



# Habitat Revolution

Bringing nature into the classroom can kindle a fascination and passion for the diversity of life on earth and can motivate a sense of responsibility to safeguard it.

**David Attenborough**

Native plants are the ecological basis upon which life depends, including people, birds, bees, butterflies and the rest of nature.

## Native Plants Provide Essential Habitat, Food and Shelter for Wildlife

Healthy, biodiverse native landscapes are critical for the survival of life on earth. Biodiversity is in steep decline due to factors such as habitat loss, climate change and the use of harmful chemicals. A diversity of native plants supports a diversity of insects, and these two key components form the foundation of a thriving, interconnected food web.

### Did you know?

- 90% of herbivorous (plant-eating) insects can eat only the native plants they co-evolved with. A well-known example is the monarch butterfly caterpillar that can feed only on milkweed, however there are thousands of other species in the same situation.
- 96% of terrestrial birds feed their chicks caterpillars produced by insects. Birds need diverse native landscapes that can adequately support enough insects to raise their chicks.
- Insects also provide critical food for birds, fish, amphibians, reptiles and some mammals.
- Insects provide ecosystem services such as the pollination of plants resulting in fruits, nuts and vegetables that provide an additional food source for wildlife, and humans.
- Predatory insects play a critical role in controlling problem insect populations, and other insects help decompose organic matter leading to critical nutrient deposition in the soil.
- Insects are experiencing a rapid and serious decline of concern to scientists and the general public alike. Besides habitat loss and harmful chemicals, one contributor to insect decline is light pollution. Consider removing yard lights that are used only for decoration, turn off outdoor lights at night or use motion-control sensors for security reasons.

- Life in the leaves- Many insects over winter under the leaf litter often in the chrysalis form. Therefore ‘leave the leaves’ in the fall as it could be someone’s house. Eventually those leaves feed the soil.

- Native Plant Cultivars vs ‘Straight species’- When purchasing native plants, sometimes the only native plants available in the nursery are “native cultivars”. Nativars, as they are called, are not open-pollinated, as are “straight species” natives. Nativars rarely have the same attractiveness to pollinators and other species. For more information: <https://wildones.org/resources/nativars/>



## Native Plants are Vital for Clean Air, Healthy Soil and Clean Water

Native plants have deep roots that can improve the soil s capacity to store and infiltrate water, build fertile soil rich in organic matter and support a diversity of microbial life through the exchange of nutrients.

**Improved Water Infiltration:** The deep, vertical channels created by native plant root systems allow rain to slowly infiltrate into the soil. This water infiltration through the soil replenishes the aquifers that provide communities with clean drinking water. In contrast, rain pooling on unhealthy or compacted soil results in surface water that runs into storm drains causing flooding, soil erosion, nutrient loading and water pollution in our lakes and rivers.

**Improved Soil Health and Fertility:** Soil organic content increases when plants die off in the fall and a portion of the roots are shed throughout the plant s life cycle. Organic matter feeds microbes and retains water allowing plants to survive without supplemental watering once established. The root systems of native plants provide soil microbes with sugars in exchange for nutrients naturally occurring in soil. This fulfills all the plant s nutritional needs for healthy growth and resistance to disease and pests, eliminating the need for fertilizers.

**Bioremediation:** Native plants and the diverse microbial community they support remove harmful contaminants from air, water and soil through a process called bioremediation. Bioremediation can degrade, detoxify, or render some contaminants harmless.

## Native Plants are Crucial for Mitigating and Adapting to Climate Change

Healthy soil full of organic matter and microbial life sequesters carbon which mitigates climate change. Native plants and healthy soil also make our communities more resilient in the face of the inevitable climate changes that are already occurring including higher

temperatures, drought and more extreme storms with flooding. They do this by tolerating warmer temperatures, preventing soil erosion and protecting against flooding.

**Carbon Sequestration:** Excess carbon dioxide, released into the air since the rise of industrialism, is the main greenhouse gas contributing to global warming. A densely planted landscape filled with a diversity of native plants will sequester significantly more carbon dioxide than a traditionally maintained lawn composed of shallow-rooted grasses. Through photosynthesis, plants remove carbon dioxide from the air, release the oxygen and use the carbon to grow a vast network of roots below ground, and stems and leaves above ground. Some of this captured carbon is released into the ground by plant roots to feed soil microbes. Plants and soil microbes, through their life cycle processes, contribute to soil structure, fertility and carbon sequestration.

**Reduced Energy Costs:** Used in an urban setting native trees and shrubs can reduce energy needs for heating and cooling benefiting the environment and saving money. Used in an urban setting native trees and shrubs can reduce the heat island effect. At the same time these trees provide food and shelter for birds and insects.

## Native Plants connection to Humans

Gardening is a pursuit that lowers stress levels, which benefits our physical, mental and emotional health. Creating and nurturing a native plant garden offers the opportunity to observe and interact with nature, inspiring in us and our children a sense of wonder and awe.

### **Ethnobotany of Native Plants:**

Indigenous people used and tended the land in California for more than 12,000 years. Indigenous people employed their traditional resource management strategies to create useful landscapes that provided food, fiber, tools, and medicine. Knowledge of traditional plant use has been passed from generation to generation. That knowledge base continues to grow today.

**For all the benefits outlined above, replacing high maintenance turf grass with a diversity of native plants is one way we can heal the planet, one yard at a time.**

More information can be found in the books by Douglas Tallamy.

[www.WildOnesPrairieEdge.org](http://www.WildOnesPrairieEdge.org)

Ethnobotany - [www.nps.gov/glac/learn/education/native-american-plant-use.htm](http://www.nps.gov/glac/learn/education/native-american-plant-use.htm)

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