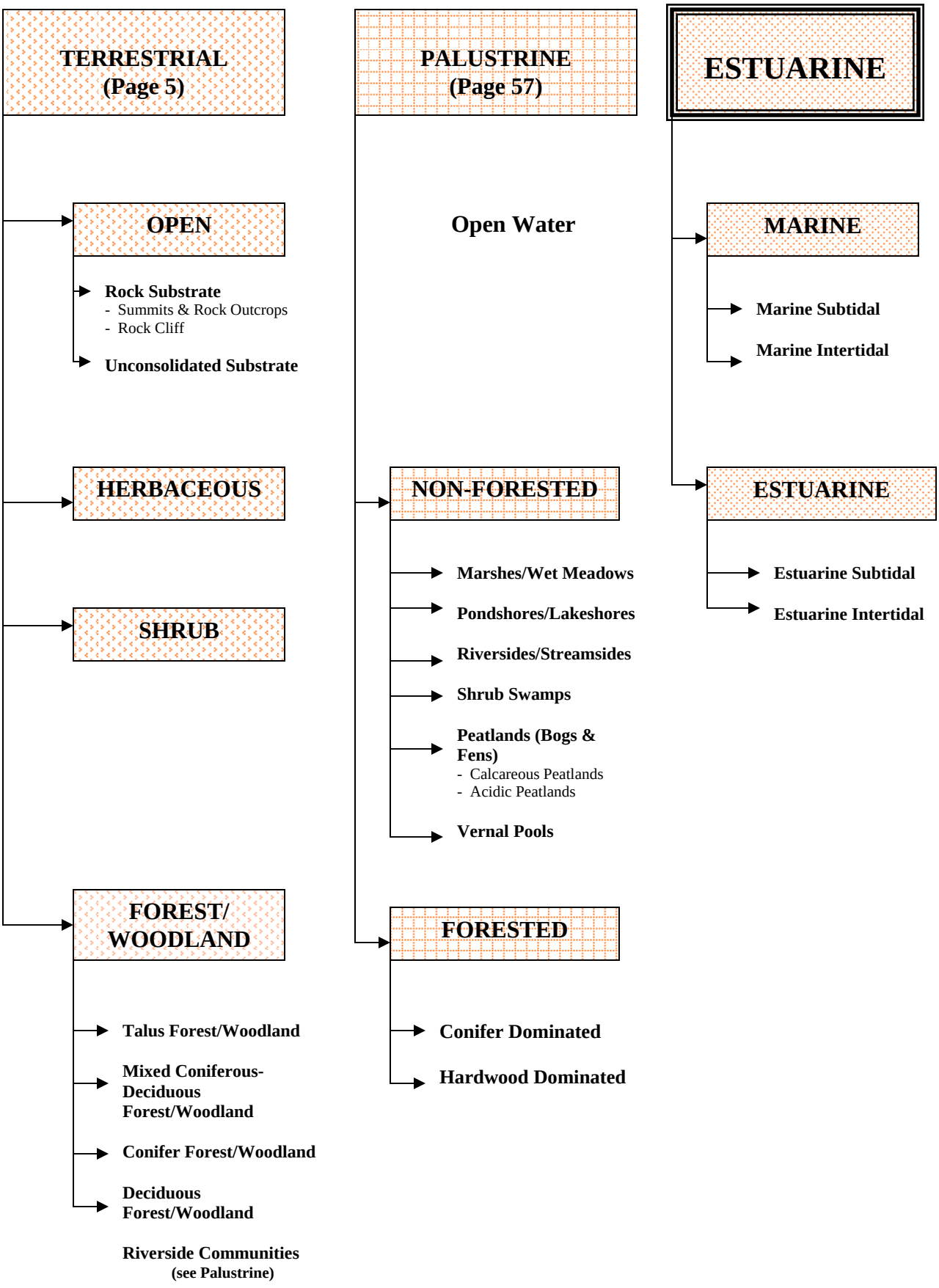

TERRESTRIAL (Page 5)
PALUSTRINE (Page 57)
ESTUARINE
OPEN
Rock Substrate
- Summits & Rock Outcrops
- Rock Cliff
Unconsolidated Substrate
HERBACEOUS
SHRUB
FOREST/ WOODLAND
Talus Forest/Woodland
Mixed Coniferous-Deciduous Forest/Woodland
Conifer Forest/Woodland
Deciduous Forest/Woodland
Riverside Communities (see Palustrine)
Open Water
NON-FORESTED
Marshes/Wet Meadows
Pondshores/Lakeshores
Riversides/Streamsides
Shrub Swamps
Peatlands (Bogs & Fens)
- Calcareous Peatlands
- Acidic Peatlands
Vernal Pools
FORESTED
Conifer Dominated
Hardwood Dominated
MARINE
Marine Subtidal
Marine Intertidal
ESTUARINE
Estuarine Subtidal
Estuarine Intertidal

MARINE

(High-energy coastline, exposed to waves and currents, with little or no dilution by fresh water)

MARINE SUBTIDAL
(Permanently flooded by tidal waters; **Page 108**)

Flats

MARINE INTERTIDAL
(Alternately covered and exposed by tidal waters; **Page 109**)

Rocky Shore
Gravel/Sand Beach
Flats

ESTUARINE

(Ocean water diluted by freshwater, includes mouth of a river, bay, or sound, and areas up river)

ESTUARINE SUBTIDAL

(Permanently flooded by tidal waters; **Page 111**)

Saline/Brackish Flats
Fresh/Brackish Flats
Coastal Salt Pond

ESTUARINE INTERTIDAL

(Alternately covered and exposed by tidal waters; **Page 115**)

Saline/Brackish Flats
Fresh/Brackish Flats
Coastal Salt Pond Marsh
Salt Marsh
Brackish Tidal Marsh
Freshwater Tidal Marsh
Fresh/Brackish Tidal Shrubland
Fresh/Brackish Tidal Swamp

MARINE SUBTIDAL COMMUNITIES

Description of Marine Subtidal Communities

Flats **S4**

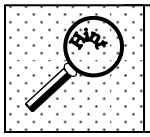
Description/Concept	Sparsely to densely vegetated communities, dominated by invertebrates. Permanently submerged saline communities that occur in open ocean or near shore.
Topography	Permanently flooded by ocean water.
Soils/Substrate	Sandy to muddy soils in nearshore shallow water and offshore banks.
Canopy	
Sub-canopy	
Shrub layer	
Herb layer	May include eelgrass beds.
Leaf litter	N/A

NOTE: **Because there is only one Marine Subtidal community type, there is no key provided.**

MARINE INTERTIDAL COMMUNITIES

Shortcut Key: Check full descriptions following use of key

1. Community characterized by a rocky substrate.	A. Yes – Rocky Shore B. No – Go to 2
2. Community characterized by a substrate of sand and/or gravel.	A. Yes – Gravel/Sand Beach B. No – Go to 3
3. Community characterized by a substrate of sediments, sand, silt, and clay.	A. Yes – Flats



These communities separate on the basis of substrate.

Descriptions of Marine Intertidal Communities

Rocky Shore S2

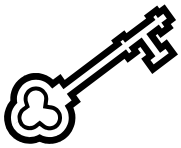
Description/Concept	A **rock substrate** community dominated by invertebrates (crustaceans and mollusks) and non-vascular plants. Shows distinct zonation from splash zone to zone of complete inundation.
Topography	Extends from the supratidal splash zone to the limits of light penetration in the subtidal zone.
Soils/Substrate	Rock.
Canopy	
Sub-canopy	
Shrub layer	
Herb layer	Macroscopic algae (i.e., seaweed) is the dominant vegetation in community.
Leaf litter	N/A

Gravel/Sand Beach S4

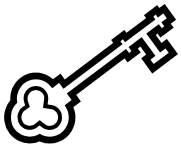
Description/Concept	A highly stressed community in the intertidal (i.e., wave action) zone of beaches. Area exposed between high tides. Dominated by invertebrates and non-vascular plants.
Topography	Located below wrack line and above the permanent water.
Soils/Substrate	Gravel/sand.
Canopy	
Sub-canopy	
Shrub layer	
Herb layer	Sparse non-vascular plants.
Leaf litter	N/A

Flats S4

Description/Concept	Marine intertidal areas protected from intense wave action. More protected than Marine Intertidal: Gravel/Sand communities. Physically and biologically linked to coastal marine systems.
Topography	Protected, low-energy coastal sites between low and high tidal limits. Sometimes bordered by salt marshes on the landward side and tidal channels or subtidal eelgrass beds on the seaward side.
Soils/Substrate	Relatively stable sediments with various proportions of silt, clay, sand, and organic materials.
Canopy	
Sub-canopy	
Shrub layer	
Herb layer	May include eelgrass beds. Some areas sparsely vegetated. Macro-algae (i.e., seaweed) is abundant.
Leaf litter	N/A



ESTUARINE SUBTIDAL COMMUNITIES



Shortcut Key: check full descriptions following use of key

1. Community located in pond isolated from ocean by a sand spit across a bay. Seaward side with salt-water plants, inland side with fresh-water plants.	A. Yes – Coastal salt pond B. No – Go to 2
2. Permanently flooded flat in tidal creek, salt marsh, or river mouth. Salt-water plants, such as eelgrass, widgeon-grass, and sea weeds ***may*** be present.	A. Yes – Saline/Brackish Flat B. No – Go to 3
3. Permanently flooded flat in upper reach of estuary or tidal creek. Fresh-water plants, such as water celery and naiads ***may*** be present.	A. Yes – Fresh/Brackish Flat

Separation of these communities is difficult.

The main difference is salinity, which may be difficult to identify in the field.

Because of this you should use location as an index of salinity.

Descriptions of Estuarine Subtidal Communities

Saline/Brackish Flats S4

Description/Concept	Estuarine areas not exposed between tides, generally without emergent vegetation. Species present depends on salinity, water temperature and depth, and substrate type. Areas <2 m deep sometimes support submerged or floating plants. Salinity of water changes with tides and flow of rivers or streams. More protected than marine subtidal communities.
Topography	Includes beds of tidal creeks draining salt marshes and river mouths.
Soils/Substrate	
Canopy	
Sub-canopy	
Shrub layer	
Herb layer	Eelgrass and widgeon-grass may form dense beds. Waterweed, coontail, sago pondweed, and horned pondweed may be mixed in or form locally dense beds. Seaweed can be locally dense.
Leaf litter	

Fresh/Brackish Flats S2

Description/Concept	Permanently flooded freshwater to brackish water areas subject to tidal fluctuations. Aquatic beds form where water is <2 m at low tide. Shores lined by Freshwater or Brackish Tidal Marshes.
Topography	Permanently flooded upper reaches of estuaries, including upper reaches of tidal creeks.
Soils/Substrate	
Canopy	
Sub-canopy	
Shrub layer	
Herb layer	Characteristic species include: sago pondweed, horned pondweed, wild celery, and naiads.
Leaf litter	

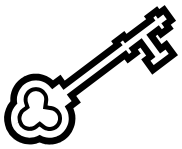
Coastal Salt Pond **S2**

Description/Concept	Vegetation in and surrounding coastal saline to brackish ponds with shallow water. Inland end tends to be fresher, with denser, taller vegetation. Found on the south and east sides of Cape Cod, and along Buzzard's Bay. Water levels fluctuate in closed salt ponds. Shorelines support marsh areas similar to brackish salt marshes.
Topography	Isolated from the ocean (more or less) by sand spits that cut off a bay. Spits may become broken by storms or human intervention, and may reclose by drifting sand.
Soils/Substrate	Mud and sand (in part.)
Canopy	
Sub-canopy	
Shrub layer	
Herb layer	Eelgrass beds often dominate sub-tidal areas of community. Mud or sand shores support mud flat species such as: mudwort, dwarf spike-rush, seaside flatsedge, seaside crowfoot, false pimpernel, waterwort, and shore pygmy-weed. Inland ends (i.e., less brackish end) is similar to landward, brackish, portions of other salt marshes, with beds of narrow-leaved cat-tail, common reed, freshwater cord-grass, saltmarsh switchgrass, bulrushes, and mock bishop's-weed.
Leaf litter	

Plants Associated With Estuarine Subtidal Communities

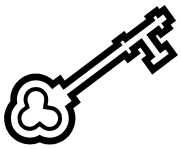
	Saline/ Brackish Flats	Fresh/ Brackish Flats	Coastal Salt Pond
Bishop's-weed, Mock			Occurs
Bulrush			Occurs
Cat-tail, Narrow-leaved			Occurs
Celery, Wild		Characteristic	
Coontail	Occurs		
Cord-grass, Freshwater			Occurs
Crowfoot, Seaside			Occurs
Eelgrass	Occurs		Occurs
Flatsedge, Seaside			Occurs
Mudwort			Occurs
Naiad		Characteristic	
Pimpernel, False			Occurs
Pondweed, Horned	Occurs	Characteristic	
Pondweed, Sago	Occurs	Characteristic	
Pygmy-weed, Shore			Occurs
Reed, Common			Occurs
"Seaweed"	Occurs		
Spike-rush, Dwarf			Occurs
Switchgrass, Saltmarsh			Occurs
Waterweed	Occurs		
Waterwort			Occurs
Widgeon-grass	Occurs		

NOTE: This is not an exhaustive list of plant species that occur in these communities. Rather, it is a list of species associated with these communities as identified in Swain and Kearsley (2001.)

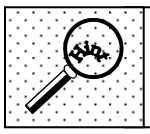


ESTUARINE INTERTIDAL COMMUNITIES

Shortcut Key: Check full descriptions following use of key



1. Community of exposed soils/sediments (i.e., <u>flats</u>), with rosette-leaved aquatic plants, possibly eelgrass.	A. Yes – Go to 2 B. No – Go to 4
2. Community characterized by saline species, such as eelgrass, algae, saltpond spike rush, and Atlantic mudwort.	A. Yes – Saline/Brackish Flats B. No – Go to 3
3. Community characterized by fresh/brackish water plants, such as false pimpernel, beggar-ticks, threesquare bulrush, and/or wild rice.	A. Yes – Fresh/Brackish Flats
4. Community is an open <u>shrubland</u> along a coastal river.	A. Yes – Fresh/Brackish Tidal Shrubland B. No – Go to 5
5. Community is a low stature <u>forested wetland</u> along a coastal river.	A. Yes – Fresh/Brackish Tidal Swamp B. No – Go to 6
6. Community consists of herbaceous vegetation surrounding a coastal salt pond.	A. Yes – Coastal Salt Pond Marsh B. No – Go to 7
7. Herbaceous community dominated by freshwater species such as bluejoint, jewelweed, climbing hempweed, wild rice, tear thumb, and smartweed. Buttonbush and silky dogwood occasionally present. Narrow-leaved cat-tail also dominant (but may characterize other communities as well.)	A. Yes – Freshwater Tidal Marsh B. No – Go to 8
8. Herbaceous community with high marsh dominated by salt-marsh hay.	A. Yes – Salt Marsh B. No – Go to 9
9. Herbaceous community with freshwater cord-grass and saltmarsh bulrush along banks, narrow-leaved cat-tail dominant in back marsh.	A. Yes – Brackish Tidal Marsh



Many of these communities are separated on the basis of salinity, which makes identification challenging in the field.

Descriptions of Estuarine Intertidal Communities

Saline/Brackish Flats S3

Description/Concept	Non-organic substrates exposed between tides. Sparsely vegetated. Exposed between high tides, covered with brackish or salt water at high tide.
Topography	
Soils/Substrate	Non-organic.
Canopy	
Sub-canopy	
Shrub layer	
Herb layer	Patches of predominately rosette-leaved aquatics, such as riverbank quillwort, river arrowhead, saltpond spike-rush, and Atlantic mudwort. Patches of eelgrass and algae. Plants completely submerged at high tide and usually coated with mud.
Leaf litter	

Fresh/Brackish Flats S2

Description/Concept	Exposed intertidal flats where plants are completely submerged under about 1 m of **freshwater** at high tide. Sparsely vegetated. Natural variability in the composition and distribution of the plant associations.
Topography	
Soils/Substrate	
Canopy	
Sub-canopy	
Shrub layer	
Herb layer	Plants are predominately low growing rosette-leaved aquatics, with the lowest leaves characteristically coated with mud. Characteristic species include: false pimpernel, arrowheads, beggar-ticks, threesquare bulrush, and wild rice.
Leaf litter	

Coastal Salt Pond Marsh S2

Description/Concept	Vegetation surrounding Coastal Salt Ponds. Inland end is fresher, with denser, taller vegetation. Sea-level Fens (see Palustrine flow chart) occur within this community.
Topography	Inland end of shores and salt ponds.
Soils/Substrate	
Canopy	
Sub-canopy	
Shrub layer	
Herb layer	Beds of narrow-leaved cat-tail, common reed, freshwater cord-grass, coastal switchgrass, bulrushes, and mock bishop's-weed grow at the inland ends of the salt ponds.
Leaf litter	

Salt Marsh S3

Description/Concept	A graminoid dominated, tidally flooded coastal community with several zones. Zones include low marsh, high marsh, salt shrub, and salt panne. Form in areas subject to tides, but sheltered from wave energy.
Topography	Usually occur in estuaries and behind barrier beaches and spits.
Soils/Substrate	
Canopy	
Sub-canopy	
Shrub layer	
Herb layer	**Low marsh** (between low and mean high tide) **dominated by saltmarsh cord-grass**. **High marsh** (between mean high tide and spring high tide) **dominated by salt-marsh hay**. Spike grass usually also occurs in high marsh. Black grass becomes more common toward upland edge of marsh. Mixed throughout (especially the upper edges) are sea-lavender, seaside goldenrod, and salt tolerant species. Groundsel tree and salt marsh elder may form shrubby zones along upper edges and on ditch spoils. Glasswort and saltwort form in salt pannes in low, poorly drained, salty areas.
Leaf litter	Peat develops in the higher marshes.

[Decision Rules: A salt marsh category (SM) is recognized, but not described.]

Brackish Tidal Marsh S1

Description/Concept	Mixed herbaceous marsh flooded daily by tides. Community may be structurally diverse, including high and low marsh, and mud flats. Tidal amplitude 0-150 cm (comparable to Freshwater Tidal Marshes.) Average annual salinity 5-18 ppt.
Topography	Brackish reach of (free flowing) coastal rivers. May also occur in smaller patches of upper zones of Coastal Salt Marshes and Salt Ponds, usually near seepages or freshwater transition areas. Occasional occurrences along rocky shores, seepages, and ditches.
Soils/Substrate	
Canopy	
Sub-canopy	
Shrub layer	
Herb layer	**Narrow-leaved cat-tail is typically dominant** in backmarsh, with frequent stands of common reed. Along the banks, freshwater cord-grass and saltmarsh bulrush occur; associated with saltmarsh sedge and saltmarsh bentgrass. Low marsh supports stands of saltmarsh cord-grass and threesquare. Mudflats and shores support sparse, low herbs such as water pimpernel, mud lily, and creeping spearwort. Plants of freshwater tidal marshes occasionally occur in the higher zones.
Leaf litter	

Freshwater Tidal Marsh S1

Description/Concept	Mixed **herbaceous marsh flooded daily by tides**, and occurring **in the <u>freshwater</u>** reach of coastal rivers. Community may be structurally diverse, including high marsh, low marsh, mud flats, rocky shore, ditches, and drainages. Tidal amplitude 0-150 cm (comparable to Brackish Tidal Marshes.) Average annual salinity <0.5 ppt. This community occurs upstream of brackish tidal marshes.
Topography	Freshwater reach of (free-flowing) coastal rivers.
Soils/Substrate	
Canopy	
Sub-canopy	
Shrub layer	Buttonbush and silky dogwood occasionally present.
Herb layer	Dominant species include: blue joint, sedges, narrow-leaved cat-tail, wild rice, smartweed, tearthumb, jewelweed, climbing hempweed, and sweet flag.
Leaf litter	

Fresh/Brackish Tidal Shrubland S1

Description/Concept	Dense to open **shrubland flooded by daily tides**, occurring along freshwater to brackish reach of coastal rivers. There is a great deal of micro-relief (tussocks and hollows) leading to high species diversity. Tidal fresh, or slightly brackish shrubland. Annual average salinity of <0.5 ppt.
Topography	Located in transition between freshwater tidal marshes and freshwater tidal swamps. Patches may also be throughout freshwater tidal marshes.
Soils/Substrate	Usually mineral without significant peat deposits.
Canopy	
Sub-canopy	
Shrub layer	Dominated by sweet gale and smooth alder, with some speckled alder. Some examples have mixture of shrubs such as silky dogwood, swamp-rose, winterberry, common elderberry, willow, buttonbush, and poison ivy. More northern examples may contain arrow-wood and meadowsweet.
Herb layer	Herbaceous associates include royal fern, marsh fern, bedstraws, broad-leaved cat-tail, arrow-arum, New York aster, false nettle, touch-me-not, and swamp milkweed. Tussock sedge may be present in northern examples.
Leaf litter	

Fresh/Brackish Tidal Swamp **S1**

Description/Concept	Low stature **forested wetland located along coastal rivers**. At upper limit of tidal influence, and flooded daily by tides. This community represents an ecotone from tidal marsh to more typical non-tidal forested wetlands. Tidal amplitude may range from 0 - 40 cm (0 - 16 inches.) Average annual salinity from 0.5 ppt in freshwater areas, with gradients to 5 ppt.
Topography	Along free-flowing coastal rivers. A variation of this community occurs along smaller streams at the upper limit of tidal influence.
Soils/Substrate	
Canopy	Open forest canopy. Swamp white oak and red maple occur on elevated hummocks. A similar association is dominated by more dense stands of Atlantic white cedar.
Sub-canopy	
Shrub layer	Often dense. Typically includes arrow-wood, winterberry, and silky dogwood.
Herb layer	Unusually rich herbaceous layer. Large mucky hollows flooded by daily tides support a diverse assemblage of herbs and graminoids. Herbs and grasses typical of nearby freshwater marsh habitat, including jewelweed, sensitive fern, and wild rice.
Leaf litter	

Plants Associated With Estuarine Intertidal Communities

	Saline/ Brackish Flats	Fresh/ Brackish Flats	Coastal Salt Pond Marsh	Salt Marsh	Brackish Tidal Marsh	Freshwater Tidal Marsh	Fresh/ Brackish Tidal Shrubland	Fresh/ Brackish Tidal Swamp
Alder, Smooth							Dominant	
Alder, Speckled							Occurs	
Algae	Occurs							
Arrow-arum							Occurs	
Arrowhead, Grass-leaf		Characteristic						
Arrowhead, River	Occurs	Characteristic						
Arrowhead, Sessile-fruited		Characteristic						
Arrow-wood, Northern							Occurs	Typical
Aster, New York							Occurs	
Bedstraw							Occurs	
Beggar-tick		Characteristic						
Bentgrass, Saltmarsh					Occurs			
Bishop's-weed, Mock			Occurs					
Bluejoint						Dominant		
Bulrush			Occurs					
Bulrush, Saltmarsh					Occurs			
Bulrush, Threesquare		Characteristic	Occurs		Occurs			
Buttonbush						Occasional	Occurs	
Cat-tail, Broad-leaved							Occurs	
Cat-tail, Narrow-leaved			Occurs		Dominant	Dominant		
Cord-grass, Freshwater			Occurs		Occurs			
Cord-grass, Saltmarsh				Dominant	Occurs			
Dogwood, Silky						Occasional	Occurs	Typical
Eelgrass	Occurs							
Elder, Salt Marsh				Occurs				
Elderberry, Common							Occurs	
Fern, Marsh							Occurs	
Fern, Royal							Occurs	
Fern, Sensitive								Occurs
Gale, Sweet							Dominant	
Glasswort				Occurs				
Goldenrod, Seaside				Occurs				
Grass, Black				Occurs				
Grass, Spike				Occurs				
Groundsel Tree				Occurs				
Hay, Salt Marsh				Dominant				
Hempweed, Climbing						Dominant		
Jewelweed						Dominant		Occurs
Lily, Mud					Occurs			

Plants Associated With Estuarine Intertidal Communities (continued)

	Saline Brackish Flats	Fresh Brackish Flats	Coastal Salt Pond Marsh	Salt Marsh	Brackish Tidal Marsh	Freshwater Tidal Marsh	Fresh Brackish Tidal Shrubland	Fresh Brackish Tidal Swamp
Maple, Red								Occurs
Meadowsweet							Occurs	
Milkweed, Swamp							Occurs	
Mudwort, Atlantic	Occurs							
Nettle, False							Occurs	
Oak, Swamp White								Occurs
Pimpernel, False		Characteristic						
Pimpernel, Water					Occurs			
Poison Ivy							Occurs	
Quillwort, Riverbank	Occurs							
Reed, Common			Occurs		Occurs			
Rice, Wild		Characteristic				Dominant		Occurs
Rose, Swamp							Occurs	
Saltwort				Occurs				
Sea-lavender				Occurs				
Sedge						Dominant		
Sedge, Saltmarsh					Occurs			
Sedge, Tussock							Occurs	
Smartweed						Dominant		
Spearwort, Creeping					Occurs			
Spike-rush, Saltpond	Occurs							
Sweet Flag						Dominant		
Switchgrass, Coastal			Occurs					
Tearthumb						Dominant		
Touch-me-not							Occurs	
Willow							Occurs	
Winterberry							Occurs	Typical

NOTE: This is not an exhaustive list of plant species that occur in these communities. Rather, it is a list of species associated with these communities as identified in Swain and Kearsley (2001.)

Hierarchical classification of natural communities within the Estuarine System

Sub-System	Community Group	Community Sub-group	Community Type
Marine	Marine Subtidal	N/A	Flats
	Marine Intertidal	N/A	Rocky Shore
			Gravel/Sand Beach
			Flats
Estuarine	Estuarine Subtidal	N/A	Saline/Brackish Flats
			Fresh/Brackish Flats
			Coastal Salt Pond
	Estuarine Intertidal	N/A	Saline/Brackish Flats
			Fresh/Brackish Flats
			Coastal Salt Pond Marsh
			Salt Marsh
			Brackish Tidal Marsh
			Freshwater Tidal Marsh
			Fresh/Brackish Tidal Shrubland
			Fresh Brackish Tidal Swamp

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GLOSSARY

Absent. A category of vegetative closure (e.g., canopy closure.) Absent is equal to 0%.

Acidic. In common usage this term refers to substances having a pH of less than 7. Cowardin et al. (1979) apply this term only to substances with a pH of less than 5.5.

Alluvial. Alluvial communities are located adjacent to rivers or streams, and the term typically refers to natural communities within flood plains.

Aspect. The direction that a slope faces.

Bog. "A nutrient-poor, acidic wetland dominated by a waterlogged, spongy mat of sphagnum moss that ultimately forms a thick layer of acidic peat; generally has no inflow or outflow; fed primarily by rain water." (USGS n.d.)

Brackish. "Water with a salinity intermediate between seawater and freshwater…" (USGS n.d.)

Calcareous. "A rock or substance formed of calcium carbonate or magnesium carbonate by biological deposition of inorganic precipitation, or containing those minerals in sufficient quantities to effervesce when treated with cold hydrochloric acid." (USGS n.d.) Carbonate rocks include limestone, dolomite, and gypsum.

Canopy. "An overlapping leaf layer formed by crowns of the tallest trees in a forest" (Lewis 1977.)

Central Hardwoods. Within the natural community classification system this term refers to deciduous trees typical of central or southern climates, especially oaks.

Circumneutral. "Term applied to water with a pH of 5.5 to 7.4" (Cowardin et al. 1979.)

Cliff. A vertical rock face.

Clumped. Natural community descriptions refer to the distribution of vegetation, by strata (canopy, sub-canopy, etc.) as either Clumped or Even. Clumped vegetation is aggregated into patches or clusters of vegetation.

Cobble. Substrate of rocks, usually rounded by scouring, deposited along rivers by high velocity currents.

Conifer dominated. Palustrine Forested communities are considered conifer dominated if >75% of canopy is composed of coniferous trees.

Coniferous. Terrestrial Forest/Woodland communities are considered coniferous if there is >75% coniferous trees in the canopy.

Deciduous. Terrestrial Forest/Woodland communities are considered deciduous if there is >75% deciduous trees in the canopy. Deciduous species are "…plants that shed foliage at the end of the growing season" (USGS n.d.)

Decision Rules. A set of rules, developed by MassWildlife, to classify vegetative cover on Wildlife Management Areas. Decision rules do not correspond exactly with Swain and Kearsley's (2001) Natural Community Classification.

Dense: A category of vegetative closure (e.g., canopy closure.) Dense is equal to 75% or more closure.

Dominant Vegetation. The most abundant species of plant in each strata of a natural community. For example, white pine dominates the canopy in the Successional White Pine Community, while black ash and red maple are co-dominant in the Black Ash Swamp Community.

Ecoregion. "An area of similar climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables" (USGS n.d.)

Emergent Plants. "Erect, rooted, herbaceous plants that may be temporarily or permanently flooded at the base but do not tolerate prolonged inundation of the entire plant" (USGS n.d.)

Ericaceous. Refers to plants in the family Ericaceae. Includes such plants as blueberries, laurels, bearberry, leatherleaf, heaths, and trailing arbutus.

Estuarine. "Estuarine communities are subject to varying salinity, tidal actions, and wind. Estuaries include tidal habitats and adjacent tidal wetlands in which ocean water is at least occasionally diluted by freshwater from the land. Estuarine areas extend landward and up streams to where oceanic salts (formally defined as above 0.5 ppt salinity in an annual average low flow period) or tides (including freshwater tidal areas) have an influence on the vegetation" (Swain and Kearsley 2001.)

Even. Natural Community descriptions refer to the distribution of vegetation, by strata (canopy, sub-canopy, etc.) as either Clumped or Even. Even vegetation is regularly distributed, or is ubiquitous.

Fen. "Peat-accumulating wetland that generally receives water from surface runoff and (or) seepage from mineral soils in addition to direct precipitation; generally alkaline; or slightly acid." (USGS n.d.)

Flat. "A level landform composed of unconsolidated sediments – usually mud or sand. Flats may be irregularly shaped or elongate and continuous with the shore…" (Cowardin et al. 1979.)

Forest/Woodland. A Terrestrial community is considered to be a Forest/Woodland (i.e., forested) if there is >25% tree canopy.

Forested. A Palustrine community is generally considered forested if there is >50% tree canopy.

Graminoid. A term referring to true grasses (Family Poaceae) and grass-like plants, such as sedges and rushes.

Grassland. A graminoid dominated community within the Terrestrial System and Herbaceous Sub-system. Grasslands have <25% tree and shrub cover. Two grassland communities are recognized under the Massachusetts classification system: Sandplain Grassland, and Cultural Grassland.

Hardwood Dominated. Palustrine Forested communities are considered hardwood dominated if >75% of canopy is composed of deciduous trees.

Heathland. A Terrestrial shrub community dominated by scrub oak. Other characteristic plants include bayberry, golden heather, chokeberry, dwarf chinquapin oak, and sweetfern.

Herbaceous. "With the characteristics of an herb, a plant with no persistent woody stem above ground." (Cowardin et al. 1979)

Hummock-hollow. A term describing the microtopography of wetland communities (e.g., Black Ash Swamp) with a basin structure where the vegetation is arranged in elevated clumps (hummocks) surrounded by depressions (hollows.)

Interdunal. Located between dunes, such as the Coastal Interdunal Marsh Swale community.

Intermediate. A category of vegetative closure (e.g., canopy closure.) Intermediate is equal to 25-75% closure.

Marine. "Marine habitats are exposed to the waves and currents of the open ocean and the water regimes are determined primarily by the ebb and flow of oceanic tides." "Shallow coastal indentations or bays without appreciable freshwater inflow, and coasts with exposed rocky islands that provide the mainland with little or no shelter from the wind and waves are also considered…" marine (Cowardin et al. 1979.)

Under Massachusetts' natural community classification system the marine environment extends from the Marine Subtidal

Flat community to either the Beach Strand Community or an estuarine community.

Maritime. Maritime communities are exposed to salt spray, which influences the vegetation. Exposure may be within the daily range of salt spray (e.g., Maritime Juniper Woodland/Shrubland) or out of the daily range of salt spray (e.g., Maritime Pitch Pine on Dunes.)

Marsh. "A water-saturated, poorly drained area, intermittently or permanently water covered, having aquatic and grasslike vegetation." (USGS n.d.)

Mesic. Moist conditions, often associated with nutrient-rich conditions.

Mixed Coniferous-Deciduous. Terrestrial Forest/Woodland communities are considered mixed if there is 25-75% of deciduous trees in the canopy and 25-75% coniferous trees in the canopy.

Natural community. A distinct grouping of plant species that occur together in recurring patterns. Communities have definite plant species composition, consistent physical structure, and specific physical conditions (Sperduto and Crowley 2004.)

Non-forested. A Palustrine community is considered non-forested if there is <50% tree canopy.

Northern Hardwoods. Within the natural community classification system this term refers to deciduous trees typical of northern climates, especially maples. Aspen, and white and yellow birch are also considered northern hardwoods.

Open. A Sub-system within the Terrestrial System. The Open Sub-system is characterized by sparse vegetation, with <25% herbaceous, shrub, or tree cover.

Outcrop. Areas of mostly horizontal, exposed bedrock.

Outwash Plain. An "alluvial plain formed around the margin of an ice sheet or beyond a glacier fed by subglacial streams carrying glacial drift from the glacier" (Lewis 1977.)

Palustrine. The Palustrine System includes "all freshwater, non-tidal wetlands dominated by trees, shrubs, or persistent emergents, including mosses and lichens" (Swain and Kearsley 2001.)

The Palustrine System does not include the following: (1) areas with submersed and floating leaved aquatic plants; (2) tidal wetlands, including freshwater tidal wetlands; and (3) riverside communities.

pH. "A measure of the acidity (less than 7) or alkalinity (greater than 7) of a solution; a pH of 7 is considered neutral" (USGS n.d.) Alternatively, acid may refer to a pH of 5.5 or less, alkaline to a pH of greater than 7.4, and circumneutral for a pH greater than 5.5 through 7.4 (Cowardin et al. 1979.)

ppt. Abbreviation for parts per thousand.

Saline. "General term for waters containing various dissolved salts" (Cowardin et al. 1979.)

Sandplain. A term used synonymously with outwash plain.

Seep. "A small area where water percolates … slowly to the land surface" (USGS n.d.)

Shrub. "A woody plant which at maturity is usually less than 6 m (20 feet) tall and generally exhibits several erect, spreading, or prostrate stems and has a bushy appearance; e.g., speckled alder (*Alnus rugosa*) or buttonbush (*Cephalanthus occidentalis*)" (Cowardin et al. 1979.)

In the context of this classification system, shrub refers to the vegetation layer between the sub-canopy and the herbaceous layer. In eastern Massachusetts this tens to be from approximately 0.5 – 3.0 m (approximately 1.5 – 10 feet.)

Slope. Literally a measure of deviation from the horizontal (e.g., a 10% slope.) This term is often used to refer to a hillside.

Sparse. A category of vegetative closure (e.g., canopy closure.) Sparse is equal to 25% or less closure.

Sphagnum. Plants belonging to the genus *Sphagnum* are typically referred to as peat mosses. Within the Palustrine System natural communities with a Sphagnum ground cover are classified as either peatlands (e.g., Acidic shrub Fen) or bogs (e.g., Atlantic White Cedar Bog.)

State Rank (SRANK.) A value (from 1 to 5) assigned to a natural community or organism that reflects its rarity in the state. A section on State Rank has been included in the *Using This Guide* section of this guide (Page 4.)

Structural Dominance. A dominant physical characteristic or feature used to classify natural communities. For example, the amount of open space, herbaceous cover, shrub, and tree canopy are structural features used to classify Sub-systems within the Terrestrial System.

Swamp: "An area intermittently or permanently covered with water, and having trees and shrubs" (USGS n.d.) Swamp communities are in the Palustrine System, and either the Non-Forested (e.g., Shrub Swamps) or Forested Sub-systems.

Talus. "A mass of boulders and smaller rocky fragments derived from the weathering of cliffs or slopes and accumulating at their bases in a sloping pile [skree]" (Lewis 1977.)

Terrestrial. "The vegetation of Terrestrial communities is not significantly influenced by standing or moving water" (Swain and Kearsley 2001.) These are the "upland" communities.

Topography. "The position in a landscape, including elevation and change in slope" (Jackson 1995.)

Xeric. Dry conditions, often in association with nutrient-poor conditions.

LIST OF COMMON NAMES, SCIENTIFIC NAMES, AND SPECIES CODES FOR PLANTS LISTED IN THIS GUIDE

Common Name [1]	Scientific Name [2]	Species Code [3]
Alder	*Alnus* spp.	ALNUS
Alder, Smooth	*Alnus serrulata*	ALSE2
Alder, Speckled	*Alnus incana* ssp. *rugosa*	ALINR
Algae		-
Arrow-arum	*Peltandra virginica*	PEVI
Arrowhead	*Sagittaria* spp.	SAGIT
Arrowhead, Common	*Sagittaria latifolia* var. *latifolia*	SALA2
Arrowhead, Grass-leaf	*Sagittaria graminea*	SAGR
Arrowhead, River	*Sagittaria subulata*	SASU
Arrowhead, Sessile-fruited	*Sagittaria rigida*	SARI
Arrow-weed	*Sagiittaria* spp.	SAGIT
Arrow-wood, Downy	*Viburnum rafinesquianum*	VIRA
Arrow-wood, Northern	*Viburnum dentatum* var. *lucidum*	VIDEL
Ash, Black	*Fraxinus nigra*	FRNI
Ash, Green	*Fraxinus pennsylvanica*	FRPE
Ash, White	*Fraxinus americana*	FRAM2
Aspen, Big-toothed	*Populus grandidentata*	POGR4
Aspen, Quaking	*Populus tremuloides*	POTR5
Aster, New York	*Aster novi-belgii*	ASNO2
Aster, Stiff	*Ionactis linariifolius*	IOLI2
Autumn Fimbry	*Fimbristylis autumnalis*	FIAU2
Autumn-willow	*Salix serissima*	SASE2
Avens, Floodplain	*Geum laciniatum*	GELA
Avens, Purple	*Geum rivale*	GERI2
Avens, White	*Geum canadense*	GECA7
Azalea, Swamp	*Rhododendron viscosum*	RHVI2
Baneberry, White	*Actaea pachypoda*	ACPA
Barberry, Japanese	*Berberis thungbergii*	BETH
Basswood	*Tilia* spp.	TILIA
Bayberry	*Myrica pensylvanica*	MYPE7
Beach-plum	*Prunus maritima*	PRMA2
Beachgrass, American	*Ammophila breviligulata*	AMBR
Beak-sedge, Brown	*Rhynchospora capitellata*	RHCA12
Beak-sedge, White	*Rhynchospora alba*	RHAL3
Bearberry	*Arctostaphylos uva-ursi*	ARUV
Bedstraw	*Galium* spp.	GALIU
Bedstraw, Fen-	*Galium labradoricum*	GALA2
Bedstraw, Labrador	*Galium labradoricum*	GALA2
Beech	*Fagus* spp.	FAGUS
Beech, American	*Fagus grandifolia*	FAGR
Beggar-tick	*Bidens* spp.	BIDEN
Beggar-tick, Estuary	*Bidens hyperborea* var. *colpophila*	BIHYC2
Bellwort	*Uvularia sessilifolia*	UVSE
Bellwort, Perfoliate	*Uvularia perfoliata*	UVPE
Bentgrass, Creeping	*Agrostis stolonifera*	AGST2
Bentgrass, Marsh	*Agrostis stolonifera*	AGST2

LIST OF COMMON NAMES, SCIENTIFIC NAMES, AND SPECIES CODES FOR PLANTS LISTED IN THIS GUIDE (CONTINUED)

Common Name [1]	Scientific Name [2]	Species Code [3]
Bindweed, Fringed	*Polygonum cilinode*	POCI
Birch, Black	*Betula lenta*	BELE
Birch, Downy	*Betula pubescens*	BEPU5
Birch, Gray	*Betula populifolia*	BEPO
Birch, Heart-leaf Paper	*Betula cordifolia*	BEPAC2
Birch, Paper	*Betula papyrifera*	BEPA
Birch, River	*Betula nigra*	BENI
Birch, Swamp	*Betula pumila*	BEPU4
Birch, Yellow	*Betula alleghaniensis*	BEAL2
Bishop's Cap	*Mitella diphylla*	MIDI3
Bittercress, Dry Land	*Cardamine parviflora*	CAPA12
Bittersweet, Oriental	*Celastrus orbiculata*	CEOR
Blackberry	*Rubus* spp.	RUBUS
Bladdernut	*Staphylea trifolia*	STTR
Bladder-sedge	*Carex intumescens*	CAIN
Bloodroot	*Sanguinaria canadensis*	SACA13
Blue Curls	*Trichostema dichotomum*	TRDI2
Blueberry	*Vaccinium* spp.	VACCI
Blueberry, Early Sweet	*Vaccinium pallidum*	VAPA4
Blueberry, Highbush	*Vaccinium corymbosum*	VACO
Blueberry, Low Bush	*Vaccinium angustifolium*	VAAN
Blueberry, Low Bush	*Vaccinium pallidum*	VAPA4
Bluejoint	*Calamagrostis canadensis*	CACA4
Bluejoint, Canada	*Calamagrostis canadensis*	CACA4
Bluestem, Big	*Andropogon gerardii*	ANGE
Bluestem, Little	*Schizachyrium scoparium*	SCSC
Bluet, Long-leaved	*Houstonia longifolia*	HOLO
Bog-sedge, Silvery	*Carex canescens* ssp. *arctiformis*	CAAR14
Bog-sedge, Three-seeded	*Carex trisperma*	CATR10
Bottlebrush-grass	*Hystrix patula*	HYPA3
Boxelder	*Acer negundo*	ACNE2
Bracken (fern)	*Pteridium aquilinum*	PTAQ
Broad-leaved Spring Beauty	*Claytonia caroliniana*	CLCA
Buckthorn	*Rhamnus* spp.	RHAMN
Buckthorn, Alder-leaf	*Rhamnus alnifolia*	RHAL
Buckthorn, Common	*Rhamnus cathartica*	RHCA3
Buckthorn, European	*Rhamnus frangula*	RHFR
Buckthorn, European Alder	*Rhamnus frangula*	RHFR
Buckthorn, Smooth	*Rhamnus frangula*	RHFR
Bugleweed	*Lycopus* spp.	LYCOP4
Bulrush	*Scirpus* spp.	SCIRP
Bulrush, Saltmarsh	*Scirpus robustus*	SCRO
Bulrush, Threesquare	*Scirpus pungens*	SCPU3
Bunchberry	*Cornus canadensis*	COCA13
Bur-marigold, Nodding	*Bidens cernua*	BICE

LIST OF COMMON NAMES, SCIENTIFIC NAMES, AND SPECIES CODES FOR PLANTS LISTED IN THIS GUIDE (CONTINUED)

Common Name [1]	Scientific Name [2]	Species Code [3]
Burnet, Canadian	*Sanguisorba canadensis*	SACA14
Bur-reed	*Sparganium* spp.	SPARG
Bush-clover	*Lespedeza* spp.	LESPE
Bush-clover, Trailing	*Lespedeza procumbens*	LEPR
Bush Honeysuckle	*Diervilla lonicera*	DILO
Butternut	*Juglans cinerea*	JUCI
Butterfly Weed	*Asclepias tuberosa*	ASTU
Buttonbush	*Cephalanthus occidentalis*	CEOC2
Canadian Burnet	*Sanguisorba canadensis*	SACA14
Catbrier	*Smilax rotundifolia*	SMRO
Cat-tail, Broad-leaved	*Typha latifolia*	TYLA
Cat-tail, Common	*Typha latifolia*	TYLA
Cat-tail, Narrow-leaved	*Typha angustifolia*	TYAN
Cedar, Atlantic White	*Chamaecyparis thyoides*	CHTH2
Cedar, Eastern Red	*Juniperus virginiana*	JUVI
Celery, Wild	*Vallisneria americana*	VAAM3
Chain-fern, Virginia	*Woodwardia virginica*	WOVI
Cherry, Black	*Prunus serotina*	PRSE2
Cherry, Fire	*Prunus pensylvanica*	PRPE2
Cherry, Pin	*Prunus pensylvanica*	PRPE2
Chestnut, American	*Castanea dentata*	CADE12
Chokeberry	*Aronia arbutifolia*	ARAR7
Chokeberry, Black	*Aronia melanocarpa*	ARME6
Chokecherry, Black	*Aronia melanocarpa*	ARME6
Cinquefoil, Shrubby	*Pentaphylloides floribunda*	PEFL15
Clearweed	*Pilea pumila*	PIPU2
Clematis	*Clematis* spp.	CLEMA
Clematis, Purple	*Clematis occidentalis*	CLOC2
Cliff-brake, Purple	*Pellaea atropurpurea*	PEAT2
Clubmoss	*Lycopodium* spp.	LYCOP2
Clubmoss, Bristly	*Lycopodium annotinum*	LYAN
Clubmoss, Southern Bog	*Lycopodium adpressum*	LYAD3
Cohosh, Blue	*Caulophyllum thalictroides*	CATH2
Columbine	*Aquilegia canadensis*	AQCA
Coontail	*Ceratophyllum demersum*	CEDE4
Cord-grass, Freshwater	*Spartina pectinata*	SPPE
Cord-grass, Saltmarsh	*Spartina alterniflora*	SPAL
Cord-grass, Saltwater	*Spartina alterniflora*	SPAL
Coreopsis, Rose	*Coreopsis rosea*	CORO
Corydalis, Pale	*Corydalis sempervirens*	COSE5
Corydalis, Tall	*Corydalis sempervirens*	COSE5
Cottonwood	*Populus deltoides*	PODE3
Cow-wheat	*Melampyrum lineare*	MELI2
Cranberry	*Vaccinium* spp.	VACCI
Cranberry, Large	*Vaccinium macrocarpon*	VAMA
Cranberry, Small	*Vaccinium oxycoccos*	VAOX
Creeper, Virginia	*Parthenocissus quinquefolia*	PAQU2
Crowfoot, Seaside	*Ranunculus cymbalaria*	RACY

LIST OF COMMON NAMES, SCIENTIFIC NAMES, AND SPECIES CODES FOR PLANTS LISTED IN THIS GUIDE (CONTINUED)

Common Name [1]	Scientific Name [2]	Species Code [3]
Currant	*Ribes* spp.	RIBES
Currant, Wild Black	*Ribes americanum*	RIAM2
Cut-grass, Rice	*Leersia oryzoides*	LEOR
Dandelion, Dwarf	*Krigia virginica*	KRVI
Dangleberry	*Gaylussacia frondosa*	GAFR2
Dewberry	*Rubus* spp.	RUBUS
Dewberry, Swamp	*Rubus hispidus*	RUHI
Ditch-stonecrop	*Penthorum sedoides*	PESE6
Dogbane, Prostrate	*Apocynum cannabinum var. hypericifolium*	APCAH
Dogwood, Alternate-leaved	*Cornus alternifolia*	COAL2
Dogwood, Flowering	*Cornus florida*	COFL2
Dogwood, Gray	*Cornus racemosa*	CORA6
Dogwood, Round-leaved	*Cornus rugosa*	CORU
Dogwood, Silky	*Cornus amomum*	COAM2
Duckweed	*Lemna* spp.	LEMNA
Dutchman's Breeches	*Dicentra cucullaria*	DICU
Eelgrass	*Zostera marina*	ZOMA
Elderberry, Common	*Sambucus canadensis*	SACA12
Elderberry, Red-berried	*Sambucus racemosa* ssp. *pubens*	SARAP
Elm	*Ulmus* spp.	ULMUS
Elm, American	*Ulmus americana*	ULAM
Elm, Slippery	*Ulums rubra*	ULRU
False Hellebore	*Veratrum viride*	VEVI
False Nettle	*Boehmeria cylindrica*	BOCY
Fern, Bracken	*Pteridium aquilinum*	PTAQ
Fern, Bulblet	*Cystopteris bulbifera*	CYBU3
Fern, Christmas	*Polystichum acrostichoides*	POAC4
Fern, Cinnamon	*Osmunda cinnamomea*	OSCI
Fern, Fragile	*Cystopteris fragilis*	CYFR2
Fern, Goldie's (Wood)	*Dryopteris goldiana*	DRGO
Fern, Hay Scented	*Dennstaedtia punctilobula*	DEPU2
Fern, Lady	*Athyrium filix-femina*	ATFI
Fern, Maidenhair	*Adiantum pedatum*	ADPE
Fern, Marginal Wood	*Dryopteris marginalis*	DRMA4
Fern, Marsh	*Thelypteris palustris var. pubescens*	THPAP
Fern, Massachusetts	*Thelypteris simulata*	THSI2
Fern, Ostrich	*Matteuccia struthiopteris*	MAST
Fern, Royal	*Osmunda regalis var. spectabilis*	OSRES
Fern, Rusty Cliff	*Woodsia ilvensis*	WOIL
Fern, Sensitive	*Onoclea sensibilis*	ONSE
Fern, Walking	*Asplenium rhizophyllum*	ASRH2
Fetterbush	*Leucothoe racemosa*	LERA4
Fir, Balsam	*Abies balsamea*	ABBA
Flag, Northern Blue	*Iris versicolor*	IRVE2
Flag, Sweet	*Acorus calamus*	ACCA4

LIST OF COMMON NAMES, SCIENTIFIC NAMES, AND SPECIES CODES FOR PLANTS LISTED IN THIS GUIDE (CONTINUED)

Common Name [1]	Scientific Name [2]	Species Code [3]
Flatsedge, Awned	*Cyperus squarrosus*	CYSQ
Flatsedge, Seaside	*Cyperus filicinus*	CYFI
Foxglove, Downy False	*Aureolaria virginica*	AUVI
Foxglove, Fern-leaf False	*Aureolaria pedicularia*	AUPE
Foxglove, Smooth False	*Aureolaria flava*	AUFL
Fumitory, Climbing	*Adlumia fungosa*	ADFU
Gale, Sweet	*Myrica gale*	MYGA
Geranium, Wild	*Geranium maculatum*	GEMA
Gerardia, Slender	*Agalinis tenuifolia*	AGTE3
Glasswort	*Salicornia* spp.	SALIC
Goat's Rue	*Galega officinalis*	GAOF
Golden Pert	*Gratiola aurea*	GRAU
Goldenrod	*Solidago* spp.	SOLID
Goldenrod	*Euthamia* spp.	EUTHA
Goldenrod, Coastal Flat-topped	*Euthamia tenuifolia*	EUTE7
Goldenrod, Rough-leaved	*Solidago patula*	SOPA2
Goldenrod, Seaside	*Solidago sempervirens*	SOSE
Goldenrod, Slender-leaved	*Euthamia tenuifolia*	EUTE7
Goldenrod, Stout	*Solidago squarrosa*	SOSQ
Goldenrod, White	*Solidago bicolor*	SOBI
Goldenrod, Zigzag	*Solidago flexicaulis*	SOFL2
Goldthread	*Coptis trifolia*	COTR2
Grape	*Vitis* spp.	VITIS
Grape, Summer	*Vitis aestivalis*	VIAE
Grape, River-bank	*Vitis riparia*	VIRI
Grass (use Graminoid code)		2GRAM
Grass, American Beach	*Ammophila breviligulata*	AMBR
Grass, Black	*Juncus gerardii*	JUGE
Grass, Bottlebrush-	*Hystrix patula*	HYPA3
Grass, Canada Blue	*Poa compressa*	POCO
Grass, Cock-spur	*Echinochloa muricata*	ECMU2
Grass, Common Hair	*Deschampsia flexuosa*	DEFL
Grass, Dune	*Ammophila breviligulata*	AMBR
Grass, Little Blue Stem	*Schizachyrium scoparium*	SCSC
Grass, Poverty	*Danthonia spicata*	DASP2
Grass, Reed Canary	*Phalaris arundinacea*	PHAR3
Grass, Spike	*Distichlis spicata*	DISP
Grass, Stalked Wool	*Scirpus pedicellatus*	SCPE3
Grass, White	*Leersia virginica*	LEVI2
Grass, Wool	*Scirpus cyperinus*	SCCY
Grass, Yellow-eyed	*Xyris* spp.	XYRIS
Grass-of-Parnassus	*Parnassia glauca*	PAGL3
Groundsel, Balsam	*Senecio pauperculus*	SEPA5
Groundsel-tree	*Baccharis halimifolia*	BAHA
Gum, Black (Tupelo)	*Nyssa sylvatica*	NYSY

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Common Name [1]	Scientific Name [2]	Species Code [3]
Hackberry	*Celtis occidentalis* var. *pumila*	CEOCP
Hairgrass, Common	*Deschampsia flexuosa*	DEFL
Harebell	*Campanula rotundifolia*	CARO2
Hay, Salt	*Spartina patens*	SPPA
Hay, Salt Marsh	*Spartina patens*	SPPA
Hazelnut	*Corylus sp.*	CORYL
Hazelnut, American	*Corylus americana*	COAM3
Hazelnut, Beaked	*Corylus cornuta*	COCO6
Heather, Beach	*Hudsonia tomentosa*	HUTO
Heather, Golden	*Hudsonia ericoides*	HUER
Hellebore, False	*Veratrum viride*	VEVI
Hemlock	*Tsuga canadensis*	TSCA
Hemlock, Eastern	*Tsuga canadensis*	TSCA
Hempweed, Climbing	*Mikania scandens*	MISC
Hepatica	*Hepatica nobilis*	HENO2
Hepatica	*Hepatica nobilis* var. *obtusa*	HENOO
Herb Robert	*Geranium robertianum*	GERO
Hickory	*Carya* spp.	CARYA
Hickory, Bitternut	*Carya cordiformis*	CACO15
Hickory, Mockernut	*Carya alba*	CAAL27
Hickory, Pignut	*Carya glabra*	CAGL8
Hickory, Shagbark	*Carya ovata*	CAOV2
Hickory, Sweet Pignut	*Carya glabra*	CAGL8
Hickory, Sweet Pignut	*Carya ovalis*	CAOV3
Hobblebush	*Viburnum lantanoides*	VILA11
Holly, American	*Ilex opaca*	ILOP
Holly, Mountain-	*Nemopanthus mucronatus*	NEMU2
Holly, Winterberry	*Ilex verticillata*	ILVE
Honewort	*Cryptotaenia canadensis*	CRCA9
Honeysuckle	*Lonicera* spp.	LONIC
Honeysuckle, Fly	*Lonicera canadensis*	LOCA7
Honeysuckle, Hairy	*Lonicera hirsuta*	LOHI
Hop-hornbeam	*Ostrya virginiana*	OSVI
Horsetail	*Equisetum* spp.	EQUIS
Horsetail, Common	*Equisetum arvense*	EQAR
Horsetail, River	*Equisetum fluviatile*	EQFL
Huckleberry	*Gaylussacia baccata*	GABA
Huckleberry, Black	*Gaylussacia baccata*	GABA
Huckleberry, Dwarf	*Gaylussacia dumosa*	GADU
Indian Cucumber-root	*Medeola virginiana*	MEVI
Indigo, Yellow Wild	*Baptisia tinctoria*	BATI
Inkberry	*Ilex glabra*	ILGL
Ironwood	*Carpinus caroliniana*	CACA18
Ivy, Poison	*Toxicodendron radicans*	TORA2

LIST OF COMMON NAMES, SCIENTIFIC NAMES, AND SPECIES CODES FOR PLANTS LISTED IN THIS GUIDE (CONTINUED)

Common Name [1]	Scientific Name [2]	Species Code [3]
Jack-in-the-pulpit	*Arisaema triphyllum*	ARTR
Jewelweed	*Impatiens capensis*	IMCA
Jewelweed, Yellow	*Impatiens pallida*	IMPA
Joe-Pye-weed, Spotted	*Eupatorium maculatum*	EUMA6
Jointweed, Sand	*Polygonella articulata*	POAR4
Jumpseed	*Polygonum (Tovara) virginianum*	POVI2
Knotweed, Japanese	*Polygonum cuspidatum*	POCU6
Labrador Tea	*Ledum groenlandicum*	LEGR
Lady's Slipper, Pink	*Cypripedium acaule*	CYAC3
Lakeshore Hemicarpha	*Hemicarpha micrantha*	HEMI5
Laurel, Bog	*Kalmia polifolia*	KAPO
Laurel, Mountain	*Kalmia latifolia*	KALA
Laurel, Sheep	*Kalmia angustifolia*	KAAN
Leatherleaf	*Chamaedaphne calyculata* var. *angustifolia*	CHCAA2
Leatherwood	*Dirca palustris*	DIPA9
Lichen (general)	many species	2LICHN
Lichen, crustose (general)	many species	2LC
Lichen, fruticose (general)	many species	2LU
Lily, Bluebead	*Clintonia borealis*	CLBO3
Lily, Mud	*Lilaeopsis chinensis*	LICH
Lily, Trout	*Erythronium americanum*	ERAM5
Loosestrife, Purple	*Lythrum salicaria*	LYSA2
Loosestrife, Swamp	*Lysimachia thyrsiflora*	LYTH2
Loosestrife, Whorled	*Lysimachia quadrifolia*	LYQU2
Lupine	*Lupinus perennis*	LUPE3
Maleberry	*Lyonia ligustrina*	LYLI
Mannagrass	*Glyceria acutifolia*	GLAC
Mannagrass	*Glyceria pallida*	GLPA5
Maple, Mountain	*Acer spicatum*	ACSP2
Maple, Red	*Acer rubrum*	ACRU
Maple, Silver	*Acer saccharinum*	ACSA2
Maple, Striped	*Acer pensylvanicum*	ACPE
Maple, Sugar	*Acer saccharum*	ACSA3
Marigold, Marsh	*Caltha palustris*	CAPA5
Marsh-elder, Salt	*Iva frutescens*	IVFR
Marsh-sedge	*Carex lacustris*	CALA16
Mayflower	*Epigaea repens*	EPRE2
Mayflower, Canada	*Maianthemum canadense*	MACA4
Meadow Beauty	*Rhexia virginica*	RHVI
Meadow-rue	*Thalictrum* spp.	THALI2
Meadow-rue, Early	*Thalictrum dioicum*	THDI
Meadow-rue, Skunk	*Thalictrum revolutum*	THRE
Meadowsweet	*Spirea alba* var. *latifolia*	SPALL
Mermaid-weed	*Proserpinaca palustris*	PRPA3
Milkweed, Four-leaved	*Asclepias quadrifolia*	ASQU
Milkweed, Swamp	*Asclepias incarnata*	ASIN

LIST OF COMMON NAMES, SCIENTIFIC NAMES, AND SPECIES CODES FOR PLANTS LISTED IN THIS GUIDE (CONTINUED)

Common Name [1]	Scientific Name [2]	Species Code [3]
Mitrewort	*Mitella* spp.	MITEL
Mitrewort, Naked	*Mitella nuda*	MINU3
Mock Bishop's-weed	*Ptilimnium capillaceum*	PTCA
Monkey Flowers, Long-stalked	*Mimulus ringens*	MIRI
Monkey Flowers, Winged	*Mimulus alatus*	MIAL2
Moss (general)		2MOSS
Moss, Sphagnum	*Sphagnum* spp.	SPHAG2
Mountain-ash, American	*Sorbus americana*	SOAM3
Mountain-holly, Common	*Nemopanthus mucronatus*	NEMU2
Mudwort	*Limosella australis*	LIAU6
Mudwort, Atlantic	*Limosella australis*	LIAU6
Naiad	*Najas* spp.	NAJAS
Nannyberry	*Viburnum lentago*	VILE
Nettle, False	*Boehmeria cylindrica*	BOCY
New Jersey Tea	*Ceanothus americanus*	CEAM
Nightshade, Enchanter's	*Circaea lutetiana* ssp. *canadensis*	CILUC
Nightshade, Small Enchanter's	*Circaea alpina*	CIAL
Nut-rush	*Scleria triglomerata*	SCTR
Oak	*Quercus* spp.	QUERC
Oak, Black	*Quercus velutina*	QUVE
Oak, Bur	*Quercus macrocarpa*	QUMA2
Oak, Chestnut	*Quercus prinus*	QUPR2
Oak, Dwarf Chestnut	*Quercus prinoides*	QUPR
Oak, Dwarf Chinquapin	*Quercus prinoides*	QUPR
Oak, Northern Red	*Quercus rubra*	QURU
Oak, Pin	*Quercus palustris*	QUPA2
Oak, Post	*Quercus stellata*	QUST
Oak, Rock Chestnut	*Quercus prinus*	QUPR2
Oak, Scarlet	*Quercus coccinea*	QUCO2
Oak, Scrub	*Quercus ilicifolia*	QUIL
Oak, Swamp White	*Quercus bicolor*	QUBI
Oak, White	*Quercus alba*	QUAL
Oak, Yellow	*Quercus muehlenbergii*	QUMU
Oats, Wild	*Uvularia sessilifolia*	UVSE
Orache, Seabeach	*Atriplex pentandra*	ATPE
Orchids	Orchidaceae family	-
Panic-grass, Fall	*Panicum dichotomiflorum*	PADI
Partridge-berry	*Mitchella repens*	MIRE
Pea, Beach	*Lathyrus japonicus*	LAJA
Peanut, Hog	*Amphicarpaea bracteata*	AMBR2
Pearlwort, Knotted	*Sagina nodosa* ssp. *nodosa*	SANON
Pepper-bush, Sweet	*Clethra alnifolia*	CLAL3
Phragmites (Common Reed)	*Phragmites australis*	PHAU7
Pickerel-weed	*Pontederia cordata* var.*cordata*	POCO14
Pimpernel, False	*Lindernia dubia*	LIDU
Pimpernel, Inundated False	*Lindernia dubia* var. *inundata*	LIDUI
Pimpernel, Water	*Samolus valerandi* var. *parviflorus*	SAVAP

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Pine, Pitch	*Pinus rigida*	PIRI
Pine, Red	*Pinus resinosa*	PIRE
Pine, White	*Pinus strobus*	PIST
Pinweed	*Lechea intermedia*	LEIN
Pipewort	*Eriocaulon aquaticum*	ERAQ2
Pipewort, Estuary	*Eriocaulon parkeri*	ERPA4
Pitcher Plant	*Sarracenia* spp.	SARRA
Plantain, Seaside	*Plantago maritima*	PLMA3
Plum, Beach-	*Prunus maritima*	PRMA2
Pogonia, Rose	*Pogonia ophioglossoides*	POOP
Poison Ivy	*Toxicodendron radicans*	TORA2
Polygala, Fringed	*Polygala paucifolia*	POPA5
Polypody, Common (Rock)	*Polypodium virginianum*	POVI7
Pondweed, Horned	*Zannichellia palustris*	ZAPA
Pondweed, Sago	*Potamogeton pectinatus*	POPE6
Pond-lily, Yellow	*Nuphar variegata*	NUVA2
Prickly Ash	*Zanthoxylum americanum*	ZAAM
Pussytoes, Plaintain-leaved	*Antennaria plantaginifolia*	ANPL
Pygmy-weed, Shore	*Crassula aquatica*	CRAQ
Pyrola, One-sided	*Orthilia secunda*	ORSE
Quillwort, Riverbank	*Isoetes riparia*	ISRI
Ragwort, Broad-leaved	*Senecio obovatus*	SEOB2
Ragwort, Golden	*Senecio aureus*	SEAU2
Raspberry, Purple-flowering	*Rubus odoratus*	RUOD
Rattlesnakeweed	*Hieracium venosum*	HIVE
Reed, Bur	*Sparganium* spp.	SPARG
Reed, Common	*Phragmites australis*	PHAU7
Rhododendron	*Rhododendron* spp.	RHODO
Rhodora	*Rhododendron canadense*	RHCA6
Rice Cut-grass	*Leersia oryzoides*	LEOR
Rice, Wild	*Zizania aquatica*	ZIAQ
Rock-cress	*Arabis* spp.	ARABI2
Rock-cress, Lyre-leaved	*Arabis lyrata*	ARLY2
Rock-cress, Smooth	*Arabis laevigata*	ARLA
Rock-pellitory	*Parietaria pensylvanica*	PAPE5
Rose, Carolina	*Rosa carolina*	ROCA4
Rose, Multiflora	*Rosa multiflora*	ROMU
Rose, Northern Prickly	*Rosa acicularis*	ROAC
Rose, Pasture	*Rosa carolina*	ROCA4
Rose, Riverside	*Rosa blanda*	ROBL
Rose, Saltspray	*Rosa rugosa*	RORO
Rose, Smooth (Riverside)	*Rosa blanda*	ROBL
Rose, Swamp	*Rosa palustris*	ROPA
Rosemary, Bog	*Andromeda polifolia*	ANPO

LIST OF COMMON NAMES, LATIN NAMES, AND SPECIES CODES FOR PLANTS LISTED IN THIS GUIDE (CONTINUED)

Common Name [1]	Scientific Name [2]	Species Code [3]
Rush, Bayonet	*Juncus militaris*	JUMI2
Rush, Canada	*Juncus canadensis*	JUCA3
Rush, Common	*Juncus effusus*	JUEF
Rush, Pondshore	*Juncus pelocarpus*	JUPE
Salt Hay	*Spartina patens*	SPPA
Saltmarsh Hay	*Spartina patens*	SPPA
Saltwort	*Salicornia* spp.	SALIC
Saltwort, Seabeach	*Salsola kali* ssp. *kali*	SAKAK
Sand Jointweed	*Polygonella articulata*	POAR4
Sandwort, Large-leaved	*Moehringia macrophylla*	MOMA3
Sandwort, Seabeach	*Honckenya peploides*	HOPE
Sarsaparilla, Bristly	*Aralia hispida*	ARHI2
Sarsaparilla, Wild	*Aralia nudicaulis*	ARNU2
Sassafras	*Sassafras albidum*	SAAL5
Saxifrage, Early	*Saxifraga virginiensis*	SAVI5
Saxifrage, Swamp	*Saxifraga pensylvanica*	SAPE8
Sea-lavender	*Limonium carolinianum*	LICA17
Sea-rocket	*Cakile edentula*	CAED
Sedge	*Carex* spp.	CAREX
Sedge, Awned	*Carex crinita*	CACR6
Sedge, Beaked	*Carex utriculata*	CAUT
Sedge, Bladder-	*Carex intumescens*	CAIN12
Sedge, Broad-leaved Woodland	*Carex platyphylla*	CAPL5
Sedge, Brome-like	*Carex bromoides*	CABR14
Sedge, Delicate	*Carex leptalea*	CALE10
Sedge, Ivory	*Carex eburnea*	CAEB2
Sedge, Long-stalked	*Carex pedunculata*	CAPE4
Sedge, Marsh	*Carex lacustris*	CALA16
Sedge, New England	*Carex novae-angliae*	CANO4
Sedge, Northern Awned	*Carex gynandra*	CAGY4
Sedge, Parasol	*Carex umbellata*	CAUM4
Sedge, Peduncled	*Carex pedunculata*	CAPE4
Sedge, Pennsylvania	*Carex pensylvanica*	CAPE6
Sedge, Plantain-leaf	*Carex plantaginea*	CAPL4
Sedge, Porcupine	*Carex hystericina*	CAHY4
Sedge, Prickly	*Carex interior*	CAIN11
Sedge, Saltmarsh	*Carex paleacea*	CAPA29
Sedge, Saltmarsh Straw	*Carex hormathodes*	CAHO8
Sedge, Slender Wooly-fruited	*Carex lasiocarpa* var. *americana*	CALAA
Sedge, Thread-leaved	*Carex eburnea*	CAEB2
Sedge, Tussock	*Carex stricta*	CAST8
Sedge, Twig	*Cladium mariscoides*	CLMA
Sedge, Water-	*Carex aquatilis*	CAAQ
Sedge, Yellow	*Carex flava*	CAFL4
Serviceberry	*Amelanchier* spp.	AMELA
Shadbush	*Amelanchier arborea*	AMAR3
Shadbush, Round-leaved	*Amelanchier sanguinea*	AMSA
Sickle-pod	*Arabis canadensis*	ARCA

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Common Name [1]	Scientific Name [2]	Species Code [3]
Silverrod	*Solidago bicolor*	SOBI
Skunk Cabbage	*Symplocarpus foetidus*	SYFO
Sleepy Catch Fly	*Silene antirrhina*	SIAN2
Smartweed	*Polygonum* spp.	POLYG4
Smartweed, Erect Water	*Polygonum amphibium* var. *emersum*	POAME
Snakeroot, White	*Eupatorium rugosum*	EURU6
Snowberry, Creeping	*Gaultheria hispidula*	GAHI2
Solomon's Seal, False	*Maianthemum racemosum*	MARA7
Solomon's Seal, Starry	*Maianthemum stellatum*	MAST4
Solomon's Seal, Three-leaved	*Maianthemum trifolium*	MATR4
Spearwort, Creeping	*Ranunculus flammula* var. *ovalis*	RAFLO
Sphagnum	*Spahgnum* spp.	SPHAG2
Spicebush	*Lindera benzoin*	LIBE3
Spikemoss, Rock	*Selaginella rupestris*	SERU
Spike-rush, Dwarf	*Eleocharis parvula*	ELPA5
Spike-rush, Saltpond	*Eleocharis parvula*	ELPA5
Spike-sedge	*Eleocharis* spp.	ELEOC
Spike-sedge, Deceitful	*Eleocharis fallax*	ELFA
Spike-sedge, Needle	*Eleocharis acicularis*	ELAC
Spike-sedge, Robbins'	*Eleocharis robbinsii*	ELRO
Spike-sedge, Saltmarsh	*Eleocharis rostellata*	ELRO2
Spike-sedge, Slender	*Eleocharis tenuis*	ELTE
Spike-sedge, Small's	*Eleocharis smallii*	ELPA3
Spiraea	*Spiraea* spp.	SPIRA
Spleenwort, Ebony	*Asplenium platyneuron*	ASPL
Spleenwort, Maidenhair	*Asplenium trichomanes*	ASTR2
Spring Beauty, Broad-leaved	*Claytonia caroliniana*	CLCA
Spruce, Black	*Picea mariana*	PIMA
Spruce, Red	*Picea rubens*	PIRU
Squirrel Corn	*Dicentra canadensis*	DICA
Starflower	*Trientalis borealis*	TRBO2
St. John's-wort	*Hypericum perforatum*	HYPE
St. John's-wort, Dwarf	*Hypericum mutilum*	HYMU
St. John's-wort, Marsh	*Triadenum virginicum*	TRVI2
St. John’s-wort, Pale	*Hypericum ellipticum*	HYEL
Starflower	*Trientalis borealis*	TRBO2
Strawberry	*Fragaria virginiana*	FRVI
Stiff Aster	*Ionactis linariifolius*	IOLI2
Straw-sedge, Saltmarsh	*Carex hormathodes*	CAHO8
Sumac, Poison	*Toxicodendron vernix*	TOVE
Sumac, Staghorn	*Rhus typhina(hirta)*	RHHI
Sumac, Winged	*Rhus copallinum*	RHCO
Sundew	*Drosera* spp.	DROSE
Sundew, Round-leaved	*Drosera rotundifolia*	DRRO
Sundew, Spatulate-leaved	*Drosera intermedia*	DRIN3
Sundew, Thread-leaved	*Drosera filiformis*	DRFI
Sunflower, Woodland	*Helianthus divaricatus*	HEDI2
Swamp-candles	*Lysimachia terrestris*	LYTE2

LIST OF COMMON NAMES, SCIENTIFIC NAMES, AND SPECIES CODES FOR PLANTS LISTED IN THIS GUIDE (CONTINUED)

Common Name [1]	Scientific Name [2]	Species Code [3]
Sweet Cicely	*Osmorhiza claytonii*	OSCL
Sweet Fern	*Comptonia peregrina*	COPE80
Sweet Flag	*Acorus calamus*	ACCA4
Sweet Gale	*Myrica gale*	MYGA
Switchgrass, Coastal	*Panicum virgatum ssp. spissum*	PAVIS
Switchgrass, Saltmarsh	*Panicum virgatum* var. *spissum*	PAVIS
Switchgrass, Seaside	*Panicum virgatum*	PAVI2
Sycamore	*Platanus occidentalis*	PLOC
Tamarack (Larch)	*Larix laricina*	LALA
Tapegrass	*Vallisneria americana*	VAAM3
Tea, Labrador	*Ledum groenlandicum*	LEGR
Tearthumb	*Polygonum arifolium*	POAR6
Tearthumb, Arrow-leaf	*Polygonum sagittatum*	POSA5
Threesquare, Common	*Scirpus pungens*	SCPU3
Threesquare, Saltmarsh	*Scirpus americanus*	SCAM2
Ticklegrass, Southern	*Agrostis hyemalis*	AGHY
Tick-trefoil, Cluster-leaf	*Desmodium glutinosum*	DEGL5
Tick-trefoil, Panicled	*Desmodium paniculatum*	DEPA6
Toadflax, Bastard	*Comandra umbellata*	COUM
Toothwort	*Dentaria diphylla*	DEDI6
Touch-me-not	*Impatiens capensis*	IMCA
Touch-me-not, Spotted	*Impatiens capensis*	IMCA
Trillium	*Trillium* spp.	TRILL
Trillium, Painted	*Trillium undulatum*	TRUN
Trout-lily	*Erythronium americanum*	ERAM5
Tupelo	*Nyssa sylvatica*	NYSY
Tussock-sedge	*Carex stricta*	CAST8
Twig-sedge	*Cladium mariscoides*	CLMA
Twinflower	*Linnaea borealis*	LIBO3
Usnea	*Usnea* spp.	USNEA2
Venus' Looking Glass	*Triodanis perfoliata*	TRPE4
Viburnum, Maple-leaf	*Viburnum acerifolium*	VIAC
Violet, Arrow-leaf	*Viola sagittata*	VISA2
Violet, Bird's Foot	*Viola pedata*	VIPE
Violet, Early Yellow	*Viola rotundifolia*	VIRO2
Violet, Lance-leaf	*Viola lanceolata*	VILA4
Violet, Three-lobed	*Viola triloba*	VIPA3
Virginia Creeper	*Parthenocissus quinquefolia*	PAQU2
Water Hemlock	*Cicuta maculata*	CIMA2
Water-horehound, Northern	*Lycopus uniflorus*	LYUN
Water-lily, White	*Nymphaea odorata*	NYOD
Water-lily, Yellow	*Nuphar variegata*	NUVA2
Water Parsnip	*Sium suave*	SISU2
Water Purslane	*Ludwigia palustris*	LUPA
Water-sedge	*Carex aquatilis*	CAAQ

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Water-plantain, Large	*Alisma plantago-aquatica* var. *americanum*	ALPLA
Water-plantain, Lesser	*Alisma plantago-aquatica* var. *parviflorum*	ALPLP
Waterweed	*Elodea nuttallii*	ELNU2
Water-willow	*Decodon verticillatus*	DEVE
Waterwort	*Elatine minima*	ELMI
Widgeon-grass	*Ruppia maritima*	RUMA5
Wild Calla	*Calla palustris*	CAPA
Wild Coffee	*Triosteum aurantiacum*	TRAU4
Wild Ginger	*Asarum canadense*	ASCA
Wild Leek	*Allium tricoccum*	ALTR3
Wild Raisin	*Viburnum nudum cassinoides*	VINUC
Wild Rye, Weigand's	*Elymus wiegandii*	ELWI
Willow	*Salix* spp.	SALIX
Willow, Autumn	*Salix serissima*	SASE2
Willow, Black	*Salix nigra*	SANI
Willow, Hoary	*Salix candida*	SACA4
Winterberry	*Ilex verticillata*	ILVE
Winterberry, Common	*Ilex verticillata*	ILVE
Winterberry, Smooth	*Ilex laevigata*	ILLA
Wintergreen	*Gaultheria procumbens*	GAPR2
Witch-hazel	*Hamamelis virginiana*	HAVI4
Wood-aster, White	*Aster divaricatus*	ASDI
Wood-aster, Whorled	*Aster acuminatus*	ASAC6
Wood-fern, Blunt-lobed	*Woodsia obtusa*	WOOB2
Wood-fern, Crested	*Dryopteris cristata*	DRCR4
Wood-fern, Intermediate	*Dryopteris intermedia*	DRIN5
Wood-fern, Marginal	*Dryopteris marginalis*	DRMA4
Wood-fern, Spinulose	*Dryopteris carthusiana*	DRCA11
Woodland-sedge, Broad-leaved	*Carex platyphylla*	CAPL5
Wood-nettle	*Laportea canadensis*	LACA3
Wood-sorrel	*Oxalis montana (= acetosella)*	OXAC3
Wood-sorrel, Mountain	*Oxalis montana (= acetosella)*	OXAC3
Yew, Canada	*Taxus canadensis*	TACA7

1. Common names from Swain and Kearsley (2001), then verified using Sorie and Somers (1999.)
2. Scientific names from Swain and Kearsley (2001), then verified using Sorie and Somers (1999.)
3. Plant codes from USDA, NRCS (2004.)