

Conservation Conversations: The Importance of Pollinators

'Conservation conversations' is a series brought to you by the Middle Park Conservation District. Its intent is to explore a variety of conservation-related topics that get people thinking and talking about the natural world we live in. If you have questions for the Middle Park Conservation District, contact us at 970-724-3456 or visit www.middleparkcd.com.

National Pollinators Week was June 20-26, 2016. Though the week has come and gone, the pollinators of Middle Park are still here and active. In this issue of Conservation Conversations, we are exploring the **Importance of Pollinators**. Pollinators are a diverse group of animals that help flowering plants produce viable seeds and fruits.

It is estimated that there are as many as 200,000 species of pollinators on Earth, including a variety of birds, bees, wasps, bats, butterflies, moths, beetles, and other small mammals¹. By spreading pollen from one flower to the next, pollinators provide the necessary link for reproduction in up to 85% of the world's flowering plants (~250,000 species). The list of species includes, but is not limited to, alfalfa, almonds, apples, beans, black pepper, blueberries, canola, carrots, cherries, chocolate, clover, coffee, melons, peaches, potatoes, pumpkins, tomatoes, vanilla, cotton, and tequila^{1,2,3}. "It has been suggested that one out of every 3 mouthfuls of food and beverages we eat or drink is delivered to us by pollinators^{1,2}. Furthermore, many of the minerals and vitamins essential to our health are produced by pollinated plants. One pollinator specialist was quoted saying, "we certainly wouldn't starve to death if we lost all of our pollinators, but we sure would be eating a lot more oatmeal." Finally, the Pollinator Partnership estimates that the work of pollinators contributes \$40 billion worth of US product annually³. This value includes indirect products, such as beef and milk, produced from cattle that are fed alfalfa (a plant that requires pollination to reproduce and thrive).

Besides the benefits to people, pollinators provide significant contributions to the native ecosystems they live in. The plants they support continue to grow and reproduce naturally, thus providing food and cover for many species of wildlife. The roots of pollinated plants also help stabilize the soil, prevent erosion, and produce clean water for all of us to enjoy. Finally, pollinators support species diversity. Increased species diversity also typically correlates with increased ecosystem functioning and health. As keystone species, the importance of pollinators in the ecosystems stretches far beyond their own populations; the loss of pollinators could be devastating to the entire plant and animal community². In fact, some scientists believe that pollinator declines could increase the vulnerability of some plant species to extinction⁶.

Though pollinators are very important to plants, animals, and people alike, sadly, pollinator populations are on a downhill slide worldwide. As of 2012, there were 3 species of bats, 6 species of birds, and 35 species of insects listed under the US Endangered Species Act as Threatened or Endangered⁵. Furthermore, at least 185 species are considered threatened or extinct worldwide by the World Conservation Union¹. Pesticide and herbicide exposure, parasites, habitat loss and fragmentation, nonnative and invasive plant species, and climate change are all possible causes of decline.

Despite the doom and gloom of pollinator declines, it is important to consider the actions we can all take to improve pollinator habitat. Desirable habitat for pollinators requires food, water, shelter, and nesting sites.

1. **Food:** Plant a variety of native flowers (preferably perennials), shrubs, and grasses that have different shapes, sizes, colors, and blooming seasons. This will ensure there is adequate food from early spring through late fall. Don't forget...bats and moths prefer night-blooming plants. Ideally, you should have at least three species in bloom each season. **Also, avoid pollenless flowers and double-petaled ornamental flowers².** These flowers are cultivated to please people but provide no benefit to the pollinators or ecosystem. Finally, just like everything else, pollinators require a minimum intake of certain minerals to meet their dietary needs. **By mixing a small amount of sea salt or wood ash into the soil, you can help insect pollinators meet their nutrient requirements¹.**

A list of Pollinator-friendly plant species for the Intermountain West can be found at

http://www.xerces.org/wp-content/uploads/2011/02/nrcstechnote_plantsintermtnwest.pdf/

2. **Water:** Pollinators require water, but fast-moving or deep water can result in drowning. **You can provide watering sites by placing marbles or rocks in a pie pan and filling the pan with water. Alternatively, you can create damp areas on the soil with a dripping hose.**
3. **Shelter & Nesting Sites:** While birds and bats often nest and shelter in trees, shrubs, snags, and rock crevices, many insect pollinators nest in tall grass, piles of leaves and twigs, soil banks, and underground. **Ensure you have a variety of shelter and nesting sites (including small areas of bare ground) available for the many pollinators nearby.**
4. **Weed Management:** One of the concerns with pollinator declines is the encroachment of nonnative and invasive plant species¹. When nonnatives start to encroach and outcompete native flowers, pollinators (and other wildlife) may lose important food sources or sites for mating, nesting, and migrating. **It is important to control nonnatives and invasives in order to maintain a preferable species composition that is at least 75% native⁷.** Though herbicide use is the most common weed management practice, it is imperative that you consider the impact of herbicides on pollinator species. Many herbicides are fatal to pollinators. If other weed management alternatives are not possible or practical, consider these tips when using herbicide...
 - Apply herbicide prior to flower bloom
 - If flowers have already bloomed, spot spray rather broadcast spray
 - Spray herbicide in the evening when most pollinators are least active

We hope this article inspires you to get out and view the beautiful and bountiful blooming wildflowers of Grand County and, in the process, keep your eyes peeled for all the busy pollinators working to keep our bellies full and the ecosystem healthy.

All photos were taken by Katlin Miller on her family's ranch near Granby.











Sources

1. NRCS Native Pollinators Leaflet. http://www.plants.usda.gov/pollinators/Native_Pollinators.pdf
2. Xerces Society Pollinator Conservation Fact Sheet. http://www.xerces.org/wp-content/uploads/2010/11/pollinator-three-steps_fact_sheet2.pdf
3. Pollinator Partnership Information on Pollination. <http://www.pollinator.org/pollination.htm>
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5. Pollinators Federally-listed as Endangered or Threatened Species (2012). <https://www.fws.gov/pollinators/Programs/Endangered.html>
6. NRCS Technical Note: Plants for Pollinators in the Intermountain West. http://www.xerces.org/wp-content/uploads/2011/02/nrcstechnote_plantsintermtnwest.pdf
7. Pollinator Friendly Practices. <http://www.pollinator.org/Resources/PollinatorFriendlyPractices.pdf>