The Treasure of our Trees

Bridging The Gap, MARC, KCMO Parks & Recreation, OEQ

Trees are Outstanding Investments

100 Trees Over 40 Years...

Benefits	Costs
Energy	Planting/Pruning
Air Quality	Remove/Dispose
Runoff	Irrigation
Real Estate	Sidewalk Repair
	Litter
= $272,000	**= $136,000**

Return on investment: $136,000

Environmental Benefits of Trees

Air pollutants reduction, carbon sequestration, soil retention, water pollution reduction, storm water capture, wildlife habitat

Trees are Energy Efficient

- Two large shade trees on west, one on east save 56% of AC costs, <25% of winter heating

In Tree-lined Commercial Districts:

More frequent, longer shopping trips; shoppers spend 12% more for goods

Customers perceive better service, merchandise, maintenance of the area, more caring business people

Trees Increase Real Estate Value

Each large front yard tree adds 1% to sales price

Large specimen trees can add 10%, or more, to property values

Better occupancy rates, lower turnover

Green spaces inhibit crime

Greenery reduces mental fatigue – a precursor to violent behavior

More eyes on the street

Residents feel safer; greater community/civility

Reduced Violence in Domestic Disputes

Jean Peters Baker, tree fan

Prow, T. 1999. The Power of Trees. *Illinois Steward Magazine,* 7, 4.

Trees Reduce Stress, Improve Health

Surgery Recovery

- Shorter stays, less use of potent pain drugs

Immunization Effect

- desk workers without view of nature reported 23% more ailments

Job Satisfaction, less pressure

Greater concentration

Trees help people (kids) breathe

Portland State: direct links between mature trees, air quality in neighborhoods

Environmental injustice—most mature trees in wealthy areas

Species matters: some trees create allergies

European Respiratory Journal, 2013
Environmental Pollution (academic journal), 2014

The Antidote to Road Rage

Roadside Green= Less Stress

physical response to ramps,

commuting stress - lower job satisfaction, higher illness rates, absenteeism

faster recovery with nature view

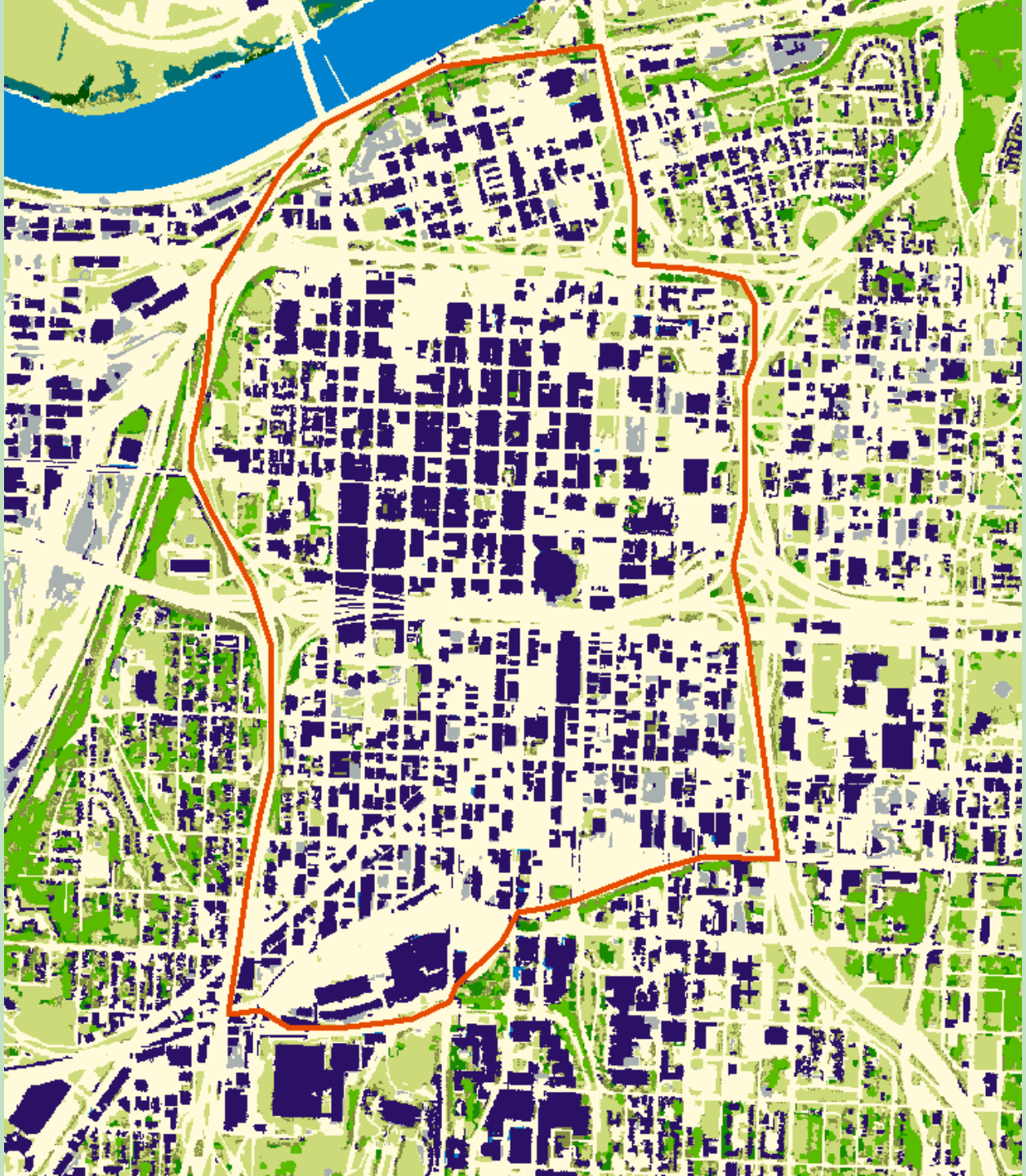
Most/Least “Treed” American Cities

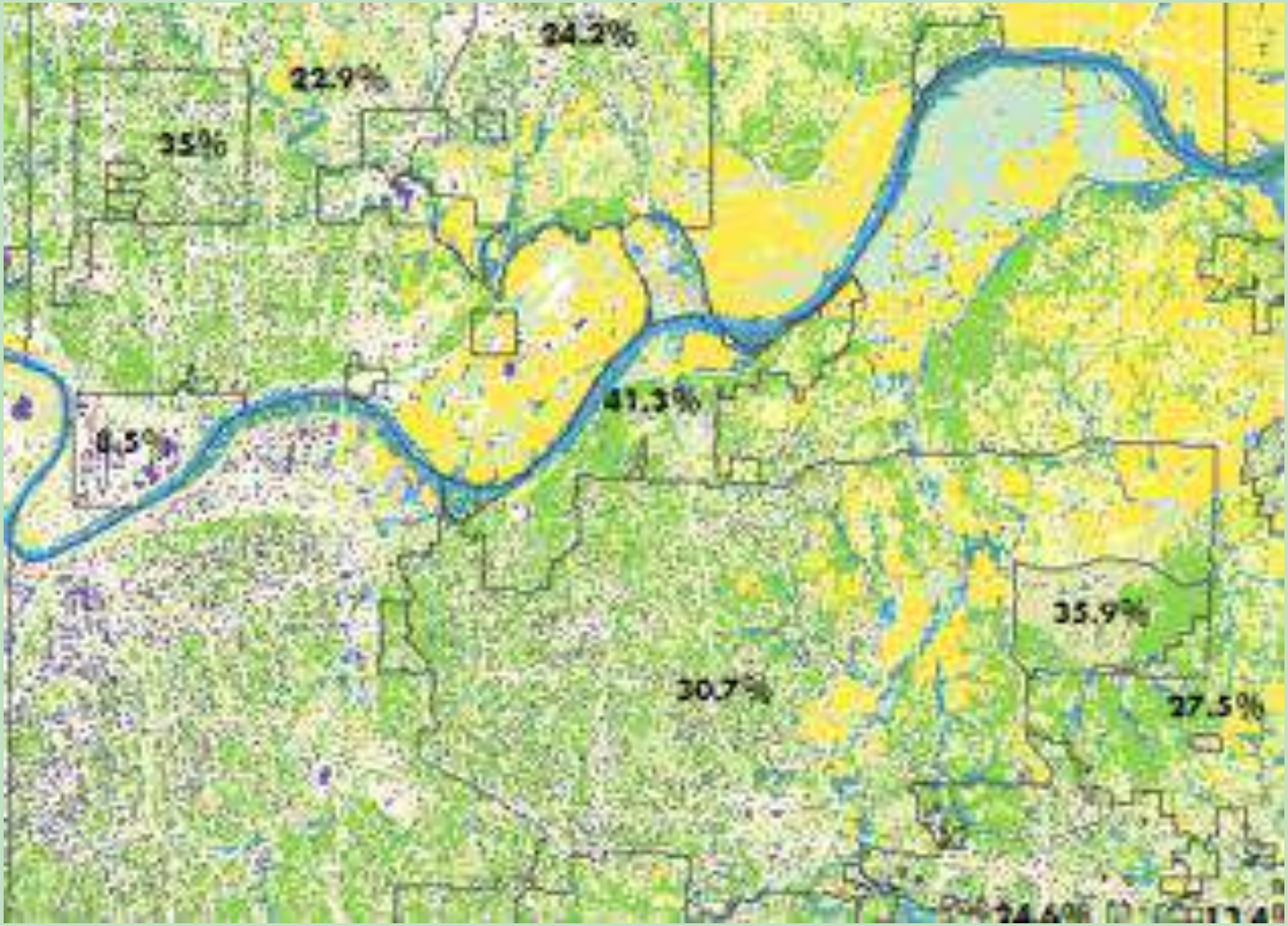
Atlanta 51.6%
Nashville 49.4%
Pittsburgh 41.6%
Minneapolis 33.7%
Portland 30.4%
Baltimore 28.4%

Boston 27.1
Kansas City 27.5
Detroit 22.3
New Orleans 23.3
New York 19.3
Chicago 18.0
Denver 9.6

How Much Coverage Do We Need?

	American Forest Canopy Guidelines	Greater KC 2012	KCMO
Entire City	**40%**	**18.6%**	**27.5%**
Suburban residential	50%	31.4%	
Urban residential	25%	?	?
Central Business Districts	15%	9.6% (commercial, Utilities, transport)	2%



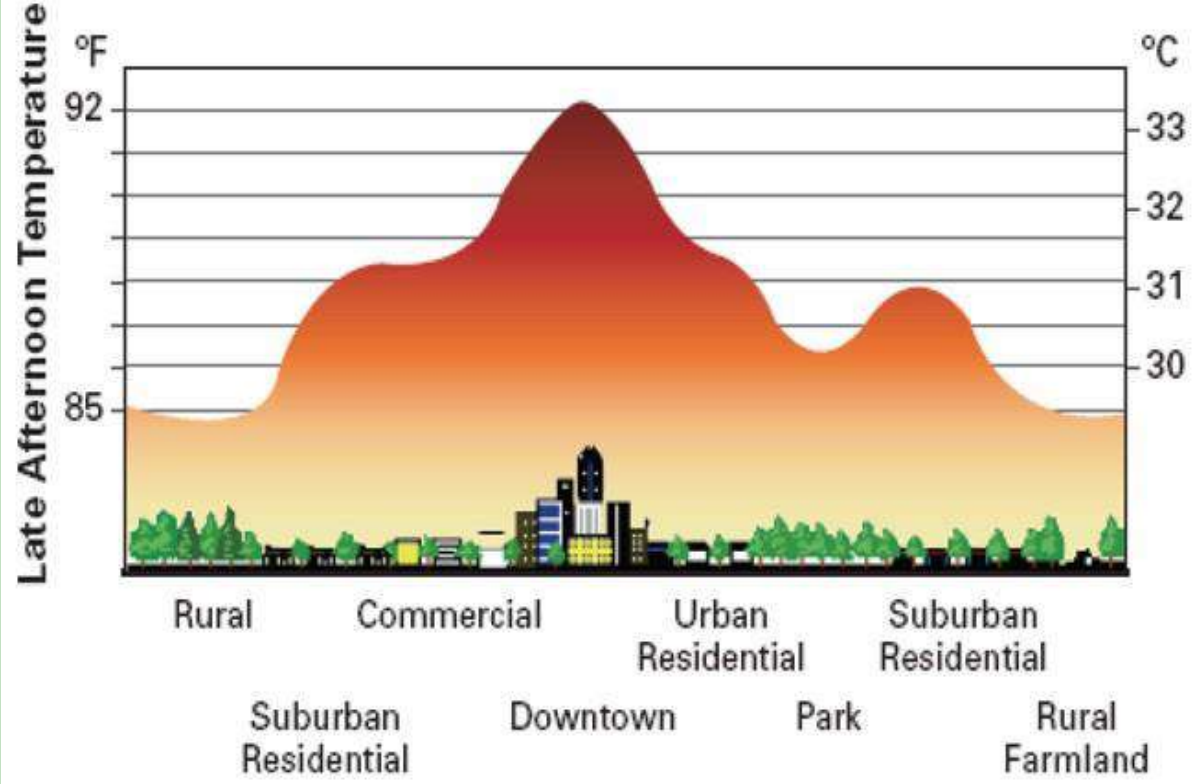


We're "undertreed" everywhere

Heat Island Effect: KC in top ten

Degree differential, city to rural

1. Las Vegas +7.3
2. Albuquerque +5.9
3. Denver +4.9
4. Portland +4.8
5. Louisville +4.8
6. Wash. D.C. +4.7
7. Kansas City +4.6
8. Columbus, OH +4.4
9. Minneapolis +4.3
10. Seattle +4.1

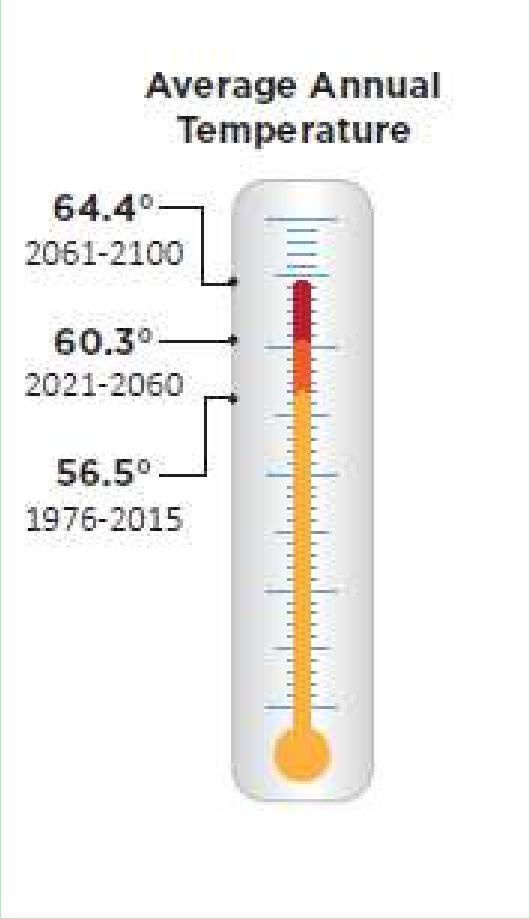


Source: climatecentral.org, Princeton, NJ

Expected Climate Change Impacts on Kansas City

Days>100 degrees up from 2/year to 32 per year by 2050

+3” rain annually, but less even=drought and flooding



Source: Dr. Chris Anderson, Iowa State University, 2015

Trees as Climate Resilience Strategy

Measures to counter Heat Island Effect, Payback in years

	Single Family Residences	Multi Family Residences
Highly reflective roofs	35 up to 100 years	41 up to 100 years
Reflective ground cover (veg. or concrete vs. asphalt)	(negative payback)	(negative payback)
Trees, strategically placed	6-12 years	3.4-4.7 years

Mid America Regional Council Study, 2015

Net Annual Tree Loss on Public Lands

Planted annually in KCMO

by City Parks	1,000
by Heartland Tree Alliance	450

Lost annually in KCMO

to ash borer (minimum)	1,000
to storm damage, age	3,000

Net Loss: 2,550 minimum

BTG’s Heartland Tree Alliance

Formed after 2002 ice storm

Heartland Tree Alliance Steering Committee

top urban foresters, landscape architects in the region

Since 2005, HTA volunteers have:

planted over 10,000 trees
pruned 2,479
mulched/staked an additional 1,620 trees
trained 150 citizen arborists

HTA STEPS TO SUCCESS

Right Tree, Right Place
- Space, species, soil, exposure

Create maintenance plan
- Watering
- Annual mulching
- Pruning in 1-2 years

Secure funding, trees, staff time

Organize volunteer workday
- Utility locates
- Planting permit
- Order trees and supplies
- Volunteer recruitment

Westport 2014: 18 trees, $5000

HTA vs. City Tree Planting Costs

HTA Volunteer Model: $250-300/tree

Volunteers plant/residents water

Citizen education/commitment

Increase trees planted in 2016 to 1,600

Planting for Climate Change

Species Diversity

Tolerance of heat, cold, drought, flooding

SW sides of buildings for deciduous, NE for conifers

Emphasis on natives

More and smaller

Black Gum or Tupelo, Z4-9

Our “ask” of City Leadership

Reflect value of trees, climate resilience potential in 2017+ city budget, staffing

Leadership, Advocacy, Public education, prioritization

Help us build a larger program

Consider a nursery

Swamp white oak: heat, flood & drought tolerant

Wangari Maathai,
Nobel Peace Prize
winner 2004

mobilized women in
Kenya
to plant 30 million trees

What is the value of native plants,
and what plants are native in greater Kansas City?

Midwestern prairie natives, the world’s most beautiful plants

Heat and drought tolerant, little mowing or watering, wildlife habita

Root Systems of Native Plants

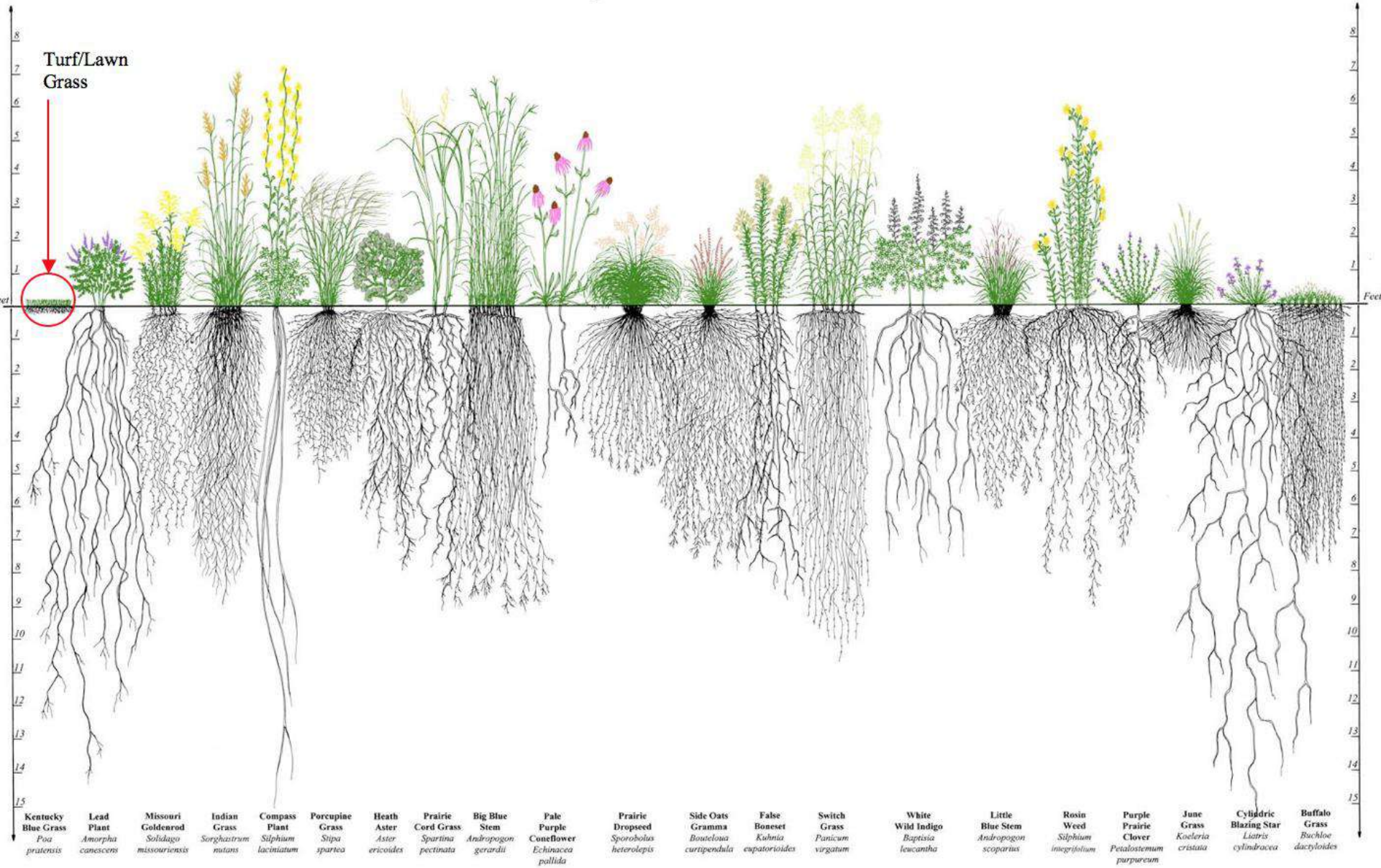


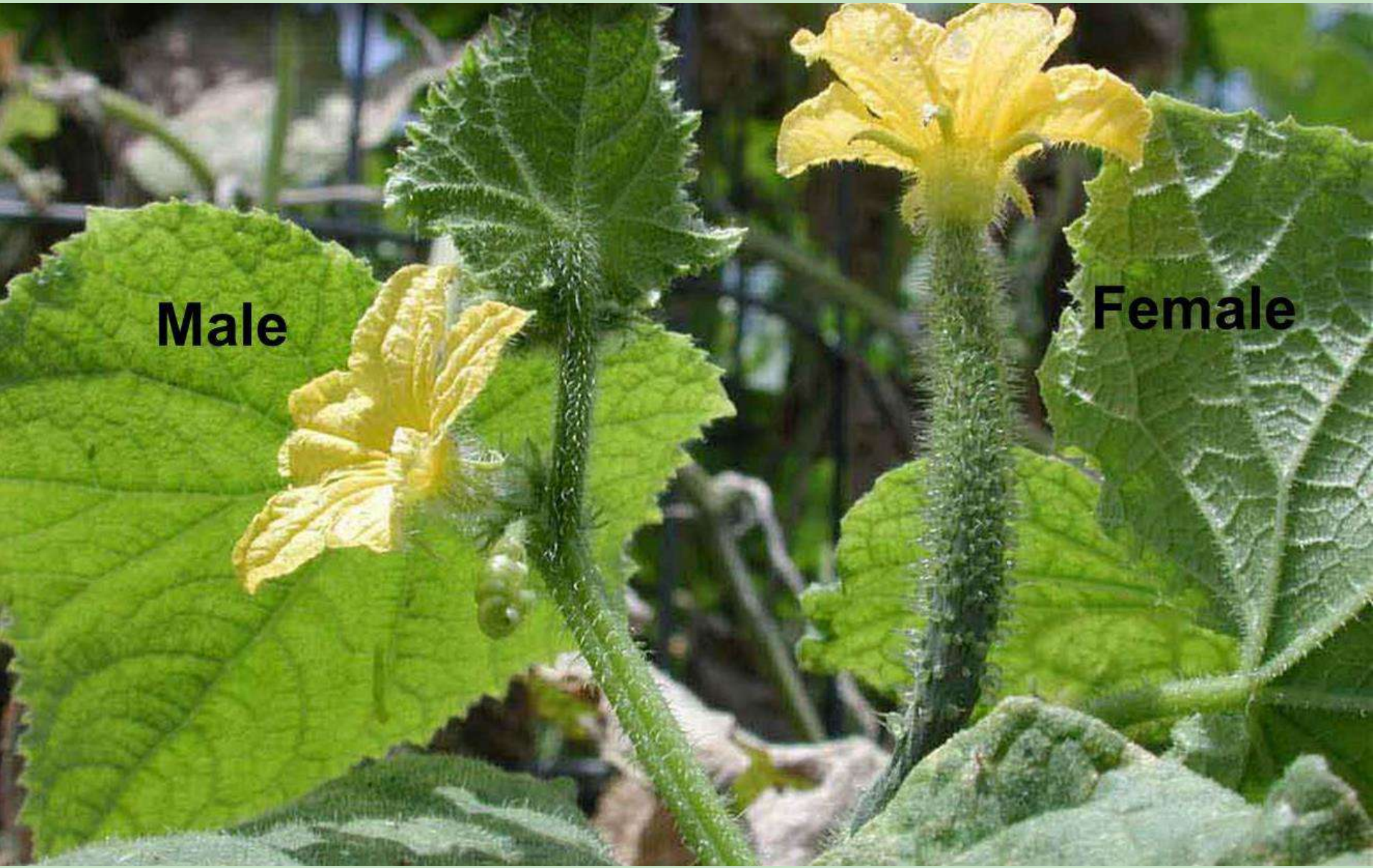
Diagram referenced from the "Conservation Research Institute"

What is a native habitat?

Food, shelter for local plants, insects, birds, frogs, bats, etc.—the web of life

Cities are actually great places for native habitat!

Pollinators Around the World Are Threatened


Male
Female

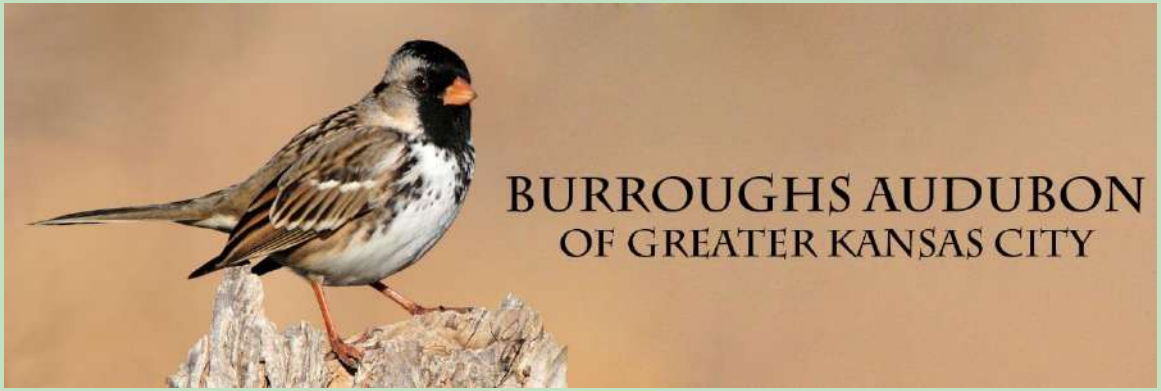
“Many species need wilderness designations to recover—but anybody can do something for pollinators.”

--Scott Black, Executive Director, Xerces Society

Kansas City WildLands,
a program of Bridging The Gap

NATIONAL FISH AND WILDLIFE FOUNDATION

NFWF



U.S. Fish & Wildlife Service

USFWS Monarch Butterfly National Conservation Priorities
--DRAFT August 2015--

USFWS Monarch Conservation Priorities*

*This map is intended to inform U.S. Fish and Wildlife Service national-scale monarch butterfly conservation work. It was created using tools developed by the USGS-led Monarch Conservation Science Partnership, in this case highlighting priorities for maximizing overwintering population-level outcomes through a combination of focusing on geographic priorities, opportunity areas, and threats to be avoided. This is a DRAFT version and may be adapted or customized for different decisions and/or scales; updates will be ongoing, using the best available science.


175 gardens

Mayor James signed the Mayors' Monarch Pledge

…and will declare Milkweed Planting Day

Ordinances affecting native plants are under review

How To Make a Native Garden Look Tidy

Define with paths, edging

Plant 9-15 pots of each plant (helps identify from weeds)

Use non-natives (boxwood, yew) to give structure in winter

Add a bird bath, boulder, other visual focal points

Trim down in early spring

Pinch if you don’t like ‘em floppy

Native groundcovers for shade suppress weeds, support pollinators

Cultivars with fancy names
don’t provide as much eco-value—ask for the original native