

**Thinking Globally,  
Acting Locally**

*Milkweeds for Monarchs:*

*The St. Louis Butterfly Project*



*Catherine Werner  
Sustainability  
Director  
Office of the Mayor,  
City of St. Louis  
April 2015*





# Triple Bottom Line Sustainability Mission Statement:

*The City of St. Louis  
harnesses the strength and spirit  
of its diverse community to create an  
economically, socially and ecologically  
vibrant City for present and future  
generations - one that dynamically  
serves those who live, work, and play in  
the City's rich and celebrated historic  
landscape.*



# THE CITY HAS A SUSTAINABILITY PLAN WITH ENVIRONMENTAL, SOCIAL AND ECONOMIC GOALS



**Urban Character, Vitality & Ecology**



**Arts, Culture & Innovation**



**Empowerment, Diversity & Equity**



**Health, Well-Being & Safety**



**Infrastructure, Facilities & Transportation**



**Education, Training & Leadership**



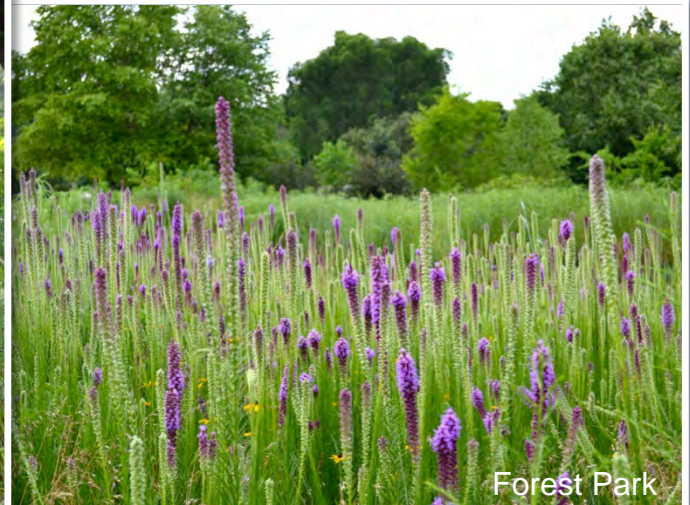
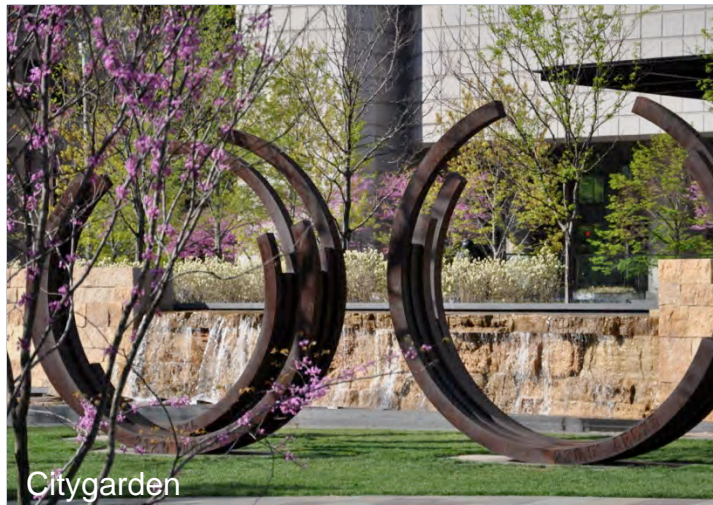
**Prosperity, Opportunity & Employment**





# SUSTAINABILITY PLAN AND URBAN VITALITY & ECOLOGY

- Support and Increase the City's Greenscape, Including its Existing Park System and Urban Tree Canopy
- Promote Urban Conservation and Revitalization of the City's Unique Biodiversity and Natural Resources
- Increase Environmental Literacy



# Mayor Slay's Sustainability Action Agenda



**Our Sustainability Plan** will guide City government for decades to come. The plan is extensive. It is a collection of broad goals, specific objectives and direct strategies that have been identified by the **people of St. Louis** as presenting the best opportunity to a But, we also want it to be i in ways that people can fee

Our Sustainability Plan has City cleaner, safer, healthi natural resources; second, others who want more si hoods; and third, to make i citizens.

Our Sustainability Plan is th gagement. The City intends ing the plan. So, we have cl ing action items over th government's plan. It is o individuals, community, o will both embrace and help

<http://stlouis-n>

Mayor Slay photo courtesy



## Action Agenda Priorities

1. Create a sustainability resource toolkit for **neighborhoods**
3. Provide easy access to **greenspace**, trails or parks within a half mile or 10 minute walk
25. Double the current eco-literacy rate by launching a program to foster an enhanced connection between **people and urban natural resources**





# Connecting People to Nature in the City of St. Louis: A Recommended Nature “Diet”



Nature Pyramid Concept: Tim Beatley



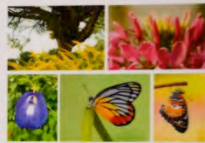
# VISITING A CITY IN A GARDEN



## Art in Nature

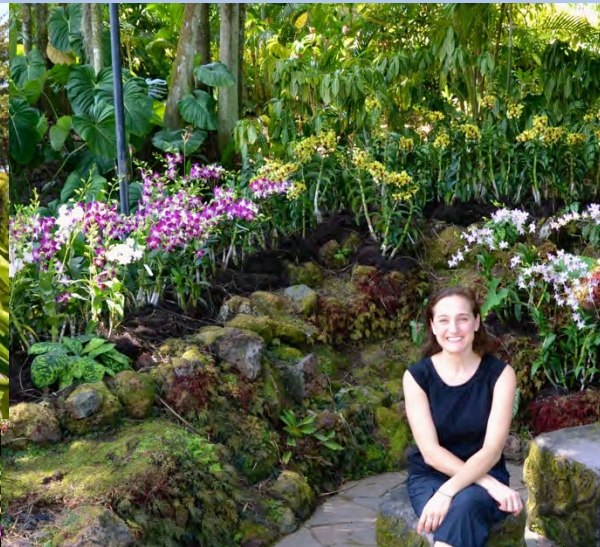
Join us for this art-and-nature appreciation workshop and draw at leisure in a beautiful garden setting. The workshop will cover basic landscape and nature drawings, as well as colour theory, with emphasis on understanding the unique characteristics of our gardens, nature, flora and fauna. Materials will be provided.

Approach our friendly staff at the Visitor Services Centre for more details.



Workshop	Recommended For	Estimated Duration	Charges/ person/ session (\$)	Group Size (per trainer)	
				MIN	MAX
Nature Sketching in the Garden	P4 – JC2	1.5 – 2 hr	\$21	20pax	30pax
Nature Sketching in the Garden	Adults	1.5 – 2 hr	\$21	15pax	25pax

\*Please make your bookings at least one month before the activity. Call 6471 5601 or e-mail NParks\_HortPark@nparks.gov.sg







SINGAPORE CHANGI AIRPORT





**Why Launch  
*Milkweeds for Monarchs: The St. Louis Butterfly Project?***



# BECAUSE NATURE NEEDS PEOPLE ...

- **Monarchs are iconic:** Easily recognizable they are the only butterfly to migrate between Canada, the US and Mexico.
- The female monarch will only lay her eggs on a milkweed plant; caterpillar larvae will only eat milkweeds.
- **Without milkweeds, monarchs cannot exist.** Monarchs also need nectar plants to nourish them during their migration.
- Milkweed numbers have declined and monarch populations have plummeted by 90%.
- **People can help by planting monarch gardens.**





# ... AND PEOPLE NEED NATURE

## Improved Social Outcomes/Health and Well-Being:

- Access to nature can reduce stress and anxiety, nourish the imagination, and provide important learning opportunities.
- Studies have shown access to greenspace tends to increase physical activity (helping lower obesity rates) and reduce ADHD in children.

## Enhanced Community and Economic Benefits:

- Gardening and creating natural areas can help strengthen a community's sense of place and build relationships between neighbors.
- Greenspace often contributes to neighborhood aesthetics, and proximity to parks and trees can boost market values and lower utility costs.

Monarch Life Cycle in Franz Park

Left to right: Female monarch butterfly laying eggs on milkweed, eggs left in milkweed flower buds, monarch caterpillar and chrysalis



Courtesy of Kathy Bidner



Courtesy of Gateway-Greening





# A MAYOR FOR MONARCHS



## Best Practices

### Milkweeds for Monarchs: The St. Louis Butterfly Project

#### City Efforts To Entice "Flying Flowers" Take Flight

By St. Louis Mayor Francis Slay

St. Louis is at work cultivating the local return of a great migration of butterflies — most specifically, that of the Monarch. It doesn't take much to make a Monarch feel welcome, just a good meal and a safe place to lay their eggs and feed their larvae.

Butterflies are both a symbol of hope and a vehicle for positive change. Who doesn't smile when they see a butterfly?

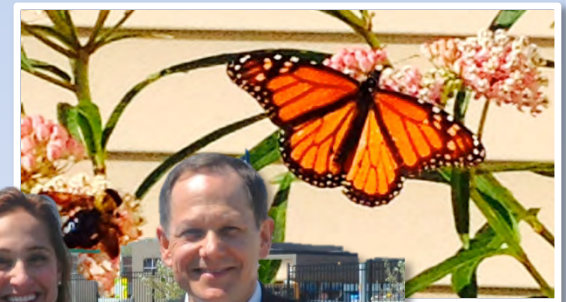
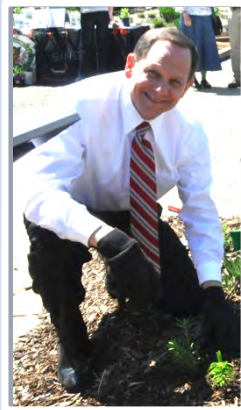
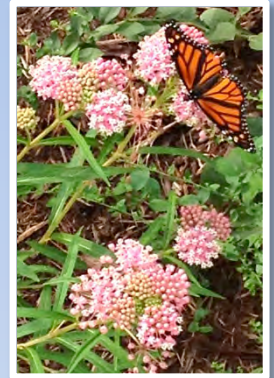
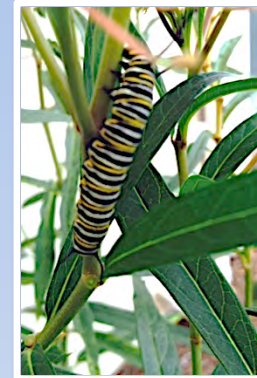
hardwired to respond favorably to elements of the natural world. Studies are showing there are actual physical and psychological benefits to exposing people to nature — things like lowering stress and anger, reducing blood pressure, improving comfort, minimizing fear and improving overall happiness.

There are dozens of notable organizations working to help Monarch butterflies; St. Louis is partnering with some of them to bring these successes to the people at the local level and neighborhood scale. We launched "Milkweeds for Monarchs: The St. Louis Butterfly Project" for the benefits it will bring to plants, pollinators and people.

Monarchs play an important pollinator role in our ecosystem and agricultural system as they make their annual epic



St. Louis Mayor Francis Slay



Earth Day 2014





# AND A COLLABORATIVE EFFORT



- ✧ Mayor's Office
- ✧ City Departments
- ✧ Community Organizations
- ✧ Neighborhood Groups
- ✧ Conservation Agencies
- ✧ Butterfly Experts
- ✧ Plant Specialists
- ✧ Nonprofit Stakeholders
- ✧ Private Supporters
- ✧ Growers
- ✧ Garden Centers
- ✧ Research Institutions
- ✧ Individuals



# TOOLS, GUIDES AND RESOURCES



## Milkweeds for Monarchs: The St. Louis Butterfly Project

### Finding Monarch Garden Plants 2014



#### Gardening in Public Spaces

Brightside St. Louis will be offering Milkweeds for Monarchs garden materials through their Neighbors Naturescaping grant program. The materials will be available for planting in public spaces this fall. To learn more visit [www.brightsidestl.org](http://www.brightsidestl.org) or call (314)772-4646. The St. Louis Urban Gardening Symposium will include a session on butterfly gardening, along with other important information.

June 21, 2014, 8:30 a.m.-12:00 p.m.  
Brightside Demonstration Garden  
4646 Shennandoah Ave.  
St. Louis, MO 63110

#### Native Plant Resource Guide

For a list of state and regional retail, wholesale and mail-order nurseries carrying native plants, visit the *Grow Native!* website at [grownative.org/resources/guide/plants](http://grownative.org/resources/guide/plants)

#### Native Plant Sales

Shaw Wildlife Market at Shaw Nature Reserve  
 Hwy 100 & L44  
 Gray Summit, MO 63009  
 Friday, September 5, 2014  
 4-7:30 p.m.

Missouri Wildlife Nursery at Karkwood Farmers' Market  
 150 E. Argonne  
 Kirkwood, MO 63122  
 Saturdays, 9am-4pm

**Local Nurseries and Garden Centers**  
The following local retail nurseries are some of the many supporting the Milkweeds for Monarchs initiative by carrying STL Monarch Mix plants:

**Bowood Farms**  
 4605 Olive Street  
 St. Louis, MO 63108  
 314-454-6668  
 [www.bowoodfarms.com](http://www.bowoodfarms.com)

**Greenscape Gardens**  
 2832 Barrett Station Road  
 Manchester, MO 63021  
 314-821-2440  
 [www.greenscapedesign.com](http://www.greenscapedesign.com)

**Garden Heights Nursery**  
 1608 S. Big Bend Blvd  
 Richmond Heights, MO 63117  
 314-645-7333  
 [www.gardenheights.com](http://www.gardenheights.com)

#### STL Monarch Mix



Milkweeds for Monarchs is an initiative of the City of St. Louis Office of Sustainability. For more information on this or other sustainability initiatives in the City of St. Louis, contact Catherine Werner, Sustainability Director, Office of the Mayor. [WernerC@stlouis-mo.gov](mailto:WernerC@stlouis-mo.gov) or visit [stlouis-mo.gov/sustainability](http://stlouis-mo.gov/sustainability).



## Planting Your Monarch Garden

### Supplies

To create a garden, you will need the following:

- Approximately 1 square meter area that is best suited for attracting, hosting and feeding monarchs, with good access to sunlight. One square meter is roughly 3 ft x 3 ft. If you prefer a rectangular layout, it will be roughly 2 ft x 5 ft.
- 1 pot or container of each plant species suggested in the STL Monarch Mix
- Garden trowel or shovel
- Mulch (optional, but recommended)

### Instructions

1. Divide the area to be planted into nine squares, placing each plant about 12" from its neighbor. A rectangular layout is suggested to the right.
2. In the middle of each square, dig a hole roughly 6 inches deep and wide enough to fit the plant plug. A good rule of thumb is to dig a hole slightly larger than the container the plant plug came in.
3. Gently break up the roots of each plant plug and place plants in the holes. Fill in lightly with soil.
4. Cover the entire monarch garden with a light layer of mulch.
5. Water your garden immediately, and then water daily.
6. After a couple weeks, water every couple of days. Because these plants are native, once they are established they should only need occasional watering.
7. Share a photo of your monarch garden at [stlouis-mo.gov/sustainability/](http://stlouis-mo.gov/sustainability/) so we can track and map the initiative's progress.

### Reminders

- Do not use pesticides or chemical fertilizers on or near your monarch garden.
- These flowers are likely to bloom at different times, and they may take a year or two to get established.

### STL Monarch Mix of Plants



Photos courtesy of Missouri Botanical Garden and Monarch Watch



## Milkweeds for Monarchs: The St. Louis Butterfly Project Plant Care Tips



**Whorled Milkweed**  
Thin and cut back new growth when the plant becomes overcrowded.

**Purple Coneflower**  
Divide clumps when the plant becomes overcrowded (about every 4 years). It will provide birds with seeds and also self-seed if some of the seed heads are left in place.

**Goldenrod**  
Divide clumps when the plant becomes overcrowded.

**Common Milkweed**  
Remove seed pods before they split open, and thin and cut back new growth when the plant becomes overcrowded.

**New England Aster**  
Pinching back stems several times before mid-July will help limit plant height to 4 feet, promote bushiness and perhaps lessen the need for staking. The plant will self-seed in optimum growing conditions. If the foliage has become unsightly or unwanted self-seeding is occurring, the plant can be cut to the ground after flowering.

Since all of the STL Monarch Mix plants are native to Missouri, they will not require highly specialized care. However, these simple measures specific to each plant will go a long way in helping your garden flourish. Also, the entire garden should be watered during times of drought, checked for weeds, and cut back in the fall. These plants require no fertilizers, though it is a good idea to add mulch around the plants. Please avoid using chemical products, such as pesticides, near your garden.

**Gardening Terms**  
**Deadhead**—Remove dead flowers by snipping them with pruning shears or scissors.  
**Divide Clumps**—If the plant becomes overcrowded, dig up the unwanted portion and transplant or share with friends.  
**Overcrowding**—Plants look spindly, rather than bushy, and do not have room to grow.  
**Pinching back**—Remove the new leaves and buds at the end of the stem to encourage branching. This should be done before the flower buds get large.  
**Seed pods**—Either remove seed pods while still green to prevent the seeds from spreading, or let the pods dry on the plant and collect the seeds for future use. When the pods turn brown and start to split, save the seed to plant later.  
**Self-seeds**—This means the plant will drop seeds which should grow the following year.  
**Staking**—This is done if a plant gets too tall and starts to droop. Place a stake in the ground very near the plant and loosely tie the plant to the stake to give it support and help it stand up straight.  
**Thin and cut back**—To avoid plant crowding, cut until there is adequate space between plants. Do this either shortly after buds appear in early spring or once flowering is finished in the fall.

**Swamp/Marsh Milkweed**  
Does best in a low spot and tolerates more moisture than the other plants. Do not transplant once established, as plants have deep taproots. Remove seed pods prior to splitting. Thin and cut back new growth when plant becomes overcrowded.

**Bee Balm/Bergamot**  
This plant needs good air circulation, so make sure it has room. You can deadhead the plant to prolong the bloom period.

**Butterfly Weed**  
To prolong the bloom, you may deadhead the plant. Divide clumps when the plant becomes overcrowded.

**Black-Eyed Susan**  
To prolong the bloom, you may deadhead the plant. Divide clumps when the plant becomes overcrowded.

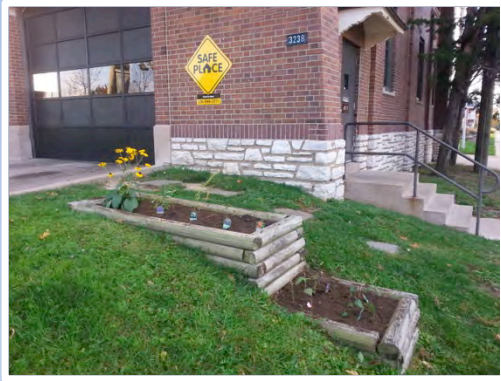


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# LEADING BY EXAMPLE: 50 MONARCH GARDENS



Fire Houses



Police Stations





# NEW AND LEVERAGED PARTNERSHIPS





# CITY PARKS, SCHOOLS AND PUBLIC SPACES



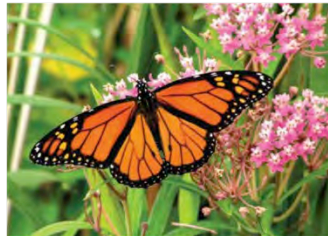


# EDUCATION AND OUTREACH

## Milkweeds for Monarchs: The St. Louis Butterfly Project

### Fading Flutterers

Monarch butterflies play an important pollinator role in our ecosystem. Female monarchs only lay their eggs on milkweed plants, and monarch caterpillars feed solely on milkweed. Due to the loss of milkweed, monarch populations have declined 97 percent between 1996 and 2013. We can help monarchs by planting more milkweed.



A monarch on a milkweed flower. Photo by David J. Pitt. Monarch is the largest of the monarchs in the genus, 1 inch long.



Keep a watch for a monarch caterpillar, adult and chrysalis.

A monarch on a butterfly weed, a short grassy plant perfect for your garden.

### Milkweeds for Monarchs

The City of St. Louis has developed Milkweeds for Monarchs to help monarch butterflies flutter and flourish. This is just one of many milkweed gardens that have been planted as a part of the program to help monarchs thrive.



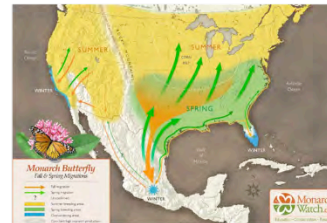
### Sustaining People, Plants and Pollinators

Butterflies, animals and people all share a need for a high quality natural environment. Clean water, green spaces and native plants help ensure that we have the food we need and natural spaces that support our health and well-being.



### A Magnificent Migration

In addition to milkweeds, monarchs need nectar to provide energy for their migratory journey and to build reserves for the winter. St. Louis is an important part of the monarch's migration path. Each fall, millions of monarch butterflies migrate to Mexico and California. In the spring, most monarchs return to their Midwest breeding areas, and the cycle starts again.



### How You Can Help

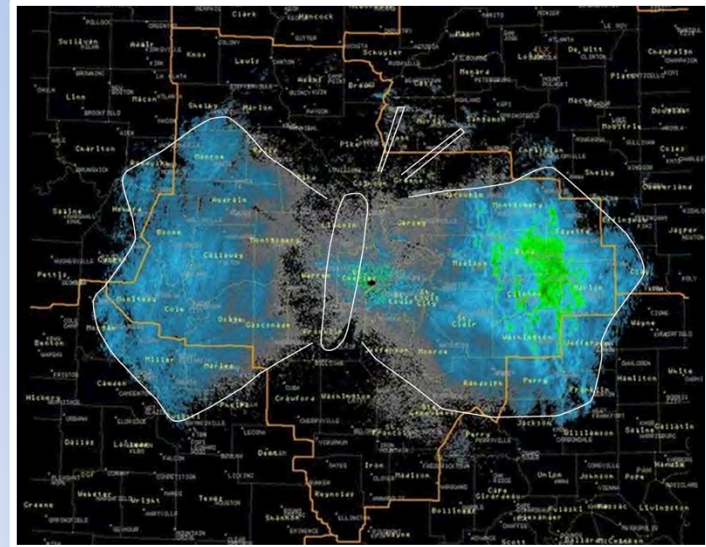
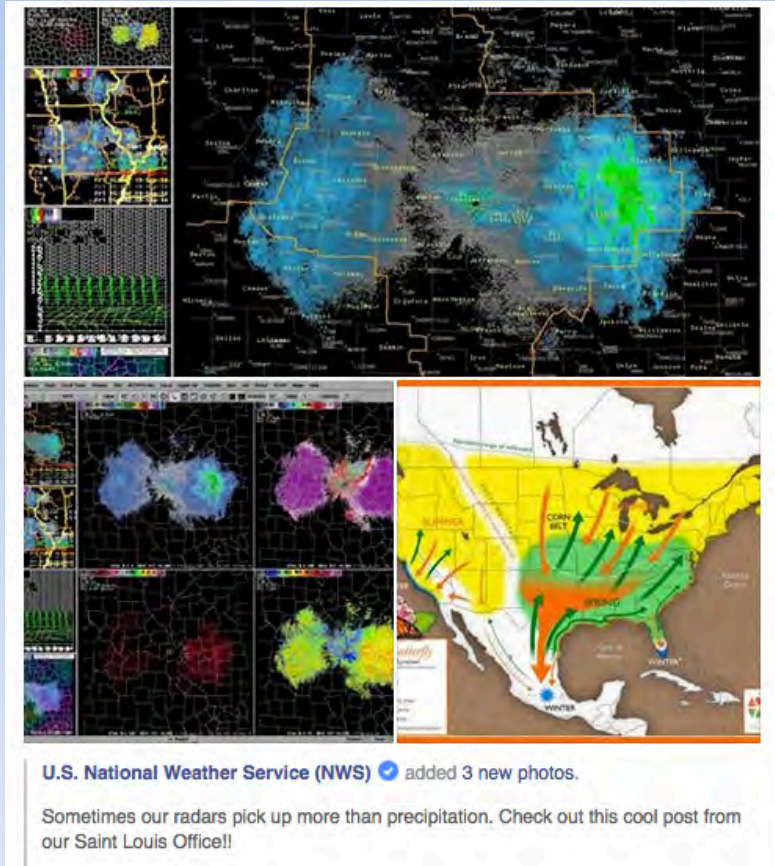
There are numerous milkweed species native to St. Louis, such as butterfly weed and swamp milkweed. To help monarchs and other pollinators, use native plants in your garden, and avoid using pesticides, herbicides and fertilizers.

For more information and to learn how you can help make your own monarch garden, visit [stlouis-mo.gov/sustainability](http://stlouis-mo.gov/sustainability).





# NATIONAL WEATHER SERVICE DETERMINES CLOUD OVER ST. LOUIS IS A MONARCH SWARM



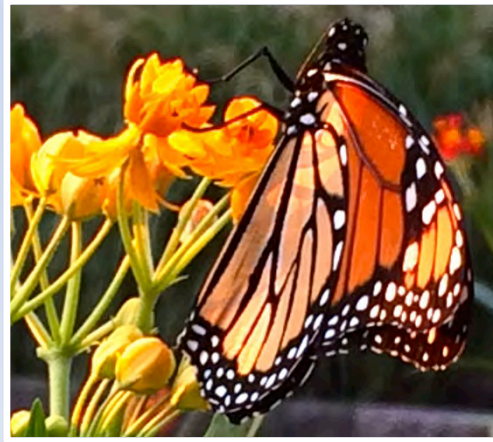
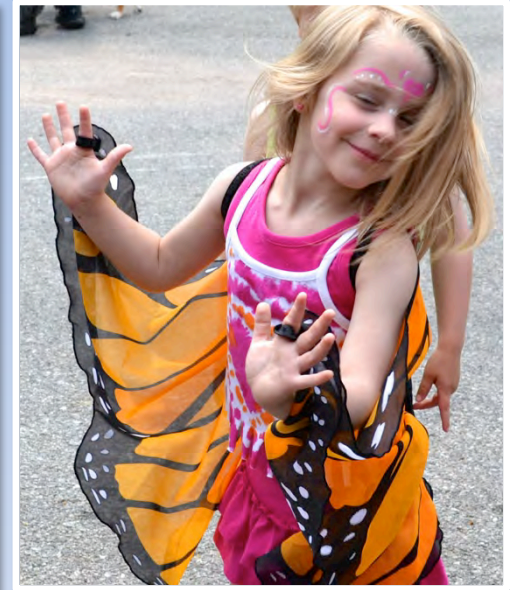
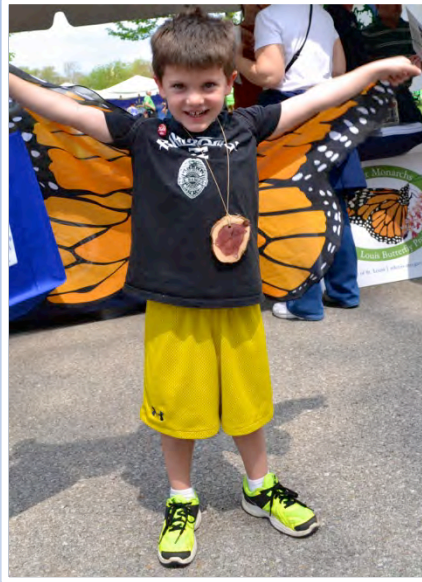
“NWS St. Louis wishes good luck and a safe journey to these amazing little creatures on their long journey south!”

*-September 2014*



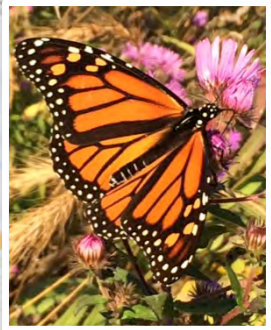
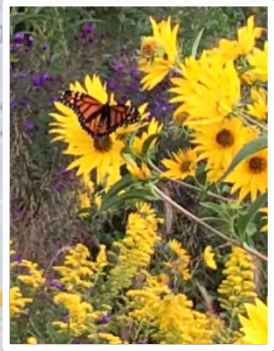


# TAKING FLIGHT ... AND CELEBRATING

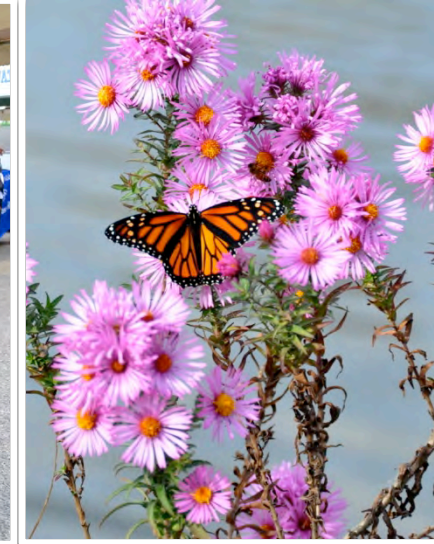




# NATURE: COMING SOON TO A NEIGHBORHOOD NEAR YOU







For More Information:

Catherine Werner  
Sustainability Director  
[wernerc@stlouis-mo.gov](mailto:wernerc@stlouis-mo.gov)

[stlouis-mo.gov/sustainability](http://stlouis-mo.gov/sustainability)



**We are Sustainable**

