WHAT ARE SUSTAINABLE LANDSCAPES?

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UConn Extension, August 2016

Each and every landscape makes a difference in the health of our planet. The human population has grown very quickly worldwide over the last few centuries. Many of the ways we use the land and our natural resources to grow food, build homes, and plant our landscapes has negatively impacted our environment. This negative impact has been observed as:

- Increase in the temperature around the planet from global warming;
- Over-use of non-renewable resources, such as gas, oil, and coal (fossil fuels);
- Poor quality or lack of water for many people;
- Nutrient-depleted soils;
- Less diversity of animal and plant species around the world.

Design and maintenance of the home landscape has often contributed to these environmental problems. For example, plants are often chosen for flower color or bloom time, without any consideration of maintenance needs or environmental impact. Lawns typically require frequent mowing, supplemental water, fertilizer, and, often, pesticides as part of routine care. Fertilizer, mowing and pesticide use all deplete our fossil fuel resources.

WHAT MAKES A LANDSCAPE SUSTAINABLE?

Every time a landscape is designed, it impacts the survival of animals, insects, and plants. A variety of plants in a landscape are important for a healthy food chain. Plants produce oxygen, improve soil health, create nutrient-dense food, and provide habitat for animals and insects. Animals and insects that have survived in our ecosystem for many generations are adapted to eat the plants that are native to that area (which have also been here for many generations). An ecosystem is a large community of living organisms in a particular area, linked together through nutrient cycles and energy transfers.

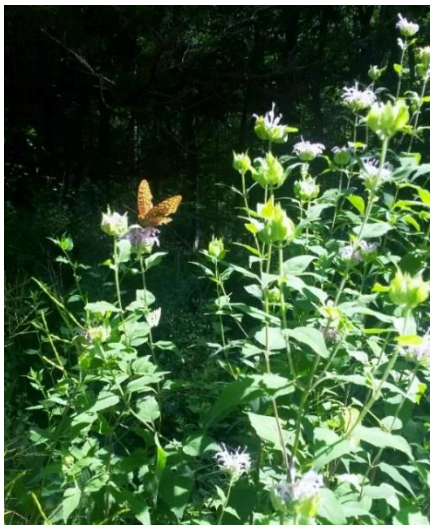
Insects are an important part of our ecosystem. When we use plants in our landscape that are from different and foreign ecosystems, like those that originated from other parts of the world, insects native to the U.S. often do not like or cannot eat those plants and decline in population. The loss of native insects in turn limits the food available for birds and other animals. This destructive change in the food supply chain is fueling the loss of thousands of insect, plant, and animal species around the planet.

Butterfly weed (Asclepias tuberosa) provides critical habitat for Monarch butterfly caterpillars. (Photo by Tom Barry)

We can start to repair this decline of native species by creating landscapes that are sustainable. Landscapes become more sustainable when they perform multiple functions. Instead of landscapes designed to only look pretty, we can create landscapes that help the environment by:

- Cleaning the air and improving water quality;
- Requiring little maintenance, fertilizer or extra water (besides rain);

- Providing berries, nectar and other food for birds, butterflies, and bees;
- Capturing carbon from the atmosphere to help control global warming;
- Reducing damage from flooding, wildfire, or drought;
- Supporting human health.



Butterflies are attracted to bee balm.

In a sustainable landscape, native plants are used as much as possible. Native plants are those that would have survived naturally in a given location, not introduced by humans. They have adapted over many centuries to the local soils, site conditions, and pests. They support a wide variety of native animal and insect species. When we plant, or preserve, native plant species, we provide the greatest benefit to wildlife and increase the variety of species in an ecosystem.

EXAMPLES OF SUSTAINABLE LANDSCAPES

This healthy, low maintenance lawn requires infrequent mowing.

- **Low Maintenance Lawns:** turf areas which require less frequent mowing or less need for fertilizer and supplemental irrigation. In New England, lawns composed primarily of a blend of fine fescues or tall fescues (*Festuca*) can thrive in both shade and full sun. Once established, they do well with fewer inputs. Alternative grasses, sedges, and flowering, low growing plants, such as clover or thyme, also may be components of a more sustainable lawn.
- **Meadows:** a field of grasses and native wildflowers, which becomes self-sustaining and flourishes naturally.
- **Xeriscaping:** the use of drought tolerant plants to reduce or eliminate the need for supplemental irrigation in the landscape.
- **Rain Gardens and Bioswales:** low, planted areas that allow rainwater runoff from urban areas to infiltrate and be absorbed into the soil.
- **Rain barrels:** collect and store rainwater from roofs, and typically connect to downspouts.
- **Permeable pavements:** made of pervious concrete, porous asphalt, or permeable interlocking pavers to infiltrate, treat, and/or store rainwater where it falls.
- **Green roofs:** roofs are covered with growing media and vegetation that enable rainfall infiltration and evapotranspiration of stored water.

Native plants thrive in a successful meadow. (Photo by Tom Barry)