

Colorado Gardening Challenges

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Native Plants as Solutions

Definition of Native Plant | *Federal Native Plant Conservation Committee*

A plant species: that occurs naturally in a particular region, state, ecosystem, and habitat without direct or indirect human actions since advent of European Colonists in North America

Ecological/evolutionary definition | *Doug Tallamy, Professor, University Delaware, author of Bringing Nature Home*

A plant that has evolved in a given place over a period of time sufficient to develop complex and essential relationships with the physical environment and other organisms in a given ecological community

Habitat loss

Butterfly gardens

Typical suggestions include:

Plant in large masses

Provide a sunny, protected spot

Provide shallow water/mud for “puddling”

Don’t use insecticides

But what about future generations?

Butterflies are specialized – they need specific host plants to provide food for caterpillars

Butterflies recognize native plants as food source for caterpillars (unfamiliar plants not seen as food) –

Cater to the caterpillars for future butterflies

For native host plants for butterflies by zipcode, go to National Wildlife Federation (“about” tab) nwf.org

See CSU Extension fact sheet 5.504

“Attracting butterflies to the garden” to see some examples of desirable caterpillars

Native plants support a wide variety of other pollinators

Research suggests that native plants are four times more attractive to native bees than exotic flowers (Xerces Society)

Some bees are specialists and require specific plants

Pollinators visiting flowers are endlessly entertaining – makes the garden come alive

Bird gardens

Typical bird garden suggestions include:

Water – bird baths/fountains

Shelter – trees (especially evergreens), bird boxes

Food: nuts, seeds, berries, bird feeders

However, the plants lists often are aimed at attracting adult birds include lots of non-native species such as bachelor’s buttons, honeysuckle, Pyracantha, Russian olive, etc.

Non-native plants miss critical element: **insects**

- Birds need insects to fledge chicks
- Even if adults are seed/nut/fruit eaters, 98% of terrestrial birds require insects to raise young

Chickadee study – Doug Tallamy

- 6,000 to 9,000 caterpillars are required to rear one clutch of chickadees.
- Native plants provide the insects for the birds to feed their chicks
- Audubon Society Native plant database
- Native plants support the entire food web

90% of herbivorous insects require specific host plants – can't eat unfamiliar plants

500 species of caterpillars on some natives vs none/a few on non-natives (Tallamy)

Tallamy's research has shown that alien ornamentals support 29 times less biodiversity than do native ornamentals.

Other insects have specialized relationships with plants

Providing habitat makes gardens a fascinating place to learn and study

Collectively, our yards can help restore habitat

If we all plant our yards and parks with natives, we can create patches and connectivity that can help replace the habitat we lost when we built our houses

Residential yards may be relatively small, but, because they make-up such a large portion of most urban landscapes they have the potential to be major players in any efforts to change the overall landscape - yardmap.org

Should you go Native?

- It is not necessary to have an "all or nothing" garden – natives and non-natives can grow well together, and the natives will still provide benefit
- Native plants are low maintenance

Because natives are adapted to the local environment, they need:

- Little to no soil amendments
- Little to no fertilizer
- Little to no pesticides
- Less time/effort.
- Price/availability trends favor native plants
- Increasing cost of water, labor, fertilizers, and chemicals
- With population increases and hotter temperatures, water is becoming scarce, and more likely to be restricted

O'Brien, B.C. 1996. Xeriscaping: Sources of new native ornamental plants. p. 536-539. In: J. Janick (ed.), Progress in new crops. ASHS Press, Arlington, VA. www.hort.purdue.edu/newcrop/proceedings1996/v3-536.html

- Well-chosen native plants save water
- Native plants can reduce water bills by half
- A 2002 study in Colorado Springs compared water use between traditional and xeric landscapes-Water savings ranged from 15-63%
- A Cherry Creek HOA completed a xeriscape/native plants retrofit saving hundreds of thousands of dollars and halving the water bill.
- Native plants often top the xeric plant lists
- Many native plants can thrive on just rainfall

Native plants represent an unfilled market niche

Less well known - new plants for gardeners.

Ask your favorite garden center to carry natives

Customer demand will help drive supply

Native plants will never become noxious weeds

A noxious weed is an alien plant or parts of an alien plant that have been designated by rule as being noxious - Colorado Noxious Weed Act, §35-5.5-101-119, C.R.S. (passed in 1990)

Natives provide a better sense of place

Natives help curb appeal

In a trend reversal, the National Association of Realtors is now recommending planting native species to improve the curb appeal of a home, boost its resale value and decrease its time on the market – National Wildlife Federation

Natives can withstand our crazy weather better

Are cultivars native plants?

Debate rages

Reduces genetic diversity (70% are clonally propagated)

May affect pollinators (if flowers are doubled or sterile)

Often not true from seed

Important not to use cultivars for restoration

May be less important in home landscapes, depending on reason to plant native plants.

Native plants for every situation

Plants for well-drained soil and sun

Indian rice grass *Achnatherum (Oryzopsis) hymenoides*

Sages *Artemisia frigida* and *ludoviciana*

Sundrops/Plains yellow primrose *Calylophus lavandulafolius* and *C. serrulatus*

Paintbrush *Castilleja* spp.

Rabbitbrush *Chrysothamnus (Ericameria) nauseosus*

Annual (seed)– Rocky Mtn bee plant *Cleome serrulata*

Apache plume *Fallugia paradoxa*

Showy goldeneye *Heliomeris multiflora*

Scarlet gilia/Fairy trumpet *Ipomopsis aggregata*

Penstemons (*P. eatonii*, *mensarum*)

More penstemons (*P. virens* and *secundiflorus*)

Silky phacelia ! *Phacelia sericea*

Native cacti *Opuntia* spp., *Echinocereus* spp.

Native plants for clay soils and sun

Lead plant *Amorpha canescens*

Big bluestem *Andropogon gerardii*

Blue grama *Bouteloua gracilis*

Winecups *Callirhoe involucrata*

Narrow-leaf coneflower *Echinacea angustifolia*

Maximilian sunflower *Helianthus maximiliana*

Spotted gayfeather *Liatris punctata*

Desert/showy four-o'clock (*Mirabilis multiflora*)

Scarlet globemallow *Sphaeralcea coccinea*

More options

Nodding onion- *Allium cernuum*

Jone's bluestar – *Amsonia jonesii*

Showy milkweed- *Asclepias speciosa*

Purple prairie clover- *Dalea purpurea*

Red twig dogwood – *Cornus sericea*

Bee balm – *Mondarda fistulosa*

Chocolate flower- *Berlandiera lyrata*
Prairie smoke- *Geum triflorum*
Yarrow-*Achillea millefolium*
Black eyed Susan- *Rudbeckia hirta*
Asters –*Aster sp.*
White sage- *Artemisia ludoviciana*
Three lobed sumac-*Rhus trilobata*
Sulfur flower– *Eriogonum umbellatum*
Switchgrass- *Panicum virgatum*

Natives suitable for already amended soils (sun)

Pearly everlasting *Anaphalis margaritacea*
Swamp milkweed *Asclepias incarnata*
Showy milkweed *Asclepias speciosa*
Orange sneezeweed *Helenium hoopesii*
Blue flag *Iris missouriensis*
Bee balm *Monarda fistulosa*
Rocky mountain penstemon *Penstemon strictus*

Native plants for dry semi-shade

Arnica *Arnica spp.*
Harebells *Campanula rotundifolia*
Wild Geraniums *Geranium viscosissimum* and *caespitosum*
Prairie smoke *Geum triflorum*/*Erythrocoma triflora*
Rock spray *Holodiscus dumosus*
Creeping mahonia *Mahonia repens*
Pasque flower *Pulsatilla patens*
Boulder raspberry *Rubus (Oreobatus) deliciosus*
Black eyed Susan *Rudbeckia hirta*

Natives for moist shade

Columbines *Aquilegia coerulea*, *A. formosa*, *A. chrysantha*
Lady fern *Athyrium filix-femina*
Wild strawberry *Fragaria spp.*
Richardson's geranium *Geranium richardsonii*
Twinberry *Lonicera involucrata*
Jacob's ladder *Polemonium caeruleum*
Mountain lover *Paxistima myrsinites*

Natives suitable for groundcovers

(dry, mostly sunny)
Kinnickinnick *Arctostaphylos uva-ursi*
Poppy Mallow *Callirhoe involucrata*
Whiplash fleabane *Erigeron flagellaris*
Sulphur flower *Eriogonum umbellatum*
Mat penstemon *Penstemon linarioides*
Britton's skullcap *Scutellaria brittonii*

Critter resistant Natives

Rocky Mountain Maple *Acer glabrum*
Big Western Sage *Artemisia tridentata*
Blue flax *Linum lewisii*
Columbine *Aquilegia caerulea*

Blanket flower *Gaillardia artistata*
Lupine *Lupinus sp.*
More options
Black eyed Susan- *Rudbeckia hirta*
Sages –*Artemisia spp.*
Milkweeds – *Asclepias spp.*
Bluestar –*Amsonia jonesii*
Penstemons- *Penstemon spp.*
Bee balm – *Monarda fistulosa*
Potentilla-*Potentilla fruticosa*
Golden currant-*Ribes aureum*
Spruce-*Picea pungens*
Serviceberry-*Amelanchier sp.*
Kinnickinnick- *Arctostaphylos uva-ursi*
Rabbit brush-*Chrysothamnus nauseosus*
Sumacs- *Rhus spp.*
Junipers-*Juniperus spp.*
Apache plume- *Fallugia paradoxa*

Natives suitable for formal gardens

Serviceberry *Amelanchier alnifolia*
Red twig dogwood *Cornus sericea*
Aspen daisy *Erigeron speciosus*
Rocky mountain juniper
Switchgrass *Panicum virgatum*
Blue spruce *Picea pungens*
Shrubby cinquefoil *Potentilla (Pentaphylloides) fruticosa*
Yuccas *Yucca spp.*

Natives for fragrance

Sand verbenas *Abronia fragrans*
Chocolate flower *Berlandiera lyrata*
Northern bedstraw! *Galium septentrionale*
Evening primrose *Oenothera caespitosa and pallida*
Palmer's penstemon *Penstemon palmeri*
American plum *Prunus americana*
Wafer-ash/Hop Tree *Ptelea trifoliata*
Cliffrose! *Cowania (Purshia) stansburiana*
Golden currant *Ribes odoratum*
Wood's rose *Rosa woodsii*

Natives for fall color

Leafy cinquefoil *Drymocallis fissa*
Virginia creeper! *Parthenocissus vitacea*
Ninebark *Physocarpus monogynus*
Chokecherry *Prunus (Padus) virginiana*
Gambel's Oak *Quercus gambelii*
Smooth sumac and three-lobed sumac *Rhus glabra and Rhus trilobata*
Mountain-ash ! *Sorbus scopulina*