

## Colorado Native Plants

**Native plants** are species that naturally occur in a particular region. Many varieties of plants developed over millions of years, and are well adapted to Colorado's windy, dry, and sunny climate. Many of our native plants can be beautiful, hardy garden plants that require very little water.

Native plants have a very special relationship with the native insects and birds that depend on them for food and shelter. As people have moved into Colorado, they have brought plants from other parts of the world. But many of these plants are not useful to Colorado's wildlife.

Flowers contain many parts including petals, stamens, and pistils. **Stamens** produce **pollen**. **Pistils** are the parts of the flower that produces seeds. When pollen makes contact with the pistil of flowers, they become fertilized and produce seeds. This is how flowers reproduce. When **pollinators** - birds, insects, or other animals -

collect food from flowers (nectar and pollen) they also fertilize flowers by carrying pollen from plant to plant.

Native plants and pollinators adapted to each other over a long time together. This is called **co-evolution**. For example, some insects and birds have long tongues. These tongues allow them to drink nectar from long flower tubes that other birds and insects cannot reach. Plants also produce chemical defenses against insects. The insects evolve to tolerate and cope with those chemicals. Limiting which pollinators can feed on the flowers benefits plants, too. It increases the chance of being visited by pollinators that have been feeding on similar flowers and receiving the right kind of pollen to be fertilized.

Native plants and pollinators depend on each other. Growing native plants in your garden can help preserve wildlife and add to Colorado's unique natural beauty.



## ***Why Are Native Plants Important?***

- Native plants are equipped to live with the local climate, soil types, and animals. Plants and animals that have evolved together depend upon each other for survival.
- Native plants are used in the development of new foods, medicines, and industrial products.
- Native plants have developed their own natural defenses against many pests and diseases, requiring less pesticide use. Reducing or eliminating the use of pesticides keeps these toxins out of our watersheds.
- Native plant communities provide opportunities for people to experience and appreciate Colorado's rich natural heritage. They are what make different regions unique. Native plants help connect people to nature.

## ***Go Native with These 6 Basic Tips:***

Native plants are being lost to habitat destruction, invasive plants, introduced pests, and diseases. Action can be taken to protect and enhance the remaining diversity of beautiful and useful native plants using the following six basic guidelines.

1. Protect native plant communities and minimize habitat destruction.
2. Landscape with native plants.
3. Learn more about native plants.
4. Buy nursery-grown native plants.
5. Do not remove native plants from the wild.
6. Practice responsible landscaping techniques by planting the right plants in the right environment.

## ***What is Biodiversity?***

**Biodiversity**, short for biological diversity, refers to all organisms living and interacting in all ecosystems on earth. This includes all levels of organisms from genes to ecosystems, and can encompass the evolutionary, ecological, and cultural processes that sustain life.

The basic ecological unit in the biosphere is the ecosystem. Each ecosystem consists of a community of plants and animals. They are in an environment they require to live.

Biodiversity includes not only species we consider rare, threatened, or endangered, but every living thing – from humans to organisms, such as microbes, fungi, and invertebrates.

## ***Biodiversity is Important***

Biodiversity is important to most aspects of our lives. This includes the many basic needs humans obtain from biodiversity such as food, fuel, shelter, and medicine. Ecosystems provide crucial services such as pollination, seed dispersal, climate regulation, water purification, nutrient cycling, and control of agricultural pests. Biodiversity also holds value for potential benefits not yet recognized, such as new medicines and other possible unknown services. Biodiversity shapes who we are, our relationships to each other, and social norms.



# What are People Saying?

**“We must remember that pollinators are a critical link in our food systems.”**

*-- Paul Growald, Co-Founder, Pollinator Partnership*

**“Adding native plantings in riparian areas [waterways] to improve pollinator habitat makes sense in advancing our family farm’s conservation and economic objectives, enhancing beneficial wildlife and improving pollination in our orchard and garden.”**

*--Lee McDaniel, Farmer and President, National Association of Conservation Districts*

**“Bees are vital to biodiversity. There are 130,000 plants for example for which bees are essential to pollination, from melons to pumpkins, raspberries and all kind of fruit trees — as well as animal fodder — like clover. Bees are more important than poultry in terms of human nutrition.”**

*-- Joergen Tautz interviewed by Michael Leidig, Honey bees in US facing extinction, The Telegraph, March 14, 2007*



**Rocky Mountain Fescue**



**Fringed Sagebrush**



**Native pasture in Eastern Colorado**



**Limber Pine**

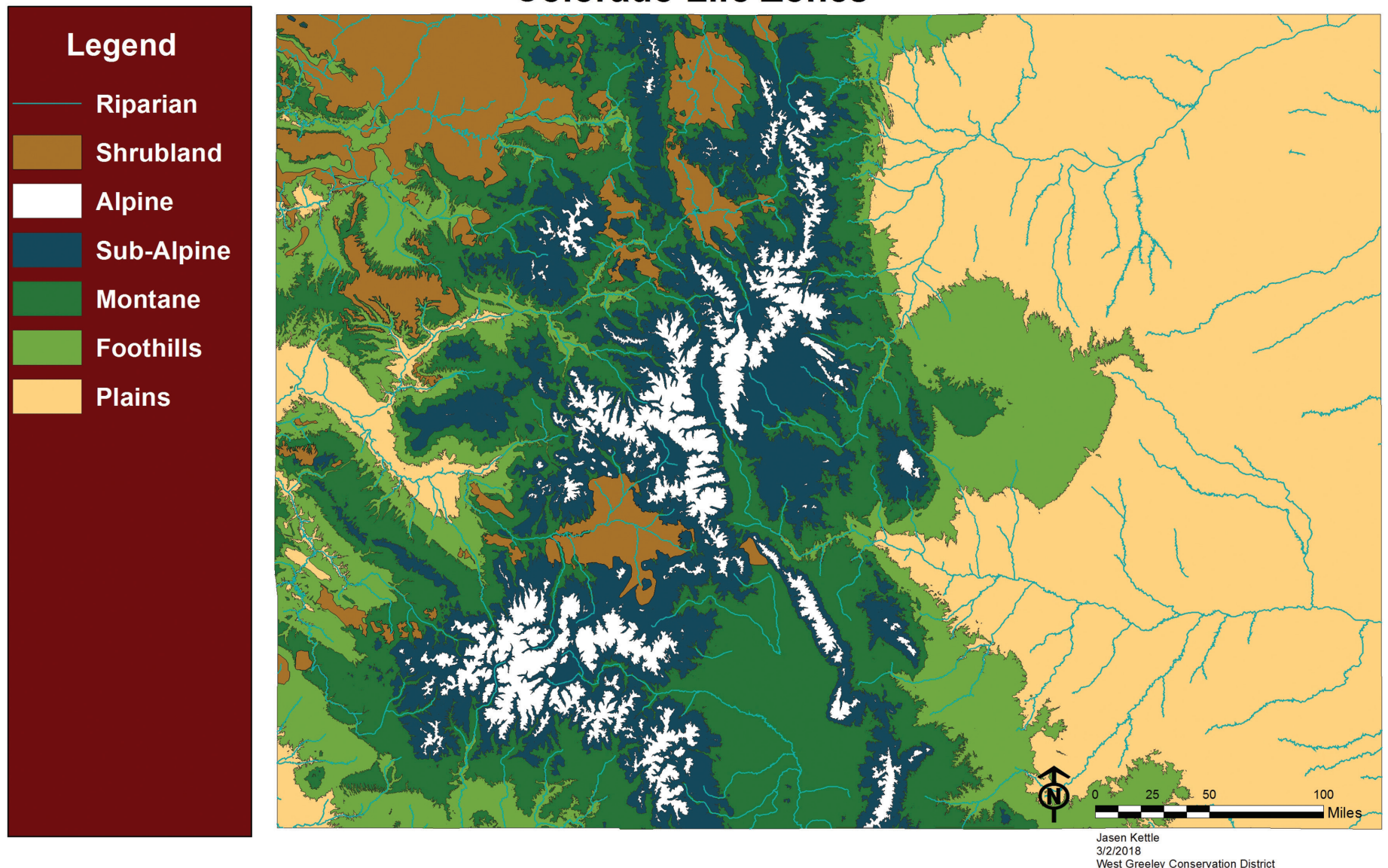


# Colorado's Seven Major Life Zones

Colorado has different landforms that make it special. The state has mountains, plateaus, mesas, canyons, and other landforms. It also has lakes, ponds, and streams. Because of the diverse landforms and waterways, Colorado has different types of habitats or **life zones** (unique places where animals and plants live).

The names of the different life zones, their **elevation** (a measurement in feet of how high above sea level this life zone is found) and the plant species found in each zone are listed. The Plains are the lowest, climbing in elevation to the Alpine areas above timberline where few trees grow. The climate of each zone impacts the growing season. Temperatures get colder at the higher elevations. Take a look at each life zone to learn the native plants, shrubs, and trees you will find in those areas. Riparian areas, or waterways, are found throughout Colorado.

## Colorado Life Zones





## Plains

Elevation: 3,400-6,000 feet

*Majority of growth occurs from May-July*

Plant species: Western Wheatgrass, Green Needlegrass, Sand Dropseed, Blue Grama, Sideoats Grama, Three-awn, Fringed sage, Rabbitbrush, Snakeweed, Yucca, Prickly Pear Cactus

## Shrublands

Elevation: 5,000-7,000 feet, Western Colorado

*Majority of growth is March-June*

Plant species: Blue Grama, Galleta, Needle-and-thread Grass, Indian Ricegrass, Three-Awn, Wyoming Big Sagebrush, Pine, Juniper, Scarlet Globemallow, Evening Primrose

## Foothills

Elevation: 5,000-8,000 feet

*Growth can occur from March-October; majority occurs from June-August*

Plant species: Western Wheatgrass, Blue Grama, Fourwing Saltbush, Pine, Juniper, Gambel Oak, Wallflower, Easter Daisy, Goldenrod

**Riparian (waterways)** *Found at various elevations with all growth seasons*

Plant species: Rushes, Sedges, Cottonwoods, Willows, Primroses, Cattails, Choke Cherry, Sagewort, Aspen, Douglas Fir, Colorado Blue Spruce

## Montane

Elevation: 8,000-10,000 feet

*Majority of growth is cool season in spring*

Plant species: Muttongrass, Blue Grama, Parry's Oatgrass, Prairie Junegrass, Mountain Muhly, Yarrow, Sagewort, Lodgepole and Ponderosa Pine, Aspen, Douglas Fir, Blue Spruce, Penstemon, Golden Banner

## Sub-Alpine

Elevation: 10,000-12,000 feet

*Cool season growth*

Plant species: Tufted Hairgrass, Fescue, Timothy, Bluegrass, Yarrow, Bluebells, Lupine, Vetch, Engelmann Spruce, Limber Pine, Bristlecone Pine, Subalpine Fir

## Alpine

Elevation: 12,000 feet, Above tree line

*Cool season growth*

Plant species: Hairgrass, Alpine Clover, Alpine Sagewort, Arctic Willow, Snow Willow, Columbine, Bluebells, Larkspur



**Colorado Blue Spruce Tree**



**Alpine Sagewort**



**Blue Grama**



# Wildlife and Pollinators

## More About Pollinators

These hard-working animals help pollinate over 75 percent of our flowering plants, and nearly 75 percent of our crops. Often we may not notice the hummingbirds, bats, bees, beetles, butterflies, and flies that carry pollen from one plant to another as they collect nectar. Yet without them, wildlife would have fewer nutritious berries and seeds, and we would miss many fruits, vegetables, and nuts, like blueberries, squash, and almonds . . . not to mention chocolate and coffee...all of which depend on pollinators

Providing habitat for songbirds and pollinators is one of the great pleasures of gardening with native plants. To maximize habitat for pollinators, plant a diversity of plants, and try to provide the longest possible season of bloom.

Many plants will provide nectar for adult insects, but consider the larval stage when choosing plants, too. Most native insects have specialized relationships with native plants, and require specific plants to grow from egg to an adult. As an example, many butterflies will sip nectar from non-natives, but the eggs need to be laid on specific plants or the caterpillars won't recognize the plant as food.

Birds use native plants for food and shelter, but insects are an overlooked and crucial part of many birds' diets. Far more insects will develop on native plants than exotics, providing food for birds during the critical nesting season. Consider planting a 'thicket' of berry-producing shrubs. If planted in the direction of the prevailing wind, this thicket can also provide a space of calm air for butterflies.

## Meet the Pollinators

**Bees** - Bees are pollinators in the natural and agricultural systems of Colorado. Colonies of honeybees, which are not native to Colorado, have been the workhorses of agricultural pollination for years in the United States.

There are nearly 4,000 species of native ground and twig nesting bees in the U.S. Some form colonies, while others live and work a solitary life. Native bees currently pollinate many crops and can be encouraged to do more to support agricultural endeavors if their needs for nesting habitat are met and if suitable sources of nectar, pollen, and water are provided.

Bumblebees form small colonies, usually underground. The sweat bee nests underground. Various species are solitary while others form loose colonies.

Solitary bees include carpenter bees, which nest in wood; digger, or polyester bees, which nest underground; leafcutter bees, which prefer dead trees or branches for their nest sites; and mason bees, which utilize cavities they find in stems and dead wood. Cactus bees are also solitary ground nesters.

**Butterflies** - Gardeners love to attract butterflies to their gardens. These insects tend to be as eye-catching as the flowers that attract them. A large diversity of butterflies can usually be found in garden areas and woodland edges that provide bright flowers, water sources, and specific host plants. Numerous trees, shrubs, and herbaceous plants support butterfly populations.

Some of the butterfly species in Colorado are Painted Lady, Blue Copper, Desert Marble, Fulvia



Checker spot, Queen, Nokomis Fritillary, and Anise Swallowtail. They usually look for flowers that provide a good landing platform.

**Moths** - Moths are most easily distinguished from butterflies by their antennae.

Butterfly antennae are simple with a swelling at the end. Moth antennae differ from simple to featherlike, but never have a swelling at the tip. In addition, butterflies typically are active during the day; moths at night. Butterfly bodies are not very hairy, while moth bodies are quite hairy and stouter.

## Colorado's Native Pollinators

Colorado is home to a large and diverse community of native pollinators that consists of:

- 946 species of native bees
- 250 species of butterflies and over 1000 species of moths
- Wasps, beetles, and flies
- 11 species of migrating hummingbirds, which arrive in April and usually leave in September

**Beetles** - Beetles also play a role in pollination. Some beetles have a bad reputation because they can leave a mess behind, damaging plant parts they eat. Beetles are not as efficient as other pollinators. They wander between different species of flowers, often dropping pollen as they go. Beetle-pollinated plants tend to be large, and strong scented.

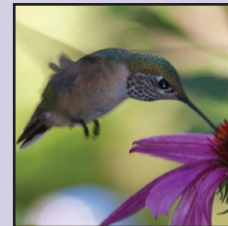
**Flies** - It's hard to imagine why anyone would want to attract flies to the garden. However, like beetles, the number of fly species and the fact that flies are generalist pollinators should encourage people to leave flies alone. Let them do their job as a pollinators!

**Birds** - Hummingbirds are the primary bird to play a role in pollination. Their long tongues draw nectar from tubular flowers. Pollen is carried on both the beaks and feathers of different hummingbirds. Hummingbirds can see the color red; bees cannot. A few of the nectar plants growing in Colorado include thistle, paintbrush, and larkspur. These plants attract black-chinned and other hummingbirds.

**Bats** - Bats also play an important role in pollination. The long-nosed bats' head shape and long tongue allows it to delve into flower blossoms and extract both pollen and nectar.

## Identify the Pollinators

Write the name of pollinator, described in the text to the left, that is shown in each picture.



1 \_\_\_\_\_



2 \_\_\_\_\_



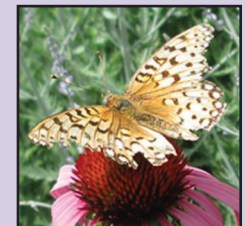
3 \_\_\_\_\_



4 \_\_\_\_\_



5 \_\_\_\_\_



6 \_\_\_\_\_



7 \_\_\_\_\_



# Native American Plant Use

Before Colorado was a state, there were many Native Americans who called this area home. These tribes included the Apache, Arapaho, Cheyenne, and Ute Nations, along with the Pueblo and Shoshones. The Comanche, Kiowa, and Navajo tribes would occasionally extend into Colorado, as well.

Before there were traditional doctors and pharmacists to offer medicine for colds, pain, or other ailments, members of the tribe would use plants to help people. The Native Americans knew how to properly identify a plant and what part to use for treatments. There are plants in Colorado even today that Native Americans might have used. It is recommended not to ingest any plants unless you have identified them correctly and know how to use them in the proper way.

Gum plant or gumweed can be found almost everywhere in Colorado and has medicinal leaves and flowers. If a Native American touched poison ivy, the leaves and flowers of the gum plant could be used as an antidote and applied often to help calm the itch.

Another plant that can be found almost everywhere in Colorado is the *Helianthus annuus*, or the common sunflower. The seeds, petals, leaves, and roots all have a variety of medicinal uses. The leaves, flowers, and seeds can help with coughs, congestion, and lung issues. A tea made from the leaves can treat high fevers. A tea made from the flowers helps treat malaria. The roots help with aches and pains. This plant contains numerous vitamins and minerals as well.



**Gum plant or Gumweed**



***Helianthus annuus***

**The next time you admire the beauty of a plant, keep in mind it could contain key properties that could help someone when they are hurt or ill.**

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