

Gardening for Wildlife

i. Introductions

A. Instructors Janet Macunovich, Steven Nikkila

1. Gardeners, designer, photographer, writers
2. Like you: educated “on the job” and at school. Still and always learning.
3. Garden and landscape design, care & education *Garden A to Z*
4. 25 years as Master Gardeners through Michigan State University Extension
5. Softie from soft families: 19 types/groups of animals encouraged or tolerated in our yard; acquainted with more from childhood and clients.
6. Garden registered 40 years as backyard wildlife sanctuary (National Wildlife Federation)

B. Beginning assumptions

1. We are all gardeners who love wild animals
 - a) One of the 42% of U.S. households who buy seed, feeders, binocs
 - b) In U.S. we spend +\$2 billion/yr. for wild bird seed, feeders & houses
2. We already understand the benefits of wildlife in our gardens:
 - a) Like that good feeling of our own “Eden”
 - b) Getting a helping hand from insect eaters
 - c) Know the value of weed-seed eaters (Iowa Dept. of Ag. figures: Since 1 sparrow eats 1/4 oz. weed seed per day, sparrows eat at least 20 box cars of weed seed each year in Iowa.)
 - d) We also understand the drawbacks of animals in the yard
 - Chewed shrubbery
 - Droppings
 - Good with the bad: insect eaters who tunnel, etc.
 - e) Whether we have one species of animal we love, or many, we know:
 - Once you open the door, tough to keep it open just a crack
 - Sometimes one wild thing is an element in another's formula!
 - f) We will continue to garden while courting these animals' favor.
 - g) We have many different situations and different experience levels
 - Acres versus 10' x 10' courtyards
 - Already managing a zoo, feeding birds for years, or just starting
 - Focused on particular species or open to many

C. Preview. Today, some basics and some in-depth information

1. The basic things that draw animals to a garden
 - Details change with each "desirable wildlife" species we court
2. Attracting specific animals
3. Maintenance practices that make a garden attractive to animals
4. Discouraging specific animals
5. Continuing to learn: a list of references and sources of information
6. Specific plants that attract animals

I. Attracting wildlife - a basic formula

A. Food

1. The easiest attraction
 - Just some seed on the ground will get birds; variety takes more effort
2. Natural foods from plants in your yard
 - a) Diversity is essential
 - Inventory yours and immediate neighbors' yards for food plants
 - b) Timing of food supplies is critical
 - Are your natural foods there when the animals need them? Setting up house in spring is determined by food availability. Staying the winter also depends on it.
3. Supplemental foods: what you put out to fill out a natural menu

B. Water

1. Clean, shallow
 - a) All the animals use it, though you may not see it
 - b) Important to know: 8-10 days of standing water... mosquitoes!
2. Natural or supplemental
 - a) "Natural": lake, tree cavity, puddle, gutter, faucet drips, dew on leaves
 - b) Supplemental: bird baths, manmade ponds
3. A real draw - running or dripping water

C. Shelter

1. For many activities
 - a) To move around safely during the day
 - b) To raise young
 - c) For protection from the weather
2. Natural shelters are
 - a) Plants – deciduous, evergreen, varied heights (may double as food)
 - b) Loose soil
 - c) Natural building materials - feathers, grasses, twigs, leaves, moss
 - d) Changes in grade
3. Shelters you can provide
 - a) Supply of building materials
 - b) Birdhouses, nesting platforms
 - c) Temporary structures, for service until your plantings mature
4. Includes protection from chemical poisoning and winter kill

II. Attracting specific animals

A. Study the animals you want to have around

- 1) Read
 - a) What do they like to eat? (Hummingbirds like red, pink, orange, then others, and blooms that lack landing platforms; butterflies like purple, pink, yellow, white, and blooms with space to perch)
 - b) When do they migrate through?
 - c) What kind of shelter do they need?

- 2) Watch the real animal
 - a) Learn to identify it by markings, sound, movements, habitat
 - b) What kind of plantings do you see them near? When?

- 3) Be realistic
 - a) Some may be lost causes (Southern hemisphere habitat disappearing for more than just Monarch butterflies.)
 - b) Some are hard to see - nocturnal, timid, very special habitat...

- 4) Part of the fun, to study animals! Some of our favorite resources:
 - *American Wildlife & Plants: A Guide to Wildlife Food Habits*, A. Martin, H. Zim, A. Nelson, Dover Books
 - Audubon, free bird i.d. app; audubon.org
 - *Bird Behavior, Volumes 1-3*, Don & Lillian Stokes
 - Cornell Lab of Ornithology, free bird i.d. app; birds.cornell.edu
 - *Landscaping for Wildlife*, Carrol Henderson, Minnesota DNR
 - *Raising Butterflies in the Garden (Learn About Butterflies in the Garden)*, Brenda Dziedzic
 - *Michigan Frogs, Toads and Salamanders*, J. Harding & J. A. Holman, MSU
 - *Michigan Mammals*, Rollin H. Baker
 - *Michigan Turtles and Lizards*, J. Harding & J. A. Holman, MSU
 - National Wildlife Federation. magazine, on-line Wildlife Guide; nwf.org
 - *Native Trees, Shrubs and Vines for Urban and Rural America*, Gary Hightshoe, Van Nostrand Reinhold
 - North American Butterfly Association, magazine, certification; naba.org
 - *Reader's Digest Guide to North American Wildlife*
 - *The Audubon Society Field Guide to North American Birds*
 - *The Audubon Society Field Guide to North American Butterflies*, blue cover includes Host Plant Index
 - Xerces Society, insect/pollinator info; xerces.org

B. Consider the benefits of ALL the possible wildlife

1. Insects

- a) Bees increase fruit/veg production
- b) All insects good food for birds, many mammals
- c) So many kinds
 - 1,402 species in one yard
 - Many tied to single plant species or family of plants
 - 1/2 of all insects prey on each other, only 1% tagged “harmful”

2. Bats

- a) Eat 1/2 their own weight in night-flying insects
- b) Unlikely to give us rabies - teeth can't pierce our skin

3. Reptiles, amphibians

- a) You will get a community of animals
- b) Some prodigious insect eaters in this group
- c) Great education for kids

4. Birds are easiest

- Don't mind fences, require little space ('though within each species they'll stake territories)

C. Plant food and cover plants

1. Much information is available on which plants are good

- a) See Resources II.A.4
- b) Lists in this outline our compilation, a *starter* list
- c) Ideally, food plants also provide cover
- d) If space limited, plant species that provide winter and early spring food.
(No one knows why some fruits left until spring, but they are.)

D. Provide water

- 1. Keep it clean
- 2. Gear it toward animals you have or want: depth, movement, sun or shade

E. Give supplemental foods and nest sites

- 1. The right foods at the right times. (Hummingbirds need masses of plants - 1,000 fuchsia flowers, 1/2 own weight in nectar plus insects, eight times own weight in water.)
- 2. Increase in nesting sites can mean dramatic increase in wildlife

F. Keep that wildlife perspective when you do maintenance

- 1. Can upset the tidiness urge. More, later.

Assessing the Wildlife Potential in Your Garden

Wildlife species you would like to attract:

- | | |
|-----------|-----------|
| 1: _____ | 2: _____ |
| 3: _____ | 4: _____ |
| 5: _____ | 6: _____ |
| 7: _____ | 8: _____ |
| 9: _____ | 10: _____ |
| 11: _____ | 12: _____ |
| 13: _____ | 14: _____ |
| 15: _____ | 16: _____ |

For each species, test and refine your knowledge, now and later:

Where does it prefer to live? What type of terrain? Home built of what kind of materials? Seasonal or year-round resident?

When are young of this species born?

What foods does this animal prefer to eat?

What are this species' chief predators and parasites? Which are present in your yard or neighborhood?

Where in your neighborhood can it make a home? Get building materials?

How far is this animal from protective shelter while it's in your yard? Is such shelter available all year?

Is the species protected while raising young?

What natural and supplemental foods are available for this species in your neighborhood? In your yard?

When are foods available?

Where can it safely get a drink of clean water in your *neighborhood*?

III. Attracting birds: Food, varied feeders, placement, water, shelter

A. Provide food.

1. Natural foods
 - a) See plant list to help the seed and fruit eaters
 - b) See “Attracting insects” and “Maintenance” notes to feed insect eaters
 - c) Steel yourself - predator birds and other predators will come
2. Supplemental foods for seed eaters, fruit eaters and insect eaters
 - a) Vegetarians
 - seed eating birds (main diet ingredient is seed): bobwhite, pheasant, mourning dove, waxwing, cardinal, song sparrow, chipping sparrow, house finch, goldfinch, cowbird
 - fruit eating birds: oriole, waxwing, robin, cardinal, cowbird, grackle, thrasher (seed before fruit is ripe)
 - seeds
 - sunflower is the single best seed
 - niger (“thistle” from India, Africa)
 - wheat, red millet nearly worthless
 - fruit
 - orange marmalade grape jelly for orioles
 - half citrus rinds filled with fruit bits
 - b) Insectivores, omnivores
 - Do martins really eat mosquitoes? Insects, surely.
 - All young birds (wren brood gets 500+ insects a day, thrasher 600)
 - Other insect-eating birds: killdeer (eat snails, too!), woodpecker, swallow, blue jay, titmouse, chickadee, wren, bluebird, robin, tree sparrow, oriole, common grackle, redwing, nighthawk
 - Suet and oils for insect eaters (and all birds in winter)
 - suet in a wire basket or mesh bag
 - suet cakes with dog food, eggs
 - bacon fat or peanut butter, rolled oats and seed (not a choker)
 - c) Grit, for all birds
 - Sand, charcoal, gravel, egg shells
 - Same source can be a bird dust bath; simple mulch-free area
 - Egg shells appreciated in early spring, for females

B. Put up feeders

1. For birds, not recommended for other animals
 - Birds can be fed with little danger to people
2. Different birds prefer different dining situations
 - a) Ground feeders
 - Stamp down an area
 - Get a little help from their upper level friends
 - Provide groundcover and mulched areas
 - b) Tabletop feeders
 - A wicker basket to hold seed, let water through

- c) Stationery feeders - some birds like a solid perch
 - On a post
 - Suction cup on a window
 - d) Hanging feeders - some birds like to move in the wind
 - e) Tree trunk feeders, for clinging birds
 - Don't nail to tree, strap or lodge in crotch of tree
 - f) Nectar feeders - for nectar eaters and sapsuckers
3. Material the feeder should be made from
 - a) Strong, cleanable, non-chewable
 - b) Birds' feet and eyes don't stick to metal feeders, but rarely
 4. Placement of bird feeders
 - a) Bird and other animals feeders should be where you can see them
 - b) Birds like to have a staging area
 - c) Birds do hit glass. Tilt it down 5-6°; paste silhouettes; sheer drapes
 5. When to feed - winter is perhaps most important
 - a) It's what gardeners do in the winter
 - b) True and false - they'll starve if you stop and start feeding
 - c) Daily feeding time depends on your schedule, your birds
 - d) Don't overfeed in summer - let them forage among your plants

C. Provide water for birds

1. Doesn't have to be elaborate
2. Shallow, with safe "beach"
3. Clean
4. Approachable - sheltered spot "on the approach"

D. Provide shelter

1. Natural shelter from plants on the plant list
 - a) The SE side of buildings and evergreens - good spots to plant
 - b) You can manage your plants to increase shelter (see "maintenance")
2. Structures you can build
 - a) Brush pile
 - Especially for bob whites, quail at woods edge
 - With west-side evergreens or canvas for winter wind shelter
 - b) Christmas tree

- c) Bird houses
 - If food, shelter and cover also there, nesting structures can dramatically increase numbers
 - Cavity dwellers: be aware of primary and secondary users
 - Woodpeckers need 2 to 4 cavities per season
 - Secondary user houses for bluebird, nuthatch, chickadee, owl, titmouse, wren, flicker, swallow
 - Eventual users: squirrels, raccoons if hole enlarged
 - Advantages of wood: cardboard and plastic heat up, babies die
 - Protection from nest raiders: barriers, slippery stuff
- d) Nesting platforms
 - In trees and shrubs
 - In the water: artificial islands

3. You can provide nesting materials

E. Bird feeding facts to share (or not!) with your family

1. U.S. seed-and-feeder market will be \$2.2 billion/yr by 2021
 - Gen X and boomers most likely to feed birds
2. Of 125 million households in U.S.
 - a) 42% buy seed, most of those also buy feeders during a year
 - b) Average annual \$59.73, seed, \$37.88 feeders (\$0 - \$81/yr)
 - c) Varies by region, 38% of households in U.S. West, 45% in NE
 - d) Since 2013 increased from 34% to 42% of households
3. 1/3 buy in packages of 10 lbs. or more
4. 60% own tube, hopper *and* nectar feeders; fewer have platform feeder (44%)
5. 83% of respondent-buyers said “I am also the bird feeding person”;
 - Of those, 40% said “spouse does, too” and 15% said “kids, too”
6. Only 10% of respondents said it was their first year feeding birds
USA Wild Bird Feeding Industry Yearly Research (2015 sole report!)
7. Pandemic news: sales up 45% at retail locations, 400% on-line
 - a) Cornell- & Audubon bird i.d. apps downloaded 2x pre-pandemic rate
 - b) Cornell bird call recordings library received 100,000 new recordings
 - March 1 – May 31, 2020...
 - Took 70 YEARS to assemble the library’s first 100,000 recordings

IV. Attracting butterflies... and other insects!

A. Natural foods

1. For butterflies: see plant list, remember tree sap
2. For bees: flowers (bumblebees are natives)
3. Insects in general: plant a diversity, import insects if necessary

B. Supplemental foods

1. Hummingbird feeders are a hit with bees, ants and butterflies
 - To exclude, place fine mesh over spout, mineral or vegetable oil on landing spot on tube
2. Butterflies eat some disgusting things, besides nectar...

C. Water

- No special requirements for most: dew
- Sandy puddles for butterflies

D. Shelter

1. Don't kill colonies unless harmful
2. Leave overwintering sites (Brush pile - caterpillars live under! Perennial beds - leave them less tidy!)
3. Don't scour your pond and change water each spring: Dragonflies must overwinter!

V. Attracting small mammals: raccoon, groundhog, squirrel

A. Natural food

1. Many of the plants on the plant list
2. Other animals, birds, insects

B. Supplemental food: not recommended

1. Small mammals bite and fight - people and each other
2. Large mammals are too much for any of us - we can cause overpopulation and starving (deer)

C. Water

1. They'll use your bird bath, water garden, or natural pond

D. Shelter for small mammals

1. Natural - even if you plant it
 - a) Hedgerows
 - b) Greenbelts
 - c) Let them dig - just protect foundations
 - d) End users of woodpecker homes
2. Shelters you can build
 - a) Nesting platforms and boxes
 - b) Bat house (pattern in International Wildlife magazine, Jan-Feb. 1986)

VI. Attracting reptiles and amphibians

A. Whether you want them or not - their natural food will be there

B. Water

1. Ground level (toads “drink” through skin - eat many insects)
2. Sloping, shallow sides (toads drowned in pools)
3. Muck at bottom of ponds - don't clean out in early spring!
4. Not just spring - toads OK with just vernal pools, bullfrogs need 2 years as tadpole
5. Safety from fish - fish eat tadpoles (Large bullfrogs retaliate - eat birds!)

C. Shelter

1. Use mulch
2. Provide south- or east-facing rock banks

VII. Planting layouts that attract animals in general

A. The edge effect

1. Where two or more plant communities meet: lawn meets hedge, shrubs meet small trees, small trees meet larger
 - a) Birds like different levels
 - b) Small mammals like cover to retreat to
2. Loss of small farms for large has eliminated many hedgerows
3. 1995-2000: 19.7 million acres more suburbia (NH+VT+MA+RI)
4. Suburbia can have edges. One tall perching tree, many shrubs, beds

B. Diversity

1. There must be diversity - suburbia's monotony a big problem
 - One plant can have 10 - 30 dependent species, from insect to deer
2. Select shrubs for variety of bloom and fruit times
3. Select shrubs for various densities and shapes
4. Animals need evergreens and deciduous plants

C. Greenbelts

1. Hedgerows
2. Groundcovers

D. Grade changes popular with birds, small mammals, reptiles

- Hunting and observation points
 - a) Lone tall tree
 - b) Dead tree standing just off shore
 - c) Large rocks just off shore (also creates eddies for fishing birds)

E. Meadows

- Game birds: pheasants, killdeer

F. Warm micro-climates

- Crescent shaped clearings facing south

G. Access to water

1. One edge of pond grown up with grasses, shrubs
2. Sloping edge to water
3. Shallows, mud flats
4. Increase your shoreline total

VIII. Maintenance practices that attract and increase animals

A. Seeds and fruits comes from flowers gone ugly!

B. Pruning

1. Leaves some dead wood for tree snags. Reduces overall insect problems in the forest
2. Create some cavities: drill up and into deadwood, under a limb
3. Don't shear: loss of flowers/fruit; too dense for animals to live in
4. Prune for crotches with 3+ limbs (sparrow, finch, cardinal - in winter)
5. Keep the forest edge open
 - a) Remove very low tree branches
 - b) Prune shrubs by cane removal

C. Animal emergency care: In general, don't!

1. Window hits an exception. Can cover, warm, 15-20 minutes
2. Abandoned birds and animals usually aren't
 - Are you expert enough to care for them?
3. The more animals you attract, the more death you'll see

D. Hold fall clean up until spring

1. Cut perennials down in spring, make "shocks" of debris
2. Clean birdhouses in March (blowflies are there - and their parasites)

E. Patrol and clean birdhouses regularly

1. How to know it's a "good" nest
2. Problems with ants, wasps, bees beating birds into house
3. Clean hummingbird feeders every 3-4 days

F. Very careful pest control

1. Don't spray
2. Target spray
3. Spray at night
4. Use biocontrols

IX. Discouraging specific animals

A. You think you have problems

Kent & Donna Dannen of Estes Park, Colorado have 1,000 pound elk that chase their birds and destroy feeders. They say, to those of us who snicker: May you wake tomorrow to see a 1,000 pound squirrel staring in your window, with bits and pieces of your feeders hanging from its whiskers!

B. Basic steps

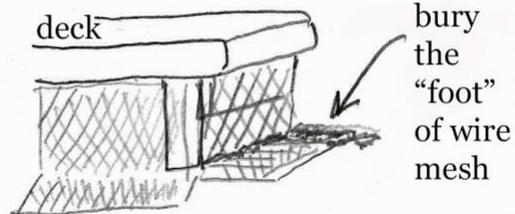
1. I.D. the pest
2. Check your concept of damage
3. Alter habitat (food, water, shelter)
4. Use a method appropriate to the season, location, environment
5. Killing is a sad thought but usually better than relocation
6. Monitor for reinfestation

C. Rats voles, and mice

1. Early spring!
2. Peanut butter traps
3. Wish the shrews could stay without them...

D. Skunks

1. Mothballs
2. Fence off under decks, mesh that L's out under ground: digging barrier



E. Opossums - do they really bother you?

F. Woodchucks (groundhog)

1. Usually range less than 50 yards
2. Floppy-top fencing
3. Clover in lawn

G. Squirrels

1. Squirrel-proof feeders
2. Distasteful bird seed - expensive?
3. Trapping (10 mile range!)

H. Chipmunks

1. Seen eating starling young, snails... butterflies!
2. Usually not in large numbers - so many predators
3. Rat traps (Sorry, guys.)

I. Rabbits

1. Repellents
2. 2' fence, smaller openings than chicken wire, with 6" "L" buried
3. Clover in lawn

J. Pigeons, sparrows, starlings, blackbirds

1. Hanging feeders help the most, and regular ground clean-up
2. Trapping and shooting legal for these only - non-natives
3. Relocating a pigeon is a waste - it'll beat you home
4. Use sunflower, avoid corn and baked goods
5. Use prescribed birdhouse entry-hole sizes, and no perches outside hole
6. Noises and fright devices - can become a full time hobby, not very effective

K. Bluejays

1. Nest raiders, eating young of other species: nature's way
2. Effective mimics, scare off other birds but also alarm callers
3. Use niger seed only (will lose cardinals and chickadees, too).

L. Cowbirds

1. Lay eggs in others' nests (but others not so dumb as all that!)
2. Danger mostly to deep woods birds (hawks, others that need 200-yard deep woods to nest in)

M. Deer

1. Repellents: Switch scents
2. Barriers the only really effective homeowner strategy
3. Support park managers' efforts to control herd size

N. Moles

1. Different than voles
2. Early spring, deep tunnel traps

Specific plants to attract wildlife

Plants for songbirds, hummingbirds, butterflies & small mammals:

Perennials & Vines

Plant name	value:	animals that use it:	culture, notes:
<i>Ajuga reptans</i> (ajuga)	nectar	hummingbirds	HS - SH - S, A - W
<i>Aquilegia canadensis</i> (columbine)	nectar	hummingbirds	HS - S, A - W
<i>Arabis</i> species (rock cress)	nectar	butterfly	S, A
<i>Asclepias incarnata</i> (swamp milkweed)	foliage nectar	butterfly caterpillars butterflies	S, W
<i>Asclepias syriacus</i> (milkweed)	foliage nectar	butterfly caterpillars butterflies	S, A - D
<i>Asclepias tuberosa</i>	nectar	butterflies	S, A - D
<i>Aster</i> species (aster)	seed nectar	songbirds butterflies	S, A-D
<i>Aubrieta deltoidea</i> (false rock cress)	nectar	butterflies	S, HS, A
<i>Buddleia davidii</i> (butterfly bush)	nectar	butterflies, hummingbirds	S, A; deer shun
<i>Campanula</i> species (bellflowers)	seed	songbirds	S - HS, A - W
<i>Campsis radicans</i> (trumpet vine)	nectar	hummingbirds	S, A
<i>Celastrus scandens</i> (bittersweet)	fruit	songbirds (waxwing)	S - HS, A
<i>Ceratostigma plumbaganoides</i> (plumbago)	nectar	butterflies	HS-S, A
<i>Chelone</i> species (turtlehead)	foliage	butterflies (Baltimore)	S - HS - SH, W - A
<i>Chrysanthemum</i> spp. (mum, daisy)	seed	songbirds	S, A
<i>Cirsium vulgare</i> (bull thistle)	nectar	butterflies, hummingbirds	S, A
<i>Coreopsis</i> spp. (tickseed)	seed	songbirds	S - HS, A - D
<i>Delphinium</i> species (delphinium)	nectar	hummingbirds	S, A
<i>Dianthus barbatus</i> (sweet William)	nectar	butterflies, hummingbirds	S, A
<i>Dicentra spectabilis</i> (bleeding heart)	nectar	hummingbirds	HS - S, A
<i>Digitalis</i> species (foxglove)	nectar	hummingbirds	HS - S, A
Plant name	value:	animals that use it:	culture, notes:
<i>Echinacea</i> spp. (purple coneflower, etc.)	seed nectar	songbirds (finch) butterflies	S - HS, A - D
<i>Eupatorium</i> species <i>E. maculatum</i> (Joe Pye weed), <i>E. perfoliatum</i> (boneset)	nectar	butterflies	S, W - A
<i>Gaillardia grandiflora</i> (blanket flower)	nectar	butterflies	S, A - D
<i>Hedera helix</i> (English ivy)	homes	songbirds	SH - HS, A
<i>Hemerocallis</i> species (daylily)	nectar	hummingbirds	S - HS, D - A - W

Culture abbreviations: S - sun, HS - half sun, SH - shade, A - average soil moisture, D - dry conditions, W - wetlands

Perennials & Vines (cont'd.)

Heuchera species (coral bells)	nectar	hummingbirds	HS - S, A
Hibiscus moscheutos (hardy hibiscus)	nectar	hummingbirds	S, W - A
Iberis sempervirens (candytuft)	nectar	butterflies	S, A - D
Iris species I. germanica (bearded I.) I. Kaempferi, I. laevigata, I. pseudacorus, I. sibirica	nectar	hummingbirds	S, A S, W - A
Lavandula angustifolia (lavender)	nectar	butterflies	S, A - D
Lobelia species (L. cardinalis: cardinal flower; L. siphilitica, Great blue lobelia)	nectar	hummingbirds	HS - S, A - W
Lonicera sempervirens (pink vine honeysuckle)	nectar	hummingbirds	S, HS, A
Mertensia virginica (Virginia bluebells)	nectar	hummingbirds	S - HS, A
Monarda species (bee balm)	nectar	hummingbirds	HS - S, A - W
Nepeta Mussinii (catmint)	nectar	hummingbirds	S, A - D
Oenothera species (primrose)	nectar	hummingbirds	HS - S, A - W
Panicum spp. (switchgrass)	seed	songbirds	S - HS, A - D
Parthenocissus quinquefolia (Virginia creeper)	fruit homes	songbirds songbirds	S - HS, SH, A
Phlox paniculata (garden phlox)	nectar	butterflies, hummingbirds	HS - S, A
Polygonum species knotweeds: P. affine, P. Bistorta 'Superbum', P. cuspidatum 'Compactum'	nectar	hummingbird	S - HS, A - W
Primula species Candelabra primroses P. beesiana, P. japonica	nectar	butterflies	HS - S, A - W
Rudbeckia spp. (blackeye Susan, etc.)	seed	songbirds	S, A - D
Ruta graveolens (rue)	foliage	butterfly caterpillars	S, A
Salvia officinalis (perennial sage)	nectar	hummingbirds	S, A - D
Sambucus ebulus (dwarf elder)	nectar	butterflies, hummingbirds	S, A - W
Scabiosa caucasica (pincushion)	nectar	butterflies	S, A
Sedum spectabile (cabbage rose)	nectar	butterflies	S, A - D
Wisteria chinensis (wisteria)	nectar	hummingbirds	S - HS, A

Culture abbreviations: S - sun, HS - half sun, SH - shade, A - average soil moisture, D - dry conditions, W - wetlands

Annual plants

Plant name	value:	animals that use it:	culture, notes:
<i>Amaranthus caudatus</i> (love lies bleeding)	seed	songbirds	S, A
<i>Antirrhinum majus</i> (snapdragon)	nectar	hummingbirds	S, A
<i>Begonia semperflorens</i> (wax begonia)	nectar	hummingbird	HS - SH - S, A - W
<i>Calendula officinalis</i> (pot marigold)	seed	songbirds	S, A; self-sows
<i>Callistephus chinensis</i> (China aster)	seed	songbirds	S, A
<i>Canna x generalis</i> (canna)	nectar	hummingbirds	S, A - W
<i>Celosia</i> spp. (cockscomb/celosia)	seed nectar	songbirds butterflies	S, A
<i>Centaurea cyanus</i> (bachelor button)	seed	songbirds	S, A - D
<i>Cicchorium intybus</i> (chicory)	seed	songbirds (finch)	S, A - D
<i>Cleome hasslerana</i> (spiderflower)	nectar	hummingbirds	S, A
<i>Consolida ambigua</i> (annual larkspur)	nectar	hummingbirds	S, A; self-sows
<i>Cosmos bipinnatus</i> (cosmos)	seed	songbirds	S, A; self-sows
<i>Dahlia hybrids</i> (dahlia)	nectar	hummingbirds	S, A
<i>Eschscholzia californica</i> (CA poppy)	seed	songbirds (doves)	S, A
<i>Fuchsia hybrids</i> (fuchsia)	nectar	hummingbirds	HS - SH, A
<i>Gladiola hybrids</i> (gladiola)	nectar	hummingbirds	S, A
<i>Impatiens</i> species I. balsamina (garden balsam), I. walleriana (impatiens), I. capensis (spotted touch-me-not)	nectar	hummingbirds	S - HS - SH; A - W
<i>Ipomoea convulvus</i> (morning glory)	nectar	hummingbirds	S - HS, A; self sows
<i>Lantana hybrids</i> (ham n' eggs)	nectar	hummingbirds	S, A - W
<i>Mirabilis jalapa</i> (four o'clock)	nectar	hummingbirds	S, A
Plant name	value:	animals that use it:	culture, notes:
<i>Nicotiana alata</i> (flowering tobacco)	nectar	hummingbirds	S - HS, A
Parsley family (dill, fennel, parsley, Queen Anne's lace)	foliage	butterfly caterpillars	S, A
<i>Pelargonium x hortorum</i> (geranium)	nectar	hummingbirds	S, A
<i>Petunia hybrids</i> (petunia)	nectar	hummingbirds	S - HS, A
<i>Phlox drummondii</i> (annual phlox)	seed	songbirds	S, A - D
<i>Portulaca grandiflora</i> (moss rose)	seed	songbirds	S, A - D; self-sows
<i>Salvia</i> species (red salvia; herb sages)	nectar	hummingbirds	S, A - D
<i>Silene</i> spp. (catchfly)	seed	songbirds	S, A
<i>Tagetes</i> spp. (marigold)	seed	songbirds	S, A - D
<i>Tithonia</i>	nectar	butterflies	S, A
<i>Tropaeolum majus</i> (nasturtium)	nectar	hummingbirds	S, A - D
<i>Verbena</i> hybrids (garden verbena)	nectar	butterflies	S, A
<i>Zinnia elegans</i> (zinnia)	nectar	hummingbird	S, A

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Shrubs for wildlife

Plant name	value:	animals that use it:	care, culture, notes:
<i>Azalea</i> species (azalea)	nectar	hummingbirds	S - HS, A
<i>Caragana arborescens</i> (peashrub)	nectar	hummingbirds	S - HS, A - D
<i>Chaenomeles</i> species (quince)	nectar	hummingbirds	S - HS, A - D
<i>Cornus</i> spp. (dogwood) <i>C. amomum</i> (silky dogwood), <i>C. stolonifera</i> (redtwig), <i>C. racemosa</i> (graystem), <i>C. mas</i> (cornelian cherry)	fruit	songbirds, small mammals	#1 plant; S, HS, A - W
<i>Cotoneaster</i> spp. (cotoneaster)	fruit homes	songbirds (waxwings), mammals songbirds, small mammals	S - HS, A - D; winter food
<i>Hibiscus syriacus</i> (Rose of Sharon)	nectar	hummingbirds	S - HS, A - W
<i>Ilex verticillata</i> (winterberry)	fruit	songbirds, mammals	S-HS, A-W; winter food
<i>Kolkwitzia amabilis</i> (beauty bush)	nectar homes	hummingbirds songbirds	S - HS, A
<i>Ligustrum</i> spp. (privet)	fruit homes	songbirds songbirds, small mammals	S - HS, A - D winter food
<i>Lindera benzoin</i> (spicebush)	fruit	songbirds	#1 plant; S - HS - SH, A - W winter food
<i>Mahonia aquifolium</i> (grapeholly)	fruit	songbirds, mammals	S, HS; A
<i>Myrica pensylvanica</i> (bayberry)	fruit	songbirds	S, A; winter food
<i>Pyracantha</i> hybrids (firethorn)	fruit homes	songbirds (waxwings) songbirds, small mammals	S - HS, D - A; winter food
<i>Rhus</i> spp. (sumac)	fruit	songbirds, mammals	S, A; winter food
<i>Ribes odoratum</i> (clove currant)	nectar fruit homes	hummingbirds songbirds, small mammals songbirds	S - HS, A
<i>Rosa</i> , hedge types (rose)	fruit homes	songbirds, small mammals small mammals, songbirds	S, A; winter food
<i>Sambucus canadensis</i> (elderberry)	nectar	butterflies	#1 plant; S, A - W; deer shun
<i>Symphoricarpos alba</i> (snowberry)	fruit	songbirds, mammals	S - HS, A; winter food
<i>Syringa vulgaris</i> (lilac)	nectar	hummingbirds	S, A
<i>Vaccinium</i> spp. (blueberry)	fruit homes	songbirds, mammals songbirds	S - HS, A
<i>Viburnum dentatum</i> (arrowwood)	fruit	songbirds, mammals	S, A; winter food
<i>Viburnum trilobum</i> (American cranberry bush)	fruit homes	songbirds (waxwing), mammals songbirds	S - HS, A - W; winter food
<i>Weigela florida</i> (weigela)	nectar	hummingbirds	S - HS, A

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Small Trees

Plant name	value:	animals that use it:	culture, notes:
<i>Acer palmatum</i> , <i>A. ginnala</i> (Japanese and Amur maple)	seeds	small mammals	S - HS, A
<i>Amelanchier</i> spp. (serviceberry)	fruit	songbirds, mammals	S - HS, A - W
<i>Cornus</i> spp. (dogwood) Kousa dogwood, flowering dogwood, pagoda dogwood, giant dogwood	fruit	songbirds	HS - S, A
<i>Craetegus</i> species (hawthorn)	nectar fruit	hummingbirds songbirds (waxwings, robins)	S, A - D
<i>Juniperus virginiana</i> (red cedar)	fruit homes	songbirds, mammals songbirds, small mammals	#1 plant; S, A - D; winter food
<i>Malus</i> varieties (crabapple)	nectar fruit	hummingbirds songbirds, small mammals	S, A
<i>Prunus</i> spp. (cherry)	fruit homes	songbirds, mammals songbirds, small mammals	S, A - D
<i>Sorbus aucuparia</i> (mt. ash)	fruit	songbirds (waxwings)	S, A - D

Large Trees

Plant name	value:	animals that use it:	culture, notes:
<i>Acer</i> spp. (maple)	seed/sap homes	songbirds, mammals /butterflies all	#1 plant; S - HS, A
<i>Aesculus</i> species (horsechestnut)	nectar	hummingbirds	S, A
<i>Betula</i> spp. (birch)	seed homes	songbirds (finches) songbirds (chickadees)	S, A
<i>Celtis occidentalis</i> (hackberries)	seed homes	songbirds, small mammals songbirds, small mammals	#1 plant; S - HS, A
<i>Fagus</i> spp. (beech)	seed homes	songbirds, mammals all - many cavities	S - HS - SH, A
<i>Picea</i> spp. (spruce)	homes seed	songbirds, small mammals small mammals	S, A - W
<i>Pinus</i> spp. (spruce)	homes seed	songbirds, small mammals small mammals	#1 plant; S, A - D
<i>Quercus</i> spp. (oak)	homes seed	songbirds, small mammals small mammals	#1 plant; S, A - W
<i>Salix</i> species (willow)	nectar homes	butterflies songbirds, small mammals	#1 plant; S, W - A
<i>Tsuga canadensis</i> (hemlock)	homes fruit	songbirds, small mammals small mammals	S - HS - SH, A winter food
<i>Ulmus</i> spp. (elm)	seed homes	songbirds, small mammals songbirds, small mammals	#1 plant; S, A - W

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