

Keystone Native Plants

Eastern Temperate Forests – Ecoregion 8

Native plants have tight relationships with wildlife, formed over many thousands of years, providing natural sources of food, cover and places to raise young. Without healthy native plant communities, wildlife cannot survive. Every ecoregion has different native plant communities.

Keystone plants are native plants critical to the food web and necessary for many wildlife species to complete their life cycle. Without keystone plants in the landscape, butterflies, native bees, and birds will not thrive. 96% of our terrestrial birds rely on insects supported by keystone plants.

There are two types of keystone plants:

-  Host plants that feed the young caterpillars of approximately 90% of butterflies and moths (Lepidoptera).
-  Plants that feed specialist bees who only eat pollen from specific plants. Keystone plants for native bees feed both specialist and generalist bees.

Entomologist Dr. Doug Tallamy, and his University of Delaware research team have identified the keystone plants that support butterfly and moth species. Native host plants of pollen specialist bees were researched by pollinator conservationist Jarrod Fowler.

Top Keystone Plant Genera in Eastern Temperate Forests – Ecoregion 8

A genus is a taxonomic category of plants that contains one or more species of plants with similar characteristics. Species within each genus have adapted to local conditions and are the appropriate native species or varieties suited to a specific ecoregion.

Plant Type	Plant Genus	Sample of Common Species (not all encompassing)	# Caterpillar Species that Use this as a Host Plant	# of Pollen Specialist Bee species that Rely on this Plant
Trees	<i>Quercus</i>	White oak (<i>Quercus alba</i>), Black oak (<i>Quercus velutina</i>)	436 	
	<i>Prunus</i>	American plum (<i>Prunus americana</i>), Black cherry (<i>Prunus serotina</i>), Chokecherry (<i>Prunus virginiana</i>)	340 	
	<i>Betula</i>	River birch (<i>Betula nigra</i>), Sweet birch (<i>Betula lenta</i>)	284 	
	<i>Populus</i>	Eastern cottonwood (<i>Populus deltoides</i>)	249 	
	<i>Acer</i>	Box elder (<i>Acer negundo</i>), Silver maple (<i>Acer saccharinum</i>), Sugar maple (<i>Acer saccharum</i>)	238 	
	<i>Malus</i>	Southern crabapple (<i>Malus angustifolia</i>), Sweet crabapple (<i>Malus coronaria</i>)	237 	
	<i>Carya</i>	Bitternut hickory (<i>Carya cordiformis</i>), Pignut hickory (<i>Carya glabra</i>), Mockernut hickory (<i>Carya tomentosa</i>)	213 	
	<i>Pinus</i>	Pitch pine (<i>Pinus rigida</i>), Eastern white pine (<i>Pinus strobus</i>), Virginia pine (<i>Pinus virginiana</i>)	200 	
Shrubs	<i>Vaccinium</i>	Northern highbush blueberry (<i>Vaccinium corymbosum</i>), Black highbush blueberry (<i>Vaccinium fuscatum</i>), Hillside blueberry (<i>Vaccinium pallidum</i>)	217 	14 
	<i>Salix</i>	Prairie willow (<i>Salix humilis</i>), Black willow (<i>Salix nigra</i>)	289 	14 
Flowering Perennials	<i>Solidago</i>	Stiff leaf goldenrod (<i>Solidago rigida</i>), Atlantic goldenrod (<i>Solidago arguta</i>)	104 	42 
	<i>Symphyotrichum</i>	Blue wood aster (<i>Symphyotrichum cordifolium</i>), Smooth aster (<i>Symphyotrichum laeve</i>)	100 	33 
	<i>Helianthus</i>	Woodland sunflower (<i>Helianthus divaricatus</i>), Small woodland sunflower (<i>Helianthus microcephalus</i>)	66 	50 

	<i>Rudbeckia</i>	Black-eyed Susan (<i>Rudbeckia hirta</i>), Green-headed coneflower (<i>Rudbeckia laciniata</i>)	20 	29 
	<i>Heterotheca</i>	Camphorweed (<i>Heterotheca subaxillaris</i>)		24 
	<i>Grindelia</i>	Curlycup gumweed (<i>Grindelia squarrosa</i>)		31 
	<i>Chrysopsis</i>	Maryland golden-aster (<i>Chrysopsis mariana</i>)	5 	20 
	<i>Coreopsis</i>	Lanceleaf coreopsis (<i>Coreopsis lanceolata</i>), Large flower coreopsis (<i>Coreopsis grandiflora</i>)	7 	22 
	<i>Bidens</i>	Devil's beggartick (<i>Bidens frondosa</i>), Small beggartick (<i>Bidens discoidea</i>)		15 
	<i>Verbesina</i>	Wingstem (<i>Verbesina alternifolia</i>)	20 	17 



Top 30 Keystone Plant Genera for Butterfly and Moth Caterpillar

Genus	Common Plant Name	# of Caterpillar Species that use this as a Host Plant
<i>Quercus</i>	oak	436
<i>Prunus</i>	almond, apricot, cherry, peach, plum	340
<i>Salix</i>	willow	289
<i>Betula</i>	birch	284
<i>Populus</i>	aspen, cottonwood, poplar	249
<i>Acer</i>	maple	238
<i>Malus</i>	apple	237
<i>Vaccinium</i>	blueberry, cranberry, deerberry	217
<i>Carya</i>	hickory	213
<i>Pinus</i>	pine	200
<i>Alnus</i>	alder	173
<i>Ulmus</i>	elm	164
<i>Picea</i>	spruce	132
<i>Tilia</i>	basswood	132
<i>Crataegus</i>	hawthorn	131
<i>Rubus</i>	blackberry, raspberry	127
<i>Juglans</i>	walnut	125
<i>Fraxinus</i>	ash	121
<i>Fagus</i>	beech	116
<i>Castanea</i>	chestnut	115
<i>Abies</i>	fir	112
<i>Larix</i>	larch	110
<i>Corylus</i>	hazel	108
<i>Solidago</i>	goldenrod	104
<i>Myrica</i>	bayberry	103
<i>Rosa</i>	rose	102
<i>Symphotrichum</i>	aster	100
<i>Cornus</i>	dogwood	98
<i>Tsuga</i>	hemlock	92
<i>Amelanchier</i>	serviceberry	92



Top 30 Native Host Plants for Pollen Specialist Bees

Genus	Common Plant Name	# of Pollen Specialist Bee Species Relying on this Plant
<i>Helianthus</i>	sunflower	50
<i>Solidago</i>	goldenrod	42
<i>Symphotrichum</i>	aster	33
<i>Grindelia</i>	gumweed	31
<i>Rudbeckia</i>	black eyed susan	29
<i>Heterotheca</i>	goldenaster	24
<i>Coreopsis</i>	tickseed	22
<i>Chrysopsis</i>	goldenaster	20
<i>Verbesina</i>	wingstem	17
<i>Bidens</i>	beggartick	15
<i>Cirsium</i>	thistle	15
<i>Salix</i>	willow	14
<i>Vaccinium</i>	blueberry, cranberry, deerberry	14
<i>Erigeron</i>	fleabane	12
<i>Vernonia</i>	ironweed	12
<i>Pityopsis</i>	silkgrass	11
<i>Ratibida</i>	prairie coneflower	11
<i>Silphium</i>	rosinweed	10
<i>Baccharis</i>	baccharis	8
<i>Euthamia</i>	goldentop	8
<i>Dalea</i>	prairie clover	7
<i>Oenothera</i>	evening primrose	7
<i>Echinacea</i>	coneflower	6
<i>Gaillardia</i>	blanketflower	6
<i>Balduina</i>	honeycombhead	5
<i>Helenium</i>	sneezeweed	5
<i>Heliopsis</i>	heliopsis	5
<i>Pectis</i>	chinchweed	5
<i>Cornus</i>	dogwood	4
<i>Lyonia</i>	staggerbush	4