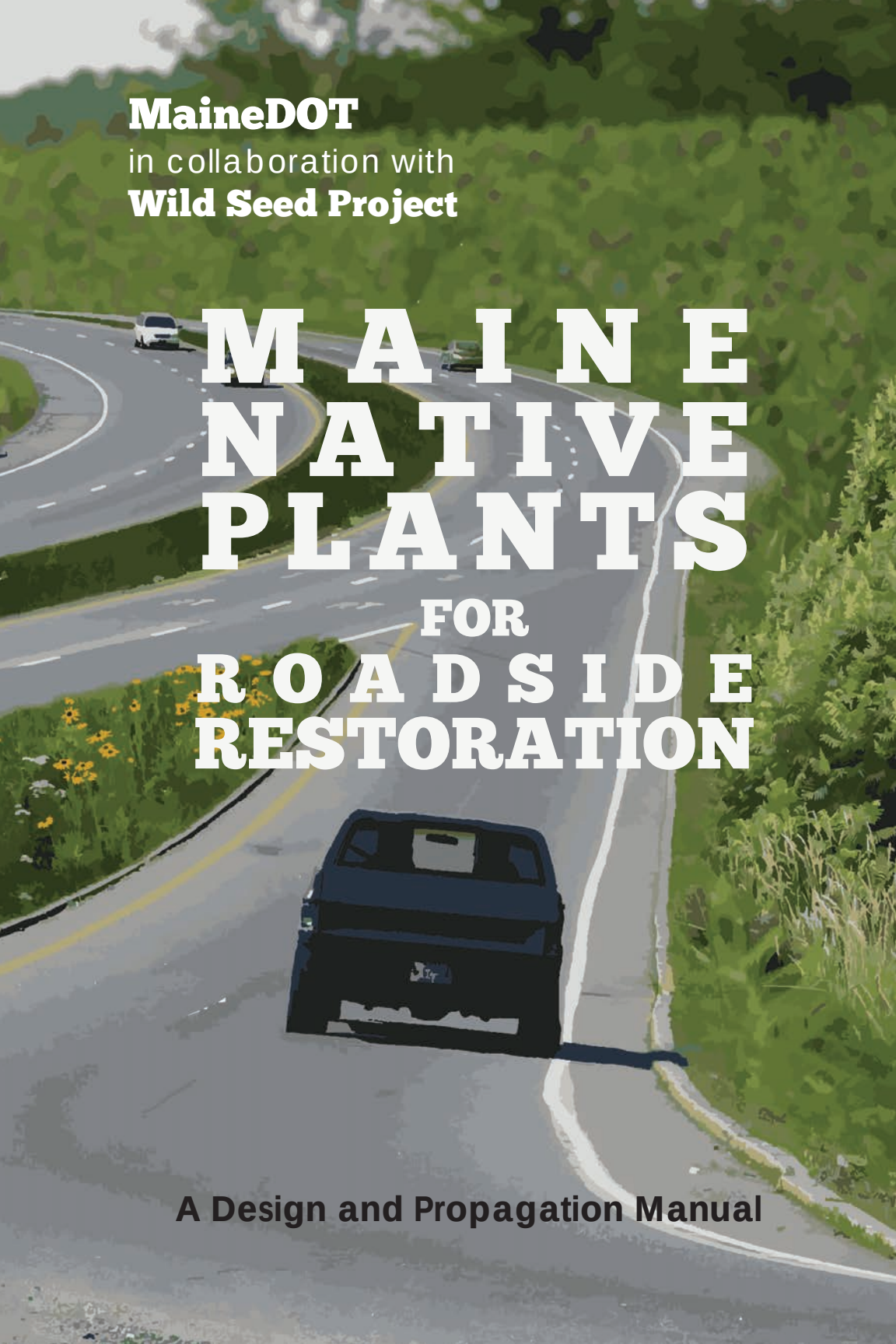

MaineDOT
in collaboration with
Wild Seed Project

MAINE NATIVE PLANTS FOR ROADSIDE RESTORATION

A Design and Propagation Manual

Text by Heather McCargo
Designed by Kathryn Dillon and Lisa Looke
Photographs © Lisa Looke and Heather McCargo
unless otherwise indicated.

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Wild Seed Project
Returning native plants to the Maine landscape

TABLE OF CONTENTS

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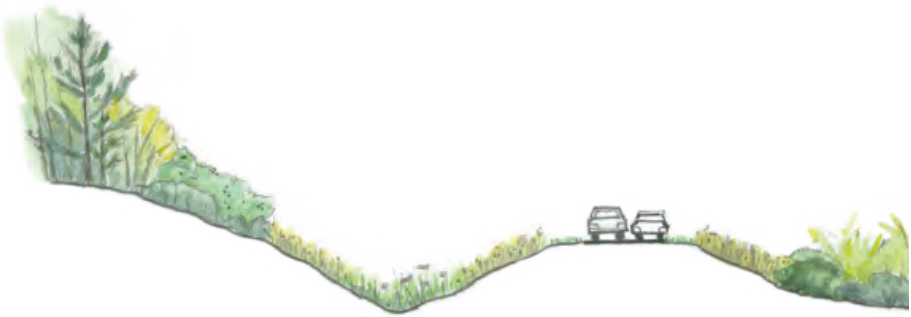
Maine Native Plants for Roadside Restoration honors the relationship between Maine's roadways and the abundant natural landscapes they traverse. Thank you to the following individuals and organizations whose expertise contributed greatly to this book:

Don Cameron, Botanist, Maine Natural Areas Program, Maine Department of Agriculture, Conservation and Forestry; **Russ Cohen**, Naturalist; **Neil Diboll**, Prairie Nursery; **Julia Frederick**, MLA; **Curtis Jirsa**, Editorial Advisor; **Cayte McDonough**, Nursery Production Manager, New England Wild Flower Society; **Brian McNiff**, Technical Advisor; **Bob Moosmann**, Statewide Vegetation Manager, Bureau of Maintenance & Operations, Maine Department of Transportation; **Nancy Olmstead**, Invasive Plant Biologist, Maine Natural Areas Program, Maine Department of Agriculture, Conservation and Forestry; **Deane Van Dusen**, MLA, Environmental Office, Maine Department of Transportation

INTRODUCTION

ACROSS THE COUNTRY, there is a growing movement to provide pollinator habitat and restore native plants in the open areas alongside highways and other roads. In 2016, the Federal Highway Administration recognized that our nation's highways could become critical habitat corridors with the planting and managing of native plants. Many states are already doing this and have realized the benefits in reduced mowing costs, increased pollinator habitat, and added beauty. Maine is now embracing this approach.

Today many of the wildflowers, grasses, and shrubs seen growing on our roadsides are not native to Maine. Creeping buttercup, ox-eye daisy, clover, blue lupine, Queen Anne's lace, and many other wildflowers and numerous grasses are introduced plants from other parts of the world. While these exotic species are tolerant of the mowing practices that have dominated roadside management in the last half century, most native species cannot grow or reproduce with mid-season cutting and have been retreating for decades. Some exotic plants such as those listed above are benign, provide nectar for pollinators, and are able to coexist with our native wildflowers and grasses under a management strategy that supports the life cycle of native plants. Other exotics, such as Japanese knotweed and black swallow-wort, are aggressive invasive species that displace native plants and do not provide habitat for pollinators. These plants must therefore be vigorously controlled or eliminated to prevent them from dominating our roadsides.



Imagine our highways as native habitat corridors. Wildflower meadows mowed just once a year, wetland shrubs in the low

Drawing by Julia Frederick

There are many native plants in Maine that could be thriving on our roadsides and supporting our struggling pollinators. This manual will help you learn more about the needs of these native plants: from the pollinators they support to the flowering, seed ripening, and collection protocols; propagation methods; sun and soil needs; and the best mowing times to protect their reproduction. We hope this guide will help roadside managers transition to creating native plant habitat along our travel corridors that is beautiful, flower-filled, and buzzing with life.

This guide will give you the information needed to plant new or manage existing populations of 70 species of wildflowers, shrubs, and grasses. With a greater understanding of the life cycle and growing needs of these plants, roadside managers could become leaders in increasing native habitat in Maine. By encouraging the specific native plants covered in this manual, you will also support many other native species and their associated fauna that grow along with these plants.

The species pages within the manual serve as quick reference for the needs and characteristics of the 70 native plants. For more detailed information on judging seed ripening, seed collection and storage, seed sowing, and planting lists for roadside designers to use in a variety of different growing situations, refer to the chapters on each subject and the bibliography and resources provided.

Heather McCargo
Wild Seed Project

ditches, and on the slopes farthest away from the road, shrubs blending into the existing forests or screening human settlements.

The restoration of native plant species along Maine roadsides requires the cooperation, collaboration, and ingenuity of many groups including government agencies such as MaineDOT and Maine Natural Areas Program, conservation nonprofits, and regional land trusts.

Above, MNAP Invasive Plant Biologist Nancy Olmstead leads a field trip on plant identification for road crew personnel.

CHAPTER 1
THE NATIVE WAY

THE THOUSANDS OF ACRES OF MOWED ROADSIDE in Maine can be cared for in a new way that will support native plants and provide extensive habitat corridors that bolster diminishing pollinator populations. For successful native plant restoration on Maine roadsides, we must remember two important ways in which native species differ from exotic ones. The first is that mowing during the growing season generally harms native plants and favors exotic ones. The second difference is how native seeds are handled and sown. A new understanding of these two factors will help roadside managers bring back the natives.

IT IS ALL ABOUT THE MOWING

Changing the mowing schedule

For native plants to thrive on our roadsides, mowing regimes will need to change. The current practice of one or more cuttings from summer to early fall prevents many native plants from flowering and setting seed. For native plants and their pollinators, this mowing during the growing season is the equivalent of a clear-cut. After mowing, the pollinators' habitat is destroyed, and native plant reproduction is halted. To promote native plants, mowing should be reduced to once a year and occur after the growing season (between November and late April).

While areas along the immediate edge of the paving may need to be mowed regularly for visibility, most of the roadside landscape should be left unmowed during the growing season. This will allow native species to flower and set seed, supporting their growth and reproduction. Raising the height of the mower blade to eight inches in areas that need to be mowed for visibility can also allow more native plants to survive in this zone as the natives are more sensitive to basal cutting than many exotic species. Native

shrubs can also play an important role in roadside habitats. Some can be mown yearly; others need several years or more between mowing to thrive. This information is provided for each species covered in this manual.

Providing overwintering habitat for pollinators

In addition, every year some patches of roadside should be left unmowed for pollinators that overwinter in the dead stems and leaves of plants. Leaving some areas unmowed will ensure year-round habitat for these species. This standing vegetation also provides food and shelter for birds and absorbs more runoff than closely cropped vegetation, preventing erosion and filtering pollutants. Other areas along the roadway, particularly the back slope (the area farthest from the road), could be managed as shrub meadows, much as the high voltage power right-of-ways have been successfully maintained for the last few decades.

Freeing up road crews to control and eliminate invasive plant species

This shift away from summer mowing can free up roadside managers to spend the summer and early fall focusing on controlling invasive species, which are spreading across the state. For native plants to thrive, invasive species must be managed. All the money and human time that has been spent mowing during the growing season could now be spent on invasive species control!

THE TIMING OF NATIVE SEED SOWING IS DIFFERENT

Successful seed sowing and establishment of native plants depend on appropriate timing for the species and good site preparation of the roadside planting area. In many situations, fall (even into January) is the best time to sow native seeds, as many species must experience a winter cold period to germinate. This is very different from the practices traditionally used for growing exotic grasses and other plants that land managers typically plant in summer. Many native plants tend to grow slowly in the first year or two as they are putting a lot of energy into establishing a perennial root system. Once established, these species will be resilient and can aid in controlling erosion and supporting pollinators and birds.

Seeding a new site

Starting native wildflowers, grasses, and shrubs from seed on bare ground along roadsides is a multi-year process. This is successfully being done in many parts of the country, and when well executed results in a beautiful, evolving meadow of native plants whose species composition changes over time. It may take a full growing season to prepare the site before native species can be seeded or planted, including loosening compacted soil and removing weeds and invasive species. From seed, it takes at least 2-3 years for the natives to start blooming and set seed, so patience is required.

Adding seed or young plants to existing vegetation

An alternative to starting a native planting on bare earth is to add natives to existing vegetation. In many situations roadside habitat can be diversified with some of the tougher native wildflowers and shrubs (called the workhorse species) by seeding into existing vegetation (called inter-seeding) or by planting young plants in the spring or fall (propagated in a nursery). Inter-seeding, along with a new mowing regime, can result in a more diverse mix of vegetation which includes benign exotics and the more vigorous native species growing together. This method yields beautiful results, as it supports pollinators, and is simpler than starting a planting from bare ground, assuming the site is not overrun by invasives.

A blank slate

A wet swale like this could be planted with marsh-marigold, golden groundsel, golden Alexanders, blue iris, boneset, swamp milkweed, Joe-pye weed, New York aster, and Virgin's bower vine.

And on the backslope next to the pines, a shrub border of black chokeberry, sweet-fern, bush-honeysuckle, bayberry, meadowsweet, wild rose and smooth arrowwood viburnum could turn this roadside into a diverse habitat for pollinators and birds.

Rehabilitating steep back slopes

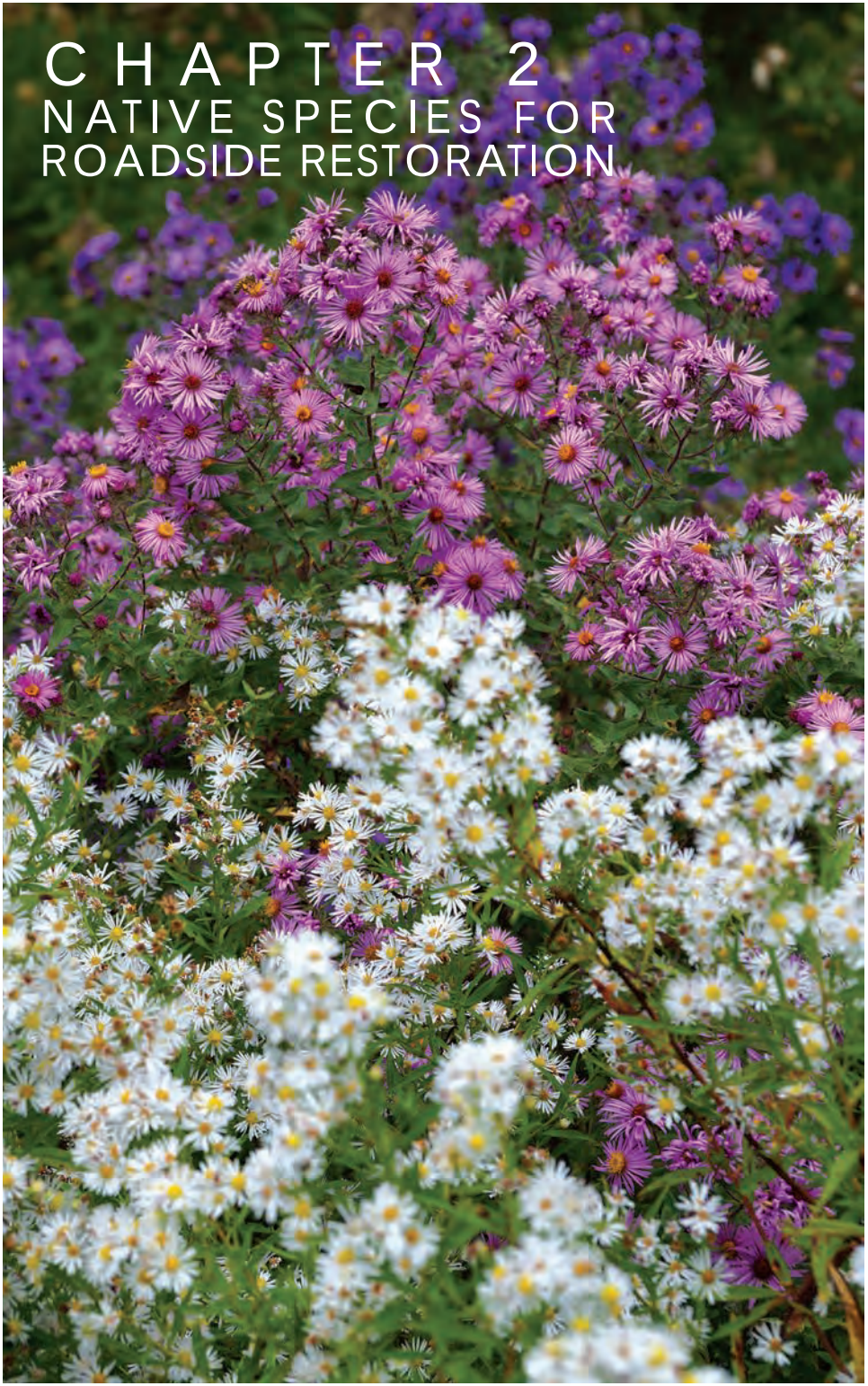
Steep back slopes provide opportunities for shrub meadows with year round habitat for overwintering pollinators. North-facing slopes with part to full shade and moderately moist soil can support hazelnut, flowering raspberry, witch-hazel, bush-honeysuckle, red elderberry, and arrowwood viburnum,

with a ground cover of Canada windflower and large-leaved wood-aster. Sunny back slopes with moderately moist soils could be planted with shadbush, meadowsweet, red-osier dogwood, and viburnums, with meadow wildflowers such as common milkweed and asters in between the shrubs.

Bringing habitat to the median

This broad, dry road median could be turned into native habitat with low dryland grasses, wildflowers and shrubs: purple lovegrass, little bluestem, wild strawberry, foxglove beardtongue, Virginia mountain-mint, bergamot, flax-leaved stiff-aster, and pearly everlasting with low stature shadbush and bush-honeysuckle in the middle.

CHAPTER 2
NATIVE SPECIES FOR ROADSIDE RESTORATION



Often misunderstood as an allergen, when in fact the real culprits are ragweed and other wind-pollinated plants, **goldenrod** provides habitat for butterflies, bees, and birds in late summer and early fall.

A Guide to the Species Pages

Each of the 70 species is illustrated to highlight its attributes and easily recognized characteristics along with landscape and wildlife associations.

Early Season
(late March to early June)
Mid-Season
(mid June to mid August)
Late season
(mid August to November)

WORKHORSE
(Special Designation)

HEIGHT
Average height of mature plant. Noted if the species spreads by the root system to form colonies

NATURAL HABITAT and DISTURBED AREAS
Describes where the plant is typically found

Wildflower
Shrub
Vines & Grasses

GROWING CONDITIONS

Considers optimal site for sun and soil

WILDLIFE

Identifies types of animals which depend on these plants; in some cases names specific animal species

MOWING STRATEGIES

Provides a date range by month

BLOOM TIME

Provides a date range by month; can vary across the state by almost a month

WORKHORSE, Described

These are the toughest natives and most projects should include a good number of these species. Other species listed are worthy but need more attention for successful establishment.

MOWING

Mowing before the date indicated may prevent the flowering and seed ripening of this species and affect its ability to survive on the roadsides.

SEED COLLECTION & PROPAGATION

Lists when the species seeds will ripen, which is crucial to understanding when to mow and for seed gathering times. Indicates how to handle the seeds for storage. Seed sowing strategies and germination are explained in more detail in Chapter 4, *Sowing the Seeds*.

WILDFLOWERS

South-facing slopes with dry, gravelly soils are no problem for Maine's native plants.

South-facing back slopes with sunny dry conditions could be planted with dwarf shadbush, red bearberry, black chokeberry, bayberry, and Virginia rose with a ground cover of wild strawberry. Instead of paving small median strips, little bluestem, downy goldenrod, and flax-leaved stiff-aster would thrive in these narrow beds with dry sandy or gravelly soils. The benefits of vegetating these areas can be improved pollinator habitat and filtered runoff.

early season

Golden Alexanders
Groundsel, golden
Marsh-marigold
Spotted crane's-bill
Strawberry, wild
Windflower, Canada

mid-season

Beardtongue, foxglove
Bergamot, wild
Boneset
Coneflower, black-eyed
Iris, blue
Lily, Canada
Lily, wood
Loosestrife, swamp yellow
Milkweeds
    Common milkweed
    Swamp milkweed
Mountain-mint, Viriginia
Pearly everlasting

late season

Asters
    Flax-leaved stiff-aster
    Heart-leaved American-aster
    Large-leaved wood-aster
    New England aster
    New York aster
    Tall white-aster
Goldenrods
    Common wrinkle-leaved goldenrod
    Downy goldenrod
    Seaside goldenrod
Joe-pye weed
Turtlehead, white
Vervain, blue

COMMON GOLDEN ALEXANDERS
Zizia aurea

EARLY SEASON

Wildflower

WORKHORSE

HEIGHT
3 ft.

NATURAL HABITAT
Wet meadows and shores

DISTURBED AREAS
Moist roadsides

GROWING CONDITIONS

Sun, part shade.
Moist to wet soils

WILDLIFE

Bees and butterflies, including the caterpillar of the black swallowtail

MOWING STRATEGIES

November to April

BLOOM TIME

Late May to June

SEED COLLECTION & PROPAGATION

Seeds ripen in August and September when they turn from green to dark brown and separate from the stalk. Seeds can be stored dry and sown in fall.

Flower

Seeds

GOLDEN GROUNDSEL

Packera aurea

EARLY SEASON

Wildflower

WORKHORSE

HEIGHT
1 ft. colony-forming plant

NATURAL HABITAT
Moist deciduous woods, wet meadows, and stream sides.

GROWING CONDITIONS

Sun to shade.
Moist to wet soils

WILDLIFE

Bees

MOWING STRATEGIES

November to April, tolerant of midseason mowing

BLOOM TIME

May to early June

SEED COLLECTION & PROPAGATION

Seeds mature in mid-June. White fluffy seed heads quickly disperse. Store seeds dry and sow in fall. Seeds do not remain viable for long-term storage.

Flowers

Seeds

MARSH-MARIGOLD

Caltha palustris

© Photograph courtesy of Donald Cameron

EARLY SEASON

Wildflower

HEIGHT
1 ft.

NATURAL HABITAT
Wet meadows, stream sides, seepages, pond edges.

GROWING CONDITIONS

Sun to part shade.
Wet soil

WILDLIFE

Early bees and flies

MOWING STRATEGIES

Plants go dormant and are unaffected by mid-summer mowing

BLOOM TIME

April and May

SEED COLLECTION & PROPAGATION

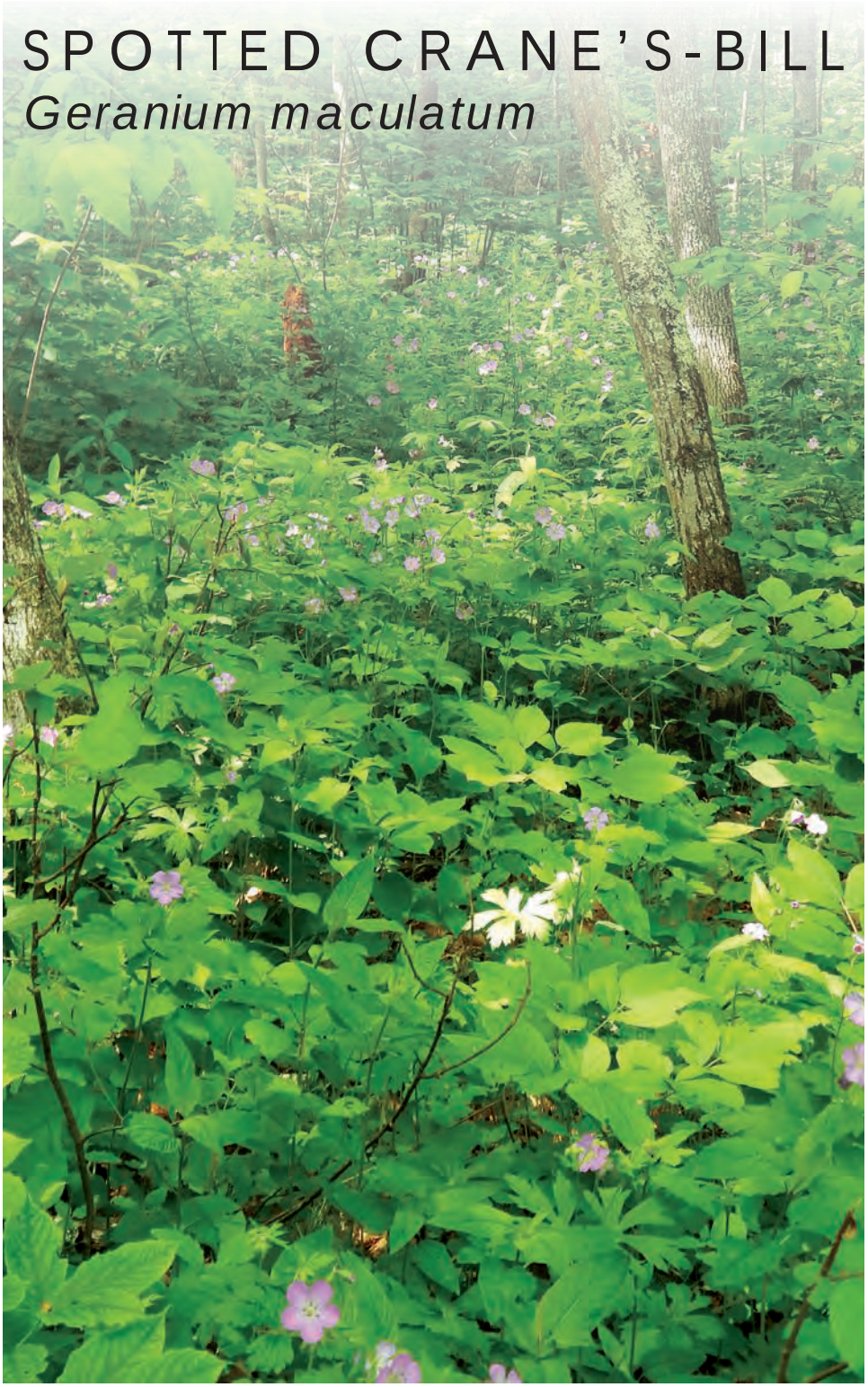
Seeds ripen in June when the green star-shaped seed pots split to reveal small green to dark brown seeds. Seeds must be sown immediately upon ripening and may not be stored dry. Germination occurs within a month.

Flowers

Seedpods

SPOTTED CRANE'S-BILL

Geranium maculatum



EARLY SEASON

Wildflower

HEIGHT
12 - 18 in.

NATURAL HABITAT
Deciduous woodlands, thickets, and moist meadows

GROWING CONDITIONS

Sun to part shade.
Moist fertile soil

WILDLIFE

Bees and birds

MOWING STRATEGIES

November to April

BLOOM TIME

May to June

SEED COLLECTION & PROPAGATION

Seeds ripen from mid-June to early July. They must be collected as the pods turn from green to black and before the seeds spring off. Sow seeds immediately for best germination. If sown in fall, some seeds will germinate the next spring, others will germinate the second spring.

Flowers

Seeds

WILD STRAWBERRY

Fragaria virginiana

EARLY SEASON

Wildflower

WORKHORSE

HEIGHT
4 in. spreads by creeping runners to form large patches

NATURAL HABITAT
Meadows and woodland edges

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun to shade.
Moist to very dry, sandy or gravelly soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

November to April

BLOOM TIME

May to June

SEED COLLECTION & PROPAGATION

Fruits ripen in June and July. Remove small seeds from pulp and store dry. Sow in fall or early spring.

Flowers

Seeds

CANADA WINDFLOWER

Anemone canadensis

EARLY SEASON

Wildflower

WORKHORSE

HEIGHT
1 ft. Spreads rapidly by roots to make large patches

NATURAL HABITAT
Moist meadows, wooded swamps, and woodland edges

GROWING CONDITIONS

Sun to shade.
Moist to dry soils

WILDLIFE

Bees and butterflies

MOWING STRATEGIES

November to April; can handle mowing during the growing season

BLOOM TIME

June to early July

SEED COLLECTION & PROPAGATION

Small green seeds ripen on round clusters in late July and early August. A gentle touch separates the seeds from the stalk. Seeds must be sown immediately and cannot be stored dry. This plant does not produce a lot of seed. It is easy to propagate from root divisions.

Flower

Seeds

FOXGLOVE BEARDTONGUE

Penstemon digitalis

MID-SEASON

Wildflower

WORKHORSE

HEIGHT
3 ft.

NATURAL HABITAT
Dry to fertile meadows and woodland edges

DISTRUBED AREAS
Roadsides and waste areas

GROWING CONDITIONS

Sun to part shade.
Moist to dry soils

WILDLIFE

Bees and hummingbirds

MOWING STRATEGIES

November to April

BLOOM TIME

July

SEED COLLECTION & PROPAGATION

Seeds ripen in late September and October when seedpods turn brown and dry. Dry pods need gentle crushing to extract the seeds. Seeds can be stored dry and surface sown in fall.

Flowers

Seeds

WILD BERGAMOT

Monarda fistulosa

MID-SEASON

Wildflower

WORKHOUSE

HEIGHT
4 ft. spreads by roots to form a colony

NATURAL HABITAT
Moist to dry meadows and woodland edges

GROWING CONDITIONS

Sun to part shade.
Moist to dry soils

WILDLIFE

Butterflies, bees, and hummingbirds

MOWING STRATEGIES

November to April

BLOOM TIME

July to August

SEED COLLECTION & PROPAGATION

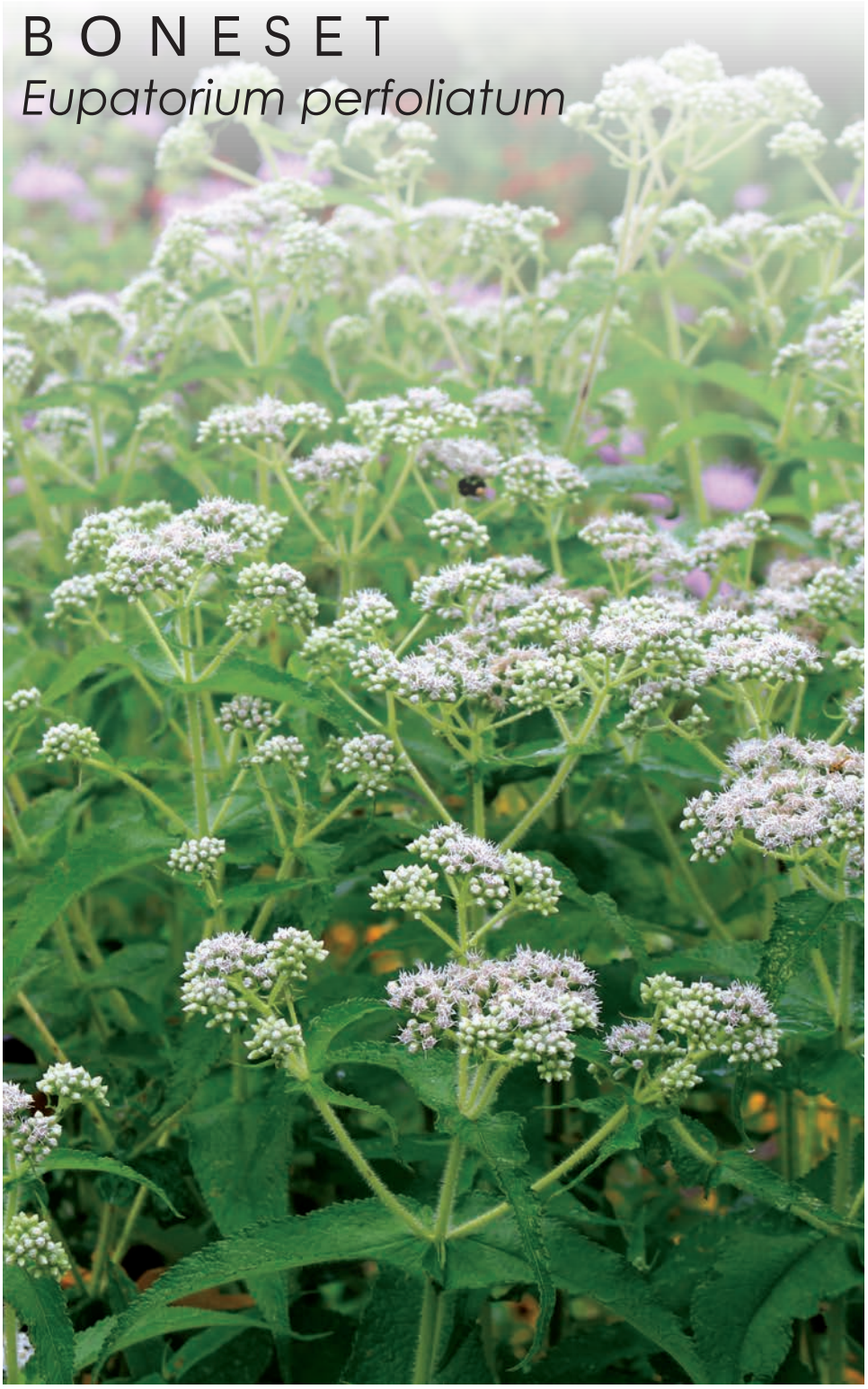
Seeds ripen in September to early October. Husks turn papery and tan with brown seeds that shake out when ripe. Store seeds dry and sow in the fall or spring. Some bergamot found in natural areas could be garden escapees of cultivated bergamot rather than the native wild form. See *GoBotany*.

Flower

Seeds

BONESET

Eupatorium perfoliatum



MID-SEASON

Wildflower

WORKHORSE

HEIGHT
3 - 4 ft.

NATURAL HABITAT
Wetlands, edges of ponds, rivers, and marshes

GROWING CONDITIONS

Sun to part shade.
Moist to wet soils

WILDLIFE

Butterflies, bees, and birds

MOWING STRATEGIES

Late October to April

BLOOM TIME

July and August

Ripe seed on stalks

SEED COLLECTION & PROPAGATION

Seeds ripen in late September into October and are light gray and fluffy. Store seeds dry and sow in fall.

Seeds

BLACK-EYED CONEFLOWER

Rudbeckia hirta

MID-SEASON

Wildflower

WORKHORSE

HEIGHT
2 ft.

NATURAL HABITAT
Dry meadows

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun to part shade.
Dry soil

WILDLIFE

Butterflies, bees, and birds

MOWING STRATEGIES

Late October to April

BLOOM TIME

July to September

SEED COLLECTION & PROPAGATION

Seeds ripen from September through October. Small elongated black seeds dislodge with ease from central cone when ripe. Store seeds dry and sow in fall or spring. This short-lived wildflower will bloom the first summer from seed.

NOTE: Most of the *Rudbeckia hirta* in Maine is from the subspecies pulcherrima that has expanded in from the west of Maine.

Flower

Dried flower head and seeds

BLUE IRIS

Iris versicolor

MID-SEASON

Wildflower

WORKHOUSE

HEIGHT
2 - 3 ft.

NATURAL HABITAT
Wet meadows, pond edges, and swales

DISTURBED AREAS
Swales and ditches

GROWING CONDITIONS

Sun, part shade.
Moist to wet soils

WILDLIFE

Bees and butterflies

MOWING STRATEGIES

November to April

BLOOM TIME

June

SEED COLLECTION & PROPAGATION

Seeds ripen from late August to early October when the 2 inch-long brown pods split to reveal large brown tightly packed seeds. Store seeds dry and sow in fall.

Left, flowers; above, seedpods

CANADA LILY

Lilium canadense

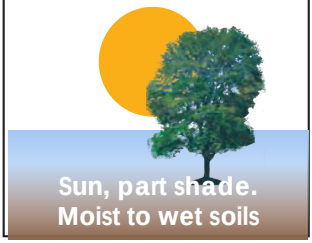
MID-SEASON

Wildflower

HEIGHT
4 - 6 ft.

NATURAL HABITAT
Wet meadows and open floodplains

GROWING CONDITIONS



WILDLIFE

Hummingbirds and bees

MOWING STRATEGIES

BLOOM TIME

July

SEED COLLECTION & PROPAGATION

Seeds ripen in October. Pods turn golden and papery and begin to split. Seeds can be stored dry for spring sowing and will germinate after the second spring. Alternatively, seeds may be warm moist stratified for 3 months, then given 5 months of cold for germination the following summer.

Flower

Seeds

WOOD LILY
Lilium philadelphicum

MID-SEASON

Wildflower

HEIGHT
2 ft.

NATURAL HABITAT
Sand plains, pine barrens, and woodlands

DISTURBED AREAS
Blueberry fields

GROWING CONDITIONS

Sun to part shade.
Moist to dry acidic soils

WILDLIFE

Hummingbirds and bees

MOWING STRATEGIES

November to May

BLOOM TIME

July

SEED COLLECTION & PROPAGATION

Seeds ripen in October. Pods turn golden and papery and begin to split. Sow immediately and germination will occur the next spring. Seeds may be stored dry and sown in the fall or spring but germination may take two years.

Left, Flower stamens
Right, flower stalk (© Photograph courtesy of Donald Cameron)

SWAMP YELLOW-LOOSESTRIFE

Lysimachia terrestris

MID-SEASON

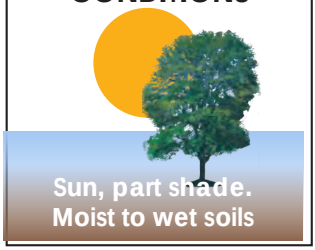
Wildflower

HEIGHT
2 ft. spreads by roots to form small colonies

NATURAL HABITAT
Wet meadows, stream sides, and woodland edges

DISTURBED AREAS
Roadside swales and ditches

GROWING CONDITIONS



WILDLIFE

Bees

MOWING STRATEGIES

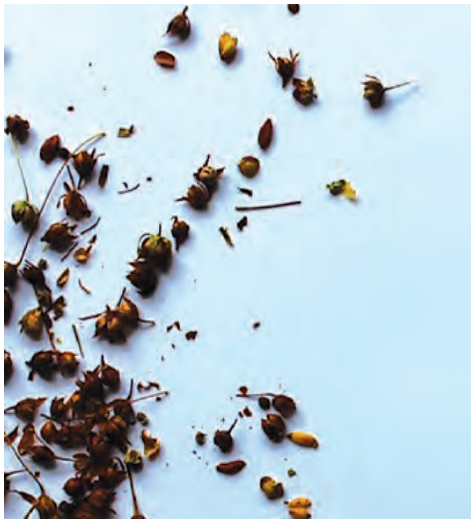
BLOOM TIME

June to July

SEED COLLECTION & PROPAGATION

Collect small tan seed capsules in September and store dry. Sow seeds in the fall.

Flower



Seeds

MILKWEEDS

Common milkweed

Asclepias syriaca

MID-SEASON

Wildflower

WORKHORSE

HEIGHT
2 - 4 ft. colonizing plant spreads by underground horizontal roots

NATURAL HABITAT
Meadows

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun.
Moist to dry soils

WILDLIFE

Butterflies and bees. The Monarch butterfly must have the foliage of milkweed during the caterpillar stage of life.

MOWING STRATEGIES

Late October to early May

BLOOM TIME

Late June to early August

Seedpods in autumn

SEED COLLECTION & PROPAGATION

Seeds ripen from late September to November. Long wide pods change from green to tan and split to reveal flat brown seeds with long silky parachute-like appendages. It is easiest to strip the rows of seed from the silk while in the field before the silk expands. Seeds can be stored dry. Sow seeds in fall or early spring.

MILKWEEDS

Swamp milkweed

Asclepias incarnata

MID-SEASON

Wildflower

WORKHORSE

HEIGHT
4 ft.

NATURAL HABITAT
Moist meadows, wetlands, and swales and ditches

GROWING CONDITIONS

Sun to part shade.
Moist to wet soils

WILDLIFE

Butterflies and bees. The Monarch butterfly must have the foliage of milkweed during the caterpillar stage of life.

MOWING STRATEGIES

November to April

BLOOM TIME

July and August

SEED COLLECTION & PROPAGATION

Seeds ripen late September through October. Long narrow pods change from green to tan and split to reveal flat brown seeds with long silky parachute-like appendages. It is easiest to strip the rows of seed from the silk directly from the pods in the field before the silk expands. Seeds can be stored dry. Sow seeds in fall or early spring.

Flower with Monarch butterfly

Dry seedpods

VIRGINIA MOUNTAIN-MINT

Pycnanthemum virginianum

MID-SEASON

Wildflower

WORKHORSE

HEIGHT
3 ft. spreads by roots to form a colony

NATURAL HABITAT
Moist to dry meadows and woodland edges

DISTURBED AREAS
Swales and ditches

GROWING CONDITIONS

Sun.
Dry to moist soils

WILDLIFE

Bees and butterflies

MOWING STRATEGIES

November to April

BLOOM TIME

July to August

SEED COLLECTION & PROPAGATION

Seeds ripen in October when small pod clusters split and tiny brown seeds disperse. Store seeds dry and sow in fall.

Flowers

Seeds

PEARLY EVERLASTING

Anaphalis margaritacea

MID-SEASON

Wildflower

WORKHORSE

HEIGHT
1 - 2 ft. spreads by roots to make large patches

NATURAL HABITAT
Sunny, dry, sandy or gravelly meadows and river shores

DISTURBED AREAS
Roadsides and blueberry barrens

GROWING CONDITIONS

Sun. Dry, sandy or gravelly soils

WILDLIFE

Bees and butterflies

MOWING STRATEGIES

November to April

BLOOM TIME

August

SEED COLLECTION & PROPAGATION

Plants are either male or female, with an entire patch often being one individual sex. Seeds are small fluffy buttons that dislodge when ripe. Individual seeds are small with a short silky appendage. Collect and store dry. Surface sow seeds in late fall or early spring.

Flower

Ripe seeds

ASTERS
Flax-leaved stiff-aster
Ionactis linariifolia

LATE SEASON

Wildflower

WORKHORSE

HEIGHT
10 in.

NATURAL HABITAT
Dry sandy meadows and pine barrens

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun.
Dry soil

WILDLIFE

Butterflies, bees, and birds. A top pollinator plant for both nectar and caterpillars

MOWING STRATEGIES

November to June

BLOOM TIME

August to September

SEED COLLECTION & PROPAGATION

Seeds begin ripening in October and are ripe when fluffy and tan and dislodge easily from the flowering stalk. Store seeds dry and sow in late fall or early spring.

Flower

Seeds

ASTERS

Heart-leaved American-aster

Symphyotrichum cordifolium

LATE SEASON

Wildflower

WORKHORSE

HEIGHT
2 - 3 ft.

NATURAL HABITAT
Forest edges and thickets

DISTURBED AREAS
Roadsides, urban spaces, and waste areas

GROWING CONDITIONS

Shade to part sun.
Moist to dry soils

WILDLIFE

Butterflies, bees and birds. A top pollinator plant for both nectar and caterpillars, birds eat the seeds.

MOWING STRATEGIES

Late November to June

BLOOM TIME

October to November

SEED COLLECTION & PROPAGATION

Seeds ripen in November. Seeds are ripe when fluffy and tan and dislodge easily from the flowering stalk. Store seeds dry and sow in late fall or early spring.

Leaves

Seeds

ASTERS
Large-leaved wood-aster
Eurybia macrophylla

LATE SEASON

Wildflower

WORKHORSE

HEIGHT
2 ft. expanding root system make large colonies of low foliage

NATURAL HABITAT
Evergreen and deciduous woodlands with dry to moist soils

GROWING CONDITIONS

Sun to shade.
Moist to dry soils

WILDLIFE

Butterflies, bees, and birds. A top pollinator plant for both nectar and caterpillars, birds eat the seeds.

MOWING STRATEGIES

November to April

BLOOM TIME

August to September

SEED COLLECTION & PROPAGATION

Seeds ripen in mid-October to November. Seeds are ripe when fluffy and tan and dislodge easily from the flowering stalk. Store seeds dry and sow in late fall.

Flowers

Low-growing foliage

ASTERS
New England aster
Symphyotrichum novae-angliae

LATE SEASON

Wildflower

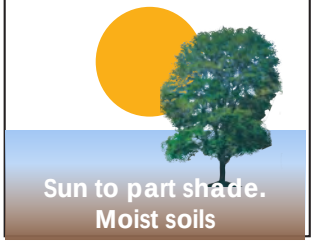
WORKHORSE

HEIGHT
2 - 5 ft.

NATURAL HABITAT
Meadows

DISTURBED AREAS
Roadsides, swales and ditches in fertile, moist soils

GROWING CONDITIONS



WILDLIFE

Butterflies, bees, and birds. A top pollinator plant for both nectar and caterpillars, birds eat the seeds.

MOWING STRATEGIES

BLOOM TIME

October to November

SEED COLLECTION & PROPAGATION

Seeds ripen in late October to November. Seeds are ripe when fluffy and tan and dislodge easily from the flowering stalk. Store seeds dry and sow in late fall or early spring.

Flowers

Seeds

ASTERS
New York aster
Symphyotrichum novi-belgii

LATE SEASON

Wildflower

WORKHORSE

HEIGHT
3 ft.

NATURAL HABITAT
Moist open woods, meadows, stream sides and shores

GROWING CONDITIONS

Sun to part shade.
Moist to wet soil

WILDLIFE

Butterflies, bees, and birds. A top pollinator plant for both nectar and caterpillars, birds eat the seeds.

MOWING STRATEGIES

November to April

BLOOM TIME

August to September

SEED COLLECTION & PROPAGATION

Seeds ripen in late October to November. Seeds are ripe when fluffy and tan and dislodge easily from the flowering stalk. Store seeds dry and sow in late fall or early spring.

Flowers © Photographs courtesy of Donald Cameron

ASTERS
Tall white-aster
Doellingeria umbellata

LATE SEASON

Wildflower

WORKHORSE

HEIGHT
4 ft. spreads by roots to make a small colony

NATURAL HABITAT
Moist meadows

DISTURBED AREAS
Roadsides and waste areas

GROWING CONDITIONS

Sun to part shade.
Moist soil

WILDLIFE

Butterflies, bees, and birds. A top pollinator plant for both nectar and caterpillars.

MOWING STRATEGIES

November to June

BLOOM TIME

August to September

SEED COLLECTION & PROPAGATION

Seeds ripen in late September to November. Seeds are ripe when fluffy, tan, and dislodge easily from the flowering stalk. Store seeds dry and sow in late fall or early spring.

In the field

Seeds

GOLDENRODS

Common wrinkle-leaved goldenrod

Solidago rugosa

LATE SEASON

Wildflower

WORKHORSE

HEIGHT
3 - 4 ft.

NATURAL HABITAT
Moist to dry meadows and woodland edges

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun.
Dry to moist soils

WILDLIFE

Butterflies, bees, and birds. A top pollinator plant for both nectar and caterpillars, birds eat the seeds.

MOWING STRATEGIES

November to April

BLOOM TIME

August

SEED COLLECTION & PROPAGATION

Seeds ripen in October and November and are dry and fluffy. Seeds can be stored dry. Sow seeds in fall.

Left, flowers, and right, leaves
© Photographs courtesy of Donald Cameron

GOLDENRODS

Downy goldenrod

Solidago puberula

LATE SEASON

Wildflower

WORKHORSE

HEIGHT
2 ft.

NATURAL HABITAT
Dry meadows

DISTURBED AREAS
Roadsides and blueberry barrens

GROWING CONDITIONS

Sun to part shade.
Dry soil

WILDLIFE

Butterflies, bees, and birds. A top pollinator plant for both nectar and caterpillars, birds eat the seeds.

MOWING STRATEGIES

November to April

BLOOM TIME

August to September

SEED COLLECTION & PROPAGATION

Seeds ripen in October and November and are a tan to gray in color and fluffy. Seeds can be stored dry and sown in fall.

Flowers

Seeds

GOLDENRODS

Seaside goldenrod

Solidago sempervirens

LATE SEASON

Wildflower

WORKHORSE

HEIGHT
2 ft.

NATURAL HABITAT
Dry, sandy or gravelly beaches, salt marshes, and shores; tolerant of flooding and salt; best for coastal areas

GROWING CONDITIONS

Sun.
Dry to wet soils

WILDLIFE

Butterflies, bees, and birds. A top pollinator plant for both nectar and caterpillars, birds eat the seeds.

MOWING STRATEGIES

November to April

BLOOM TIME

August to September

SEED COLLECTION & PROPAGATION

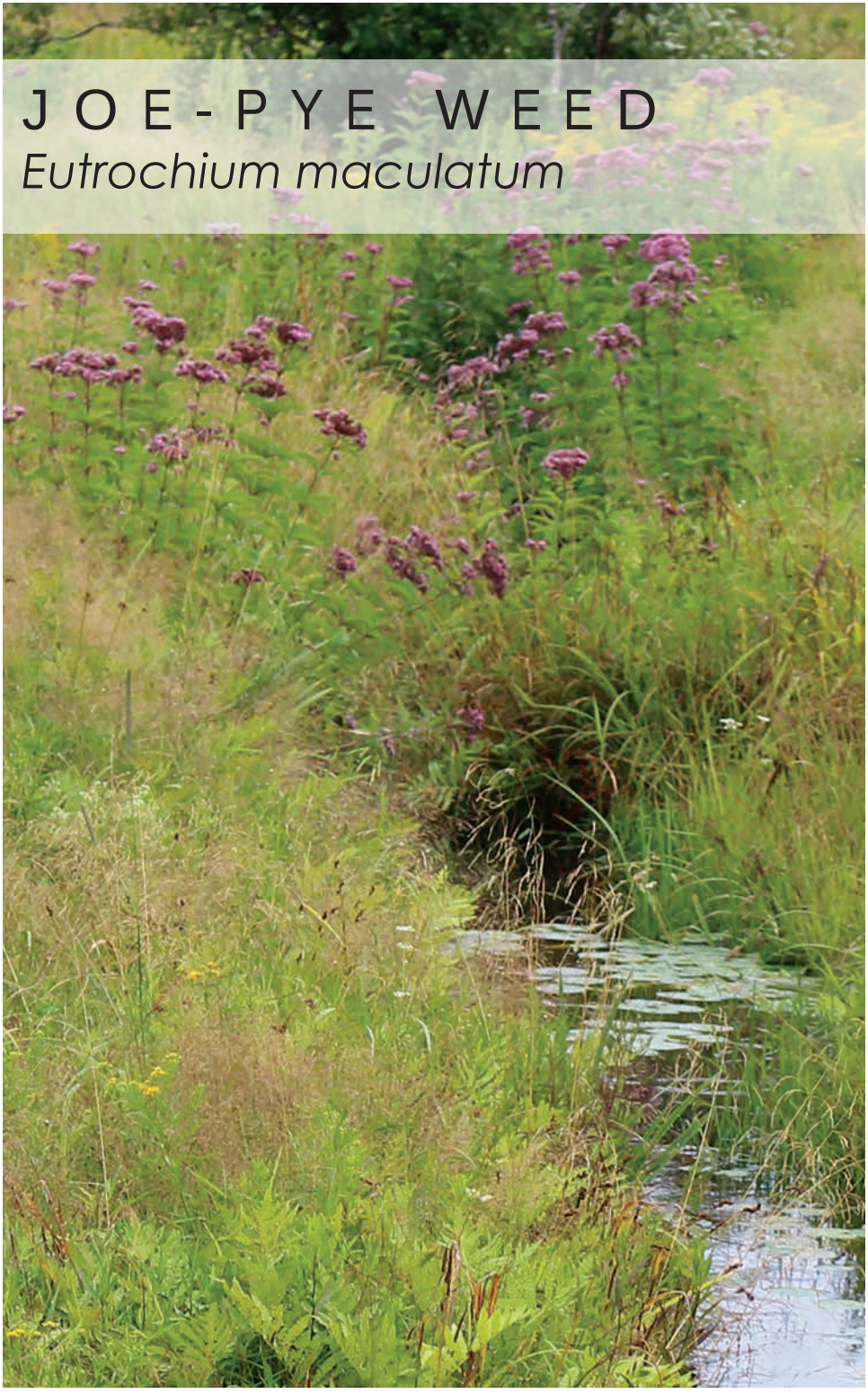
Seeds ripen in October and November when dry and fluffy. Seeds can be stored dry and sown in fall.

Flowers

Seeds

JOE-PYE WEED

Eutrochium maculatum



LATE SEASON

Wildflower

WORKHORSE

HEIGHT
4 - 6 ft. expands from the root to form a large clump

NATURAL HABITAT
Stream sides, pond edges, and wet meadows

DISTURBED AREAS
Roadside ditches

GROWING CONDITIONS

Sun.
Moist to wet soils

WILDLIFE

Butterflies, bees, and birds

MOWING STRATEGIES

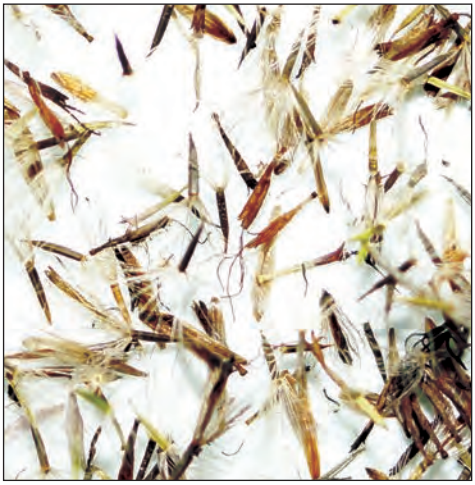
November to April

BLOOM TIME

August

SEED COLLECTION & PROPAGATION

Seeds ripen in late September into November when they are tan/gray and fluffy. Store seeds dry and sow in fall.



Above, seeds, and Right, flower heads

WHITE TURTLEHEAD

Chelone glabra

© Photograph courtesy of Prairie Moon Nursery

LATE SEASON

Wildflower

HEIGHT
3 ft. expands from the root to form clumps

NATURAL HABITAT
Stream sides, pond edges, and wet meadows

DISTURBED AREAS
Roadside ditches

GROWING CONDITIONS

Sun to part shade.
Moist to wet soils

WILDLIFE

Butterflies and bees

MOWING STRATEGIES

November to April

BLOOM TIME

August

SEED COLLECTION & PROPAGATION

Seeds ripen in October and November when capsules are papery and brown. Seeds shake easily out of the pods and are small brown flakes. Store seeds dry and surface sow in fall.

Flower

Seedpod

BLUE VERVAIN

Verbena hastata

LATE SEASON

Wildflower

WORKHORSE

HEIGHT
4 - 6 ft.

NATURAL HABITAT
Wet meadows, ponds, and stream edges

DISTURBED AREAS
Roadside ditches

GROWING CONDITIONS

Sun, part shade.
Moist to wet soils

WILDLIFE

Bees, butterflies, and birds

MOWING STRATEGIES

November to April

BLOOM TIME

July and August

SEED COLLECTION & PROPAGATION

Seeds ripen in October. Small brown seeds shake out easily from dried stalks and are stored dry. Surface sow seeds in fall.

Left, flowers; above, seed stalk with clean seeds

On a shady slope with conifers, huckleberry, low bush blueberry, and bracken fern thrive in dry acid soils.

early season
Alder, speckled
Bayberry, small
Bearberry, red
Blueberry, highbush
Blueberry, lowbush
Chokeberry, black
Dogwoods
- Gray dogwood
- Silky dogwood

Elderberry, red
Hazelnut
Huckleberry, black
Juniper, common
Laurel, sheep
Pussy willow
Shadbush
Sweet-fern
Sweetgale
Viburnum
- Highbush cranberry
- Nannyberry
- Smooth arrowwood
- Withe-rod

mid-season
Dogwood, red-osier
Elderberry, black
Honeysuckle, bush
Meadowsweet, rosy
Meadowsweet, white
Raspberry, flowering
Rose, wild
Sumac
Winterberry holly

late season
Witch-hazel

SPECKLED ALDER

Alnus incana

EARLY SEASON

SHRUB

WORKHORSE

HEIGHT
10 - 15 ft.

NATURAL HABITAT
Moist soils, wetlands, edges of ponds, rivers, and marshes

GROWING CONDITIONS

Sun, part shade.
Moist to wet soils

WILDLIFE

Bees eat pollen and birds eat seeds

MOWING STRATEGIES

Tolerant of mowing every other year

BLOOM TIME

April

SEED COLLECTION & PROPAGATION

Seeds ripen in fall and can be collected in October as cones darken and split. Small flat brown seeds separate easily from a cone-like structure. Store seeds dry and sow in fall.

Leaves

Cones

Flowers (catkins)

SMALL BAYBERRY

Morella caroliniensis

EARLY SEASON

SHRUB

WORKHORSE

HEIGHT
3 - 6 ft., may spread by underground roots

NATURAL HABITAT
Dry, sandy, or gravelly soils; pine barrens; and coastal areas

GROWING CONDITIONS

Sun. Dry, sandy or gravelly soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

October to December

BLOOM TIME

May

SEED COLLECTION & PROPAGATION

Species has separate male and female plants. Seeds ripen in late September and October on female plants and are a gray waxy berry. Seeds can be stored dry and sown in fall. Before sowing, grind seeds on a wire screen to remove waxy coating.

Ripe fruits

Flowers

RED BEARBERRY

Arctostaphylos uva-ursi

EARLY SEASON

SHRUB

HEIGHT
3 - 8 in. creeping plant that roots along horizontal stems covering large areas

NATURAL HABITAT
Rocky ledges, open gravelly and sandy soils, and pine barrens

GROWING CONDITIONS

Sun. Dry, sandy or gravelly soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Not tolerant of mowing unless mower is set above height of foliage

BLOOM TIME

May

SEED COLLECTION & PROPAGATION

Red fruits ripen in late summer and persist into spring. Collect seeds starting in September and separate seeds from pulp. Seeds have a thick seed coat that can take several years of winter freezes to break down or can be loosened by scarification. Sow seeds in fall and expect sporadic germination over several years.

Leaves and stems creep along the ground.

Flowers

HIGHBUSH BLUEBERRY

Vaccinium corymbosum

EARLY SEASON

SHRUB

HEIGHT
6 - 8 ft.

NATURAL HABITAT
Wet woods, vernal pools, and shrub swamps.

GROWING CONDITIONS

Sun to light shade.
Moist acidic soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Not tolerant of mowing

BLOOM TIME

May

SEED COLLECTION & PROPAGATION

Blueberries ripen in July and August and should be collected before birds eat them. Clean the tiny brown seeds from the fruit and store dry. Surface sow seeds in spring.

Ripe fruits

Flowers

LOWBUSH BLUEBERRY

Vaccinium angustifolium

EARLY SEASON

SHRUB

HEIGHT
1 - 2 ft., spreads by its roots to form large colonies

NATURAL HABITAT
Dry, gravelly, or sandy soil, pine barrens, ledges, and edges of spruce, pine, or oak woodlands

GROWING CONDITIONS

Sun to shade.
Moist to dry acidic soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Very tolerant of annual mowing

BLOOM TIME

May

Flower

SEED COLLECTION & PROPAGATION
Blueberries ripen in July and August and should be collected before birds eat them. Clean tiny brown seeds from fruit and store dry. Surface sow seeds in spring.

BLACK CHOKEBERRY

Aronia melanocarpa

EARLY SEASON

SHRUB

WORKHORSE

HEIGHT
1 - 6 ft.

NATURAL HABITAT
Ledges, rocky or sandy soils from wetlands to dry barrens, bogs

GROWING CONDITIONS

Sun. Wet to dry soils

WILDLIFE

Bees, birds eat fruits in late winter

MOWING STRATEGIES

Tolerant of yearly mowing

BLOOM TIME

May

SEED COLLECTION & PROPAGATION

Black fruits ripen in late August and September and persist over the winter. Remove pulp and store seeds dry. Sow seeds in fall.

Fruits

Seeds

COMMON JUNIPER

Juniperus communis

EARLY SEASON

SHRUB

HEIGHT
3 ft. spreading over time to make large circles

NATURAL HABITAT
Dry meadows, rocky ledges

NATURAL HABITAT
Roadsides

GROWING CONDITIONS

Sun. Dry, sandy or gravelly soils

WILDLIFE

Host plant for butterfly and moth caterpillars

MOWING STRATEGIES

Not tolerant of mowing

BLOOM TIME

May

SEED COLLECTION & PROPAGATION

This species has separate male and female plants. Berries ripen on female plants in October in pale whitish green to dark blue berries (actually a fleshy cone). Harvest and store dry or sow in fall. Germination occurs in the second spring. Another option: give seeds 3 months of warm, moist stratification before 3 months of cold, and seeds should germinate the first spring.

Needle-like leaves

Ripe fruits

DOGWOODS
Gray dogwood
Swida racemosa

© Arthur Haines, New England Wild Flower Society

EARLY SEASON

SHRUB

WORKHORSE

HEIGHT
8 ft., spreads from roots to form large colonies

NATURAL HABITAT
Moist to dry meadows, thickets

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun, part shade.
Dry to moist soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

October to December

BLOOM TIME

June

SEED COLLECTION & PROPAGATION

White fruits ripen in late August and September. Collect and separate pulp from seeds. Seeds sown immediately usually result in germination the next spring. Otherwise, germination will occur after the second spring. Seeds may be stored dry and sown in fall.

Left, foliage
© Photograph courtesy of Donald Cameron

DOGWOODS

Silky dogwood

Swida amomum

EARLY SEASON

SHRUB

WORKHORSE

HEIGHT
8 - 10 ft., spreads from roots to form large colonies

NATURAL HABITAT
Moist meadows, wetlands, shores of rivers and lakes

GROWING CONDITIONS

Sun. Moist to wet soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Tolerant of mowing every 2 years

BLOOM TIME

June

SEED COLLECTION & PROPAGATION

Blue fruits ripen in late summer. Collect and separate pulp from seeds. Seeds must not dry out and should be sown as soon as possible for germination the following spring.

Green fruits

Ripe fruits

RED ELDERBERRY

Sambucus racemosa

EARLY SEASON

SHRUB

HEIGHT
3 - 8 ft.

NATURAL HABITAT
Moist acidic forests and woodland edges

GROWING CONDITIONS

Part shade.
Moist to wet soils

WILDLIFE

Hollow stems provide winter habitat for bee larvae.

MOWING STRATEGIES

Tolerant of mowing every 5 years

BLOOM TIME

Early May

Ripe fruits are eaten quickly by birds

SEED COLLECTION & PROPAGATION

Red fruits ripen in late June and early July. Harvest immediately before birds eat them. Clean pulp from fruit and sow immediately. Germination usually occurs the following spring.

HAZELNUT

Corylus americana
C. cornuta

EARLY SEASON

SHRUB

HEIGHT
6 ft.

NATURAL HABITAT
Woodlands, forest edges, and shrub lands

GROWING CONDITIONS

Sun to shade.
Moist to dry soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Tolerant of mowing every 5 years

BLOOM TIME

April

SEED COLLECTION & PROPAGATION

Nuts ripen in fuzzy green husks in September. Collect before squirrels, remove husk, and do not let seeds dry out. Store nuts in sealed containers in the refrigerator until sowing in fall or spring. Protect sown seeds from rodents. (*See page 160*)

Ripe nuts in husk

Flowers (catkins)

BLACK HUCKLEBERRY

Gaylussacia baccata

EARLY SEASON

SHRUB

HEIGHT
2 - 3 ft.

NATURAL HABITAT
Wet to dry acid woodlands, ledges, edges of wetlands, and bogs.

GROWING CONDITIONS

Sun to shade.
Moist to dry acidic soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Tolerant of mowing every 3 years

BLOOM TIME

Late May

SEED COLLECTION & PROPAGATION

Black fruits ripen in August. Remove pulp and surface sow immediately. Seeds can be cleaned and stored dry but germination will happen over several years. NOTE: 1 month of warm, moist stratification before cold stratification improves germination substantially.

Ripe fruits

Flowers

SHEEP-LAUREL
Kalmia angustifolia

EARLY SEASON

SHRUB

HEIGHT
1 - 3 ft. colony forming

NATURAL HABITAT
Moist to wet acid meadows and wetlands

GROWING CONDITIONS

WILDLIFE

Bees

MOWING STRATEGIES

BLOOM TIME

Early June to July

SEED COLLECTION & PROPAGATION

Seed capsules ripen in October when they dry and split to reveal small dust-like seeds. Seeds germinate in the wild on moist moss or decaying logs. Seeds can be stored dry and surface sown in spring.

Seed capsules

Flowers

PUSSY WILLOW

Salix discolor

EARLY SEASON

SHRUB

WORKHORSE

HEIGHT
6 - 15 ft.

NATURAL HABITAT
Wet meadows and stream sides

GROWING CONDITIONS

Sun. Moist to wet soils

WILDLIFE

Hollow stems provide winter habitat for bee larvae.

MOWING STRATEGIES

Tolerant of mowing every other year

BLOOM TIME

April

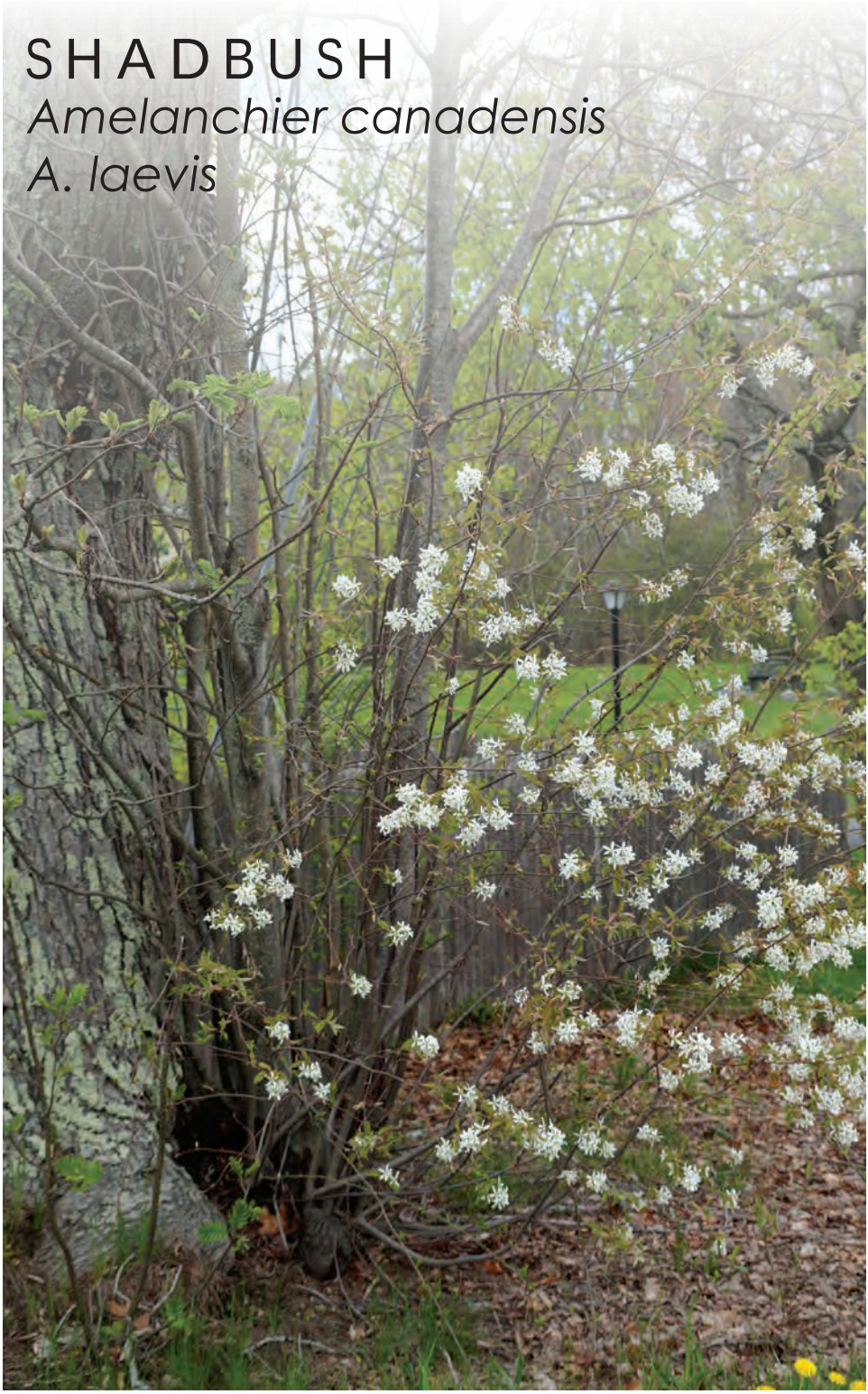
SEED COLLECTION & PROPAGATION

This species has separate male and female plants. Seeds ripen in late May on female plants when small yellow capsules split to reveal green or tan seeds with a cottony appendage. Collect and surface sow immediately and germination will occur within a few weeks. Propagation from cuttings should be taken from a minimum of 50 individuals of both sexes to maintain genetic diversity.

From left to right:
Early flower emerging ; in full bloom; leaves (© photograph courtesy of Donald Cameron)

SHADBUSH

Amelanchier canadensis
A. laevis



EARLY SEASON

SHRUB

WORKHORSE

HEIGHT
8 - 20 ft.

NATURAL HABITAT
Woodland edges, meadows, and borders of wet areas

GROWING CONDITIONS

Sun to part shade.
Moist to dry soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Tolerant of mowing every five years

BLOOM TIME

Late April to early May

SEED COLLECTION & PROPAGATION

Fruits turn from red to blue when ripe in late June. Separate seeds from pulpy flesh. Seeds may be sown immediately or stored dry and sown in fall. Light scarification of seed may improve germination.

Flowers

Fruits

DWARF SHADBUSH
Amelanchier spicata

EARLY SEASON

SHRUB

WORKHORSE

HEIGHT
3 - 6 ft. colonizing shrub

NATURAL HABITAT
Ledges, woodland edges, and meadows

DISTURBED AREAS
Roadsides and dry land

GROWING CONDITIONS

Sun to part shade.
Moist to dry soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Tolerant of mowing every two years

BLOOM TIME

Late April to early May

SEED COLLECTION & PROPAGATION

Fruits turn from red to blue when ripe in late June. Separate seeds from pulpy flesh. Seeds may be sown immediately or stored dry and sown in fall. Light scarification of seed may improve germination.

Flowers

Fruits

SWEET-FERN
Comptonia peregrina

EARLY SEASON

SHRUB

HEIGHT
2 - 3 ft. spreads by roots to form a colony

NATURAL HABITAT
Sandy dry meadows, and open woods

DISTURBED AREAS
Roadsides with infertile or thin soils

GROWING CONDITIONS

Sun. Dry, sandy or gravelly soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Very tolerant of yearly mowing

BLOOM TIME

Late April to early May

SEED COLLECTION & PROPAGATION

The species has separate male and female plants. Seeds ripen late July to early August in prickly green capsules on female plants. Green to brown nutlets must be collected before they drop to the ground. Seeds can be stored dry and sown in fall. Germination can take several years as the hard seed coat can take multiple winters to break down or can benefit from scarification. Can also be propagated by root divisions.

Flowers (catkins)

Seeds in prickly husk

SWEET GALE

Myrica gale

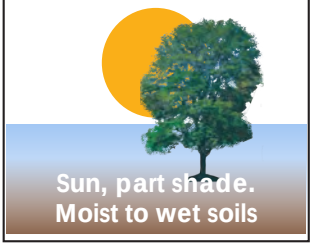
EARLY SEASON

SHRUB

HEIGHT
3 ft., spreads by roots to make a colony

NATURAL HABITAT
Pond margins, bogs, and stream edges

GROWING CONDITIONS



Sun, part shade.
Moist to wet soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Tolerant of high mowing (1 ft. minimum) every 3 years

BLOOM TIME

May

SEED COLLECTION & PROPAGATION

This species has separate male and female plants. Seeds ripen inside small nutlets in late October and persist through the winter. Collect and remove small seeds and store dry. Sow seeds in fall.

Foliage

VIBURNUMS
Highbush-cranberry
Viburnum opulus var. americanum

EARLY SEASON

SHRUB

HEIGHT
8 - 12 ft.

NATURAL HABITAT
Moist to wet meadows and forest edges

GROWING CONDITIONS

Sun, part shade.
Medium to moist soil

WILDLIFE

Bees and birds

MOWING STRATEGIES

Tolerant of mowing every 5 years

BLOOM TIME

May to July

SEED COLLECTION & PROPAGATION

Fruits turn red when ripe from late August into October. Collect and clean pulp from seeds and sow immediately (seeds must not dry out). Several months of warm temperatures before winter cold usually result in germination the next spring. Otherwise, germination will occur after the second spring. **NOTE:** The European variety of Viburnum opulus is naturalized in Maine. Make sure the seeds collected are from the native American species (*See GoBotany*).

Flower

Fruits

VIBURNUMS
Nannyberry viburnum
Viburnum lentago

EARLY SEASON

SHRUB

WORKHORSE

HEIGHT
8 - 12 ft.

NATURAL HABITAT
Moist to dry meadows and woodland edges

GROWING CONDITIONS

Sun to part shade.
Moist to dry soils

WILDLIFE

Butterfly and moth host plant

Seeds eaten by birds

MOWING STRATEGIES

Tolerant of mowing every 3 years

BLOOM TIME

June

SEED COLLECTION & PROPAGATION

Fruits change from yellow to orange to navy as they ripen in late August and early September. Collect and clean pulp from seeds and sow immediately. Several months of warm temperatures before winter cold usually result in germination the next spring. Otherwise, germination will occur after the second spring.

Flowers

Fruits

VIBURNUMS
Withe-rod viburnum
Viburnum nudum var. cassinoides

EARLY SEASON

SHRUB

WORKHORSE

HEIGHT
4 - 6 ft.

NATURAL HABITAT
Wet to medium acid woodlands and forest edges

GROWING CONDITIONS

Sun to part shade.
Wet to dry acidic soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Tolerant of mowing every 3 years

BLOOM TIME

Late June

SEED COLLECTION & PROPAGATION

Fruits change from yellow to pink to navy as they ripen in late August and September. Collect and clean pulp from seeds and sow immediately (seeds must not dry out). Several months of warm temperatures before winter cold usually result in germination the next spring. Otherwise, germination will occur after the second spring.

Flower

Fruits

VIBURNUMS
Smooth Arrowwood
Viburnum dentatum

EARLY SEASON

SHRUB

WORKHORSE

HEIGHT
6 - 8 ft.

NATURAL HABITAT
Deciduous woodland edges, wetlands, wet meadows

DISTURBED AREAS
Roadside swales and ditches

GROWING CONDITIONS

Sun to shade.
Moist to dry soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Tolerant of mowing every three years

BLOOM TIME

June

SEED COLLECTION & PROPAGATION

Dark blue fruits ripen in late August and early September. Collect and clean pulp from seeds and sow immediately (seeds must not dry out). Several months of warm temperatures before winter cold usually result in germination the next spring. Otherwise, germination will occur after the second spring.

Young plants

Fruit, © Photograph courtesy of Donald Cameron

DOGWOODS
Red-osier dogwood
Swida sericea

MID-SEASON

SHRUB

WORKHORSE

HEIGHT
2 - 8 ft. spreads from roots to form large colonies

NATURAL HABITAT
Moist to saturated soils along wetlands and streams

GROWING CONDITIONS

Sun, part shade.
Moist to wet soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Very tolerant of yearly mowing

BLOOM TIME

Late June

SEED COLLECTION & PROPAGATION

White fruits ripen in late August. Collect and clean pulp from seeds and sow immediately as seeds must not dry out. Several months of warm temperatures before winter cold usually result in germination the next spring. Otherwise, germination will occur after the second spring.

Flower

Fruits

BLACK ELDERBERRY

Sambucus nigra ssp. canadensis

MID-SEASON

SHRUB

WORKHORSE

HEIGHT
5 - 10 ft.

NATURAL HABITAT
Wet meadows and hedgerows

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun. Moist to wet soils

WILDLIFE

Hollow stems provide winter habitat for bee larvae.

MOWING STRATEGIES

Tolerant of mowing every 3 years.

BLOOM TIME

Late June to July

SEED COLLECTION & PROPAGATION

Purple-black berry clusters ripen in late August and September and must be collected before birds eat them. Remove pulp and store dry. Sow seeds in fall and germination occurs after second spring. Seeds that are warm moist stratified and then fall sown germinate the first spring.

Ripe fruits

Cleaned seeds

BUSH-HONEYSUCKLE

Diervilla lonicera

MID-SEASON

SHRUB

WORKHORSE

HEIGHT
1 - 4 ft. colonizing shrub

NATURAL HABITAT
Evergreen and deciduous forests and openings

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun to light shade.
Moist to dry acidic soils

WILDLIFE

Bees

MOWING STRATEGIES

Very tolerant of yearly mowing

BLOOM TIME

June to August

SEED COLLECTION & PROPAGATION

Small elongated capsules with fringed tips in clusters (several to a dozen) turn brown in fall and remain closed. Harvest and crush gently to extract small brown seeds. Seeds can be stored dry and surface sown in spring.

Flowers on new growth

Leaves

ROSY MEADOWSWEET

Spiraea tomentosa

MID-SEASON

SHRUB

WORKHORSE

HEIGHT
3 ft.

NATURAL HABITAT
Wet to moist meadows

DISTURBED AREAS
Roadside swales and ditches

GROWING CONDITIONS

Sun. Moist to wet soils

WILDLIFE

Birds, butterlies, and bees

MOWING STRATEGIES

Tolerant of mowing every year

BLOOM TIME

August

SEED COLLECTION & PROPAGATION

Conical seedpod clusters ripen when brown and start to crack open in late September and October. Collect in bag to release tiny dust-like seeds. Store dry and surface sow in fall.

Flowers

Tan seedpod and small seeds

WHITE MEADOWSWEET

Spiraea alba

MID-SEASON

SHRUB

WORKHORSE

HEIGHT
3 ft.

NATURAL HABITAT
Meadows and woodland edges

DISTURBED AREAS
Blueberry barrens, roadsides, and swales and ditches

GROWING CONDITIONS

Sun to part shade.
Moist to wet soils

WILDLIFE

Host plant for the spring Azure butterfly

MOWING STRATEGIES

Very tolerant of yearly mowing

BLOOM TIME

July to August

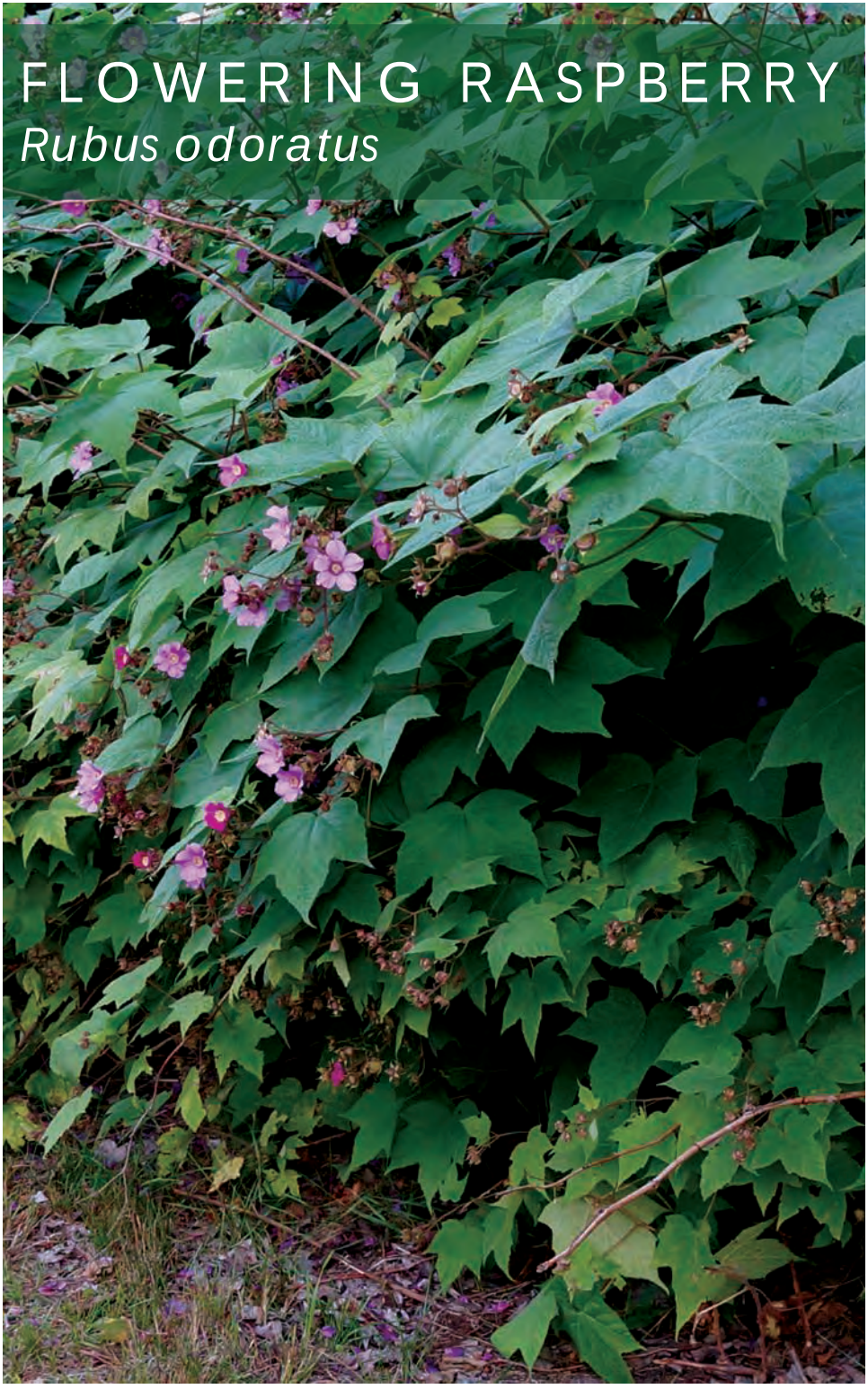
Seedpods

SEED COLLECTION & PROPAGATION

Small seedpod clusters ripen when they turn from green to golden brown and begin to crack open, often in late October. Collect and gently crush in a paper bag until the tiny dust-like seeds drop out. Surface sow immediately or store dry for fall sowing.

FLOWERING RASPBERRY

Rubus odoratus



MID-SEASON

SHRUB

WORKHORSE

HEIGHT
4 - 5 ft. shrub forms a large colony

NATURAL HABITAT
Woodland edges and moist rocky slopes

DISTURBED AREAS
Shady roadsides

GROWING CONDITIONS

Sun to shade.
Moist soil

WILDLIFE

Bees and birds

MOWING STRATEGIES

Tolerant of mowing every other year

BLOOM TIME

July to August

SEED COLLECTION & PROPAGATION

Seeds form in a dark pink raspberry and ripen a few at a time from August to mid-September. Harvest and remove pulp. Seeds can be stored dry and sown in fall.

Flowers

Fruits, Photograph courtesy of Russ Cohen

WILD ROSE

Rosa carolina
R. virginiana

MID-SEASON

SHRUB

WORKHORSE

HEIGHT
2 - 5 ft. colonizing shrub that spreads by underground runners

NATURAL HABITAT
Dry to wet meadows and shores

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun.
Dry to wet sandy or gravelly soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Very tolerant. Mow yearly to maintain low growth or leave to form a large shrub mass.

BLOOM TIME

July to August

SEED COLLECTION & PROPAGATION

Red fruits ripen in October and can be harvested anytime throughout the winter. Separate fruit from seeds and store dry. Sow seeds by late fall as they need a long period of cold stratification to germinate (a full winter).

Ripe fruits

Cleaned seeds

SUMAC

Rhus hirta (syn. Rhus typhina)

MID-SEASON

SHRUB

WORKHORSE

HEIGHT
3 - 15 ft., forms large colonies

NATURAL HABITAT
Dry meadows

DISTURBED AREAS
Roadsides and embankments

GROWING CONDITIONS

Sun.
Dry to medium soils

WILDLIFE

Bees and birds
Hollow stems provide winter habitat for bee larvae

MOWING STRATEGIES

October to December

BLOOM TIME

June

SEED COLLECTION & PROPAGATION

Red fruits ripen September through November. Collect and separate disk-shaped seed from fruit. Seeds may be stored dry, scarified, and sown in fall.

Fruits

Winter branches

WINTERBERRY HOLLY

Ilex verticillata

MID-SEASON

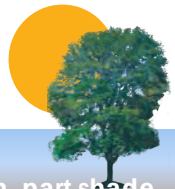
SHRUB

HEIGHT
5 - 10 ft.

NATURAL HABITAT
Deciduous wet woodlands and wet meadows

DISTURBED AREAS
Swales and ditches

GROWING CONDITIONS



Sun, part shade.
Moist to wet soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Tolerant of mowing every five years

BLOOM TIME

June to July

SEED COLLECTION & PROPAGATION

This species has separate male and female plants. Red berries ripen in October and can be harvested in the fall. Clean pulp from seed and sow immediately. Seeds take two years to germinate unless put in a warm, moist location for 2 months before 2 months of cold stratification.

Ripe fruits

Flowers

WITCH-HAZEL

Hamamelis virginiana

LATE SEASON

SHRUB

HEIGHT
8 - 15 ft.

NATURAL HABITAT
Deciduous woodlands and stream sides

GROWING CONDITIONS

Part/full shade.
Moist to dry soils

WILDLIFE

Butterflies and moths

MOWING STRATEGIES

Tolerant of mowing every 5 years

BLOOM TIME

October to November

SEED COLLECTION & PROPAGATION

Seeds ripen in late September and October while shrub is in bloom. Harvest seed as soon as the first pods have opened. Put pods in paper bag and seeds will eject with a popping noise over a two week period. Seeds can be stored dry and sown in fall or spring. Germination takes two years unless two months of warm moist stratification is supplied before winter cold.

Flowers and exploded seedpod

Seeds

VINES & GRASSES

Made of tough stuff
Switch panicgrass can tolerate a variety of tough human landscapes. Here a bed of the grass absorbs runoff and pollutants and tolerates heat and drought.

Virgin's bower
Virginia creeper

Little bluestem
Purple lovegrass
Switch panicgrass

VIRGINIA CREEPER

Parthenocissus inserta
P. quinquefolia

Fruits

EARLY SEASON

Vine

WORKHORSE

HEIGHT
12 - 20 ft.

NATURAL HABITAT
Woodland edges, thickets, and cliffs

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun to shade.
Moist to dry soils

WILDLIFE

Bees and birds

MOWING STRATEGIES

Tolerant of yearly mowing

BLOOM TIME

May and June

SEED COLLECTION & PROPAGATION

Seeds ripen in September in a navy berry. Clean pulp from seed to extract up to 4 seeds per berry. Store seeds dry and sow in fall.

VIRGIN'S-BOWER CLEMATIS

Clematis virginiana

MID-SEASON

Vine

WORKHORSE

HEIGHT
8 - 12 ft.

NATURAL HABITAT
Woodland edges and wetlands

DISTURBED AREAS
Roadside swales and ditches

GROWING CONDITIONS

Sun, part shade.
Moist soil

WILDLIFE

Bees

MOWING STRATEGIES

Tolerant of yearly mowing

BLOOM TIME

August

SEED COLLECTION & PROPAGATION

Seeds ripen in late October and November with long silky seed heads covering the trailing and climbing stems. Seed sown immediately in a warm environment for a month and then placed outside in late fall will germinate the following spring. Seeds may be stored dry.

Ripe seeds on vines

Seeds

LITTLE BLUESTEM

Schizachyrium scoparium

LATE SEASON

Grass

WORKHORSE

HEIGHT
18 - 24 in. warm-season bunchgrass

NATURAL HABITAT
Sandy or rocky well-drained acidic soils of pine barrens and meadows

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun. Dry, sandy or gravelly soils

WILDLIFE

Butterfly and moth host plant

MOWING STRATEGIES

November to May

BLOOM TIME

August to September

SEED COLLECTION & PROPAGATION

Seeds are fluffy when ripe in late September and October. Collect and store dry. Sow seeds in fall or spring. For nursery production grows best in warm conditions.

Left, © photograph courtesy of Donald Cameron

PURPLE LOVEGRASS

Eragrostis spectabilis

LATE SEASON

Grass

WORKHORSE

HEIGHT
12 in. short-lived warm-season bunchgrass

NATURAL HABITAT
Moist to dry meadows

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun. Moist to very dry soils

WILDLIFE

Butterfly and moth host plant

Seeds eaten by birds

MOWING STRATEGIES

November to April

BLOOM TIME

Late summer to early fall

SEED COLLECTION & PROPAGATION

Seeds ripen in late September and October and hang on to the plant for easy harvesting. Collect and store dry. Sow seeds in fall or spring.

Left, flower, and above, seeds

SWITCH PANICGRASS

Panicum virgatum

LATE SEASON

Grass

WORKHORSE

HEIGHT
3 - 5 ft. warm-season bunchgrass, forms large clumps

NATURAL HABITAT
Moist to dry meadows and salt marsh margins

DISTURBED AREAS
Roadsides

GROWING CONDITIONS

Sun, part shade.
Moist to dry soils

WILDLIFE

Butterfly and moth host plant

Seeds eaten by birds

MOWING STRATEGIES

November to April

BLOOM TIME

Late summer

SEED COLLECTION & PROPAGATION

Seeds ripen in September and October and hang onto the plant for easy harvesting. Collect and store dry. Sow seeds in fall or early spring.

Flowers © photograph courtesy of Donald Cameron

Seeds

CHAPTER 3
COLLECTING SEEDS OF NATIVE PLANTS

THIS MANUAL IS DESIGNED to give you the information you need to collect and sow the seeds of native plants from local populations in Maine. Plants grown from seed are genetically diverse. This diversity is important because each individual is unique in its ability to tolerate varied conditions such as heat, drought, excessive rain, disease, herbivory, or pollution. Much of the modern nursery trade is focused on uniformity and many plants for sale are clones, which means they possess the genetic information of just one individual. It is important that the natives added to Maine's roadsides are genetically diverse and grown from local seed stock whenever possible. This will create resilient plant populations with the best ability to adapt to a changing climate.

Many native species ideal for sowing on Maine roadsides are not commercially available. Therefore, roadside managers or contractors will need to collect the seed, at least for the near term. This manual provides the information needed to collect the seeds when they are ripe and to properly store and propagate them. Healthy wild plants often produce an abundance of seed and can still maintain a viable population when a small percentage of the seed is collected. With even a limited supply of seed, a lot of plants can be produced if the seeds are sown in a nursery.

Someday, when our roadsides are filled with native plants, Maine will have an abundant supply of local seed to harvest for broadcasting into new areas. In the meantime, propagating plants in a native nursery and planting them out will be a quick and reliable way to establish native plants.

PROTOCOL FOR COLLECTING NATIVE WILD SEED

Four things to remember

1) Correctly identify the species.

Before collecting seed, make sure the species has been correctly identified. Visit the GoBotany website (https://gobotany.newenglandwild.org) or request assistance from an experienced botanist to help you identify the plant. Make sure to check its protected status and ensure that it is not a rare species in Maine (in which case you should NOT collect the seeds).

2) Ask permission.

If it is not your land, be respectful and ask permission from the landowner before collecting the seed. Also, be aware that it is NOT PERMITTED to collect seeds in national or state parks and often on conservation land.

3) Research handling and germination requirements

Use this guide to review the seed handling and germination requirements of each species before collecting so that the seed is correctly handled and not destroyed. (Refer to other references as needed, see books listed in the *Bibliography.*)

4) Collect with diversity in mind.

If the seed is ripe and it is a healthy population (at least 50 individuals), select several stands to assure sufficient genetic diversity and cross-pollination. Collect a modest amount of seed, between 5-25% depending on how common the plant species.

Determining ripeness

For seeds to germinate and grow, they must be collected when mature. Outlined below are guidelines for determining seed ripeness. The species pages give details on judging ripeness and general seed collection times for each species.

• Generally, when seedpods or capsules change from green to tan, beige/brown, or black and become papery or dry, the seeds are mature.

• Fleshy fruits often change from green to red, blue, or black and become soft when ripe and seeds are mature.

• Some species have fruits which stay green (e.g. marsh-marigold, Canada anemone). If you watch them carefully you will notice that when they are ripe, they become plump and fall off the plant when touched.

• Staggered ripening: Many species have flowers which continue to grow and bloom along the stem while the earlier flowers go by and produce seed. Harvest only the ripe seeds and do not cut the whole stems.

• With most fruits, whether dry or fleshy, ripeness can usually be determined by the ease with which the fruit or seed falls off the plant. A gentle touch or pull is all that it should take to get the fruit off the plant. You should never have to tear it off the stem.

• Some species have dried pods that form a hole in the top when the seeds are ripe. These seeds disperse on windy days over an extended period of time. These pods to not separate from their stalks.

When you determine that the seeds are mature, write the name of the species, date, and collection location on a bag or envelope. Seeds that can be stored dry should be collected and stored in paper bags. Seeds that need to retain moisture should be stored in plastic bags for several days until cleaning.

Cleaning and storing seeds

Seeds should be cleaned to protect them from mold, rot, or insects, and for successful storage.

• Dry fruits can have chaff removed by putting them through a sieve. After removal, air dry the seeds at room temperature in paper bags for a few weeks. A cool, dark location, such as a basement with a dehumidifier, is ideal. Dry, cleaned seeds should be stored in airtight bags or jars in a refrigerator until they are ready to be sown. The seeds of many species stay viable for several years or more with proper storage.

• Fleshy fruits should be separated from seeds as the skin or pulp sometimes inhibits germination. Flesh can be removed by squeezing the seeds from

the fruit by hand, or by macerating the seeds in plastic bags for several days or a week to soften the flesh. Next the seeds can be cleaned by rinsing off the pulp and pushing them through a sieve. (See reference books for additional details on cleaning and separating the seeds from fleshy fruits.)

NOTE: Many species with fleshy fruits have seeds that will not germinate if allowed to dry out. These seeds should be sown soon after cleaning or stored by mixing the seeds with moist sand or vermiculite and sealing this mixture in zip-lock bags or plastic containers in the refrigerator (e.g. marsh-marigold, anemone, viburnums, dogwoods, hazelnut, pussy willow).

CHAPTER 4
SOWING OR PLANTING: DETERMINING YOUR OPTIONS, TIMING SEED SOWING, AND PREPARING THE SITE

THIS CHAPTER PROVIDES A BROAD OVERVIEW of what is involved in propagating native seeds. Seeds can be sown outdoors in a nursery for later planting as young plants, or seeds can be sown in prepared sites along the road corridors, which requires large quantities of seed.

Determining site conditions

Before choosing the species to plant, assess the site conditions. Many plants in this guide need a full to half a day of sun, while others tolerate partial or even full shade. The nature of the soil must also be determined: is it sandy, gravel, clay, loam? What is the level of moisture: wet, moist, or dry? Finally, identify some of the existing plants growing on the site because they are key indicators of soil types and moisture levels and will inform you of soil characteristics. (For help in identifying plants Maine DOT may consider partnering with state botanists or experienced naturalists. See the Resources page for ideas.)

Invasive species

If there are any invasive plants, it is highly recommended that these are removed before planting. There are many online resources to help you determine the best methods for removal (see the *Resources* page).

Preparing unplanted ground

Bare, disturbed earth will need to be prepared before planting. Construction zones often result in soil that is very compacted. Loosening compacted

soil is crucial before planting, as this is a man-made condition that few plants can tolerate. Planting a cover crop to break up the heavy soil is very effective in improving this situation.

Tilling the surface loosens the soil but brings up thousands of new weed seeds. Cover crops (e.g., buckwheat, clover, oats) quickly carpet the soil with green foliage that outcompetes weeds while their roots pierce deep into the soil and improve its structure. Cover crops can be planted anytime during the growing season. They look attractive, prevent erosion, and stimulate microbial life in the soil. With a very weedy site consider a whole year of cover cropping before sowing native seeds. A spring/summer season of cover cropping works well with native seed sowing and planting because fall is the preferred time to sow the seeds and is also a good time for planting young plants in the field.

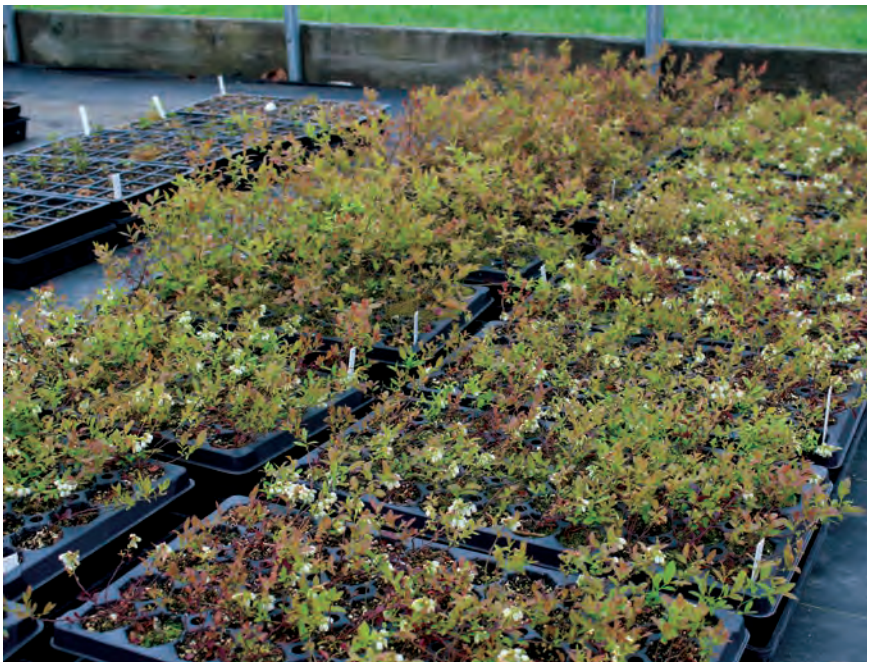
Timing is important for native seed sowing

Fall and winter are the ideal time to sow the seeds of native plants as many species need the cold, moist conditions of our Maine winter to overcome seed dormancy for germination. With outdoor seed sowing, germination occurs when the conditions are optimum for each species. For some seeds this happens in the fluctuating and even freezing temperatures of early spring, and for others not until the heat of summer.

Some species do not require a winter cold period to germinate and can also be sown in early spring when soil moisture levels are high (late spring sowing is possible but will require supplemental watering). This is easy to accomplish in a nursery, less practical on the side of a road.

SOWING SEEDS IN A NURSERY

For nursery production of native plants, outdoor seed sowing is inexpensive and very effective. Seeds can be sown outdoors in the fall in nursery seedbeds, flats, or deep plug trays. Six months to a year later, depending on the growth rate of the wildflower, shrub, or grass, juvenile plants can be planted in their permanent location. Spring (April-May) or fall (September-October) are the optimal timing for successful establishment



Young blueberry seedlings ready for planting. Photo taken at Nasami Farm (New England Wild Flower Society ~ NEWFS).

(not summer). Outdoor propagation methods produce healthy, strong seedlings that are already acclimated to Maine's climate.

The seeds can be sown very thickly, about 1/8 to 1⁄4 inch apart. Native seedlings grow well close together and can be separated further when they are bigger. After sowing, many seeds should be covered with coarse sand. A good rule of thumb is to cover the seeds to the depth of the thickness of the seed (for example: an acorn would be 1 inch deep, a sesame seed would be covered with 1/8th of an inch of sand). Label with the name and sowing date. Water thoroughly with a gentle rain nozzle. Consistent watering is important. If the soil dries out, germinating seedlings can be lost.

Some species, especially those with small dust-like seeds, should NOT be covered as they need light to germinate. These are labeled in this manual as "surface sown".

Protecting from rodents

Mice and squirrels can seek out and destroy a native seed sowing. Rodent-proof caging for seed flats or beds is one of the best options to prevent this damage.

Waiting for Germination

Each native seed has its own timetable for germination, from early spring to summer, depending on the species. This is very different from cultivated plants that have been selected for rapid germination in warm, even temperatures. In the wild, seed germination is often variable with some seeds germinating immediately while others germinate irregularly over a period of weeks, months, or even years. Staggered germination is advantageous for a wild plant because offspring are dispersed over time — a better strategy for dealing with environmental fluctuations.

NOTE: There are some native species whose seeds have a double dormancy and take two years to germinate. These species have an immature embryo when the fruits ripen, and for the embryo to mature it needs a few months of warm weather before a winter cold period will break dormancy. In Maine, many of these species ripen in the fall when our weather has already cooled. Therefore the seeds are not able to finish this maturation until the following summer — hence the two-year germination period. (Some of these same species grow farther south where the warm fall completes this maturation and the seeds germinate after the first winter.)

Scarifying seeds

Outdoor propagation is very effective in breaking down thick seed coats. Propagators sometimes recommend scarification, a technique for manually breaking through a tough seed coat by rubbing with sand paper or nicking the seed coat with a knife. This is especially important for greenhouse production where seeds that need a cold period to germinate are typically moist stratified in a refrigerator. The steady cool temperature is not enough to crack a tough seed coat as with outdoor stratification. For most species in this manual, outside propagation will take care of scarifying the seeds; species that may benefit from additional help are noted.

Ongoing nursery care during the first season

Regular watering, fertilizing seedlings with an organic seaweed-based liquid fertilizer, checking for weeds, and moving seedlings on to deep plug containers if they outgrow their seed flats are the ongoing care for a native nursery.

Wire mesh is useful for protecting seedlings from rodents.

ROADSIDE SEED SOWING

If enough seed is available, seeds can be broadcast on a prepared roadside site. Fall is an ideal time for this sowing, as most mixes will contain many species that must receive a winter cold period to germinate. Grasses may be effectively sown in mid-spring as many of these species germinate in warmer temperature. The risk with spring seed sowing is that the rains will have subsided and water is crucial for high rates of germination. In–the-field restoration projects consider a 5% success rate of germination excellent because of the lack of control over watering and seed predators.

In preparation for in-the-field seed sowing, seed can be mixed with sand, moist vermiculite, saw dust, or peat moss to help disperse the seeds, many of which are tiny. Protocols for seeding amounts for the various species can be calculated from the references provided at the end of this chapter. Seeds sown in the fall will be well hydrated and have good contact with the soil after a winter outdoors. Germination will begin in early spring with some preferring cool temperatures and others waiting for warmer temperatures. Erosion prone sites should have a light covering of weed free straw or a nurse crop of oats to help hold the soil.

Ongoing care during the first season

During the first growing season after germination, native seedlings will appear to grow slowly as they will be sending down deep roots rather than producing a lot of above ground shoot growth. Any annual weeds on the site will grow much more quickly. The planted area should be mowed when the weeds are 1 foot in height. Preventing annual weeds from producing seed through periodic mowing for the first two seasons will greatly benefit native seedling establishment.

CHAPTER 5
DESIGNING WITH NATIVES: PLANT LISTS FOR DIFFERENT GROWING CONDITIONS

This chapter has organized the wildflowers, shrubs, vines, and grasses covered in this manual according to their growing requirements. These lists can be used to choose the species combination that will work best at the site being planted. They are designed to be used in conjunction with *Chapter 2: Native Species for Roadside Restoration.*

Once you have determined the conditions at a proposed planting site (sun exposure, soil type, and moisture level), choose plant species from the list that match these conditions. To support pollinators from spring to fall, choose species that will bloom from early in the season to late in the season. If you are inter-seeding or adding young plants to existing vegetation, the plants identified as workhorse species in Chapter 2 will be the easiest to establish.

Plants for sunny and dry, sandy or gravelly soils

WILDFLOWERS
Aster, flax-leaved stiff
Beardtongue, foxglove,
Bergamot
Coneflower, black-eyed
Goldenrod
  downy
  seaside
Lily, wood
Mountain-mint, Virginia
Pearly everlasting
Strawberry, wild

SHRUBS
Bayberry
Bearberry
Blueberry, lowbush
Chokeberry, black
Honeysuckle, bush
Huckleberry, black
Juniper, common
Rose, wild
Shadbush, dwarf
Sumac
Sweet-fern
Viburnum,
  smooth arrowwood

VINES
Virginia creeper

GRASSES
Bluestem, little
Lovegrass, purple
Panicgrass, switch

Plants for sunny moist soils that may become dry in summer

WILDFLOWERS
Asters
  New England
  New York
  Tall White
Beardtongue, foxglove
Bergamot
Crane's-bill, spotted
Golden Alexanders
Goldenrod,
  wrinkle-leaved
Groundsel, golden
Lily, Canada,
Milkweed, common
Mountain-mint
Strawberry, wild
Windflower, Canada

SHRUBS
Chokeberry, black
Dogwood, gray
Elderberry, black
Hazelnut
Honeysuckle, bush
Meadowsweet
  rosy
  white
Raspberry, flowering
Rose, wild
Shadbush
  A. canadensis
  A. laevis
Viburnum, all species

VINES
Virginia creeper

GRASSES
Switch panicgrass

Plants for sunny wet sites

WILDFLOWERS
Asters
  New England
  New York
Boneset
Golden Alexanders
Groundsel, golden
Iris, blue
Joe-pye weed
Lily, Canada
Loosestrife, swamp yellow
Marsh-marigold
Milkweed, swamp
Turtlehead, white
Vervain, blue

SHRUBS
Alder, speckled
Blueberry, highbush
Dogwood,
  gray
  silky
Elderberry, black
Laurel, sheep
Meadowsweet
Pussy willow
Rose, wild
Shadbush
  A. canadensis
  A. laevis
Sweetgale

Viburnum
  smooth arrowwood
  highbush-cranberry
Winterberry holly

VINES
Virgin's bower

Plants for part or full shade and moist soils that may become dry in summer

WILDFLOWERS
Aster
  large-leaved wood
  heart-leaved American
Beardtongue, foxglove
Crane's-bill, spotted
Groundsel, golden
Lily, wood
Loosestrife, swamp yellow
Strawberry, wild
Windflower, Canada

SHRUBS
Blueberry, highbush
Elderberry, red
Hazelnut
Honeysuckle, bush
Huckleberry, black
Meadowsweet
Raspberry, flowering
Shadbush
Viburnum
  nannyberry
  smooth arrowwood
  withe-rod

Winterberry holly
Witch-hazel

VINES
Virginia creeper

Plants for part or full shade and dry soils

WILDFLOWERS
Aster
large-leaved wood
heart-leaved American
Beardtongue, foxglove
Lily, wood
Strawberry, wild

SHRUBS
Bayberry, small
Blueberry, lowbush
Dogwood, gray
Elderberry, red
Honeysuckle, bush
Huckleberry, black
Meadowsweet
Shadbush
Viburnum
smooth arrowwood
withe-rod

VINES
Virginia creeper

Plants for highly acidic soils near conifers, ranging from wet to dry

WILDFLOWERS
Aster
large-leaved wood
flax-leaved stiff
Coneflower, black-eyed
Goldenrod, downy
Lily, wood
Loosestrife, swamp yellow
Pearly everlasting
Strawberry, wild

SHRUBS
Bayberry
Bearberry, red
Blueberry, highbush
Blueberry, lowbush
Chokeberry, black
Elderberry, red
Hazelnut
Honeysuckle, bush
Huckleberry, black
Juniper, common
Laurel, sheep
Meadowsweet
Rose, wild
Sumac
Sweet-fern
Sweetgale
Viburnum, withe-rod

VINES
Virginia creeper

GRASSES
Bluestem, little
Lovegrass, purple

INDEX

RESOURCES

Plant identification

• GoBotany https://gobotany.newenglandwild.org
• Local land trusts may have knowledge of naturalists and botanists who could help identify plants in the field.
• Plant identification courses for many species and some habitat types are offered most summers at:
The Humboldt Institute in Steuben, www.eaglehill.us
Coastal Maine Botanical Garden in Boothbay, www.mainegardens.org

Invasive plants

• Maine Natural Areas Program
http://www.maine.gov/dacf/mnap/features/invasive_plants/invsheets.htm
• Ecological Landscaping Alliance for non-herbicide based solutions at
http://www.ecolandscaping.org

Outdoor seed sowing

For further information on outdoor production of native plants, the following books are highly recommended and have detailed instructions and images:
• *Growing Trees from Seed A practical guide to growing native trees, vines and shrubs* by Henry Kock
• New England Wild Flower Society's Nasami Farm
http://www.newenglandwild.org/visit/nasami-farm

Sowing and establishing native seeds in the field

• Prairie Moon Nursery's fact sheet, www.prairiemoon.com
• New England Wetland Plants fact sheet, www.newp.com

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