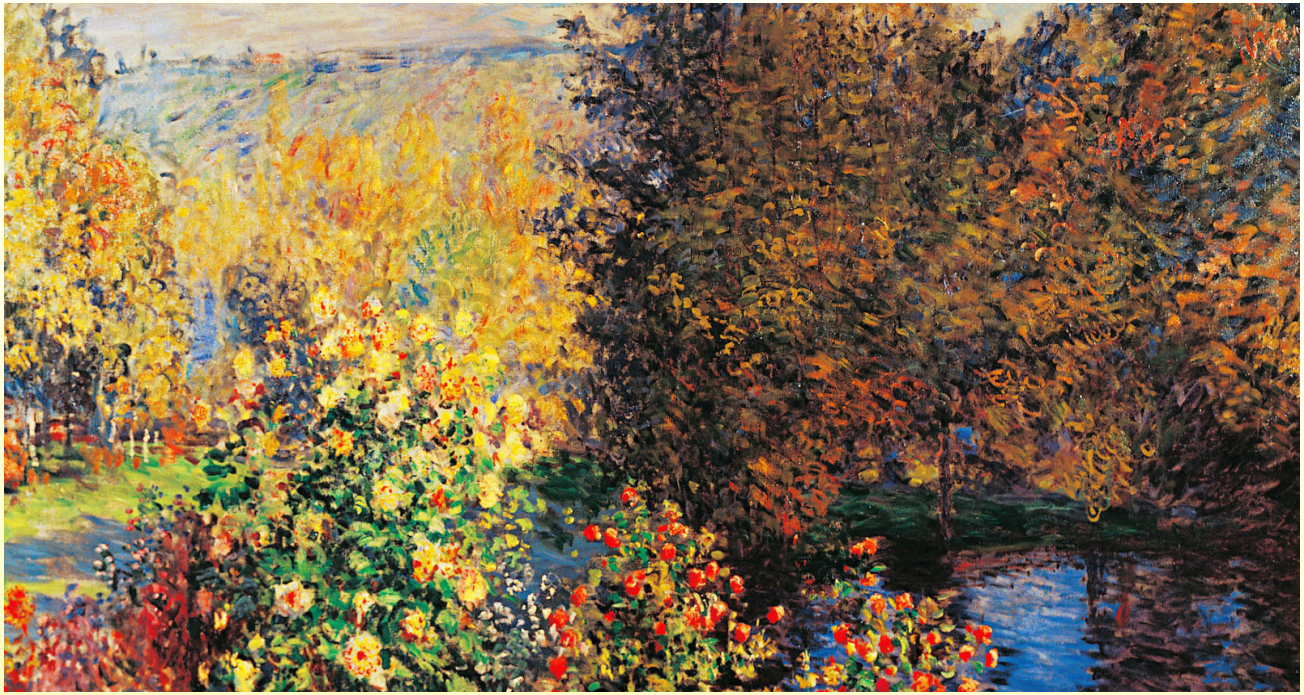
Put Your Garden To Bed



City of Bothell™

City of Bothell - Natural Yard Care

tilth ALLIANCE
WHERE GOOD FOOD GROWS

Put Your Garden To Bed

- Healthy soil
- Building habitat
- Fall maintenance for encouraging wildlife diversity
- Beneficials and pollinators

The Value of Healthy Soil

- Reduces need for chemical fertilizers and pesticides
- Reduces irrigation needs
- Filters out urban pollutants
- Sequesters stormwater
- Stores carbon from atmosphere

Soil

- Soil health can make or break plant success
- Get to know your soil type
- Amend the soil; dig in or spread compost
- Test your soil in the fall

"What we do to the land, we do to ourselves."
Wendell Berry

Benefits of Mulch

- Moisture conservation
- Prevents weeds
- Moderates soil temperature
- Protects soil from compaction
- Don’t forget the potted plants
- Light vs. dark colored mulch in the veggie garden
- Don’t remove all the leaves!
- Creates habitat for beneficial insects and birds

Mulch Types

- **Wood Chips**: perennials, tree and shrub beds, groundcovers, paths
- **Compost**: vegetable gardens, annual beds
- **Leaves**: All of the above!
- **Commercial Mixes**: manure and wood products for all areas
- **Burlap**: vegetable beds and open bed areas
- **Sheet Mulch**: for weed or grass suppression and soil building
- **Cover Crops**: for soil building and protection

Sheet Mulching

- Also known as lasagna gardening
- Layer cardboard and/or newspaper with organic material
- Can cover all layers with burlap
- Improves fertility and loosens soil while killing grass or weeds

Benefits of Cover Crops

- Protects soil from winter rain- leaching of nutrients
- Prevents soil compaction
- Adds nitrogen to soil
- Enriches soil with microorganisms
- Adds organic matter to soil
- Keeps weeds at bay – sometimes inhibiting certain types of weeds
- Referred to as “green manures” and fall into two main categories: annual grasses and legumes

Cover Crops

- Grasses: Ryegrass, barley, oats and winter wheat
  - Quickly produce dense growth
  - Produces a substantial amount of organic matter added to the soil.
  - Their roots tend to form fibrous mats, providing the added benefit of breaking up clay soil or binding together sandy soils.

Cover Crops

- Legumes: Common vetch, Fava beans, crimson clover, Austrian field peas
  - Able to transform otherwise inaccessible atmospheric nitrogen into a form usable by plants.
  - By leaving legume plant material in the soil to break down, this nitrogen is made available to your next generation of crop plants.
  - In addition, they often have strong, deep roots that are able to break up compacted soils.

hab·i·tat/ˈhabiˌtat/
Noun:
The natural home or environment of an animal, plant, or other organism.
A particular type of environment regarded as a home for organisms.

“If you want to live and thrive, let the spider run alive.”
~American Quaker Saying

Building Habitat

- Plants diversity is key –shape and size and species
- Don’t be overly tidy and practice tolerance
- Leave some ground bare for ground nesters
- Leave moss intact for bird nests
- Provide larval food plants for butterfly caterpillars
- Plant dense areas for shelter
- Provide snags, wood blocks, rock piles for basking, nesting and safe sites
- Provide a water source – puddles for butterflies, fountains or baths for birds

Why Garden to attract Wildlife?

Photos by Emily Bishton, 2007

- Preserves needed habitat for birds, bats, and beneficial insects
- Adds to the health and beauty of your garden
- Makes your maintenance easier – many birds, mammals and insects will eat plant eating insects

Wildlife Habitat

Need grassy areas, warm sunning spots

Ladybeetles lay eggs in plant material where aphids are present, pupate on plant leaves

Bug hotels

Bumble bees need bare earth in the garden for nesting

The 4 Keys to Success

Food – Shelter- Nesting Places – Water

Photos by Emily Bishton, 2007

Food

Photo by Emily Bishton, 2007

- Use Native Plants
- Birds and beneficial insects instinctively recognize their nectar, fruit, or seeds
- They also instinctively know which are likely to harbor their favorite insect prey
- Native plants thrive in our wet winter/dry summer climate, with little water and pruning once established

Plants offer multiple food sources

- Choose plants that provide more than one food source, ie: nectar and fruit or nectar and seeds
- Leave all or most of the spent flowers on your plants to become seed pods

Photos by Emily Bishton, 2007

Shelter

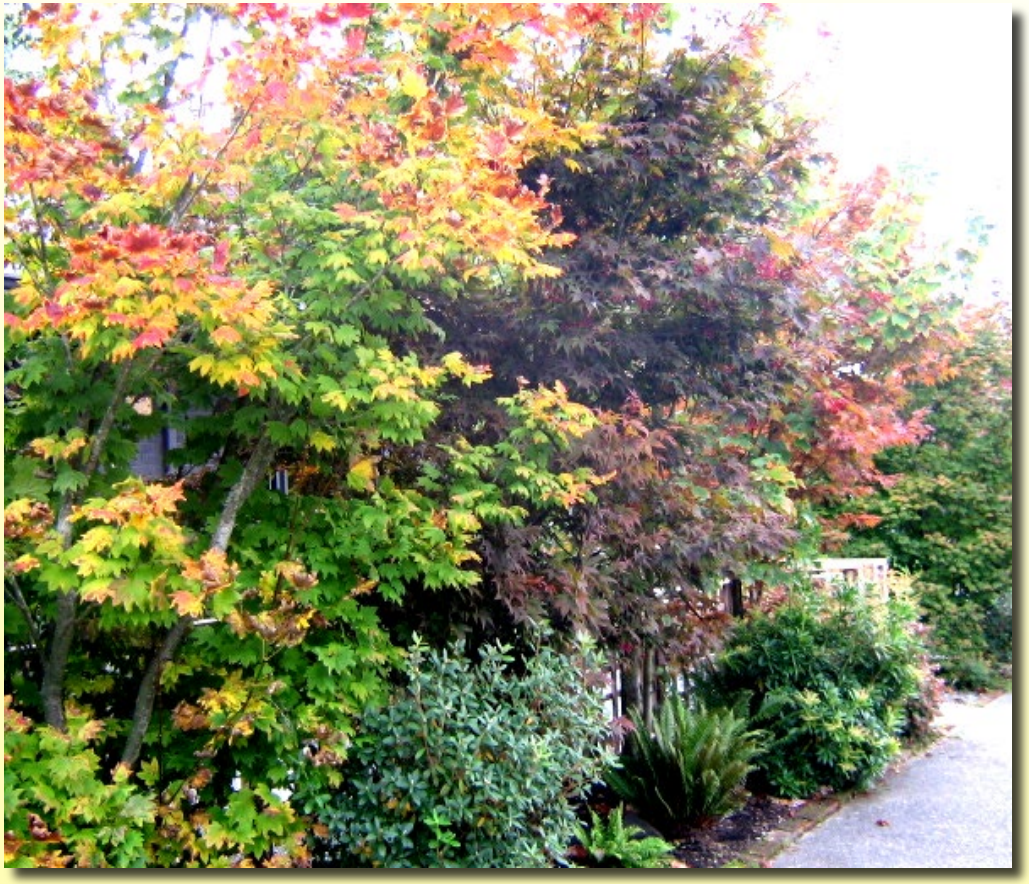


Photo by Emily Bishton, 2007

- Plant trees and shrubs “hedgerow-style” - to mimic a forest edge habitat
- Use a mix of evergreen and deciduous plants
- Plant a variety of heights and forms for multiple layers of habitat
- Informal planting style and maintenance

Hedgerow-style planting provides a diverse supply of food and shelter

Photo by Emily Bishton, 2007

Nesting Sites

Photos by Emily Bishton, 2007

- Build nest and roosting boxes for birds, bats and insects
- Avoid doing pruning and other maintenance during the nesting season
- Be conservative with pruning, and leave a few dead twigs
- Leaves and wood chip mulch also shelter beneficial insects
- Hollow stems are nesting sites for solitary bees

Nesting Needs

- Bumblebees: old rodent holes, open ground, upside down flower pots, wood piles
- Carpenter Bees: soft dead wood, stems with pith (blackberry)
- Leafcutter Bees: sound, dead wood
- Mason Bees: pre-existing tunnels in sound, dead wood, human made houses
- Sweat Bees: bare compacted soil
- Beetles: groundcover or leaf litter
- Birds: tree canopy, groundcover, plant material like moss
- Moths/Butterflies: native shrubs for larvae

Bee Habitat

- Diverse bees need diverse settings
- Bare ground
- Rotting wood
- Burrows
- Hollow Stems
- Rock and Wood Piles
- Grass Tufts
- Manufactured Homes!

Building Supplemental Habitat

Insect Hotels
http://www.inspirationgreen.com

Mason Bee Houses
http://rentmasonbees.com/

http://gardening.wsu.edu/wildlife/

Don’t be too tidy with fall cleanup

Many overwintering insects could be using the old plant debris

Photos by Emily Bishton, 2007

Leave a natural area

Photos by Emily Bishton, 2007

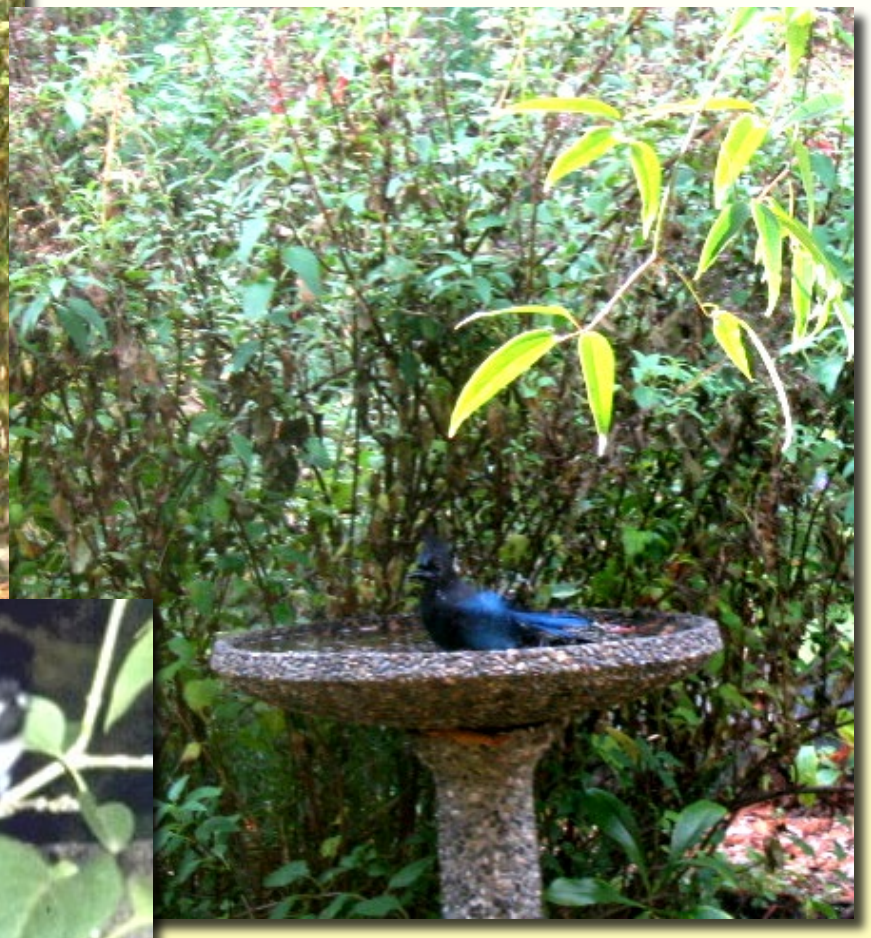
In the fall Goldfinches will perch on seeded Black Eyed Susan flowers to feed.

In late winter, hummingbirds will gather the “fluff” from Japanese Anemone seed heads for their nests

Water

Water is essential each day, for birds, bats, and insects.

Water is essential for grooming for wildlife as well as for drinking



Photos by Emily Bishton, 2007

Planting in the Fall

- Cooler temperatures = less stress when planting
- Soil temperatures perfect for developing roots
- Rainy season aids you in plant care
- Great time to take stock of the structure of the garden

Planting Choices

- Native plants are pest and disease resistant and recognized by native fauna
- Group plants together
- Three season bloom
- Intermix with edibles
- Include cover crops – let them bloom

Mahonia

Red Flowering Currant

Phacelia – summer cover crop

Purple Coneflower

Plants that attract pollinators as well as predators

- Carrot Family - Apiaceae: Lovage, Cilantro, Parsley, Dill, Angelica, Queen Anne's Lace, Sea Holly
- Mint Family - Lamiaceae: Mint, Lavender, Thyme, Oregano, Sage, Monarda, Lemon Balm, Russian Sage
- Daisy Family - Asteraceae: Daisy, Echincaea, Rudbeckia, Cosmos, Yarrow, Aster, Echinops, Marigold

Pollinator Flower Preference

- Bees: Yellow, blue and purple flowers
- Butterflies: Red, orange, yellow, pink and blue flowers
- Moths: Light-colored flowers that open at dusk
- Hummingbirds: Red, orange, purple/red tubular flowers
- Bats: Large, light-colored, night blooming flowers

- Marigold, Daisy, Bee balm
- Calendula, yarrow
- Evening primrose
- Fuchsia, nasturtium, sage
- Cactus

Biological Helpers

Who are they? Bacterial, fungal, viral, parasitic/parasitoid and predatory organisms present in nature.

- Create a healthy and diverse landscape in order to attract beneficial insects and other organisms naturally
- Need to know the lifecycle of the organism you are using and who it targets
- Predator and prey populations: must have some food for the predators
- Timing of application matters

Garden Heroes

Ground Beetles are fabulous slug and snail predators

Hummingbirds pollinate and eat insects

Parasitoid wasps make short work of aphids

Bushtits forage for insects throughout the garden

Mud Dauber Wasp pollinate flowers and eat nectar and spiders

Ladybeetles and their larvae are voracious aphid predators

Garden Heroes

Garter Snake

- Snakes eat slugs!
- Provide tall grass areas
- Warming areas can be created with large rocks

Birds

- Chickadee young eat only insects
- Adults eat weed seeds

Bats

- Bats eat 600-1,000 insects an hour
- One baby a year
- Fragrant and night-blooming plants

Benefits of Native Bees

- Foraging earlier in season – mason bees and fruit trees
- Foraging earlier in day and later at night
- Foraging in cooler and cloudier weather
- Competition on same flowers can cause honey bees to move more frequently – dioecious plants benefit
- Insurance policy – having diversity
- Installing bee habitat can increase pollination and yield of your crops

Native Bees

- Bumble Bees – 30 species in western North America
- Solitary Bees – mason, leaf cutter, carpenter
- Green Bees and Small Bees – ground nesting, semi -social

Blue Orchard Mason Bee

Sweat Bee

Western Bumble Bee

Leaf Cutter Bee

Carpenter Bee

Yellow Faced Bumble Bee

Butterflies and Moths

Monarch and Milkweed

Anise Swallowtail Larvae

Western Sheep Moth

Taylor’s Checkerspot

Moths

- 1,200 species of moths in the Pacific Northwest
- Moth wingspans range from 1/10 of one inch to 6 inches
- Generally active at night
- Feathered, thickened or threadlike antennae
- Wings held horizontally or hugged around abdomen
- Silk cocoons
- Colorful moths tend to be day fliers
- Sand Verbena Moth at risk in Washington
- Habitat loss impacts populations

Sand Verbena Moth

Elegant Sheep Moth

Butterflies

- Knobs on the ends of their antennae
- Can hold wings up over body – especially when warming up
- Need 60°F temperature to fly
- On the wing from March until early October
- Colorful wings – for attracting a mate and for camouflage
- Can be plant species dependent
- Red Admiral and Stinging Nettle
- Monarch and Milkweed
- Puget Blue and Lupine
- Many butterflies are at risk due to urbanization

Taylor's Checkerspot

Oregon Silverspot Butterfly

Mardon Skipper

Beneficial Insects

Green Lacewing

Larvae also called Aphid Lions

Lady Beetle

Adults and larvae are proficient aphid eaters

Assassin Bug

Hide and ambush their prey and eat almost any insect

Resources

- Garden Hotline – 206-633-0224 – www.gardenhotline.org
- Tilth Alliance- www.tilthalliance.org
- Cascade Water Alliance - www.cascadewater.org
- Puget Sound Starts Here www.pugetsoundstartshere.org
- City of Bothell www.bothellwa.gov/gardentobed

Please join us next for:
Fall Yard Maintenance
Wednesday – October 14th, 7-8:30 p.m.