Medical and Environmental Management Division

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The Effects of Monarch Conservation on Water Quality

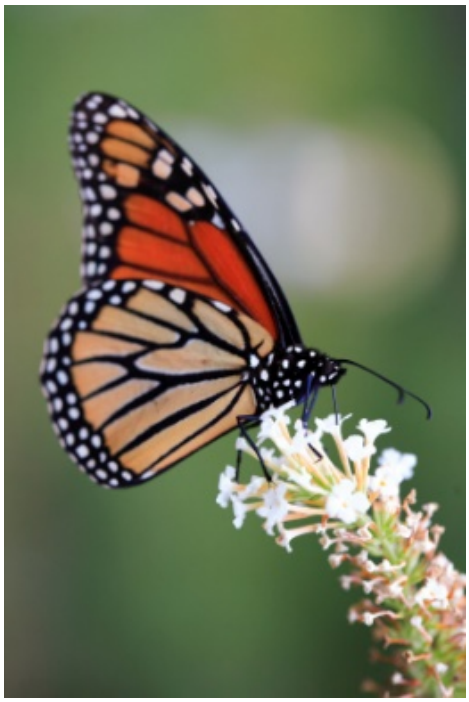
It is well known in the environmental and restoration communities that monarch butterflies are intrinsically important and therefore their conservation is essential for their own protection and the well-being of the environment.

The quality and quantity of water in our streams, rivers, and lakes are affected by human activity. However, long before urbanization, the landscape was dominated by forests, prairies, and wetlands. Rainfall easily infiltrated the ground, was absorbed by plants, or would run off through a vegetated buffer into the nearest stream or river. Today, rainfall comes into contact with impervious surfaces (roofs, parking lots, streets, etc.) and inevitably picks up various pollutants along the way (sediment, debris, oil, fertilizer, etc.), carrying them to nearby waterways. These pollutants degrade water quality, create a greater potential for flooding and erosion, and pose a serious threat to aquatic life.

What does this have to do with Monarch Butterflies?

You may be asking yourself, how can monarch conservation help improve water quality? The answer is that "monarch planting," which uses native plants to serve as a habitat to monarchs and other pollinators to restore some of the functions of the landscape that nature originally intended. The benefits of native landscaping include:

- Reduce the need to mow and apply pesticides/herbicides.
- Control public safety hazards, such as soil erosion, snow drifting, and flooding.
- Improve groundwater recharge and water quality.



Unlike turf grass, native plants and favorites of the monarch butterfly, such as milkweed, wildflowers, and bunch grasses, have deep root systems that provide soil stability and prevent erosion, and form channels in the soil that allow rainfall to infiltrate and replenish our groundwater supply.

In addition, when planted along roadsides, streams, agricultural fields, and residential or corporate areas, these native plants help to slow the flow of runoff and can prevent contaminants from reaching waterways. This is achieved by the plants' ability to soak up heavy

metals and other pollutants into their tissues along with water to remove them from the soil. This function helps to buffer certain contaminants from entering our streams, rivers, and lakes through storm water runoff.

Landscaping with native plants also requires fewer inputs than other ecosystems, unlike crops, lawns, and ornamental landscaping, as they are well adapted to regional soil and moisture conditions and require less care and maintenance. Millions of pounds of chemicals are used on conventional landscaping across the country every year, leading to greater potential for pollution in waterways and detriment to the health of beneficial insects and aquatic life.

What Can You Do To Help?

The conservation of monarch butterflies is about much more than monarch species. The actions necessary to sustain the monarch population are also water stewardship practices. Monarch planting benefits this imperiled butterfly and aquatic ecosystems that we rely on for survival and recreation. You can learn more about planting natives and monarchs by reading previous environmental bulletins at https://code200-external.gsfc.nasa.gov/250/environmental/environmental-bulletins.

Visit the following websites for more information on monarch butterfly conservation as it relates to water quality:

https://monarchjointventure.org/news-events/news/more-than-monarchs-water-quality
https://www.fws.gov/savethemonarch/rights-of-way.html
https://www.monarchwatch.org/