

The Natural History Background as Scientific Support for Community Partnerships to Bring Nature Back into Urban Environments:
A Missouri Botanical Garden Perspective
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COMMUNITY

A Look Back • Big Mound in St. Louis, legacy of a lost culture, is leveled in 1869



MISSOURI HISTORY MUSEUM PHOTO

Big Mound in 1852, showing erosion and removal of some of its earth to make way for a street. When St. Louis' founders arrived, the mound at today's North Broadway and Mound Street was the largest and northernmost of a cluster of 25 mounds. It measured 319 feet long by 158 feet wide and was 34 feet high. Final destruction began in November 1868.

Big Mound, Mississippian culture (ca. 900–1450 AD)

The area that is now Missouri has had continuous human habitation for at least 14,000 years.

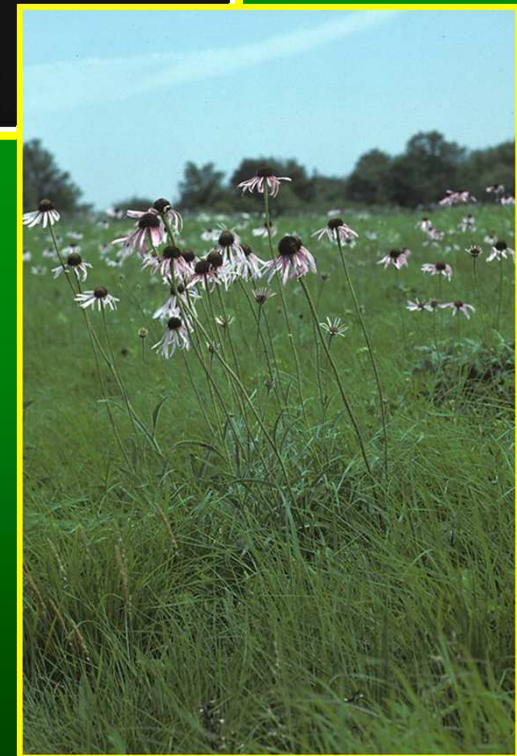
George Yatskievych



Grant McClintock



Modern habitats, such as tallgrass prairie, which once covered almost 1/3 of Missouri's landscape (ca. 15 million acres), developed both as climate warmed after the last Ice Age and through centuries of land use activities by humans.



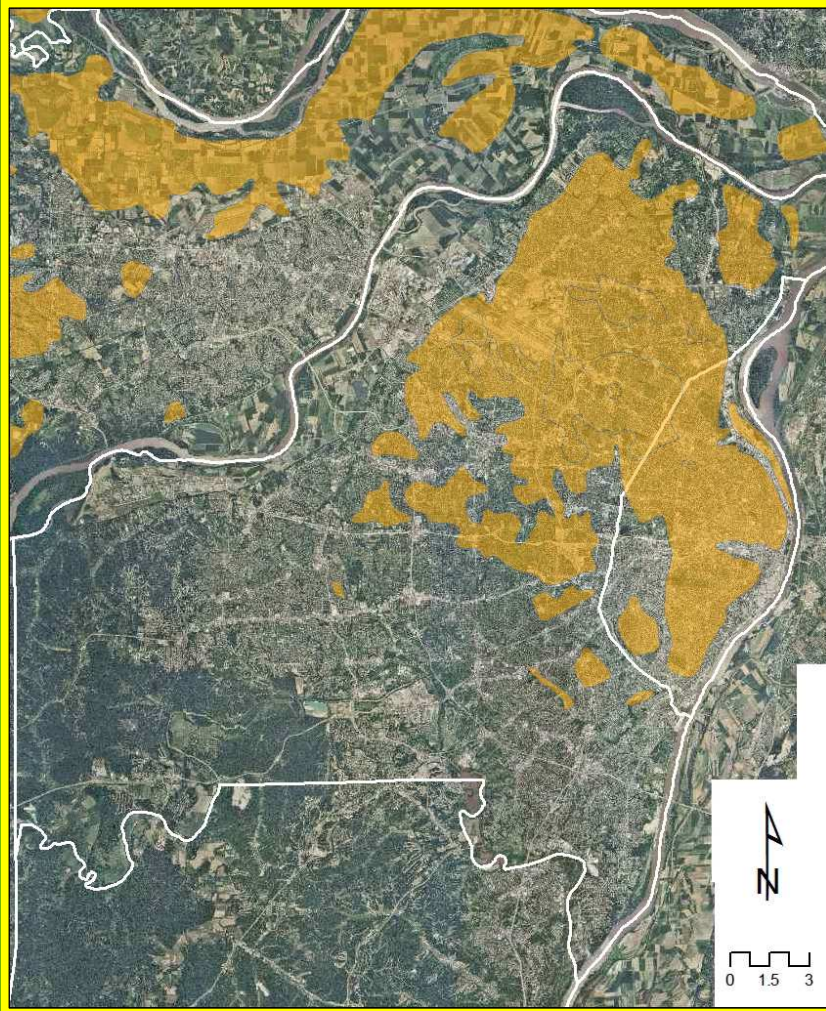


Figure 6. Early prairies of St. Louis City with the location of the French system of common fields and commons (pasture). Information from Soulard surveys 1796-1806, U.S. General Land Office surveys 1816-17, and contemporary written accounts.

EARLY PRAIRIES of ST. LOUIS CITY

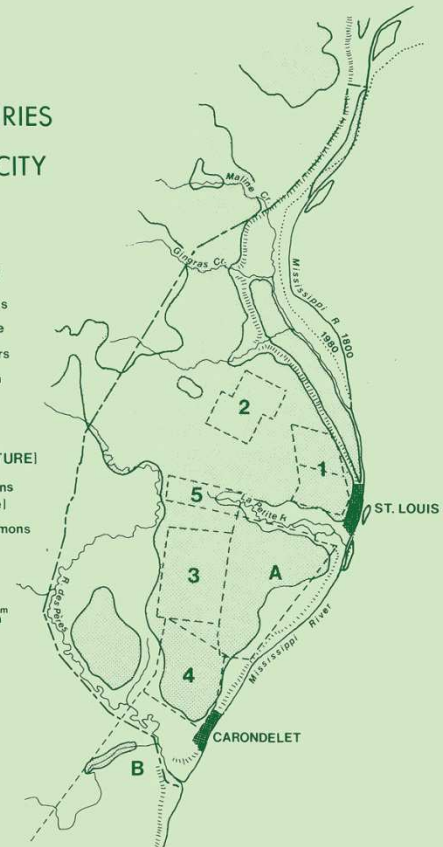
COMMONFIELDS

- 1 Prairie de St. Louis
- 2 La Grande Prairie
- 3 Prairie des Noyers
- 4 Prairie a Catalan
- 5 Cul de Sac

COMMONS (PASTURE)

- A St. Louis Commons
(La Petite Prairie)
- B Carondelet Commons

0 5 m
0 5 km



Sources: Walter A. Schroeder (1981); Steve Buback (MDC)

Presettlement Prairies of the St. Louis Area

As the settlement grew, improvements changed the landscape dramatically.

Extent of Chouteau's Pond overlaid on aerial view
Of modern St. Louis.
<http://www.reddit.com/r/StLouis/comments/157610/>

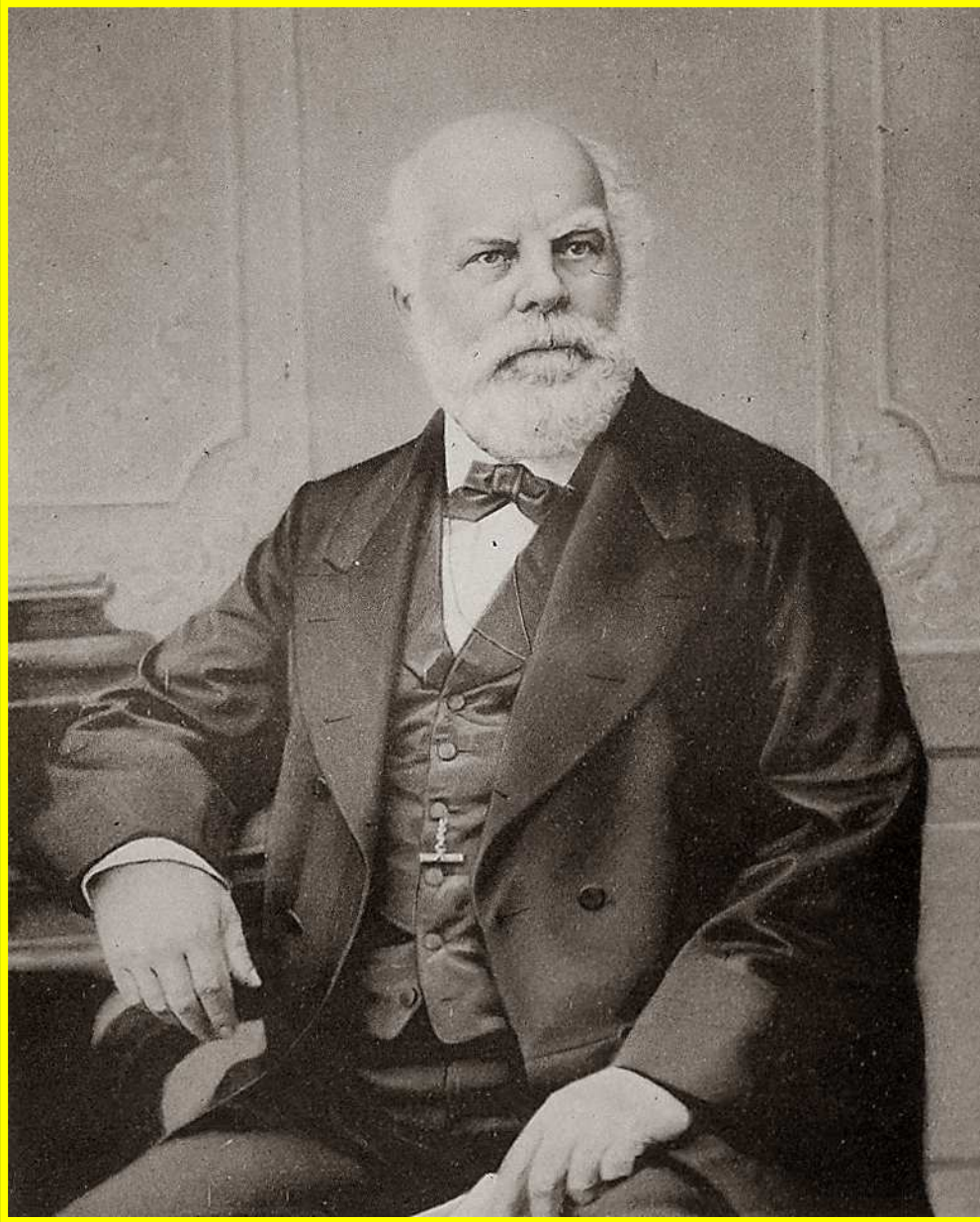


View of St. Louis from South Side of Chouteau's Lake,
1840. Lithograph, Missouri Historical Society

Chouteau's Pond (Lake)
was a large impoundment
of Mill Creek above the
area's first mill. It was
drained in 1851, because
of pollution and fears of
cholera and other
diseases.

When Henry Shaw purchased the land that would become his country estate and, in 1859, the Missouri Botanical Garden, this property was located about 3 miles outside the city limits and was still a virgin prairie.





George Engelmann (1809–1884)

Botanized extensively in Missouri, starting in the early 1830s

Developed a personal herbarium of ca. 97,000 specimens

Published >100 botanical papers, including >600 new species

Was instrumental in founding of the St. Louis Academy of Science

Was Henry Shaw's botanical advisor and the first research botanist at the Missouri Botanical Garden

Cerastium brachypodum Engelm.
Brachypodum
note
Banks of Chouteau's Pond
George Engelmann, M.D.
ST. LOUIS, Mo.
April 1842

George Engelmann's collections in the St. Louis area, beginning in the early 1830s, documented the flora and changes in the flora over time. He collected the original (type) specimen of the short-stalked mouse-ear chickweed (*Cerastium brachypodum*) on the banks of Chouteau's Pond in April 1842 and described it as new to science.





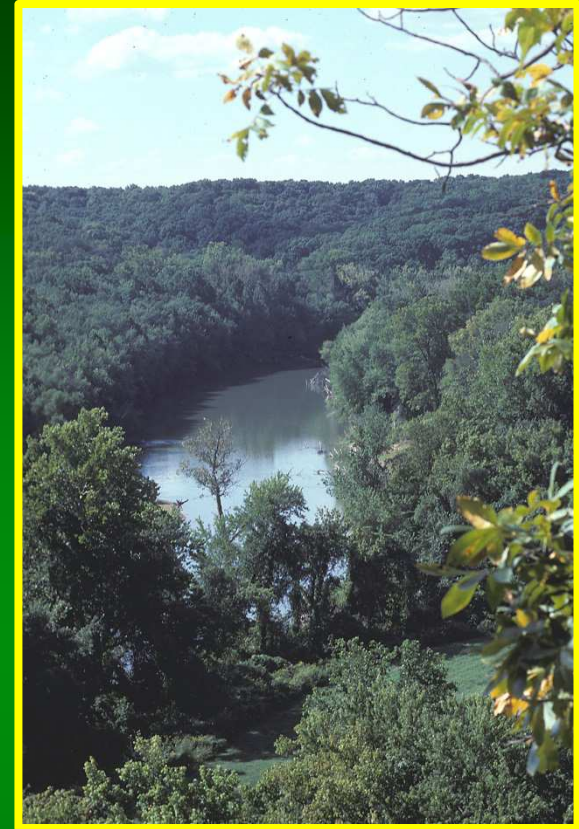
Demolition of the St. Louis Arena, 29 February 1999
Jason Redmond, St. Louis Post-Dispatch

The advance of civilization is an inherently destructive process. What results from urbanization and agricultural development bears little resemblance to the original landscape. Modern city dwellers are so isolated from the natural world, that often they have lost their links to nature.



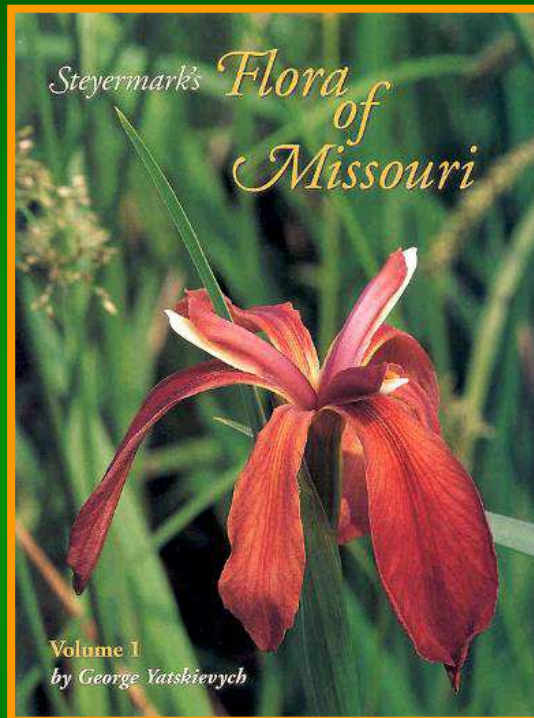
Meramec Greenway Trail, St. Louis County.
Great Rivers Greenway

Landscape restoration requires city planners and others to discriminate between native plantings, gardening with natives, attempts to recreate examples of various habitats, establishment of greenspaces and wildlife corridors, and habitat restoration. These are not the same.

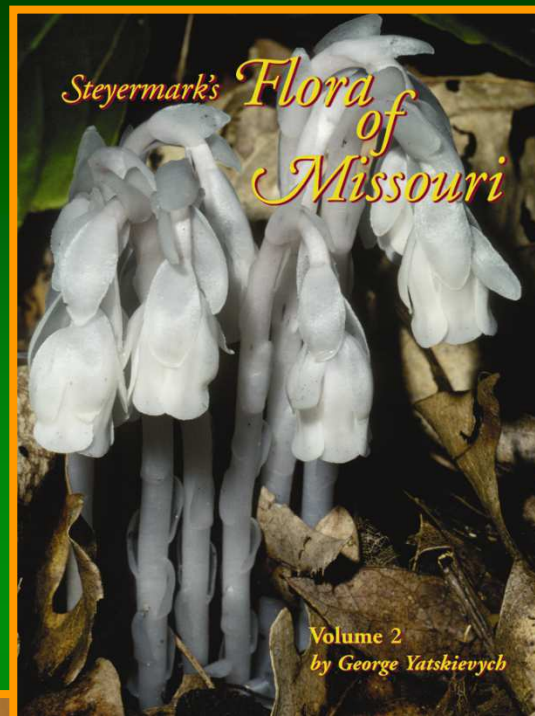


Castlewood State Park, St. Louis County
George Yatskievych

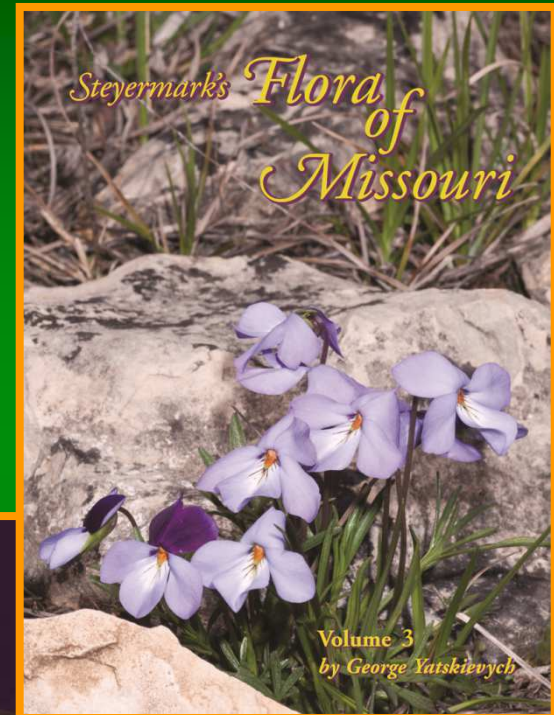
1999



2006



2013



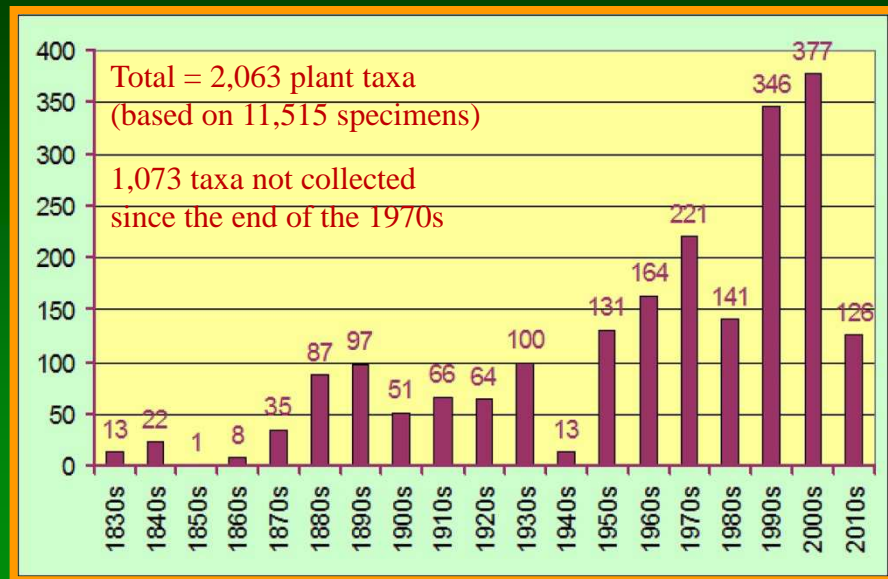
Flora of Missouri Project



Historical
vs
Present-Day
Distributions



Number of Specimens Collected



Decade of Last Collection of Taxa



Providing Names for Organisms



Ron Liesner identifying plant specimens
in the Missouri Botanical Garden Herbarium

Alliaria petiolata

First report for Missouri: 1979

Flora of Missouri Project

Species occurring in County: St. Louis City

* <i>Abutilon theophrasti</i>	velvet-leaf, butter-print
<i>Acalypha gracilens</i>	slender three-seeded mercury
<i>Acalypha ostryifolia</i>	roughpod copperleaf
<i>Acalypha rhomboidea</i>	rhombic copperleaf, three-seeded mercury
<i>Acalypha virginica</i>	Virginia copperleaf
<i>Acer negundo</i> var. <i>negundo</i>	box elder, ash-leaved maple
<i>Acer rubrum</i> var. <i>rubrum</i>	red maple
<i>Acer saccharinum</i>	silver maple, soft maple
<i>Acer saccharum</i> ssp. <i>nigrum</i>	black maple
<i>Acer saccharum</i> ssp. <i>saccharum</i>	sugar maple, hard maple
<i>Achillea millefolium</i>	yarrow, common milfoil, nosebleed
<i>Acemison americanus</i> var. <i>americanus</i>	prairie trefoil
<i>Actaea racemosa</i>	black cohosh, black snakeroot
<i>Adiantum pedatum</i> var. <i>pedatum</i>	northern maidenhair fern
* <i>Aegilops cylindrica</i>	bearded goat grass
<i>Agalinis auriculata</i>	auriculate false foxglove
<i>Agalinis tenuifolia</i>	common gerardia, slender gerardia
<i>Agastache nepetoides</i>	yellow giant hyssop
<i>Ageratina altissima</i> var. <i>altissima</i>	white snakeroot
* <i>Ageratum conyzoides</i> ssp. <i>conyzoides</i>	ageratum
<i>Agrimonia parviflora</i>	swamp agrimony, many-flowered agrimony, harvest lice
<i>Agrimonia pubescens</i>	downy agrimony, soft agrimony
* <i>Agropyron cristatum</i>	standard wheatgrass, crested wheatgrass
* <i>Agrostemma githago</i> var. <i>githago</i>	corn cockle
* <i>Agrostis capillaris</i>	Rhode Island bent
<i>Agrostis eliottiana</i>	awned bent grass
* <i>Agrostis gigantea</i>	redtop
<i>Agrostis hyemalis</i> var. <i>hyemalis</i>	hair grass, tickle grass, winter bent grass
<i>Agrostis perennans</i>	upland bent, autumn bent grass
<i>Agrostis stolonifera</i> var. <i>palustris</i>	creeping bent
* <i>Ailanthus altissima</i>	tree-of-heaven, cancer tree, stinkweed
* <i>Aira elegans</i>	hairgrass
* <i>Albizia julibrissin</i>	mimosa, silktree
* <i>Alcea rosea</i>	hollyhock
<i>Allium canadense</i> var. <i>lavandulare</i>	wild garlic, wild onion
* <i>Allium cepa</i> var. <i>cepa</i>	onion
* <i>Allium cepa</i> var. <i>viviparum</i>	onion
<i>Allium cernuum</i>	wild onion, nodding wild onion
* <i>Allium sativum</i>	garlic
* <i>Allium vineale</i>	field garlic
<i>Alopecurus carolinianus</i>	common foxtail, Carolina foxtail



County Flora Checklist

Identifying Connections in Nature



White-banded crab spider (*Misumenoides formosipes*)
with its prey, a wasp,, on oxeye sunflower (*Heliopsis helianthoides*)
Shaw Nature Reserve, Franklin County, Missouri.
Dave Stone, thingsbiological.wordpress.com

New
Invasive
Exotic
Records
Since
Steyermak
(1963)



Lonicera maackii
(Amur honeysuckle)



... and, in general, helping to design and implement studies to track changes in plant communities, species diversity, and the success of restoration efforts.



Wildcat Glade, City of Joplin, Newton County, Missouri. George Yatskievych

Missouri Native Plant Society outing
George Yatskievych



However, scientific efforts need to be coordinated with education, outreach, and other efforts, whether through individual Citizen Science projects or through more formal activities, such as nature walks or Bioblitz inventories. Partnerships are the cornerstone of any Biophilic projects.

FLORA OF MISSOURI PROJECT

