of trees, and in what condition are they? Do you have a vegetable garden you love, or an apple tree that bears delicious fruit? How much lawn do you have, and how much of this do you really use? Are there any seasonal wet areas or steep slopes on your property? Repeat your investigations several times. Assessing your yard’s existing conditions is the first step towards designing your future wildlife habitat.

Draw a Base Map

Next, you need to sketch your property. (No artistic talent is required.) This will be your base map. You can use poster board or simply sketch on graph paper. The sketch should show your property from above.

1. Draw the impervious surface – your house, garage, and all paved areas.
2. Fill in mature trees and shrubs, including dead or dying trees.
3. Identify planted or landscaped areas, such as a vegetable or wildflower garden.
4. Include patches of invasive vegetation, such as ivy and blackberry brambles.
5. Show water sources of any type (ponds, streams).
6. Include brush piles, rock shelters, large stumps, and logs.
7. Show existing bird feeders, birdbaths, and nest boxes.
8. Identify the lawn.



Sample Base Plan - To transform their backyard into a wildlife sanctuary, Neil and Carleen Zimmerman used a base map to identify the existing structures, trees, and areas of use. They wanted to screen an intrusive view in the back, construct a new shed, add to the deck and viewing areas, and convert the large lawn to low-growing native plants. They screened the porch with a wire mesh that does not detract from the view, but keeps their two cats safely inside.

Your base map helps to identify existing conditions, and it also illustrates the connectivity and structure of your existing features and their value to wildlife. If you know your plants, you may wish to use a key diagram to identify different species of plants on your property, or make a list of the existing native species.

Design a Layout Plan

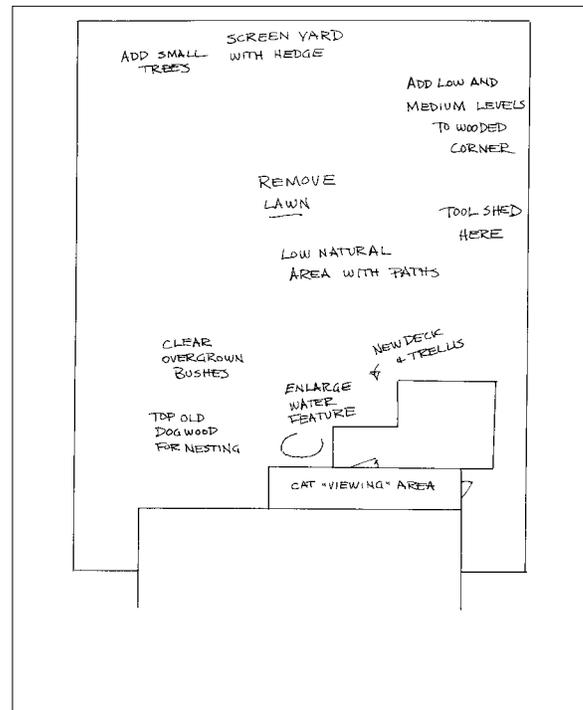
Make a number of photocopies of your base map. Now you can experiment with different garden scenarios. Use all the paper you need for this exercise – don't be shy about trying a new idea out on a piece of paper.

You might ask yourself some questions when designing your garden:

- ❖ If you have both a front and back yard, how do you use each one?
- ❖ How much lawn, if any, is needed for family recreation, pets, and entertaining? Concentrating high-use human activities into one or two designated areas will help maximize your undisturbed areas.
- ❖ What areas should be shielded for privacy? Do you have views to maintain, or obstructions such as utility lines?
- ❖ Can you allow for movement through the landscape? Might you include paths and benches for people to use the space and view the wildlife?
- ❖ Do you have, or want, wildlife features that will definitely attract birds, such as feeders, snags, brush piles and bird baths? Areas near windows, patios and porches are the best wildlife-viewing areas.



Layering the planting will attract a greater variety of birds to the yard.



Sample Layout Plan - To transform their property, the Zimmermans tackled one project at a time. They have many tall trees in the yard and around it, and wanted to add lower layers in the corners that would invite birds. The yard was screened with a tall photinia hedge. They added nest boxes and snags for cavity nesters (in one case, sawing a dead tree that had a nest hole in it so that it could be hinged and cleaned like a box.) They topped one of the trees, a dogwood, for perches and nesting area. They decided to remove a large overgrown laurel, trim the rhododendrons near the back windows, and add a brush pile. This opened up a feeding area that was easy to view from the dining room. A small artificial pond was enlarged to make a circulating "waterfall," and this stream was visually connected to a rocky path leading to a stunning driftwood piece in the center of the yard. The lawn was replaced with low growing native vegetation, and a pathway and stepping stones were added so that the feeders could be easily accessed.

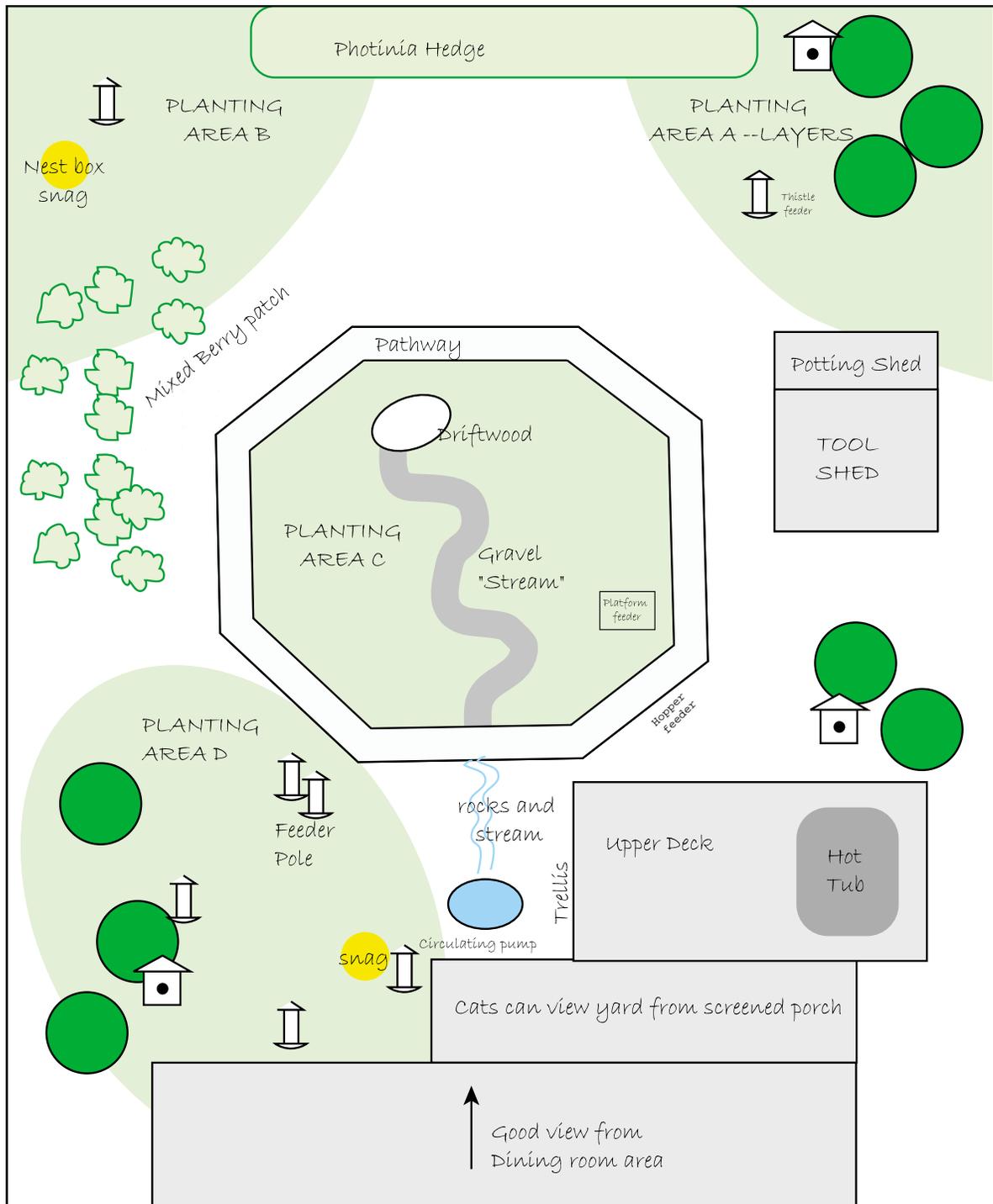
Create a Planting Plan

After creating a layout plan that you like, sketch a planting plan. This will let you experiment with plants on paper before anything goes into the ground. The plan may include specific species, location, spacing, and quantities. Some considerations:

- ❖ **Select your trees first** and determine where you want to plant them. Next, select shrub layer plants and finally your smaller plants and groundcover.
- ❖ **Select plants that will be attractive** to you and to native wildlife.
- ❖ **Choose plants that are well-suited** to the conditions of your property. Choose shade-tolerant plants for shady areas and the understory layer, and erosion-control plants for steep slopes.
- ❖ **Preserve existing native vegetation** if possible. Trees are especially valuable, and shrubs may provide food and cover for wildlife.
- ❖ **Plant with repetition.** Instead of the “one of everything” approach, plant several individuals of each species. This pleases the eye and is more likely to attract wildlife, as individuals of the same species often bloom together.
- ❖ **Provide cover,** giving wildlife the ability to hide. Avoid oversharing and overshaping your shrubs. Instead, let shrubs grow out a bit and touch each other.
- ❖ **Add layers.** Different wildlife species use different layers of vegetation. Every plant layer (groundcover, shrub, understory, and canopy) increases the diversity of wildlife in the garden.
- ❖ **Increase vertical and horizontal connectivity** to allow wildlife to travel up and down and in and out through the different layers of vegetation. Plant so that each layer connects somewhere to another layer.
- ❖ **Take your time.** You don’t have to do it all at once—work on one section at a time if that is more comfortable.

Opposite: *The planting plan of the yard to date. Although many of the plants are young, the birds find the landscape appealing. The Zimmermans have noted 67 species of birds in their yard, and at least nine species have nested there.*

See table on page 40 for a list of Northwest native plants highly recommended for wildlife-friendly landscaping.



Planting Plan

Area A – Shaded woodland corner.

Medium size trees: serviceberry, red alder, vine maple. Smaller shrubs and herbs: bracken fern, cape fuchsia, indian plum, Oregon grape, salal, salmon-berry, sword fern, twinberry

Area B – Transition area from tall trees beyond yard: vine maple, red-flowering currant, mungho pines, evergreen huckleberry, boysenberry, blue-berry, indian plum

Area C – Low growth inside of walkway:

red-flowering currant, oxalis, deer fern, salal, huckleberry, kinnickinick, bearded iris.

Area D – Shady, tall trees (hemlock, cedar): transplanted moss with netting, Pacific rhododendron, salal.

		Evergreen	Deciduous	Grows anywhere	Dry soil	Moist soil	Prefers sun	Prefers shade	Catkins, leaves or seeds	Attracts insects	Nesting site (dead wood)	Nectar/pollen	Fruit	Attracts hummingbirds	Nectar butterfly or moth	Larval food butterfly or moth	
TREES	Vine maple	<i>Acer circinatum</i>	●			●			●			●					
	Big-leaf maple	<i>Acer macrophyllum</i>	●	●					●	●	●	●				●	
	Red alder	<i>Alnus rubra</i>	●			●			●	●					●		
	Pacific madrone	<i>Arbutus menziesii</i>	●		●		●					●	●	●		●	
	Pacific dogwood	<i>Cornus nuttallii</i>	●			●							●			●	
	Douglas fir	<i>Pseudotsuga menzeisii</i>	●				●		●	●	●						●
	Scouler's willow	<i>Salix scouleriana</i>	●			●	●		●	●					●	●	
	Western red cedar	<i>Thuja plicata</i>	●					●	●	●	●						
	Serviceberry	<i>Amelanchier alnifolia</i>	●	●			●						●	●			●
	Red osier dogwood	<i>Cornus stolonifera</i>	●			●							●	●			●
SHRUBS	Salal	<i>Gaultheria shallon</i>	●	●								●	●			●	
	Tall Oregon grape	<i>Mahonia aquifolium</i>	●				●					●	●		●		
	Cascade Oregon grape	<i>Mahonia nervosa</i>	●					●				●	●		●		
	Indian plum	<i>Oemleria cerasiformis</i>	●					●				●	●		●		
	Mock orange	<i>Philadelphus lewisii</i>	●	●								●			●		
	Red-flowering currant	<i>Ribes sanguineum</i>	●		●							●	●	●			
	Thimbleberry	<i>Rubus parviflorus</i>	●	●								●	●		●		
	Red elderberry	<i>Sambucus racemosa</i>	●			●						●	●	●	●	●	
	Snowberry	<i>Symphoricarpos albus</i>	●	●								●	●	●			
	SUBSHRUBS AND GROUNDCOVERS	Vanilla leaf	<i>Achlys triphylla</i>			●											
Pearly everlasting		<i>Anaphalis margaritacea</i>					●					●		●			
Kinnikinnick		<i>Arctostaphylos uva-ursi</i>	●		●		●					●			●	●	
Wild ginger		<i>Asarum caudatum</i>	●			●		●									
Lady fern		<i>Athyrium filix-femina</i>	●			●		●									
Deer fern		<i>Blechnum spicant</i>	●			●											
Bunchberry		<i>Cornus canadensis</i>				●						●				●	
Pacific bleeding heart		<i>Dicentra formosa</i>				●						●		●			
Fireweed		<i>Epilobium angustifolium</i>					●					●		●	●		
Twinflower		<i>Linnaea borealis</i>	●					●				●					
Fringecup	<i>Tellima grandiflora</i>	●			●												
Sword fern	<i>Polystichum munitum</i>	●	●														