"In wildness is the preservation of the world." — HENRY DAVID THOREAU

discover ecological landscaping

ECOLOGICAL • LANDSCAPING ASSOCIATION •

THE ECOLOGICAL LANDSCAPING ASSOCIATION

The Ecological Landscaping Association began in 1993 with a group of environmentally concerned landscape professionals and individuals searching for methods and an approach to managing the landscape in a healthy, sustainable manner.

Experience, research, and knowledge compiled by the group were the beginning of a positive exchange of ideas to promote environmentally sound methods of landscaping.

The group consisted of lawn care professionals, landscapers, organic gardeners, county extension agents, entomologists, plant pathologists, IPM specialists, ecologists, conservationists, landscape designers and architects, and botanists.

With the desire to eliminate and reduce the use of pesticides, consider the water and air quality of the site, preserve biodiversity, and acknowledge the health of clients and the practitioner, the Ecological Landscaping Association is committed to educating others about environmentally sound methods of landscape design, installation, and maintenance.

The mission of ELA resounds loud and clear:

The Ecological Landscaping Association advocates for environmentally responsible stewardship of land and natural resources in the landscaping and horticultural practices of professionals and the public. Through education, collaboration, and networking, ELA promotes the design, installation, and maintenance of landscapes that are guided by a knowledge of and respect for natural ecosystems.

ECOLOGICAL LANDSCAPING ASSOCIATION

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ecological landscaping

ECOLOGICAL LANDSCAPING IS A METHOD of designing, building, and maintaining landscapes that considers the ecology of a site and creates gardens that enhance the surrounding environment for the benefit of humans and all other life in the ecosystem.

When the earth is disturbed during the construction of buildings, homes, driveways, and roadways, the land is forever altered. Although the natural landscape can never be restored completely, with thoughtful attention to the site, ecological landscapers can create outdoor spaces that are practical, healthy, and aesthetically pleasing. Ecological landscaping strives to balance the building site with the natural environment. It draws upon the wisdom of natural systems. By studying the inter-relationships between living things, non-living things, and the environment, ecological landscapers can create a landscaped community that will conserve natural resources, preserve biodiversity, and protect the environment. With proper design and implementation, a healthy pattern begins to form with each component in the landscape; people, animals, plants, water, soil, insects, and wildlife, all interacting in a sustainable way.

Conservation is an important part of ecological landscaping. The objectives of an ecological landscaper are to reduce water consumption, preserve water quality, prevent soil erosion, protect biodiversity, diminish the use of toxic pesticides, and minimize the use of non-renewable resources. By striving toward these goals, the ecological landscaper can create gardens that are both environmentally responsible and enjoyable to experience.

"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

— ALDO LEOPOLD

healthy soil, healthy plants

Organic matter…Right plant, right place…Soil analysis

LIVING PLANTS IMPART BEAUTY and grace to our landscapes. Through color, texture, and form, they can sooth or excite us, provide interest, and transform a property into a place with its own unique personality. Landscape plants provide a transition from what is made by people to what is created by nature. They help our homes and other buildings fit into their natural surroundings.

Purchasing a plant is like making an investment, for it can increase the value of a property and the well-being of its owner. But these benefits are not realized if plants become unsightly when riddled with pests or disease. Unhealthy plants degrade the landscape and are costly to replace. Knowing which plant grows best in a given situation can make all the difference between a healthy plant or a struggling plant.

Ecological landscaping offers sound choices and practices to promote the healthiest plants possible by…

- **Selecting plants** based upon an analysis of the site
- **Favoring regionally propagated plants** and cultivars that are disease or pest-resistant
- **Amending planting areas** with compost and organic matter if needed
- **Planting at the correct depth** trees, shrubs, perennials, and annuals
- **Applying mulches** to improve soil texture and retain moisture
- **Keeping mulches away** from tree bark or stem to prevent rotting

Non-toxic Alternatives

INSECTICIDAL SOAPS For controlling infestations of soft-bodied insects such as aphids, mealybugs, and whiteflies

HORTICULTURAL OIL SPRAYS For controlling hemlock wooly adelgid, mites, and scale insects.

BACTERIA **Bt** *(Bacillus thuringiensis)* for controlling outbreaks of common pest caterpillars, such as gypsy moth, budworms, and loopers and **Milky Spore Powder** *(Bacilus popillae)* to control Japanese beetle grubs

BIOLOGICAL CONTROLS Predatory insects and natural pesticides

LADYBUGS which feed on aphids

LACEWINGS feed on aphids and other soft-bodied insects

ICHNEUMON WASPS feed on sawfly and beetle larvae and caterpillars

NEEM, made from the seeds of the Neem tree of Africa and India, controls a wide range of pests

Soil is the foundation for healthy plants and landscapes. It is the foundation for all plant life. One gram of soil contains millions of bacteria, yeasts, molds, fungi, and other microbes. These organisms are vital to the natural processes of the environment by recycling nutrients, protecting plants from pests and diseases, and allowing plants to receive nutrients from the soil. Organic matter in the form of compost and mulch feed the soil microbes, while reducing erosion and compaction and adding to soil porosity and moisture-holding capacity. An ecological approach to healthy soil requires that…

Encourage beneficial insects to visit your yard

Plant nectar-producing plants

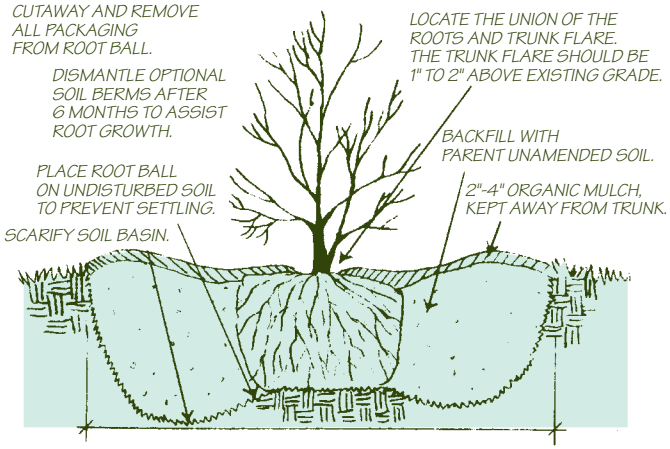
Provide shelter from wind and weather extremes

Provide water during dry spells

Plant dill, fennel, parsley, mints, catnip, lemon balm, rosemary, thyme, daisies, coneflowers, yarrow, goldenrod, clover

- **Soil tests are taken** to analyze soil composition, texture, pH, and fertility
- **Organic soil amendments are applied** when needed, based on soil test results, to promote long-term soil health
- **Soil compaction is prevented** by using heavy equipment only when necessary
- **Wet soils are never worked**
- **Exposed soils and slopes are quickly covered** with hay mulch, planted with fast growing seed, or addressed by other soil-stabilizing methods to prevent erosion
- **Siltation of waterways is prevented** by placing hay bales along the edge of wetlands

How to Plant a Shrub



healthy environment

Biodiversity…Prevention…Conservation

AN UNHEALTHY ENVIRONMENT SHOULD NOT BE THE PRICE OF A BEAUTIFUL LANDSCAPE. But when we over-use natural resources and rely on toxic chemicals to resolve problems resulting from poor plant choices and inadequate soil preparation, we risk the health of our children, our pets, and our environment.

Ecological landscaping appreciates the connectedness between all living things and works to promote a healthy environment through conservation, respect for biodiversity, and the practice of ecologically-sound techniques.

Ecological landscaping practices promote a healthy environment by…

- **Protecting biodiversity** by avoiding and removing invasive plants
- **Promoting air quality** by reducing the need for gasoline-powered machines such as lawnmowers and leaf blowers
- **Minimizing pesticide use** through Integrated Pest Management (IPM) which predicts pest activity based on the host plant and focuses on prevention and environmentally-safe strategies
- **Protecting wildlife** by reducing or eliminating the use of toxic chemicals
- **Conserving water** by matching plants to the site, improving soil moisture retention, and watering effectively

Simple things you can do in your own backyard to promote a healthier environment

Shred leaves in the fall and use them as mulch for your beds and borders

Build a compost pile

Leave grass clippings on the lawn to add organic matter and nutrients to the soil

Mow lawns at 3" to 3.5"

Irrigate only when necessary

Let part of your property overgrow naturally to provide habitat for beneficial insects and birds

Choose a natural pest control instead of toxic chemicals

Plant native trees or shrubs that produce berries for birds

Compost Dos & Don'ts

Compost is one of the best soil amendments for our gardens. It contributes organic matter that will increase water retention, supply nutrients to plants, enrich soil texture and fertility, and suppress disease organisms present in the soil.

What to add…

- Grass clippings and seed-free weeds
- Seaweed
- Vegetable and fruit scraps
- Plants, leaves, and pine needles
- Wood shavings and sawdust
- Wood ash
- Small twigs

What not to add…

- Diseased plants
- Weeds with seeds
- Kitty litter
- Pressure-treated wood
- Pesticide-treated plants or grass
- Coal dust or ashes
- Fats or oils
- Meat or dairy products

Ecological landscaping practices promote conservation of natural resources because…

- **Energy consumption and costs for heating are reduced** by strategic placement of evergreens to screen winter winds
- **Water is saved** by addition of organic matter to soils which promotes moisture retention
- **Energy costs are cut by 10% to 50%** by planting shade trees which moderate temperatures by providing summer cooling and winter warming

Native Plant Alternatives

common invasive plant	*native alternative*
Norway Maple *Acer platanoides*	**Sugar Maple** *Acer saccharum*
Burning Bush *Euonymus alatus*	**Highbush Blueberry** *Vaccinium corymbosum*
Japanese Barberry *Berberis thunbergii*	**Chokeberry** *Aronia arbutifolia*
Oriental Bittersweet *Celastrus orbiculata*	**Virginia Creeper** *Parthenicissus quinquefolia*
Glossy Buckthorn *Rhamnus frangula*	**Arrowwood** *Viburnum dentatum*
Common Buckthorn *Rhamnus cathartica*	**Witch Hazel** *Hamamelis virginiana*
Purple Loosestrife *Lythrum salicaria*	**Gayfeather** *Liatris spicata*
Multiflora Rose *Rosa multiflora*	**Pasture Rose** *Rosa carolina*
Tatarian Honeysuckle *Lonicera tatarica*	**Serviceberry** *Amelanchier alnifolia*
Morrow's Honeysuckle *Lonicera morrowii*	**Spicebush** *Lindera benzoin*
Garlic Mustard *Alliaria petiolaria*	**Bee Balm** *Monarda didyma*
Goutweed *Aegopodium podagraria*	**Wintergreen** *Gaultheria procumbens*

clean, abundant water

Conservative use…Erosion prevention…Less chemicals

CLEAN WATER IS A BASIC REQUIREMENT OF LIFE. Choices we make in our day-to-day activities can help or harm our above- and below-ground water supplies. Water restrictions, expensive irrigation systems, and contaminants that enter the water supply are concerns that can be alleviated through the practice of an ecological approach to landscape design.

Water can be conserved and kept on site instead of running off into storm drains. Reduced consumption of water can be achieved by…

- **Reducing lawn size, planting sun and shade gardens,** and **adding more vegetative cover**
- **Using native plants** adapted to local conditions
- **Mulching and composting** to increase water retention
- **Watering slowly and deeply** in early morning or evening
- **Using rain barrels and rain gardens** to prevent run-off
- **Matching plants to site conditions** and grouping plants according to water needs
- **Avoiding turf on steep inclines** and isolated strips
- **Using paving materials for hardscape areas,** such as cement pavers, to allow for drainage, instead of run-off

Erosion by wind and water brings sediment into streams and results in loss of nutrient-rich topsoil. Sheltering and slowing the flow of water to prevent erosion requires…

- **Vegetative cover** such as hedgerows and crosswind-planted strips
- **Slopes planted with meadow plants, shrubs, or trees** to hold soil in place
- **Native grasses** with deeper roots

Pesticides and fertilizers used on lawns and gardens contaminate surface water through runoff into streams, rivers, and lakes. By allowing plants and the natural systems to balance the ecosystem, water quality can be improved by…

- **Minimizing or eliminating the use of pesticides**
- **Mowing lawns at highest height** in order to shade out weeds
- **Using mulching mowers** to keep grass clippings on lawn and return nutrients to the soil
- **Planting native plants** adapted to the site
- **Creating habitats to encourage natural predators** such as ladybugs, birds, frogs, and lizards to control pests in the landscape

rich wildlife

Natural habitats…Native plants…Peaceful coexistence

SEEING AND LEARNING ABOUT WILDLIFE is an enriching experience that can be enjoyed in our own backyards. All animals, including humans, have four basic requirements to survive — food, shelter, water, and nesting areas for reproduction. When these are in abundance, a rich variety of life can be supported, creating a healthier, more resilient ecosystem for all of us to inhabit. Nuisance animal behavior can be avoided if we provide areas that meet their four basic needs in the outer limits of our properties.

Natural habitats for wildlife can be increased by connecting patches and corridors of open land, woodlands, and streams between properties. These natural areas can harmonize with landscaped areas that contain…

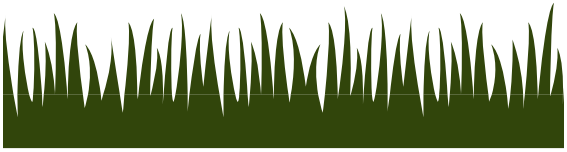
- **Multiple heights and layers of native vegetation** including vines, fruit, and nut-bearing plants
- **Meadow areas** that provide nesting materials and habitat
- **Bird baths, streams, and ponds** for water sources
- **Thickets and brush piles** for shelter
- **Standing dead trees** or snags and rotting logs for food and shelter
- **Stone walls** with leaf litter left along the side for shelter and pathways

Plants that attract butterflies and hummingbirds

Blue Sage *Salvia azurea*
Cardinal Flower *Lobelia cardinalis*
Joe-Pye Weed *Eupatorium fistulosum*
New Jersey Tea *Ceanothus americanus*
Northern Blazing Star *Liatris scariosa*
Purple Coneflower *Echinacea purpurea*
Summersweet *Clethra alnifolia*
Wild Bergamot *Monarda fistulosa*
Wild Bleeding Heart *Dicentra eximia*

"Approximately 67 million birds die each year from exposure to pesticides. In the US 1 billion pounds of pesticides are applied annually.

— AMERICAN BIRD CONSERVANCY



lawns

Reduce size…Water wisely…Organic fertilizers

LAWNS ARE WONDERFUL PLACES for playing and entertaining. As a low growing and durable groundcover, grass accepts foot traffic and provides a level playing field. It can serve as an extension to your living space, especially near a deck or patio. But because of its high maintenance requirements, the lawn should not be allocated more space than is needed for these activities.

The typical North American lawn requires a great deal of money, time, and energy to maintain. Irrigated lawns strain our water supply, while fertilizers, pesticides and fungicides, used to maintain a picture-perfect turf, pollute our groundwater. Large lawns reduce biodiversity by replacing areas for wildlife habitat and forage with "green pavement" which provides neither. Native grasses have longer roots, making them drought-resistant and able to grow well in the warm season. They grow at varying heights and have beautiful seed-heads that provide food for birds and winter interest.

Grasses for songbirds

Big Bluestem
Andropogon gerardii

Indiangrass
Sorghastrum nutans

Little Bluestem
Schizachyrium scoparius

Northern Dropseed
Sporobolus heterolepsis

Purple Lovegrass
Eragrostis spectabilis

Side-oats Gramma
Bouteloua curtipendula

Switchgrass
Panicum virgatum

Tips for maintaining a lawn without compromising the environment…

- **A yearly application of compost** for established lawns, applied on the top of the lawn in the fall at a thickness of 1/8" to 1/4" will provide organic matter and nutrients to the soil
- **Mow lawns with a sharp blade at least 3" high,** never cutting more than one-third of the blade length
- **Leave the lawn clippings on the soil** for added nutrients and organic matter
- **Use an organic fertilizer** made from blends of manure, feather meal, blood-meal, and kelp
- **Irrigation of lawns is unnecessary** in most cases. Turf grasses will go dormant during periods of drought and then turn green again when natural rainfall returns

"A gasoline-powered lawnmower running for an hour puts out about the same amount of smog-forming emissions as 40 new automobiles running for an hour."

— AIR RESOURCES BOARD OF THE CALIFORNIA EPA

how to choose an ecological landscaper

ECOLOGICAL LANDSCAPERS ARE PROFESSIONALS who have an understanding of natural systems — geology, climate, soils, plants, and ecology. They incorporate this knowledge with landscape design, construction, and maintenance to make ecologically-sound decisions for your property. An ecological landscaper differs from a conventional landscaper through the approach, techniques, and products used while managing the soil, plant life, and landscape. They strive to create gardens in an environmentally responsible way with a goal to improve and enhance the site conditions for both humans and wildlife alike.

An ecological landscaper begins with a study of the entire site…

PLANT INVENTORY — Cataloging the plants that exist on the site

SITE LOCATION — Hardiness zone, topography, microclimate, exposure to wind and sun, and availability of water

SOIL SAMPLES — pH test, soil composition, texture, moisture retention, and fertility

SITE HISTORY — Recurring problems in the landscape, wet areas, stressed plants, erosion

Ecological landscapers use data from their site analysis to provide a design that is appropriate for the site. They will build healthy soil and choose plants that will grow and thrive, selecting for disease resistance, drought or wet tolerance, and non-invasiveness.

To minimize the use of toxic chemicals, an ecological landscaper will proactively monitor plant material and soils for key pests and diseases that arise in stressed situations. Problems are addressed on a case-by-case basis using the solution with the least environmental impact.

Listen for these terms when interviewing a landscaper…

- Soil tests
- Site analysis
- Integrated pest management
- Compost as soil amendment
- Endophytically enhanced grass seed
- Mulches of leaf mold or compost
- Low impact solutions
- Least toxic pesticides

Products used by an ecological landscape professional…

- Insecticidal soap
- Horticultural oil
- NEEM
- Bt
- Compost tea
- Beneficial nematodes
- Low nitrogen fertilizer

resources

ECOLOGICAL LANDSCAPING ASSOCIATION, *www.ecolandscaping.org*

PLANTS

New England Wildflower Society, *www.newfs.org*

National Park Service Plants Conservation Alliance, *www.nps.gov/plants/alien/factmain.htm#pllists*

Organic Gardening, www.organicgardening.com/

The Invasive Plant Atlas of New England, a comprehensive, web-accessible database of invasive and potentially invasive plants in New England, *http://nbii-nin.ciesin.columbia.edu.ipane/*

The Nature Conservancy, learn what you can do to fight invasive plants and preserve the species native to your region, *http://nature.org/initiatives/invasivespecies/features/index.html; http://tncweeds.ucdavis.edu*

The Plant Conservation Alliance, PCA members and cooperators work collectively to solve the problems of native plant extinction and native habitat restoration, ensuring the preservation of our ecosystem, *http://www.nps.gov/plants/, http://www.nps.gov/plants/alien/pllists*

The PLANTS National Database, online USDA database of information, images, and links on plants in the USA, including invasives, *http://plants.usda.gov/index.html*

WATER

American Water Works Association Consumer Center, *http://www.awwa.org*

The Groundwater Foundation, *http://www.groundwater.org*

US EPA Surf Your Watershed Site, *http://www.epa.gov/surf*

US Geological Survey Water Resources of the US, *http://water.usgs.gov/*

WILDLIFE

MSPCA Wildlife Help Center, *http://www.livingwithwildlife.org*

The National Wildlife Federation, *http://www.nwf.org/backyardwildlifehabitat*

The Massachusetts Audubon Society, *http://www.massaudubon.org/Nature_Connection/wildlife.php*

BirdSource, *http://www.birdsource.org*

National Audubon Society, *http://magazine.audubon.org/backyard/winter.html*

Join the **ECOLOGICAL LANDSCAPING ASSOCIATION** today! Learn more about environmentally responsible landscaping and horticultural practices by…

- becoming a part of a growing network of people who care about the environment
- collaborating with other environmentally concerned groups and organizations
- being able to make informed choices for your business, your garden, and your community
- supporting public education and awareness about ecological landscaping methods

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