



Sweetfern

ECOLOGICAL DESIGN

Concept Plans for Site Improvements and Conservation Planning



BUFFER ZONE PLANTING

REFORESTATION, SOIL STABILIZATION + LAYERED HABITAT

The buffer zone planting uses a layered selection of groundcovers, shrubs, understory trees and canopy trees. The planting is intended to naturalize over time, immediately protect exposed soil, and mature into a balanced reforested area that retains soil while increasing ecological diversity and habitat value.

At installation, compost may be incorporated where appropriate to improve soil structure and water-holding capacity. Disturbed ground should be seeded promptly with a quick-growing soil-stabilizing cover crop. Depending on season and slope conditions, biodegradable erosion-control matting can be installed with plugs and bare-root material planted through the mat.

Dormant-season overseeding can follow during the first winter. This timing supports natural cold stratification and establishment of native wetland and erosion-control species.



ESTABLISHMENT

Quick-cover seeding immediately after disturbance; dormant-season native overseeding.

WILDLIFE

Fruit, mast, host plants, nesting cover and season-long insect resources.

STRUCTURE

Canopy + understory + shrub + herbaceous layers create long-term resilience.

SOIL + WATER

Dense roots stabilize soil, intercept runoff and increase infiltration.

PLANT CHARACTERISTICS + WILDLIFE SUPPORT



Red Maple

Acer rubrum

Canopy tree | 40-60' H x 30-50' W | Moist-wet; sun-part shade

WILDLIFE FOOD

Seeds, buds and flowers used by birds and mammals

POLLINATORS

Early-season pollen/nectar resource

HOST + INSECT SUPPORT

Supports numerous native moth/butterfly caterpillars

DESIGN + HABITAT FUNCTION

Canopy, wet-site stabilization, seasonal cover



River Birch

Betula nigra

Canopy tree | 40-60' H x 30-50' W | Moist-wet; sun-part shade

WILDLIFE FOOD

Seeds eaten by songbirds; catkins/buds used by wildlife

POLLINATORS

Early pollen resource

HOST + INSECT SUPPORT

Betula is an important caterpillar host genus

DESIGN + HABITAT FUNCTION

Riparian stabilization, canopy, nesting/cover



Swamp White Oak

Quercus bicolor

Canopy tree | 50-60' H x 50-60' W | Moist-wet; sun

WILDLIFE FOOD

Acorns support birds and mammals

POLLINATORS

Indirectly supports insect food web

HOST + INSECT SUPPORT

Oak is a high-value larval host genus

DESIGN + HABITAT FUNCTION

Long-lived canopy, mast, nesting habitat



Arrowwood Viburnum

Viburnum dentatum

Shrub | 6-10' H x 4-10' W | Average-moist; sun-part shade

WILDLIFE FOOD

Blue-black fruit for songbirds, grouse, turkey and mammals

POLLINATORS

Flowers support bees and butterflies

HOST + INSECT SUPPORT

Host for native caterpillars including azure butterflies

DESIGN + HABITAT FUNCTION

Dense cover, edge habitat, screening



Buttonbush

Cephalanthus occidentalis

Shrub | 6-12' H x 6-12' W | Wet; sun-part shade

WILDLIFE FOOD

Seeds/fruits used by waterfowl and birds

POLLINATORS

Exceptional nectar source for bees and butterflies

HOST + INSECT SUPPORT

Supports native moth larvae

DESIGN + HABITAT FUNCTION

Wetland edge, rain garden, shoreline cover

PLANT CHARACTERISTICS + WILDLIFE SUPPORT



Winterberry

Ilex verticillata

Shrub | 6-12' H x 6-12' W | Moist-wet; sun-part shade

WILDLIFE FOOD

Persistent red fruit eaten by many bird species and small mammals

POLLINATORS

Flowers support pollinators; specialized bee association

HOST + INSECT SUPPORT

Host for Henry's Elfin and other caterpillars

DESIGN + HABITAT FUNCTION

Winter food, cover, wetland edge



Red-osier Dogwood

Cornus sericea

Shrub | 6-9' H x 8-12' W | Moist-wet; sun-part shade

WILDLIFE FOOD

White berries eaten by birds and mammals

POLLINATORS

Flowers support bees and butterflies

HOST + INSECT SUPPORT

Cornus supports native caterpillars and specialist bees

DESIGN + HABITAT FUNCTION

Bank stabilization, thicket cover, nesting



Blackhaw Viburnum

Viburnum prunifolium

Shrub/small tree | 12-15' H x 8-12' W | Average; sun-part shade

WILDLIFE FOOD

Dark fruit for birds and mammals

POLLINATORS

Flowers support native bees and butterflies

HOST + INSECT SUPPORT

Viburnum supports native caterpillars

DESIGN + HABITAT FUNCTION

Edge habitat, nesting cover, fruiting layer



Black Chokeberry

Aronia melanocarpa

Shrub | 3-6' H x 3-6' W | Average-wet; sun-part shade

WILDLIFE FOOD

Persistent berries attract birds

POLLINATORS

Flowers attract butterflies and other pollinators

HOST + INSECT SUPPORT

Supports insect diversity associated with Rosaceae

DESIGN + HABITAT FUNCTION

Mass planting, wet edges, fall/winter food



Virginia Sweetspire

Itea virginica

Shrub | 4-8' H x 3-6' W | Moist-wet; sun-shade

WILDLIFE FOOD

Seeds eaten by songbirds

POLLINATORS

Fragrant flowers attract butterflies and pollinators

HOST + INSECT SUPPORT

Provides insect habitat

DESIGN + HABITAT FUNCTION

Rain garden, wet edge, dense cover

PLANT CHARACTERISTICS + WILDLIFE SUPPORT



Silky Dogwood

Cornus amomum

Shrub | 6-12' H x 6-12' W | Moist-wet; sun-part shade

WILDLIFE FOOD

Fruit eaten by songbirds, grouse, turkey and mammals

POLLINATORS

Flowers nectar butterflies

HOST + INSECT SUPPORT

Host for spring/summer azure butterflies; specialist bees

DESIGN + HABITAT FUNCTION

Wetland thicket, nesting, erosion control



Sensitive Fern

Onoclea sensibilis

Fern | 1-3' H; spreading | Moist-wet; part shade-shade

WILDLIFE FOOD

Limited direct food value

POLLINATORS

Non-flowering

HOST + INSECT SUPPORT

Provides invertebrate habitat

DESIGN + HABITAT FUNCTION

Groundcover, soil protection, moist habitat structure



Cinnamon Fern

Osmundastrum cinnamomeum

Fern | 2-6' H x 2-4' W | Moist-wet; sun-shade

WILDLIFE FOOD

Provides cover; frond hairs used as nesting material

POLLINATORS

Non-flowering

HOST + INSECT SUPPORT

Listed as host plant by Native Plant Trust

DESIGN + HABITAT FUNCTION

Nesting cover, wet woodland structure



Spotted Joe-Pye Weed

Eutrochium maculatum

Perennial | 4-7' H x 3-4' W | Moist-wet; sun-part shade

WILDLIFE FOOD

Seeds may be used by songbirds

POLLINATORS

Strong late-summer nectar for butterflies and bees

HOST + INSECT SUPPORT

Supports diverse insects

DESIGN + HABITAT FUNCTION

Tall meadow structure, pollinator corridor



Swamp Milkweed

Asclepias incarnata

Perennial | 3-5' H x 2-3' W | Moist-wet; sun

WILDLIFE FOOD

Seeds used lightly by birds

POLLINATORS

High nectar value for bees, butterflies and other insects

HOST + INSECT SUPPORT

Essential larval host for monarch butterflies

DESIGN + HABITAT FUNCTION

Wet meadow/rain garden pollinator support

PLANT CHARACTERISTICS + WILDLIFE SUPPORT



Soft Rush
Juncus effusus
Rush | 2-4' H x 2-3' W | Wet; sun-part shade

WILDLIFE FOOD
Seeds used by wetland birds
POLLINATORS
Wind-pollinated; low floral nectar value

HOST + INSECT SUPPORT
Provides habitat for wetland insects
DESIGN + HABITAT FUNCTION
Dense cover, nesting material, water filtration



Tussock Sedge
Carex stricta
Sedge | 2-3' H; clumping | Wet; sun-part shade

WILDLIFE FOOD
Seeds eaten by birds and small mammals
POLLINATORS
Wind-pollinated; supports food web indirectly

HOST + INSECT SUPPORT
Carex is an important host genus for skipper and moth larvae
DESIGN + HABITAT FUNCTION
Tussock habitat, nesting cover, bank stabilization



Softstem Bulrush
Schoenoplectus tabernaemontani
Emergent sedge | 4-8' H; spreading | Shallow water/wet; sun

WILDLIFE FOOD
Seeds and rhizomes support waterfowl and marsh wildlife
POLLINATORS
Wind-pollinated

HOST + INSECT SUPPORT
Provides aquatic/emergent insect habitat
DESIGN + HABITAT FUNCTION
Nesting cover, shoreline stabilization, water filtration

REINFORCED VEGETATED NORTH SLOPE + DRAINAGE

EROSION CONTROL, PLANTED TERRACES + CONTROLLED STORMWATER

The north slope concept addresses approximately 6 feet of vertical rise over 9 to 10 feet of run - roughly a 60% grade. Biodegradable coir matting is proposed over finish grade and interplanted with erosion-control species. Plant roots add a second layer of reinforcement while increasing habitat and visual integration.

Intentionally placed boulders can anchor the slope and create small planting terraces. A quick-growing erosion-control seed blend should establish immediate cover, followed by overseeding with a native steep-slope mix. Trees and shrubs are selected for deep or spreading root systems, quick establishment and their ability to colonize difficult slope conditions.

At the base of the slope, a series of bioswales or rain-garden depressions can work with topographic flow paths to slow surface water. Where compact drainage is required closer to structures, subsurface dry wells can receive downspouts or drain lines and slowly release water below grade.



SLOPE ARMORING

Coir mat + boulders + rooted woody plants reinforce steep grades.

DRAINAGE

Dry wells receive concentrated roof or drain flows where needed.

INFILTRATION

Bioswales slow runoff and create opportunities for groundwater recharge.

PLANTING

Native shrubs, ferns and colonizing species knit the slope together over time.

PLANT CHARACTERISTICS + WILDLIFE SUPPORT



Sweetfern

Comptonia peregrina

Shrub | 2-4' H x 4-8' W | Dry-average; sun-part shade

WILDLIFE FOOD

Nutlets used by wildlife

POLLINATORS

Wind-pollinated; supports insect community

HOST + INSECT SUPPORT

Host for several native moth species

DESIGN + HABITAT FUNCTION

Nitrogen-fixing associate, slope stabilization, thicket cover



Smooth Hydrangea

Hydrangea arborescens

Shrub | 3-5' H x 3-5' W | Average-moist; part shade

WILDLIFE FOOD

Limited fruit value

POLLINATORS

Open fertile flowers support pollinators

HOST + INSECT SUPPORT

Provides insect habitat

DESIGN + HABITAT FUNCTION

Woodland edge, cover, slope planting



Ninebark

Physocarpus opulifolius

Shrub | 5-8' H x 6-8' W | Average; sun-part shade

WILDLIFE FOOD

Seeds/fruits used by birds

POLLINATORS

Flowers support bees and other pollinators

HOST + INSECT SUPPORT

Host for native moths

DESIGN + HABITAT FUNCTION

Dense cover, nesting, erosion control



Christmas Fern

Polystichum acrostichoides

Fern | 1-2' H x 2-3' W | Average-moist; part shade-shade

WILDLIFE FOOD

Limited direct food value

POLLINATORS

Non-flowering

HOST + INSECT SUPPORT

Provides invertebrate refuge

DESIGN + HABITAT FUNCTION

Evergreen ground cover, winter shelter, erosion protection



Fragrant Sumac

Rhus aromatica

Shrub | 2-6' H x 6-10' W | Dry-average; sun-part shade

WILDLIFE FOOD

Red drupes persist and feed birds

POLLINATORS

Flowers provide early insect forage

HOST + INSECT SUPPORT

Rhus supports native caterpillars

DESIGN + HABITAT FUNCTION

Slope stabilization, thicket cover, winter food

PLANT CHARACTERISTICS + WILDLIFE SUPPORT



Mapleleaf Viburnum
Viburnum acerifolium
Shrub | 4-6' H x 3-5' W | Average; part shade-shade

WILDLIFE FOOD
Blue-black fruit eaten by birds and mammals
POLLINATORS
Flowers support native bees

HOST + INSECT SUPPORT
Viburnum supports native caterpillars
DESIGN + HABITAT FUNCTION
Woodland understory, nesting/cover, fruit

ENTRYWAY WETLAND PLANTINGS

WET-SITE STABILIZATION + HABITAT REINFORCEMENT

Native trees and shrubs planted in wet areas strengthen soil structure and improve the resilience of the entry landscape during rain events.

Woody vegetation increases evapotranspiration, infiltration and soil-water storage while helping slow runoff. A layered wetland-edge planting also increases habitat potential, adds seasonal food resources and expands structural diversity.

The palette emphasizes species suited to moist and wet soils, with strong wildlife value through fruit, flowers, larval-host relationships, nesting cover and long-term canopy structure.



WATER

Increase infiltration and evapotranspiration while slowing runoff.

HABITAT

Fruit, flowers and dense branching support birds and insects.

ROOTS

Woody root systems reinforce saturated or periodically wet soils.

STRUCTURE

Trees + shrubs create layered wetland-edge habitat.

PLANT CHARACTERISTICS + WILDLIFE SUPPORT



Serviceberry

Amelanchier canadensis

Small tree | 15-30' H x 10-20' W | Average-moist; sun-part shade

WILDLIFE FOOD

Early-summer berries highly valuable to birds and mammals

POLLINATORS

Early spring flowers support pollinators

HOST + INSECT SUPPORT

Rosaceae host supporting native caterpillars

DESIGN + HABITAT FUNCTION

Fruiting understory/canopy, nesting habitat



Black Chokeberry

Aronia melanocarpa

Shrub | 3-6' H x 3-6' W | Average-wet; sun-part shade

WILDLIFE FOOD

Persistent berries attract birds

POLLINATORS

Flowers attract butterflies and other pollinators

HOST + INSECT SUPPORT

Supports insect diversity associated with Rosaceae

DESIGN + HABITAT FUNCTION

Mass planting, wet edges, fall/winter food



River Birch

Betula nigra

Canopy tree | 40-60' H x 30-50' W | Moist-wet; sun-part shade

WILDLIFE FOOD

Seeds eaten by songbirds; catkins/buds used by wildlife

POLLINATORS

Early pollen resource

HOST + INSECT SUPPORT

Betula is an important caterpillar host genus

DESIGN + HABITAT FUNCTION

Riparian stabilization, canopy, nesting/cover



Silky Dogwood

Cornus amomum

Shrub | 6-12' H x 6-12' W | Moist-wet; sun-part shade

WILDLIFE FOOD

Fruit eaten by songbirds, grouse, turkey and mammals

POLLINATORS

Flowers nectar butterflies

HOST + INSECT SUPPORT

Host for spring/summer azure butterflies; specialist bees

DESIGN + HABITAT FUNCTION

Wetland thicket, nesting, erosion control



Black Tupelo

Nyssa sylvatica

Canopy tree | 30-50' H x 20-30' W | Average-moist; sun-part shade

WILDLIFE FOOD

High-fat blue-black fruit used by migratory birds and mammals

POLLINATORS

Flowers are a strong bee resource

HOST + INSECT SUPPORT

Supports native moth larvae

DESIGN + HABITAT FUNCTION

Canopy, nesting, fall migration food

PLANT CHARACTERISTICS + WILDLIFE SUPPORT



American Cranberrybush

Viburnum opulus var. americanum

Shrub | 8-12' H x 8-12' W | Moist; sun-part shade

WILDLIFE FOOD

Persistent red fruit for birds

POLLINATORS

Flowers support pollinators

HOST + INSECT SUPPORT

Viburnum supports native caterpillars

DESIGN + HABITAT FUNCTION

Dense cover, winter fruit, wet edge

MANAGED MEADOW + NATIVE ORCHARD

SUCCESSIONAL HABITAT, POLLINATOR SUPPORT + NATIVE FOOD SYSTEM

The managed meadow concept reinforces native diversity within an existing woodland clearing ecotone. Seasonal mowing can maintain the herbaceous character of the clearing while allowing native grasses and wildflowers to build a stronger seed bank.

Keeping the area primarily herbaceous supports a habitat-rich transition between open ground and surrounding forest. The meadow provides complete life-cycle support for many insects, including species that overwinter in grasslands near their woody host plants. Mowing can be timed to reduce conflicts with wildlife use and nesting periods.

A guild-style native orchard adds fruit- and nut-producing trees and shrubs for wildlife. These woody layers can be underplanted with native groundcovers, while areas disturbed during invasive-species removal should be seeded immediately to protect soil and reduce reinvasion.



MEADOW

Seasonal mowing maintains open habitat and favors herbaceous diversity.

POLLINATORS

Flowers and host plants support insects across multiple life stages.

ORCHARD

Native fruit + nut species add soft mast, hard mast and vertical structure.

INVASIVES

Seed disturbed soil promptly after removal to reduce open niches.

PLANT CHARACTERISTICS + WILDLIFE SUPPORT



Serviceberry

Amelanchier canadensis

Small tree | 15-30' H x 10-20' W | Average-moist; sun-part shade

WILDLIFE FOOD

Early-summer berries highly valuable to birds and mammals

POLLINATORS

Early spring flowers support pollinators

HOST + INSECT SUPPORT

Rosaceae host supporting native caterpillars

DESIGN + HABITAT FUNCTION

Fruiting understory/canopy, nesting habitat



Black Chokeberry

Aronia melanocarpa

Shrub | 3-6' H x 3-6' W | Average-wet; sun-part shade

WILDLIFE FOOD

Persistent berries attract birds

POLLINATORS

Flowers attract butterflies and other pollinators

HOST + INSECT SUPPORT

Supports insect diversity associated with Rosaceae

DESIGN + HABITAT FUNCTION

Mass planting, wet edges, fall/winter food



Pawpaw

Asimina triloba

Small tree | 15-30' H x 15-30' W | Average-moist; sun-part shade

WILDLIFE FOOD

Large fruit eaten by mammals

POLLINATORS

Flowers pollinated mainly by flies and beetles

HOST + INSECT SUPPORT

Primary host for Zebra Swallowtail

DESIGN + HABITAT FUNCTION

Edible/native orchard, understory habitat



American Chestnut

Castanea dentata

Canopy tree | 50-75'+ H x 40-60' W | Average; sun

WILDLIFE FOOD

Nuts are high-value mast for birds and mammals

POLLINATORS

Catkins provide pollen

HOST + INSECT SUPPORT

Supports native insect community

DESIGN + HABITAT FUNCTION

Long-term mast, canopy and habitat restoration



American Hazelnut

Corylus americana

Shrub | 8-16' H x 8-13' W | Average; sun-part shade

WILDLIFE FOOD

Nuts feed squirrels, chipmunks, turkey and other wildlife

POLLINATORS

Wind-pollinated; catkins provide early pollen

HOST + INSECT SUPPORT

Supports native moth/butterfly larvae

DESIGN + HABITAT FUNCTION

Thicket cover, mast, edge habitat

PLANT CHARACTERISTICS + WILDLIFE SUPPORT



American Persimmon
Diospyros virginiana
Tree | 35-60' H x 25-35' W | Average; sun-part shade

WILDLIFE FOOD
Fruit eaten by birds and many mammals
POLLINATORS
Flowers used by bees

HOST + INSECT SUPPORT
Host for Luna moth and other native insects
DESIGN + HABITAT FUNCTION
Fruiting canopy, mast/soft fruit, cover



Spicebush
Lindera benzoin
Shrub | 6-12' H x 6-12' W | Moist; part shade-shade

WILDLIFE FOOD
Red berries are valuable to migratory birds
POLLINATORS
Early flowers support small native pollinators

HOST + INSECT SUPPORT
Primary host for Spicebush Swallowtail
DESIGN + HABITAT FUNCTION
Woodland understory, bird food and cover



American Plum
Prunus americana
Small tree/shrub | 15-25' H x 15-25' W | Average; sun-part shade

WILDLIFE FOOD
Fruit eaten by birds and mammals
POLLINATORS
Spring flowers support bees

HOST + INSECT SUPPORT
Prunus is a major host genus for native caterpillars
DESIGN + HABITAT FUNCTION
Thicket/nesting cover, soft mast, edge habitat



American Elderberry
Sambucus canadensis
Shrub | 6-12' H x 6-12' W | Moist; sun-part shade

WILDLIFE FOOD
Berries heavily used by songbirds and mammals
POLLINATORS
Broad flower clusters attract diverse pollinators

HOST + INSECT SUPPORT
Supports native insects
DESIGN + HABITAT FUNCTION
Wet edge, dense cover, summer fruit



Highbush Blueberry
Vaccinium corymbosum
Shrub | 6-12' H x 6-10' W | Moist acidic; sun-part shade

WILDLIFE FOOD
Berries support birds and mammals
POLLINATORS
Important spring bee resource, including specialist bees

HOST + INSECT SUPPORT
Vaccinium supports many native caterpillars
DESIGN + HABITAT FUNCTION
Fruiting shrub layer, wet/acidic habitat

ECOLOGICAL VALUE KEY

How to read the updated planting palettes

WILDLIFE FOOD

Berries, fruit, nuts, seeds, buds or other plant material used directly by birds and mammals.

HOST + INSECT SUPPORT

Larval-host relationships and broader support for native caterpillars, moths, butterflies and other insects.

POLLINATORS

Nectar, pollen or floral resources for bees, butterflies, beetles, flies and other pollinating insects.

DESIGN + HABITAT FUNCTION

The physical role of the plant in the landscape: stabilization, canopy, cover, nesting, water filtration, screening or meadow structure.

SOURCE NOTE

Plant-characteristic and wildlife-support notes are based on the expanded Sweetfern planting spreadsheet, which references Native Plant Trust, NC State Extension, UConn Plant Database and regional native-plant references. The original site-planning narrative and species palettes have been retained and reorganized into this report.