

PLANT IDENTIFICATION

A knowledgeable person in any phase of the landscape industry must know how to identify plants; plant identification is one of the major parts of the **New Hampshire Certified Landscape** examination. The candidate will be asked to identify, from the samples and/or pictures, a reasonable selection from the list that follows. Knowledge of a plant includes both the common and scientific name. *Hortus III* and the *Manual of Woody Plants* (M. Dirr.) were the primary references for the scientific names.

EVERGREENS

N	Abies balsamea	Balsam Fir
N	Abies concolor	White Fir
	Abies fraseri	Fraser Fir
	Chamaecyparis obtusa 'Gracilis'	Hinoki Falsecypress
	Chamaecyparis pisifera 'Filifera'	Thread-Leaf Falsecypress
	Chamaecyparis thyoides	Atlantic White Cedar
	Juniperus chinensis 'Pfitzeriana'	Pfitzer Juniper
	Juniperus horizontalis 'Plumosa'	Andorra Juniper
	Juniperus horizontalis 'Wiltonii'	Blue Rug Juniper
	Juniperus procumbens 'Nana'	Dwarf Japanese Garden Juniper
	Juniperus scopulorum 'Wichita Blue'	Wichita Blue Juniper
N	Juniperus virginiana	Eastern Red Cedar
	Juniperus virginiana 'Grey Owl'	Grey Owl Juniper
	Picea abies	Norway Spruce
	Picea abies 'Nidiformis'	Bird's Nest Spruce
	Picea glauca 'Conica'	Dwarf Alberta Spruce
N	Picea pungens 'Glauca'	Colorado Blue Spruce
	Pinus cembra	Swiss Stone Pine
	Pinus mugo	Mugo Pine
	Pinus nigra	Austrian Pine
	Pinus parviflora	Japanese White Pine
N	Pinus strobus	Eastern White Pine
	Pinus sylvestris	Scotch Pine
N	Pseudotsuga menziesii	Douglas fir
	Sciadopitys verticillata	Japanese Umbrella Pine
	Taxus cuspidata 'Capitata'	Upright Japanese Yew
	Taxus cuspidata 'Nana'	Dwarf Japanese Yew
	Taxus x media 'Densiflora'	Dense Spreading Yew
	Taxus x media 'Hicksii'	Hick's Upright Yew
	Thuja occidentalis 'Nigra'	Dark American Arborvitae
	Thuja occidentalis 'Techny'	Mission Arborvitae
	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae
N	Tsuga canadensis	Canadian Hemlock

N= Native to New England
I= Invasive

D-1
Jan. 2007

PLANT IDENTIFICATION STUDY LIST—continued

BROAD-LEAVED EVERGREEN SHRUBS

	Buxus spp.*	Boxwood
	Ilex crenata	Japanese Holly
N	Ilex glabra	Inkberry
	Ilex x meserveae	Meserve Holly
	Ilex opaca	American Holly
N	Kalmia latifolia	Mountain Laurel
	Leucothoe fontanesiana	Drooping Leucothoe
	Pieris x 'Brouwer's Beauty'	Brouwer's Beauty Andromeda
N	Pieris floribunda	Mountain Andromeda
	Pieris japonica	Japanese Andromeda
	Rhododendron carolinianum	Carolina Rhododendron
	Rhododendron catawbiense	Catawba Rhododendron
	Rhododendron x laetivirens	Wilson Rhododendron
N	Rhododendron maximum	Rosebay Rhododendron
	Rhododendron P.J.M. Hybrids	PJM Series Rhododendrons
	Rhododendron 'Purple Gem'	Purple Gem Rhododendron

DECIDUOUS SHADE & ORNAMENTAL TREES

	Acer ginnala	Amur Maple
	Acer griseum	Paperbark Maple
	Acer palmatum	Japanese Maple
I	Acer platanoides	Norway Maple
I	Acer platanoides 'Crimson King'	Crimson King Maple
N	Acer rubrum	Red or Swamp Maple
N	Acer saccharinum	Silver Maple
N	Acer saccharum	Sugar Maple
	Aesculus hippocastanum	Common Horsechestnut
N	Amelanchier canadensis	Serviceberry
	Betula jacquemontii	Himalayan Birch
N	Betula nigra	River Birch
N	Betula papyrifera	Canoe or White Birch
	Betula platyphylla 'Whitespire'	Japanese Whitespire Birch
N	Catalpa speciosa	Northern Catalpa
	Cercidiphyllum japonicum	Katsura tree
N	Cercis canadensis	Eastern Redbud
N	Cornus alternifolia	Pagoda Dogwood
	Cornus Rutgers Hybrids	Rutgers Hybrid Dogwood
	Cornus kousa	Kousa Dogwood, Chinese Dogwood
N	Crataegus spp.*	Hawthorn
N	Fagus grandifolia	American Beech
	Fagus sylvatica	European Beech
	Fagus sylvatica 'Riversii'	River's Purple Beech
N	Fraxinus americana	White Ash

* Many species within this genus

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PLANT IDENTIFICATION STUDY LIST—continued

N	Fraxinus pennsylvanica	Green Ash
	Ginkgo biloba	Ginkgo Tree
	Gleditsia triacanthos var. inermis	Thornless Honeylocust
	Koelreuteria paniculata	Golden Rain Tree
	Laburnum x watereri	Goldenchain Tree
	Larix spp*	Larch
N	Liquidambar styraciflua	American Sweetgum
N	Liriodendron tulipifera	Tuliptree
	Magnolia x loebneri	Loebner Magnolia
	Magnolia x soulangiana	Saucer Magnolia
	Magnolia stellata	Star Magnolia
	Malus spp*	Flowering Crabapple
N	Nyssa sylvatica	Black Tupelo
	Oxydendrum arboreum	Sourwood
	Platanus x acerifolia	London Planetree
N	Prunus spp.*	Cherry
	Pyrus calleryana	Callery Pear
N	Quercus palustris	Pin Oak
N	Quercus rubra	Red Oak
	Salix alba 'Tristis'	Golden Weeping Willow
	Sorbus alnifolia	Korean Mountain Ash
	Stewartia pseudocamellia	Japanese Stewartia
	Syringa reticulata	Japanese Tree Lilac
N	Tilia americana	Basswood
	Tilia cordata	Littleleaf Linden
N	Ulmus americana	American Elm
	Ulmus parviflora	Lacebark Elm
	Zelkova serrata	Japanese Zelkova

DECIDUOUS ORNAMENTAL SHRUBS

N	Aronia arbutifolia	Chokeberry
	<i>Azaleas:</i>	
	Rhododendron 'Exbury'	Exbury Hybrid Azalea
	Rhododendron mucronulatum	Korean Rhododendron
	Rhododendron 'Northern Lights' hybrids	Northern Lights Azalea
	Rhododendron poukhanensis	Korean Azalea
N	Rhododendron vaseyi	Pink Shell Azalea
N	Rhododendron viscosum	Swamp Azalea
I	Berberis thunbergii	Japanese Barberry
	Chaenomeles spp.*	Flowering Quince
N	Clethra alnifolia	Sweet Pepperbush
N	Cornus sericea	Redosier Dogwood
	Cotinus coggygria	Smoke Tree
	Cotoneaster spp.	Cotoneaster
	Daphne spp.*	Daphne

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PLANT IDENTIFICATION STUDY LIST—continued

	<i>Enkianthus campanulatus</i>	Redvein Enkianthus
I	<i>Euonymus alatus</i> 'Compactus'	Compact Burning Bush
	<i>Forsythia x intermedia</i>	Forsythia
	<i>Folthergilla gardenii</i>	Dwarf Fothergilla
N	<i>Hamamelis</i> spp.	Witchhazel
	<i>Hibiscus syriacus</i>	Rose of Sharon
	<i>Hydrangea</i> spp.	Hydrangea
N	<i>Ilex verticillata</i>	Winterberry
	<i>Kolkwitzia amabilis</i>	Beauty Bush
	<i>Ligustrum</i> spp.	Privet
N	<i>Myrica pensylvanica</i>	Northern Bayberry
	<i>Philadelphus coronarius</i>	Sweet Mockorange
N	<i>Potentilla fruticosa</i>	Potentilla
	<i>Prunus x cistena</i>	Purple Leaf Sand Cherry
	<i>Spiraea x bumalda</i>	Bumald Spirea
	<i>Spiraea x vanhouttei</i>	Vanhoutte Spirea
	<i>Syringa patula</i> 'Miss Kim'	Miss Kim Lilac
	<i>Syringa prestoniae</i> 'James MacFarlane'	James MacFarlane Lilac
	<i>Syringa vulgaris</i> hybrids	Hybrid Common Lilac
N	<i>Vaccinium corymbosum</i>	Highbush Blueberry
	<i>Viburnum carlesii</i>	Koreanspice Viburnum
N	<i>Viburnum dentatum</i>	Arrowwood
	<i>Viburnum x juddi</i>	Judd Viburnum
	<i>Viburnum plicatum tomentosum</i>	Doublefile Viburnum
N	<i>Viburnum prunifolium</i>	Blackhaw Viburnum
	<i>Viburnum rhytidophyllum</i>	Leatherleaf Viburnum
N	<i>Viburnum trilobum</i>	American Cranberrybush Viburnum

VINES, GROUNDCOVERS, AND CLIMBING PLANTS

N	<i>Asarum canadense</i>	Canadian wild Ginger
	<i>Ajuga reptans</i>	Bugleweed
N	<i>Arctostaphylos uva-ursi</i>	Bearberry
	<i>Calluna</i> spp.*	Heather
	<i>Celastrus scandens</i>	American Bittersweet
	<i>Clematis</i> spp. and hybrids	Clematis
	<i>Convallaria majalis</i>	Lily of the Valley
N	<i>Cornus canadensis</i>	Bunchberry
	<i>Euonymus fortunei</i> var. <i>coloratus</i>	Wintercreeper Euonymus
	<i>Euonymus fortunei</i> 'Emerald Gaiety'	Euonymus Emerald Gaiety
	<i>Galium odoratum</i>	Sweet Woodruff
N	<i>Gaultheria procumbens</i>	Wintergreen
	<i>Hedra helix</i> 'Baltica'	English Ivy
	<i>Hydrangea anomala</i> subsp. <i>petiolaris</i>	Climbing Hydrangea
	<i>Lamium maculatum</i>	Spotted Dead Nettle
	<i>Lonicera x heckrottii</i>	Goldflame Honeysuckle

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PLANT IDENTIFICATION STUDY LIST—continued

	Microbiota decussata	Russian Cypress
	Pachysandra terminalis	Japanese Spurge
	Pachysandra procumbens	Allegheny Spurge
	Parthenocissus quinquefolia	Virginia Creeper
	Parthenocissus tricuspidata	Boston Ivy
N	Phlox spp.*	Groundcover Phlox
	Sedum spp.*	Ground Sedums
	Stephanandra incisa 'Crispa'	Cutleaf Stephanandra
N	Vaccinium angustifolium	Lowbush Blueberry
	Vinca minor	Periwinkle or Myrtle

ROSES & HYBRIDS

	Rosa Hybrids	Carpet/Groundcover Roses
	Rosa spp. & Hybrids	Climbing Roses
	Rosa Hybrids	Hybrid Tea Roses
	Rosa spp. & Hybrids	Floribunda Roses
	Rosa spp. & Hybrids	Shrub Roses
	Rosa 'Meidland'	Meidland Roses

HERBACEOUS PERENNIALS (Reference: *Index Hortensis*, 1989)

	Achillea spp.	Yarrow
	Alchemilla spp.	Lady's Mantle
	Aurinia saxatilis	Basket-of-Gold
N	Aquilegia spp. and Hybrids	Columbine
	Artemisia schmidtiana 'Silver Mound'	Silver Mound Artemisia
	Astilbe x arendsii	Astilbe
N	Aster spp.	Asters
	Athyrium niponicum 'Pictum'	Japanese Painted Fern
	Baptisia australis	False Indigo
	Campanula spp.	Bell-flower
N	Cimicifuga racemosa	Bugbane
	Coreopsis verticillata	Threadleaf Coreopsis
	Dendranthema Hybrids	Hardy Chrysanthemum
	Dennstaedtia punctiloba	Hay-scented Fern
	Dianthus spp.	Pinks
N	Dicentra spp.	Bleeding Heart
	Echinacea purpurea	Purple Coneflower
	Echinops ritro	Globe Thistle
	Festuca glauca	Blue Fescue
	Geranium spp.	Hardy Geraniums
	Gypsophila spp.	Baby's Breath
	Heliopsis helianthoides	Sunflower Heliopsis
	Hemerocallis spp. and Hybrids	Daylily

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PLANT IDENTIFICATION STUDY LIST—continued

	Heuchera spp. & hybrids	Coral bells
	Hosta spp. and hybrids	Plantain Lily, Hosta
	Iberis sempervirens	Candytuft
N	Iris spp. and hybrids	Iris
	Liatris spicata	Gayfeather
	Leucanthemum superbum (formerly Chrysanthemum maximum)	Shasta Daisy
N	Lobelia cardinalis	Cardinal Flower
	Miscanthus sinensis	Maiden Grass
	Monarda didyma	Beebalm
	Nepeta spp.*	Catmint
	Paeonia spp. and hybrids	Peony
	Papaver spp. and hybrids	Poppy
	Penstemon digitalis 'Husker Red'	Huskers Red Penstemon
	Perovskia atriplicifolia	Russian Sage
	Phlox paniculata	Garden Phlox
	Polemonium caeruleum	Jacob's Ladder
	Pulmonaria spp.	Lungwort
	Rudbeckia fulgida 'Goldsturm'	Black Eyed Susan
	Salvia nemorosa	Perennial Salvia
	Sedum spectabile	Showy Stonecrop
	Sempervivum spp.	Houseleek, Hen and Chickens
	Stachys byzantina	Lamb's Ears
	Thymus spp.	Thyme
N	Tiarella cordifolia	Foamflower
	Veronica spp.	Speedwell
	Viola spp.	Violets

ANNUALS (Reference: *Taylor's Guide to Annuals*)

Ageratum
 Begonia
 Coleus
 Cosmos
 Dahlia
 Dusty Miller
 Marigold
 Fuchsia
 Geranium
 Impatiens
 Lobelia
 Moss Rose, Portulaca
 Nasturtium
 Ornamental Cabbage and Kale
 Pansy
 Petunia
 Snapdragon

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PLANT IDENTIFICATION STUDY LIST—continued

Spider Flower
Sweet Alyssum
Verbena
Vinca
Zinnia

BULBS (Reference: *Taylor's Guide to Bulbs*)

FALL PLANTING

Crocus
Daffodil
Hyacinth
Hybrid Lily
Tulip

SPRING PLANTING

Begonia
Caladium
Dahlia
Gladiolus
Hybrid Lily

WEEDS

PERENNIAL WEEDS

Canada Thistle
Dandelion
Field Bindweed
Ground Ivy
Horsetail
Mouseear Chickweed
Plantain
Quackgrass
Red Sorrel

ANNUAL WEEDS

Common Chickweed
Common Purslane
Common Ragweed
Crabgrass
Henbit
Prostrate Knotweed
Yellow Woodsorrel

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NATIVE PLANTS

DEFINITION

Native plants are species that have been part of our natural landscape since before colonization and are indigenous to a particular region, habitat and/or ecological area.

The term can mean native to the United States, to New England or specifically to New Hampshire. When selecting native plants for their ecological adaptability plants which are native to the region should be used.

USING NATIVE PLANTS IN THE LANDSCAPE

There are many reasons to use natives in the landscape. They are low maintenance, sustainable plants. They have evolved over time and are adapted to environmental stresses and ecological processes that occur in their given region, such as rainfall, temperature fluctuations, soil type, interaction with native pollinators and seed dispersal methods. These factors not only allow them to survive, but to flourish. Here in New England they are robust enough to survive our cold winter and endure a summer drought. Natives also have fewer pest and disease problems due to the plant's inherent resistance.

Natives must support so much ongoing life in their ecosystem – birds, butterflies, wildlife, beneficial fungi and other microorganisms and as a result of this, they have interesting flowers and foliage, seedpods, berries and bark for winter interest. Often people think of natives as not being showy or long blooming, yet there are many interesting plants available from our native palette. Most of them are easy to grow and even to propagate.

Natives also present rich historical and cultural interest by the part they play in healing medicines, food, textiles, etc.

Natives are part of a community. There are natural checks and balances, which prevent them from straying far from home. They will gently and naturally grow into an area and increase their populations. Where plants introduced from other regions or countries may become invasive, local natives will not, though some can be “explosive.” An example of an “explosive plant” is Sumac.

BUYING NATIVE PLANTS

A crucial consideration when purchasing natives is their source. Unfortunately, there are people who sell “wild collected” plants. What this means is that someone digs up plants from the wild (often illegally), pots them up and sells them to the public or to a nursery. This only adds to the decrease in many plant populations. Habitat is often disregarded as someone carelessly moves through the woodland or wetland in search of plants. Rare plants can be trampled and/or the wrong plant may also be removed resulting in improper labeling not to mention the disruption in an otherwise undisturbed area. Any of these actions only defeats the purpose of using natives in the first place. (There are situations when plant rescues are done but with permission and through proper channels.)

NATIVE PLANTS—continued

Fortunately, due to the recent increase in demand, more specialty nurseries and growers are propagating their own and/or getting them from responsible sources. So please be sure of the origin of the plants you buy, and once you find a reliable source continue to support their effort in making these plants available to the public.

If a customer requests a particular plant that you have a difficult time finding, speak with the owner of the nursery about considering its inclusion in their inventory. The NHLA plant list denotes natives with “N” and will help you determine which are native. Also consider using natives as alternatives to many of our all too commonly planted invasive species. For instance, choose Winterberry (*Ilex verticillata*), *Fothergilla* spp., Highbush blueberry (*Vaccinium corymbosum*) or an appropriate *Viburnum* for autumn color and/or winter berries instead of Burning Bush (*Euonymus alatus*), or Japanese Barberry (*Berberis thunbergii*).

A NOTE ON TERMINOLOGY

Many people use the term “wildflower” and “native” as if they are synonymous – they are not. Plants such as Queen Anne’s Lace, are “naturalized” not native. Naturalized means they were brought into an area by some outside means and have become established. This doesn’t necessarily make them bad, though some can get quite weedy. It is important to know the difference. Some meadow mixes include these so-called “wildflowers” which gives the impression they are native.

—*This section written by Bonnie Caruthers*

INVASIVE PLANTS

DEFINITION

“Plants that have or are likely to spread into native or minimally managed plant systems and cause economic or environmental harm by developing self-sustaining populations and becoming dominant or destructive.” (Chris Mattrick, NEWFS and Les Mehrhoff of University of CT.)

Simply put, invasive plants are plants that are introduced into new areas where they are not native and no longer encounter their natural predators or competition. This results in potentially crowding out other less aggressive species and overtaking native habitats.

WHAT EXACTLY IS THE PROBLEM?

It is not a new problem, but the repercussions are only now being fully realized. Non-native, exotic or alien species, have caused serious devastation to nature as we know it. This is not just a “weed” problem—like too much crabgrass in the lawn or nutsedge popping up in the garden—it’s a lot more serious. It has become a virtual nightmare for farmers, homeowners and land managers but more importantly to the biodiversity of the planet. A widespread problem of invasive species is their ability to degenerate a habitat to the extent of altering the behavior of plants, animals, and pollinators so completely that left unchecked can be a means of some species extinction.

WHERE DID THEY COME FROM?

Many of these plants were introduced to North America intentionally:

- Horticulture industry is responsible for 60%
 - Planted as ornamentals
 - Used as food or medicine
- Conservation organizations, 25%
- Accidental, 15%
 - Ship ballast water was emptied into rivers, etc. with grain and other foods from abroad

WHAT ARE THE CHARACTERISTICS OF AN INVASIVE PLANT?

- Easy Establishment
- Grow and proliferate aggressively
- Produce copious amounts of seed with high viability
 - Ex. Purple Loosestrife, *Lythrum salicaria*, yields approximately 2,000,000 seeds per mature plant per year!
- Successful and varied seed dispersal by wind, birds, and water
- High viability
- Reproduce vegetatively as well as sexually
 - Ex. Japanese knotweed, *Polygonum cuspidatum* has been known to have rhizomes of 65 feet traveling underground to colonize a new area!
- Dispersed over a wide area
- Persist without cultivation
- Have aggressive root systems
- Threaten biological diversity
- Lack predators

INVASIVE PLANTS—continued

- Thrive in disturbed areas
- Are habitat generalists
- Exhibit phenotypic plasticity

(Phenotypic plasticity is the manifestation of alterability among plants of identical genotype. For example: *Rhamnus frangula* will produce a smaller leaf in sun and a larger leaf in shade giving it more potential to survive in varied conditions.)

WHAT IS YOUR ROLE AND RESPONSIBILITY AS A LANDSCAPER?

The best defense is to be informed so that you are able to advise your clients. Learn which plants are problems in New Hampshire and seek alternatives that are native or non-invasive exotics.

Unfortunately, many of these plants are attractive and this is the very reason they were brought here in the first place. It will take time for this change in perspective to occur, but you as a landscaper/ designer have a great opportunity to encourage this shift by offering alternatives and pointing out the qualities of lesser-known and under-used plants.

There are many different methods of controlling invasive plants and methods used will depend on the kind of plant and the scope of the problem. Cutting woody plants in fall when their energy is going into the root system, and then painting (not spraying) with the proper concentration of herbicide will decrease or eliminate future suckering. Hand pulling can be used in small areas but a tool such as the Weed Wrench would be preferable for larger site. Pulling certain perennials when they are in seed only causes more of a problem by dispersing the seed so they should be pulled before they go to seed.

INVASIVE PLANT LEGISLATION

Currently there is legislation in New Hampshire (passed April 2000) which will initiate a list of invasive species and will address solutions to the problem. There are some actual laws in place which ban the sale, planting, use, transportation and importation of certain plants (e.g. Purple Loosestrife, *Lythrum salicaria*). It is hoped that through ongoing communication via seminars, newsletters, word of mouth, etc. that we will become a self-regulated industry.

— *This section on Invasive Plants was written by Bonnie Caruthers*

**PROHIBITED PLANT AND INSECTS LISTS, PLANTS
WITH RESTRICTIONS LIST, AND A RESTRICTED
PLANT LIST FOR
INVASIVE SPECIES IN NEW HAMPSHIRE
June 2004**

The New Hampshire Invasive Species Committee, designated by legislation within the Department of Agriculture, has finalized the proposed lists of Prohibited Plants and Insects, a Prohibited Plant List with Conditions, and a Restricted/Watch Plant List for the State of New Hampshire.

The purpose of these lists is to distinguish those species that pose an immediate threat to the health of native species, to the environment, to commercial agriculture, to forest crop production, or to human health. The purpose of these lists is to also prevent the further spread of non-native invasive species throughout the state by prohibiting their collection, possession, importation, transportation, sale, propagation, transplantation and cultivation.

Following are the lists of these species:

Prohibited Plant List

Scientific Name	Common Name
<i>Ailanthus altissima</i>	Tree of Heaven
<i>Alliaria petiolata</i>	Garlic Mustard
<i>Berberis vulgaris</i>	European Barberry
<i>Butomous umbellata</i> *	Flowering Rush
<i>Cabomba caroliniana</i> *	Fanwort
<i>Celastrus orbiculatus</i>	Oriental bittersweet
<i>Cynanchum nigrum</i>	Black Swallow-wort
<i>Cynanchum rossicum</i>	Pale Swallow-wort
<i>Egeria densa</i> *	Brazilian elodea
<i>Elaeagnus umbellata</i>	Autumn Olive
<i>Hydrilla verticillata</i> *	Hydrilla
<i>Hydrocharis morsus-ranae</i> *	European frogbit
<i>Iris pseudacorus</i>	Water-flag
<i>Ligustrum obtusifolium</i>	Blunt-leaved Privet
<i>Lonicera bella</i>	Showy Bush Honeysuckle
<i>Lonicera japonica</i>	Japanese Honeysuckle
<i>Lonicera morrowii</i>	Morrow's Honeysuckle
<i>Lonicera tatarica</i>	Tartarian Honeysuckle
<i>Lythrum salicaria</i> *	Purple Loosestrife

INVASIVE PLANTS—continued

<i>Myriophyllum aquaticum</i> *	Parrot Feather
<i>Myriophyllum heterophyllum</i> *	Variable Milfoil
<i>Myriophyllum spicatum</i> *	European Water-milfoil
<i>Najas minor</i> *	European Naiad
<i>Nymphoides peltata</i> *	Yellow Floating Heart
<i>Phragmites australis</i> *	Common Reed
<i>Polygonum cuspidatum</i>	Japanese Knotweed
<i>Potamogeton crispus</i> *	Curly-leaf Pondweed
<i>Rhamnus carthartica</i>	Common Buckthorn
<i>Rhamnus frangula</i>	Glossy Buckthorn
<i>Rosa multiflora</i>	Multiflora Rose
<i>Trapa natans</i> *	Water Chestnut

*Indicates those species already prohibited in NH since 1998 per RSA 487:16-a of the NH Department of Environmental Services and Chapter Env-Ws 1300

Prohibited Plant List January 2007

<i>Euonymus alatus</i>	Burning Bush
<i>Acer platanoides</i>	Norway Maple
<i>Berberis thunbergii</i>	Japanese Barberry

Restricted/ Plant List

<i>Ampelopsis brevipedunculata</i>	Porcelain-berry
<i>Centaurea maculosa</i>	Spotted Knapweed
<i>Cirsium arvense</i>	Canada Thistle
<i>Coronilla varia</i>	Crown Vetch
<i>Elaeagnus angustifolia</i>	Russian Olive
<i>Euonymus fortunei</i>	Wintercreeper
<i>Glyceria maxima</i>	Sweet Reedgrass
<i>Ligustrum vulgare</i>	Common Privet
<i>Lonicera maakii</i>	Amur Honeysuckle
<i>Lysimachia nummularia</i>	Moneywort
<i>Microstegium vimineum</i>	Japanese Stilt Grass
<i>Phalaris arundinacea</i>	Reed Canary Grass
<i>Populus alba</i>	White Poplar
<i>Pueraria lobata</i>	Kudzu
<i>Robinia pseudoacacia</i> L.	Black Locust
<i>Ulmus pumila</i>	Siberian Elm

INVASIVE PLANTS—continued

Prohibited Insect List

Rhizotrogus majalis	European chafer
Lymantria dispar	Gypsy moth
Adelges tsugae	Hemlock woolly adelgid
Acarapis woodi	Honeybee tracheal mite
Popillia japonica	Japanese beetle
Varroa destructor	Varroa mite
Lymantria dispar	Asian gypsy moth
Anoplophora glabripennis	Asian longhorned beetle
Tetropium fuscum	Brown spruce longhorned beetle
Callidiellum rufipenne	Cedar longhorned beetle
Aeolesthes sarta	City longhorn beetle
Ips typographus	European spruce bark beetle
Symantria monacha	Nun moth
Hylurgus lingniperda	Redhaired bark beetle
Dendrolimus sibiricus	Siberian silk moth
Pyrrhalta viburni	Viburnum leaf beetle

NHDES



Alternatives to Invasive Landscape Plants

In 2004, the N.H. Invasive Species Committee finalized a list of 18 plant species to be immediately prohibited from sale, transport, distribution, propagation or transplantation in New Hampshire. These species join 14 aquatic species already prohibited since 1998.

On January 1, 2007, all varieties and cultivars of *Euonymus alatus* (Burning bush), *Berberis thunbergii* (Japanese barberry), and *Acer platanoides* (Norway maple) will join the list. Existing stocks of these species may be sold legally until that date. For information on the laws and criteria regarding invasive species in New Hampshire, please see www.nh.gov/agric/divisions/plant_industry/plants_insects.htm.

Euonymus alatus, *Berberis thunbergii*, and *Acer platanoides* are ornamental plants currently prominent in the regional landscape plant palette, and their loss could have a large economic impact on nursery and landscape businesses. We have developed the following lists of potential alternatives for these three species with input from nursery owners and growers, landscape architects and designers, landscape contractors, arborists, and concerned citizens. While recognizing that no single plant can substitute directly for all the functions and aesthetic qualities of the invasive plant of concern, the lists provide suggestions suitable for a range of site conditions and plant functions. The plants listed are known to be adaptable to New Hampshire conditions (within the appropriate hardiness zones) and currently available or able to be brought into production in sufficient quantities to meet future demand.

Alternatives for *Euonymus alatus*, Burning bush

Burning bush is a popular component of the landscape, selected primarily for its brilliant fall color. Its adaptable nature and stress tolerance allow it to thrive in shade or sun and throughout a wide range of soil conditions. It has a dense, wide-mounded or spreading form up to 20' wide and 20' high at maturity. The ridged bark is an identifying characteristic. Its prolific seeds are eaten and spread by birds and other wildlife. Consider the following alternatives when selecting large shrubs for fall color.

American cranberrybush viburnum (*Viburnum trilobum*) This native plant is hardy throughout the state. Coarse in texture and form, it is adaptable to most well-drained soils, and likes full sun or partial shade. While the fall color is not outstanding compared to burning bush, it has multi-seasonal interest with large white flower clusters in spring, cranberry-like fruit in summer through fall, and subdued burgundy and gold fall foliage. Songbirds returning to the area in late winter/early spring greatly appreciate the fruits. Cultivars such as 'Alfredo' and 'Redwing' have been selected for superior fall color. Mature size varies according to cultivar, but plants may grow 8'-10' tall and wide. A word of caution, however; the viburnum leaf beetle, a new invasive insect, does find this species an attractive host.

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Highbush blueberry (*Vaccinium corymbosum*) Grown primarily for the edible berries, highbush blueberry also makes an excellent landscape plant in the right conditions; i.e, acidic soils in full sun to partial shade. A shallow-rooted species, it should be mulched. Native, hardy to zone 3, and slow in growth, the plants develop an upright, spreading form, up to 12' tall and 6'-8' wide. Two dual-use varieties for New Hampshire are 'Spartan', with brilliant red fall foliage, and 'Bluejay', with orange fall foliage. This is one of the best plants for wildlife, providing nectar for insects, larval food for butterflies, and fruit for a wide array of mammals.

Redvein enkianthus (*Enkianthus campanulatus*) Fall color varies, ranging from true gold to bright red, but all are very attractive. In addition, lovely clusters of pink to white bell-shaped flowers appear in spring. Another slow-grower, this plant has an upright, open habit when young and fills out as it matures, reaching 6'-8' tall and wide. It requires acid, moist soil for best growth, is suitable for full to partial sun, and is hardy to zone 4 or 5.

Fothergilla (*Fothergilla gardenii* or *Fothergilla major*) Fothergilla is an underused plant, with great fall foliage in shades of yellow, orange and red, all on the same plant! It also has fragrant, bottlebrush-type lowers in spring, and a dense rounded form with medium texture. *F. gardenii* (2'-4' high and wide) is a smaller version of *F. major*, which can grow 6'-10' and form colonies from suckers. Like enkianthus, it needs acid, moist soil, full to partial sun, and is hardy to zone 4 or 5.

Red chokeberry (*Aronia arbutifolia*) Native to New England, red chokeberry is an attractive, slow-growing plant, 6'-10' high and 3'-5' wide, forming colonies through suckers. It is adaptable to most soil conditions in sun to partial shade. It has attractive red berry-like fruit (not considered edible by humans, but serving as a late winter food source for birds) and red to purplish fall foliage. 'Brilliantissima' is a cultivar selected for superior red fall color; 'Autumn Magic' is a selection of black chokeberry, *Aronia melanocarpa*. Hardy to zone 3 or 4.

Alternatives for *Berberis thunbergii* (Japanese barberry)

Japanese barberry is a durable, dense mounded, low-maintenance plant, most popular for its red or purple-leaved cultivars which add color to the border. Potential alternatives include some that provide the red color but not the compact form, and others that provide the desired form but not the red color. Unfortunately, it's hard to find both in one plant.

Weigela (*Weigela florida*) New purple-leaved cultivars of this plant, such as the low-mounding 'Midnight Wine' and the larger 'Wine and Roses', can provide a nice splash of color in the border, with prolific pink flowers as well. These tend to be spreading, dense, rounded shrubs which can be cut back hard during the winter. Best in full sun and adaptable to many soils, weigela is hardy to zone 4 or 5, or even 3 with the selection of the proper cultivar.

Slender deutzia (*Deutzia gracilis*) Another good match for the low, broad mounding form of Japanese barberry, but lacking a purple-leaved form. Suitable for zones 5 and 6, the plant is tough and adapt-

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able, and very ornamental when in bloom in the spring. 'Nikko' is a graceful low shrub with abundant white flowers in spring and attractive burgundy fall color.

Common ninebark (*Physocarpus opulifolius*) A hardy, durable and adaptable shrub, common ninebark is generally an upright grower, coarse in texture. We include it here because of the introduction of two purple-leaved cultivars — 'Diabolo' which grows to 8'-10', and the brand-new 'Summer Wine', which

has a finer texture and more compact form, and grows 5'-6' high. Both have white flowers in midsummer and attractive peeling bark. Cut them back in winter to keep plants more compact. A good plant for bird shelter, it also serves as the host for spring azure butterfly larvae.

Shrub roses (*Rosa* species and hybrids) Shrub roses can substitute for the dense, mounding form of barberry, but the flowers make roses a focal point in the landscape. All except redleaf rose, *Rosa glauca*, have green leaves. Proper selection and placement is critical if you want to minimize maintenance, since the thousands of species and varieties on the market vary widely in size and form.

Do not buy roses grafted onto multiflora rootstock, a prohibited invasive. Many roses are subject to Japanese beetles and diseases such as black spot, and many are not winter hardy. A few tried and true varieties for New Hampshire are 'Sea Foam', 'The Fairy', 'Harrison's Yellow' and 'Glory of Edzell'. Rose hips make good winter food for birds and mammals, and the dense thorny branches provide excellent nesting cover for songbirds.

Other shrubs to consider using in place of burning bush or barberry include summersweet (*Clethra alnifolia*), Southern bush-honeysuckle (*Diervilla sessilifolia*), Virginia sweetspire (*Itea virginica*), mapleleaf viburnum (*Viburnum acerifolium*), spreading cotoneaster (*Cotoneaster divaricatus*), Northern bayberry (*Myrica pennsylvanica*), cutleaf stephanandra (*Stephanandra incisa*), and 'Gro-low' fragrant sumac (*Rhus aromatica* 'Grolow'). Many spireas can be used, although some people consider them potentially invasive as well. In some cases, perennials such as purple-leaved *Heuchera* or *Alternanthera* may provide the desired effect. For more information on selecting perennials and shrubs, refer to *The Best Plants for New Hampshire Gardens and Landscapes*, published by the New Hampshire Plant Growers Association in cooperation with UNH Cooperative Extension.

Alternatives for *Acer platanoides* (Norway maple)

Norway maple, introduced from Europe in 1756, has become one of the most frequently planted and occurring street trees in the U.S., especially in the eastern and north central regions of the country. Its popularity can be explained by its rapid early growth rate, site adaptability, ease of transplanting, and tolerance of urban conditions, including exposure to road salt. In addition, the cultivar 'Crimson King' has attractive maroon-red leaves all summer, and has become a favorite shade tree for home and commercial landscapes.

When selecting an alternative for this large-growing, attractive shade tree, consider the conditions at the intended planting site. While there is no shortage of desirable tree species to choose from, most are not as widely adaptable and tolerant as Norway maple.

Some salt tolerant shade trees, listed from largest to smallest mature size:

Red maple (*Acer rubrum*) has red spring color when in bloom, turning green as the foliage appears. Although red maple is native throughout much of the east, cold hardiness of seedlings or grafted vari-

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eties is not always consistent and it is important to purchase plants from northern sources. Red maple will tolerate wet soils. 75' tall by 60' wide at maturity.

Northern red oak (*Quercus rubra*) is sometimes difficult to establish and slow to start growing, but makes a nice green shade tree for lawn areas. Acorns may become an annoyance to some people, but the squirrels love them. 75' tall by 60' wide.

Ginkgo (*Ginkgo biloba*) is slow-growing but very long lived, and has a nice, clear yellow fall color. It is salt, heat and drought tolerant, making it a good urban tree if given adequate room to grow. Female trees are undesirable because they have malodorous fruit. 75' tall by 40' wide.

Japanese tree lilac (*Syringa reticulata*) is a good choice for a smaller tree, 30' x 20' at maturity; smaller cultivars are available. It has lilac-type white blossoms in mid-summer (but lacks the lilac fragrance) and attractive cherry-like bark. 'Ivory Silk' is a popular cultivar selected for compact form and prolific bloom. (Note: Can become weedy in some areas.)

Some red-leafed trees:

European beech (*Fagus sylvatica*) Nothing is more beautiful than the purple-leaved 'Riversii' European beech, one of the few large shade trees with purple leaves. This tree becomes enormous over time, however, so should not be used as a street tree or in other areas with limited growth potential. The nuts provide excellent wildlife food. 60' tall by 45' wide.

Flowering crabapple or plum (*Malus* varieties; *Prunus cerasifera*): For those who must have a purple-leaved tree, a few cultivars of flowering crabapple, plum and cherry fit this order. However, these are all much smaller than Norway maple. Choose disease-resistant, zone-hardy cultivars and prepare to tolerate pests, such as Eastern tent caterpillar. Cherry and plum are often subject to winter injury, as well as diseases such as black-knot, and may be short-lived, especially north of zone 5. Both *Malus* and *Prunus* species provide fruit and cover for birds and other animals, and serve as hosts to many butterfly species in the larval stage.

Some crabapple varieties that have purple leaves and good disease resistance include 'Purple Prince' and 'Thunderchild'. 'Pink Princess' and 'Pink Spires' have purplish-green foliage and moderate to good resistance. 15'-20' tall by 12-25' wide, depending on variety. Zone 4.

Flowering plum (*Prunus cerasifera*) varieties with purple leaves include 'Atropurpurea', 'Newport', 'Mount Saint Helens', and 'Thundercloud'. The latter is restricted to zone 5 or warmer, while the others are suitable for zone 4. Mature sizes vary; 15-30' high and 15-25' wide.

For more information on selecting shade trees for urban or landscape situations, refer to *Selecting Trees for Urban Landscape Ecosystems*, published by the N.H. Department of Resources and Economic Development, Division of Forests and Lands, Concord N.H.

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