

The Sustainable Gardener

Virtual reality has ultimately brought much disconnection between people and their sense of place. As sustainable gardeners we want to reconnect with the natural world.

Even “beautiful” landscapes may threaten our health through the use of toxic pesticides and fertilizers. Synthetic fertilizer salts remove water from the microbes, the very core of the soil food web balance. Although these chemicals are partially absorbed by the roots, most continue to drain down to the water table. Excess nutrients leach into rainwater runoff further causing algae bloom on our lakes, ponds and streams.

Homeowners spend as much as \$40 billion annually on their lawns; in watering, fertilizing, applying toxic pesticides and mowing.

Sustainable actions suggest a limit on the degree of human impact on the environment. In this way, the natural capacity of the earth’s ecosystems will be less compromised.

The sustainable gardener accepts responsibility for actions and chooses to reconnect with the physical world in relevant, authentic ways. Here are some methods you can use to work with nature rather than against it:

Conserve Water in the Landscape

- Water trees first, then shrubs, then herbaceous plants
- Plant more drought resistant and drought tolerant plants- see NYBG Fact sheet # 9,
- http://www.nybg.org/hgc_online/fact_sheets_detail.php?id_fact_sheet=9
- Re-configure landscape plantings into “hydro zones”
- Water garden plants with drip irrigation or soaker hoses to target roots
- If lawns do not get 1-1 1/2" of rainfall per week, apply supplemental water with a sprinkler to reduce waste.
- Use a rain gauge for accurate measure
- Allow grass to go dormant, it will green up again when rainfall returns
- Apply mulch to moderate soil temperature and retain moisture
- Collect storm water from roof runoff
- Collect rainwater with rain barrels under gutters: use to water the garden.
- Consider planting a rain garden- see NYBG Fact Sheet #22
http://www.nybg.org/files/rain_gardens.pdf

For additional information about water conservation in the landscape- see http://www.epa.gov/WaterSense/docs/water-efficient_landscaping_508.pdf and NYBG Green Perspectives by Thomas Christopher- <http://www.nybg.org/wordpress2/> (July 22, 2009)

Soil Improvement

- Mulch to retain moisture and keep weeds under control
- Fertilize lawns only if soil testing indicates necessity and use only organic fertilizer <http://www.epa.gov/nps/dosdont.html>
- Use the rich, black humus result of composting (black gold), compost tea and mulch to build up microbial activity http://www.nybg.org/images/green_up/compost_made_easy.pdf?sub_id=attr_130516
- Fertilize shrubs, roses, perennials, annuals and vegetables
- Leave grass clippings to add nutrients and organic matter to the soil
- Use a mulching lawn mower to discourage thatch build-up
- Save garden waste (stems, leaves, spent flowers) and vegetable kitchen scraps to make a compost pile- Note: Infested and diseased garden waste cannot be composted.
- Plant trees and shrubs to help avoid erosion and increase water infiltration

For additional information about soil improvement see-

<http://www.nyccompost.org/>

http://www.extension.org/pages/Soils_and_Composting:_Soil_Improvement

http://www.extension.org/pages/Soils_and_Composting/print/

Design and Plant Selection

- see NYBG Fact Sheet #8

http://www.nybg.org/hgc_online/fact_sheets_detail.php?id_fact_sheet=8

- Analyze site characteristics including soil, sun and wind paths and drainage patterns
- Preserve existing trees and shrubs whenever possible to prevent erosion
- Design to save energy through appropriate tree placement to provide shade in summer.
- Grade land away from your house at a minimum of 1.5-2% slope
- Reduce impervious paved areas and replace with plantings and porous wood decks, bricks and other porous surfaces to increase water to percolation.
- Plant evergreen windbreaks to block prevailing winter winds in and reduce energy demand for heat.
- Create plantings in zones of low water use, moderate water use and high water use
- Decide to include native garden plants that have evolved in your area with their pollinators and dispersers. They conserve soil and water and provide food sources for birds and wildlife- <http://www.nativeplantcenter.org/>

- Choose to downsize existing lawns- see NYBG Fact sheet #18 , Downsizing Lawns, http://www.nybg.org/files/downsizing_lawns.pdf
- Include an area that provides habitat for wildlife- leave a portion of your yard wild- see NYBG Fact Sheet # 13, Home Gardening the Organic Way, http://www.nybg.org/hgc_online/fact_sheets_detail.php?id_fact_sheet=14
- Consider green roofs for newly constructed buildings. Not only do these environments catch storm water run-off, but also they provide reduction in the urban heat island effect.
- Use sustainably grown wood for structures; certified by Forest Stewardship Council- (FSC) or recycled wood and other recycled materials

IPM to Minimize Pesticide Use

- Allow for a tolerable level of insect damage
- Check plants for infestations and spot treat immediately
- Use only natural insecticides such as insecticidal soap
- Employ beneficials like ladybugs, nematodes, praying mantids
- Utilize deterrents such as diatomaceous earth, sticky traps and tree tanglefoot
- Corn gluten meal will act as a natural herbicide and suppress weed seeds in the lawn
- Vinegar can be applied to kill weeds and ants and attack fungi
- Use disease-resistant plant varieties and cultivars
- Sulfur fungicides control certain fungal diseases such as mildew
- Bordeaux mixture can control certain fungi, blights, and mildews

For additional information about IPM for gardens see:

<http://www.epa.gov/pesticides/factsheets/ipm.htm>

Power Down Landscape Tools

- Remember the use of fossil-fuel powered machines cause pollution
- If you must use them, maintain gas powered mowers and avoid oil spills
- Replace gasoline-powered mowers with manual and/or electric
- Utilize electric leaf blowers and electric or manual hedge trimmers
- Consider a switch to a “mulching mower” or an electric chipper-shredder
- Convert to using manual tools including hedge clippers, hand saws, rakes, pruners and loppers

For additional information about powering down landscape tools see:

http://www.epa.gov/air/community/details/yardequip_addl_info.html#activity1

Maintenance

- Practice IPM.
- Weed, deadhead, prune
- Aerate and moisten compost pile
- Apply fertilizers at proper seasons to avoid weed growth
- Minimize high-maintenance grass areas
- Learn to tolerate some weeds in the lawn but improve the health of the existing lawn.
- Apply antidesiccants so that evergreens don't burn in fluctuating temperatures

For a complete guide to garden maintenance refer to: NYBG Garden Calendar,
http://www.nybg.org/hgc_online/gardening_calendar.php

Reduce, Re-use, Re-cycle in the Garden

- Start compost pile with kitchen waste (e.g., fruit and vegetables, egg shells, coffee grounds, yard waste such as leaves, branches and weeds- see NYBG Bronx Green-Up http://www.nybg.org/green_up/comp_programs.php and <http://www.nyccompost.org/how/index.html>
- Bring empty pots and flats back to the local farmer's market for re-use
- Grow your own plants from cuttings and divisions to reduce the number you buy
- Save seeds and start your plants from seed (heirloom tomatoes are only grown this way) <http://ecgardening.cce.cornell.edu/PDFs/Starting%20Seeds%20at%20Home.pdf>

For more information regarding recycling in the garden see: NYBG-
http://www.nybg.org/images/green_up/compost_made_easy.pdf?sub_id=attr_130516