

Toward Resilient Landscapes

Trees People & Towns Conference
Nebraska City – July 2015

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Nebraska Forest Service & Nebraska Statewide Arboretum



Confessions of a Tree Nut



Confessions of a Do-Nut!



Sad News:
Conroy's Closes



The Good News: We can now get a Hurts Donut



The Money Pit

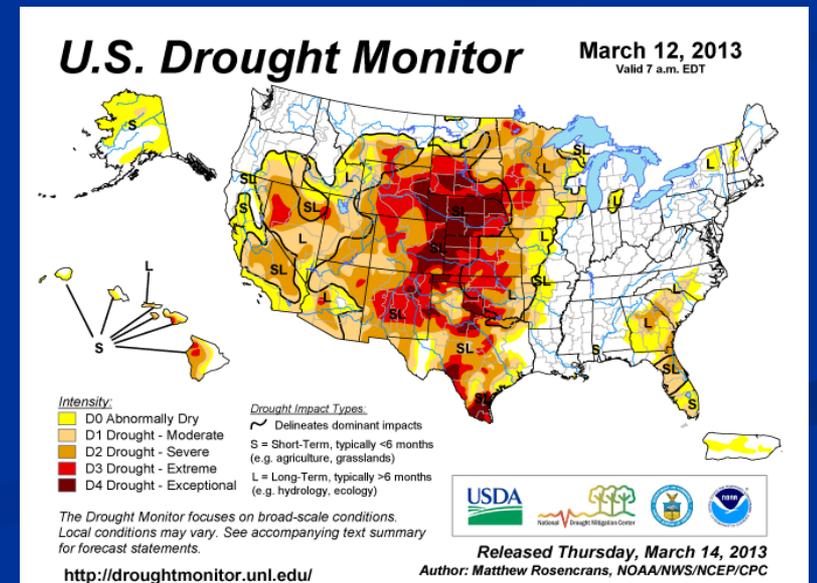


Are we doing right by the biosphere and our long-term survival as a species?



So Many Environmental Challenges

- Habitat loss
- Decreased biodiversity
- Increasing extinction rates
- A changing climate
- Degraded soils
- Water quantity and quality concerns
- Ocean acidification and dead zones
- Population growth
- Human apathy and our disconnect from nature



Evidence is Mounting Rapidly!

- Collapsing Biodiversity and Extinctions
WWF Living Planet Report 2014:
52% decline in vertebrate species populations since 1970.
Canaries in the coalmines: Monarchs, bees, amphibians, bats, etc.
- Xerces Society for Invertebrate Conserv. - data on declining pollinators
- *Modeling Wild Bee Abundance in the US*, National Academy of Science – Nov 2015
- *Ten Most Endangered Animals in Africa*, Answers Africa, 2015
- ***Crisis in Global Oceans – WWF Nov 2015***
- *Alarming Amphibian Decline*, USGS 2013
- *White Nose Syndrome in Bats –*
www.whitenosesyndrome.org



Evidence on Climate & Population

- **Anthropogenic climate change: It's real!**
Understanding and Assessing Climate Change: Implications for Nebraska – UNL, 2014
- *National Climate Assessment, 2015 – GlobalChange.gov*
- *Short Answers to Hard Questions About Climate Change – NY Times, Nov 2015*
- *Addressing Air Pollution and Climate Change (Could Save 300,000 Lives and \$130billion by 2030). Journal Nature Climate Change, 2016.*
- *One Planet, How Many People? A Review of Earth's Carrying Capacity – United Nations Environment Program, 2012.*



The Evidence Closer to Home

- *Prairie Conservation in North America* – Sampson and Knopf, BioScience Vol 44, No6, 1994. <http://digitalcommons.unl.edu/>
- *Grassland Conversion in Plains/Midwest 2011-12*: 60,000 CRP acres Nebraska – we're #1! (USDA 2013); 7,000+ acres of prairie.
- *Monarchwatch.org*: 24 million acres east US grassland habitat loss since 1996. Total habitat loss to monarchs 167 million acres.
- *Tiger Salamanders Disappearing*, Dennis Ferraro, Lincoln Journal Star, 1/24/16
- *Nitrates in Drinking Water*
Des Moines, Hastings, Waverly, etc.
- *Advance of Eastern Red Cedar and loss of Ponderosa Pine* - NFS



Michael Forsberg – Spring Creek Prairie



Less than 1% of the
tallgrass prairie remains!

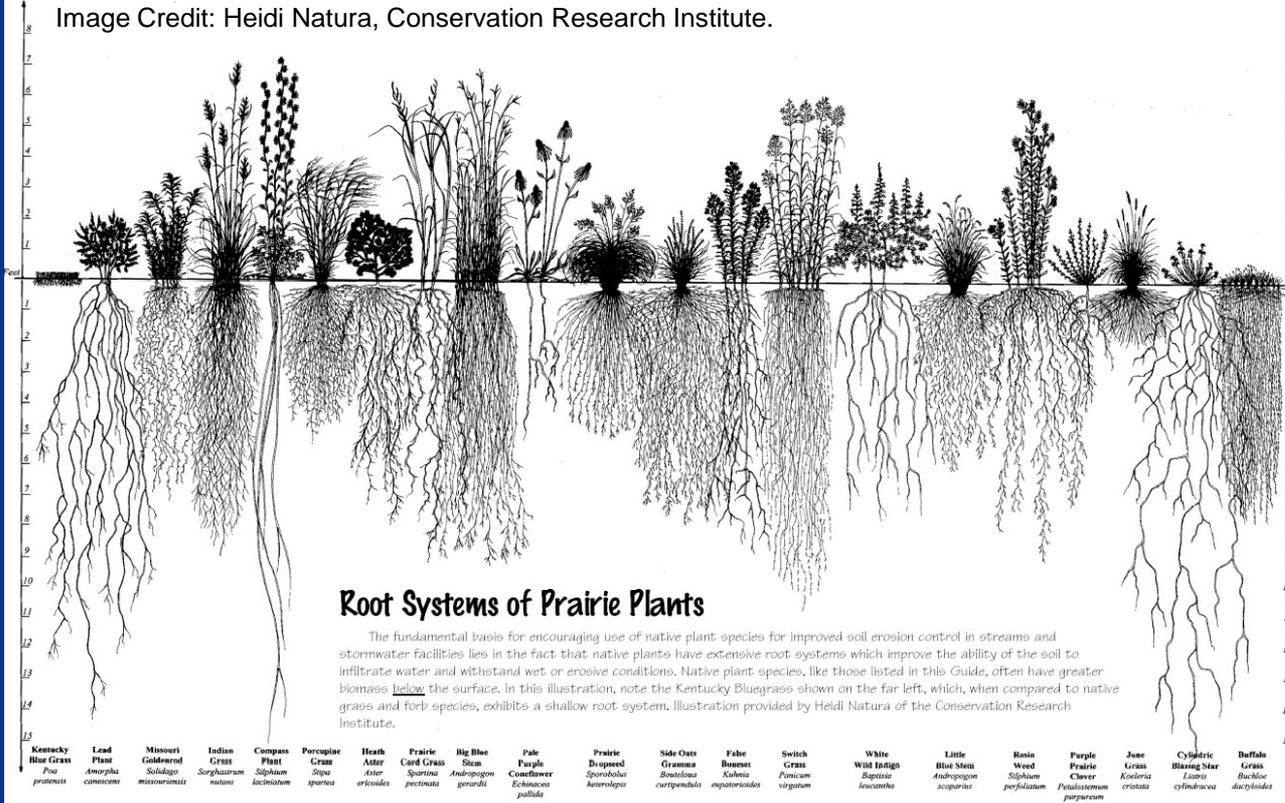


Dieken Prairie

The prairie was teeming with life and was a sponge for water and carbon. More than 200 plants & 20 species could exist in one sq. meter.



Image Credit: Heidi Natura, Conservation Research Institute.





Greater Prairie Chicken



Regal Fritillary



Bobolink



Western Prairie Fringed Orchid / NGPC



Ute's Ladies Tresses / Fish & Wildlife Service



Monarch



Tiger Salamander

It's not only what we've lost but also what we've added: Invasive Species

1. Honeysuckle
2. Burning Bush
3. Callery Pear
4. Phragmites
5. Leafy Spurge
6. Sericea lespedeza
7. Smooth Brome
8. Emerald Ash Borer
9. Japanese Beetle
10. Gypsy Moth
11. Etc.



Sericea lespedeza

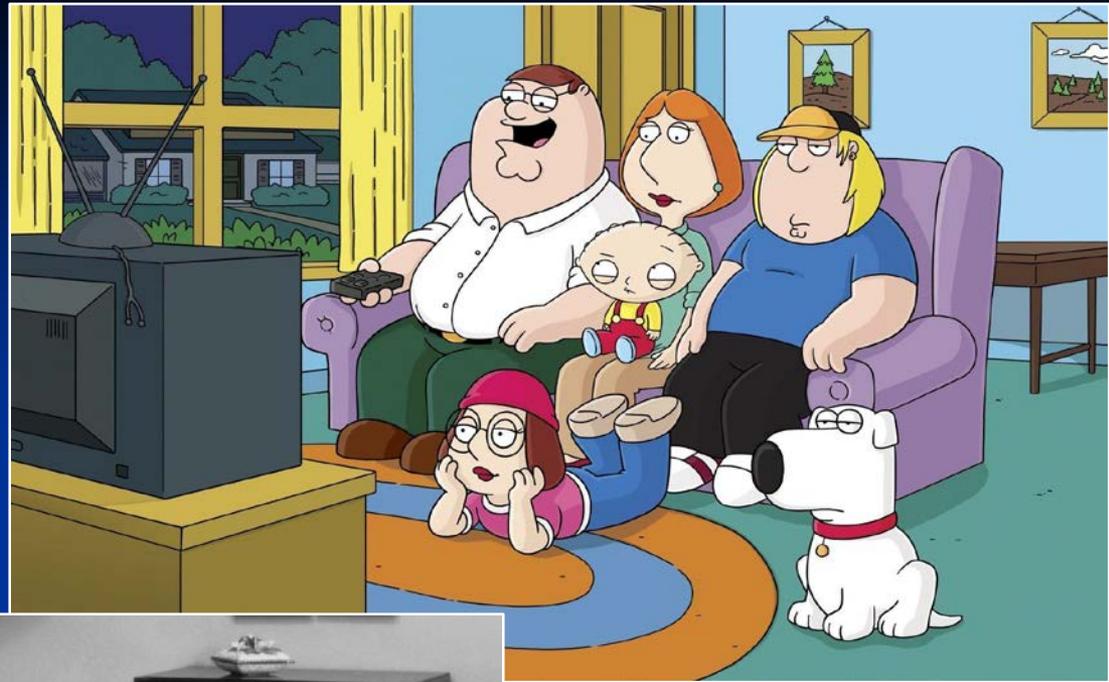


Emerald Ash Borer



Phragmites

Every day, we become more disconnected from the natural world.



Our community
landscapes reflect
this disconnect as we
strive for the “neat
and tidy”.



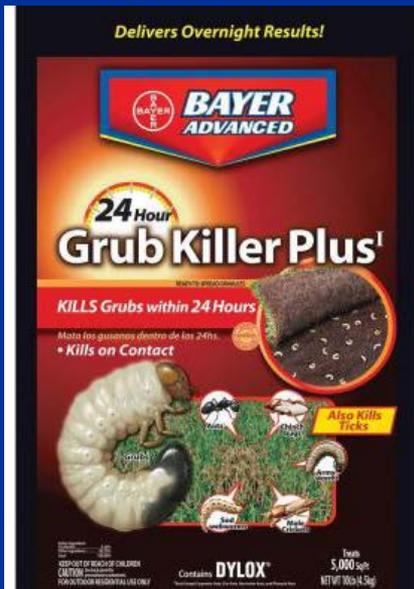
What ecological benefits are these landscapes providing?

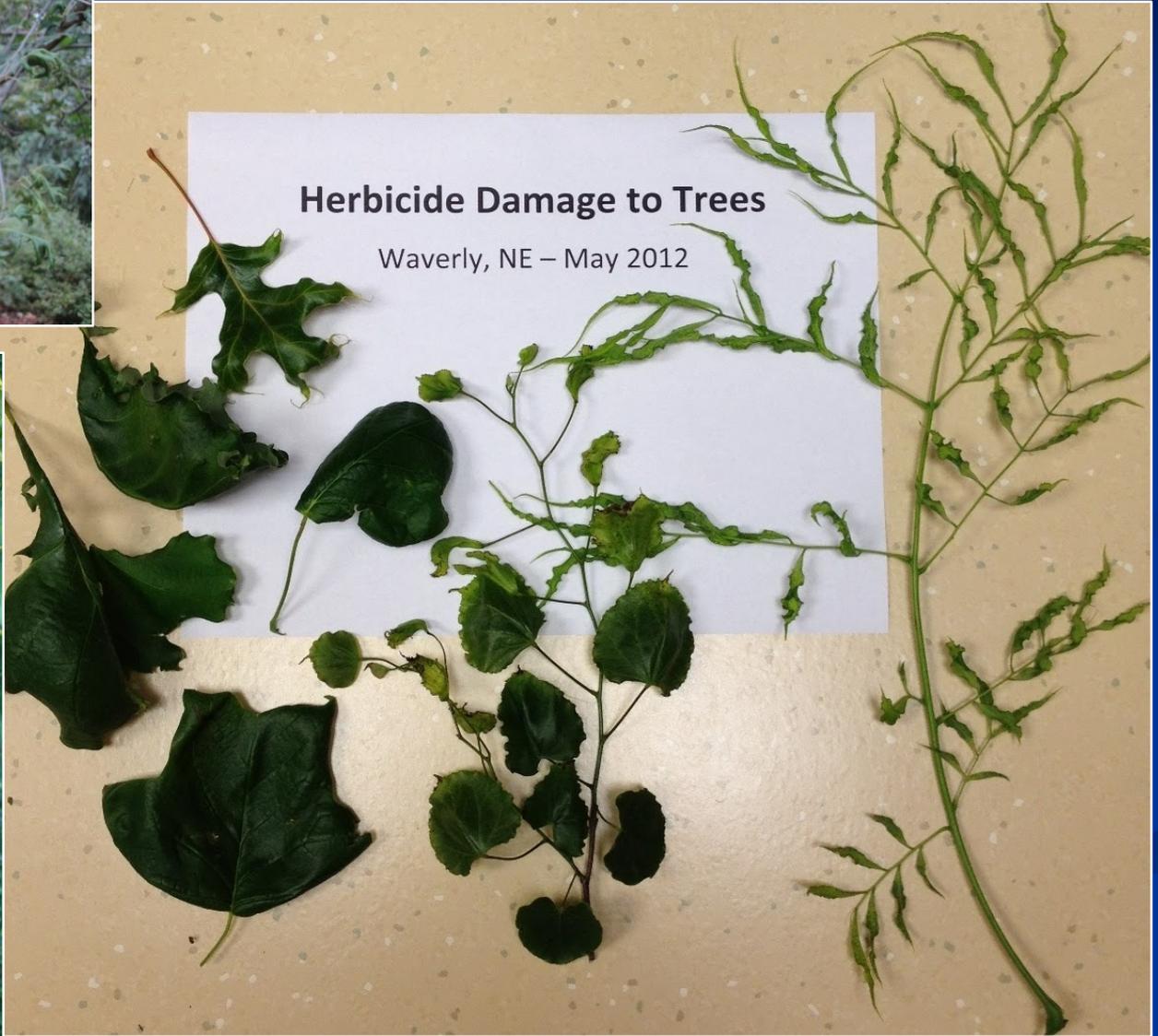


Photo: Kelly Feehan

We work hard at reducing biodiversity as we strive for a very narrow aesthetic.

30,000 tons of pesticides are applied to planted landscapes each year.
10X greater use/acre than on farm ground.





My concern must be misplaced.

If these issues are so important, where's the political, social and economic action?
What am I missing?



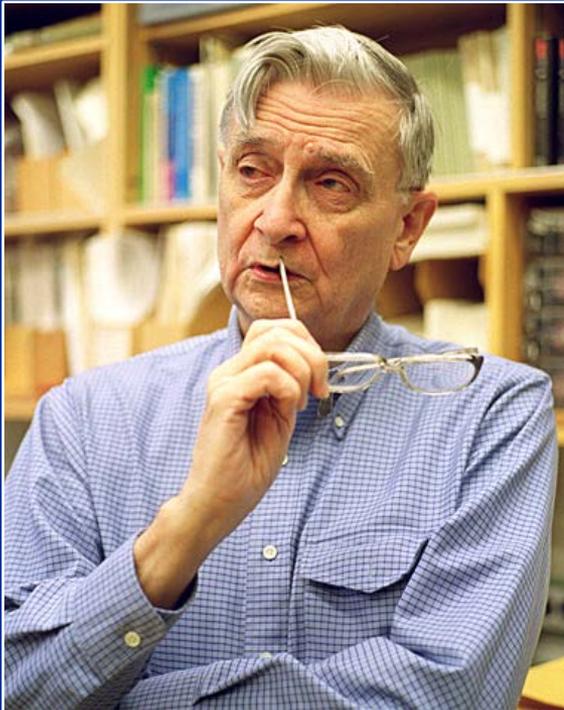
What about humans?





Lady Bird Johnson

“Some may wonder why I chose wildflowers when there is hunger and unemployment and the big bomb in the world. Well, I, for one, think we will survive, and I hope that along the way we can keep alive our experience with the flowering earth. For the bounty of nature is also one of the deep needs of man.”

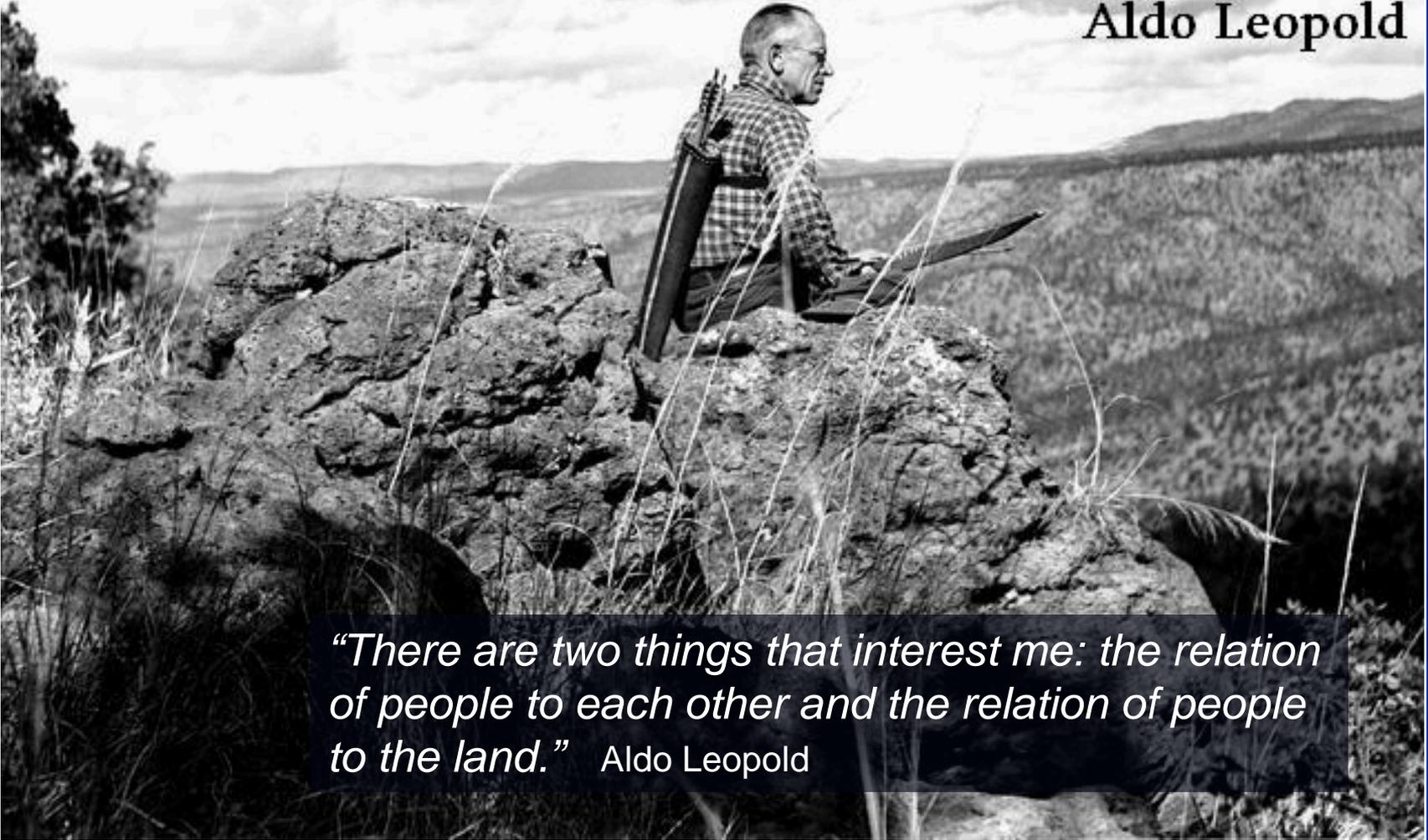


E.O. Wilson

“A very Faustian choice is upon us: whether to accept our corrosive and risky behavior as the unavoidable price of population and economic growth, or to take stock of ourselves and search for a new environmental ethic.”

We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.

Aldo Leopold



“There are two things that interest me: the relation of people to each other and the relation of people to the land.” Aldo Leopold

"We do not inherit the earth from our ancestors, we borrow it from our children." Native American Proverb



A Moral Imperative

It's the moral challenge of our time that we develop and promote a new ethic for sustaining the planet as we work to sustain ourselves. We are all in this together.



A Few Suggestions for Sustainability

1. Strive for biodiversity and celebrate a bit of wildness.
2. Emphasize native plants.
3. Celebrate insects & wildlife.
4. Think multi-purpose plants (plants beyond beauty).
5. Improve/sustain soil health and practice nutrient recycling.
6. Put plants in communities.
7. Be water-wise.
8. Relax about the lawn!



Our community landscapes must become refuges for native plants, insects and other wildlife.



The Benefits of Native Plant Biodiversity

- Greater diversity of wildlife – especially insects, birds, amphibians and reptiles.
- More pollinators & better pollination
- More predatory insects and better insect balance.
- Better/more organic soil.
- Better stormwater mgmt.
- Greater resiliency to weather events, insects, disease, etc.
- Aesthetic benefits!



Planted landscapes should be teeming with life!



A Few Landscape Examples

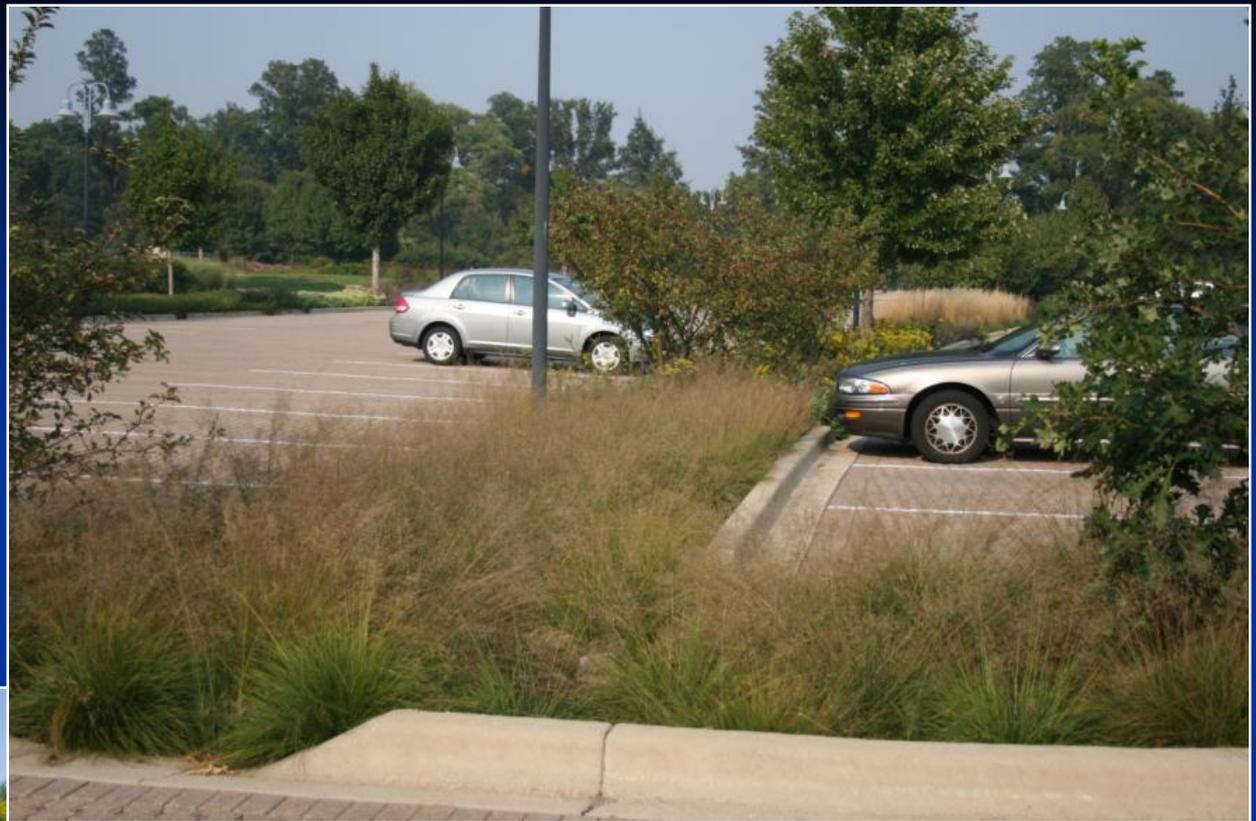
Fireworks Restaurant & Trail Corridor - Lincoln





Johnson County Transit Center, Olathe KS





Morton Arboretum, Chicago



Specifically About Trees

If I Were King...



I'd start by reminding people how beautiful and important trees are!

Benefits of Trees

Beauty, comfort, shade, energy conservation, stormwater absorption, wildlife, human health, food, lumber, etc.





Big trees!



Green ash - 1895

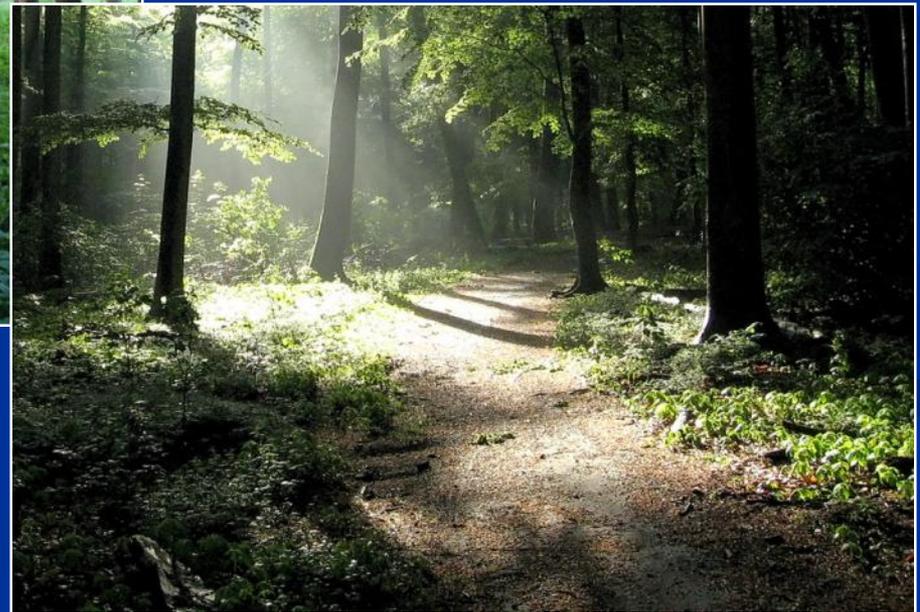
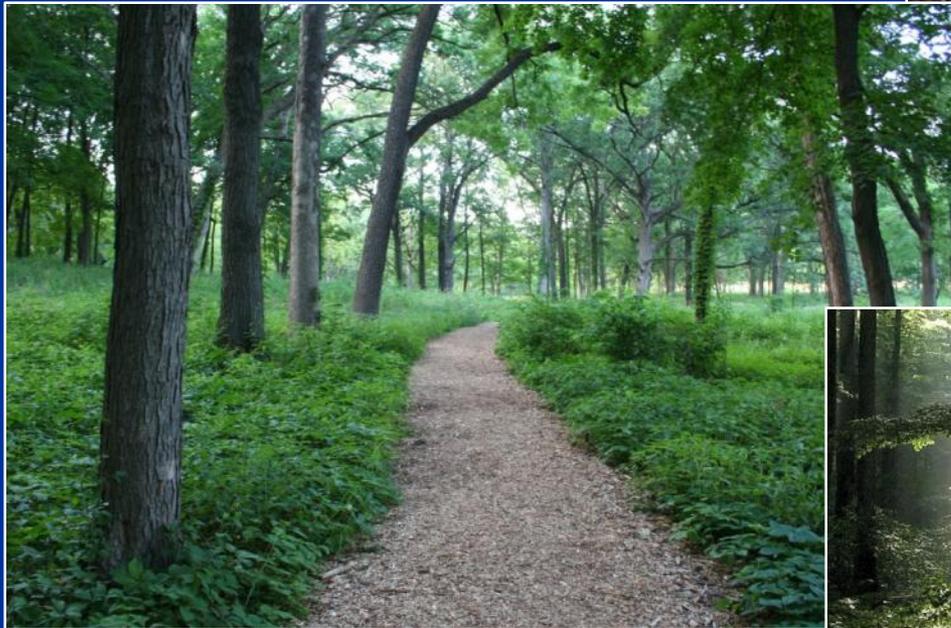
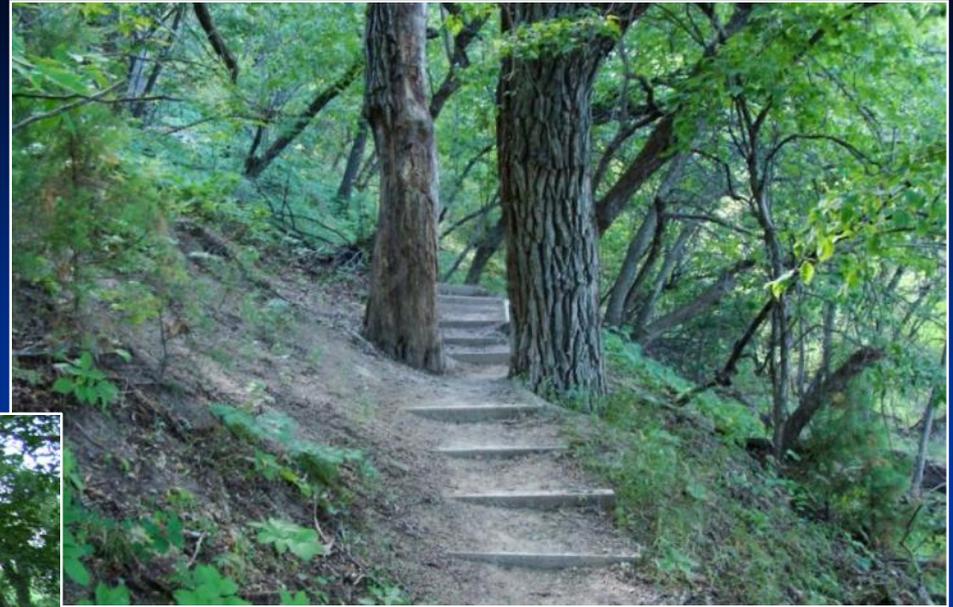
Josephine Bur Oak
Petersburg, IL



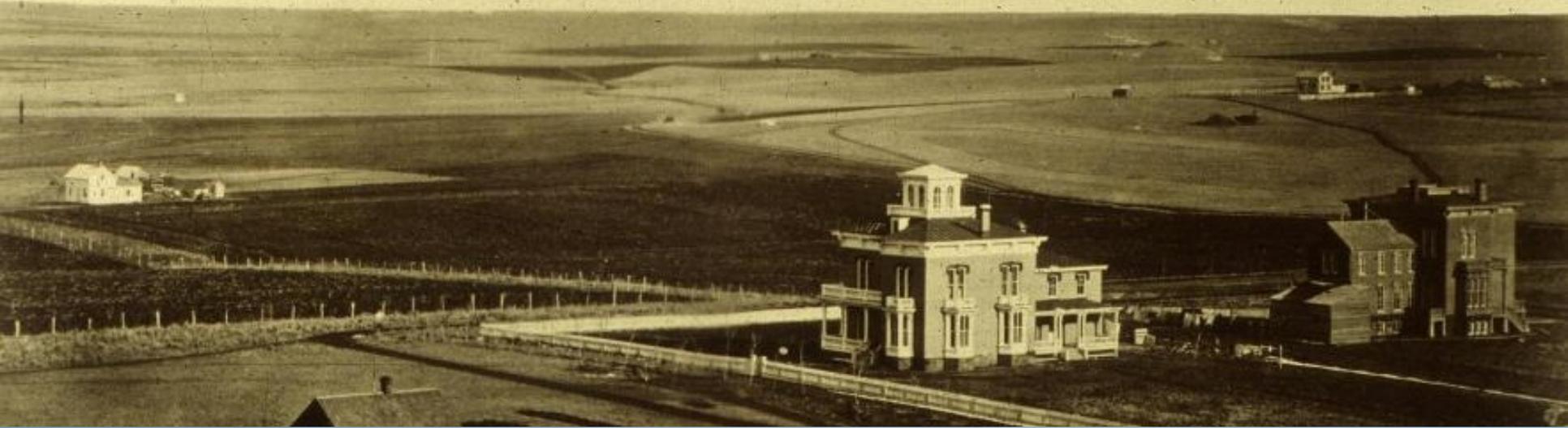
Tree huggers welcome!



We'd spend some time in the woods.



Lincoln ca. 1870



2010



I'd remind people
that we used to
work harder at
managing trees.

Tilden



Kearney ca. 1909
Butcher collection

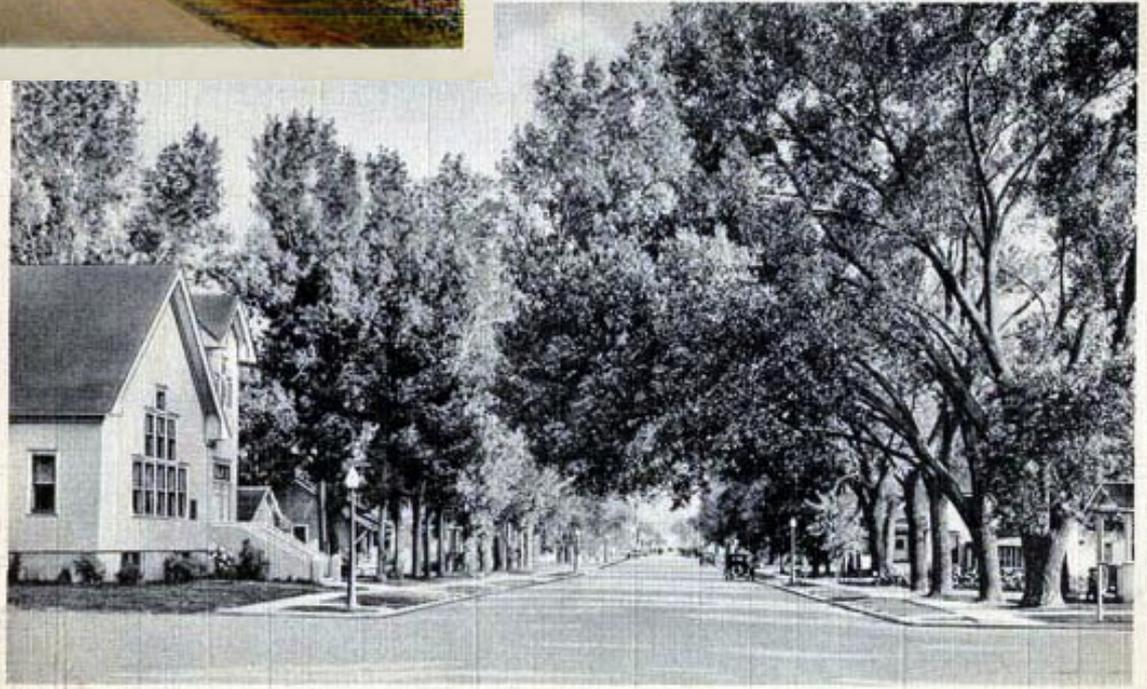


Watson Boulevard, Kearney, Neb., Immediately West of City, on Lincoln Highway—U. S. 30



Kearney Old
Lincoln Highway
1920

NORTH SPRUCE AVENUE, RESIDENCE SECTION, OGALLALA, NEB.

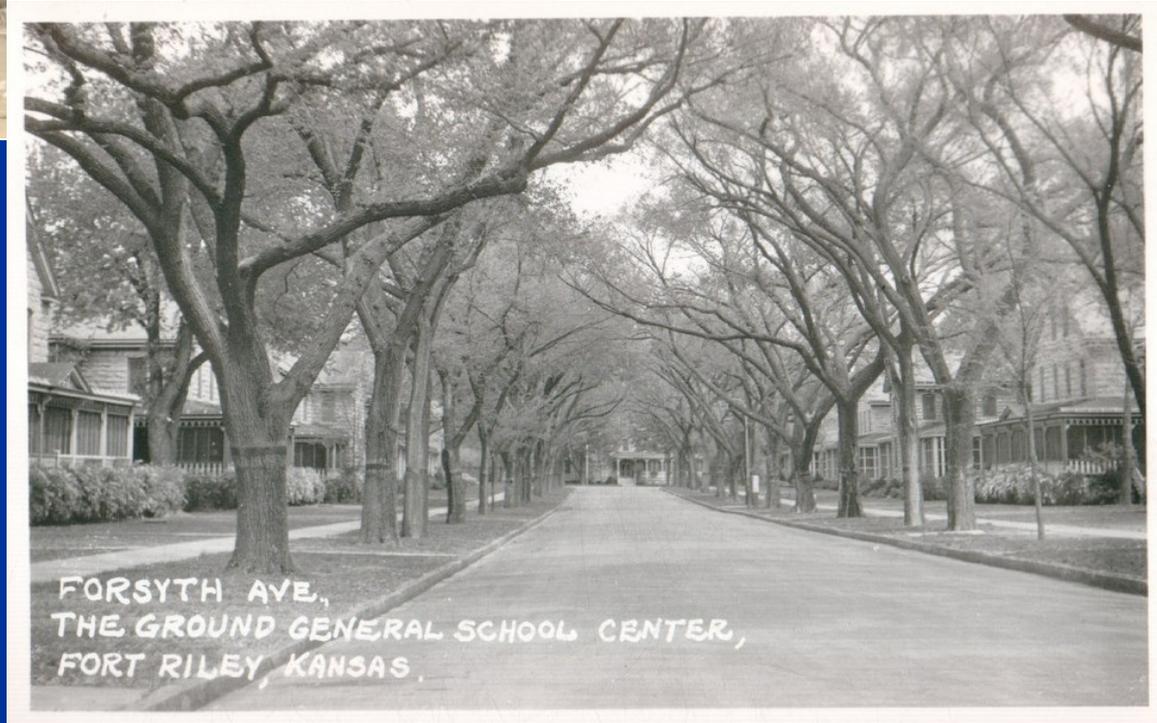


Ogallala



Baxter Springs, KS

Fort Riley, KS



FORSYTH AVE,
THE GROUND GENERAL SCHOOL CENTER,
FORT RILEY, KANSAS.

Residence Street, Redfield, S. Dak.



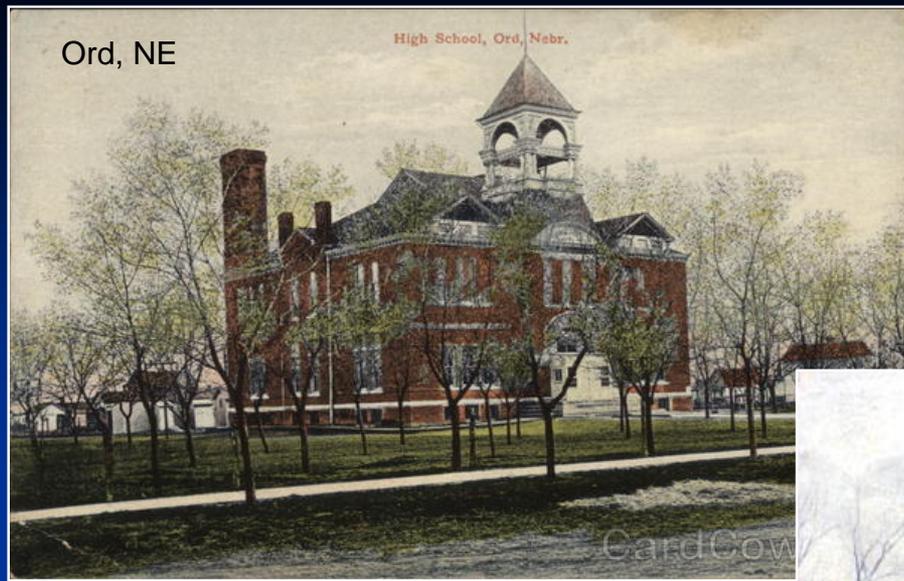
Redfield, SD

Pierre, SD



CardCow.com

Ord, NE



High School, Geneva, Nebr.
Geneva, NE



Chadron, NE





Elk Point, SD

Brookings, SD



We'd address our community forest decline.

- 30% to 50% canopy loss in established neighborhoods since 1960s.



We'd learn about the biggest pest problem: People!

1. Poor selection & siting (wrong tree/wrong place)
2. Issues around land development and regulations
3. Poor nursery quality
4. Poor planting
5. Poor pruning & care
6. Lawn related: mower & herbicide damage, over watering, etc.
7. Altered soils & construction impacts
8. Vandalism/mistreatment
9. Apathy!





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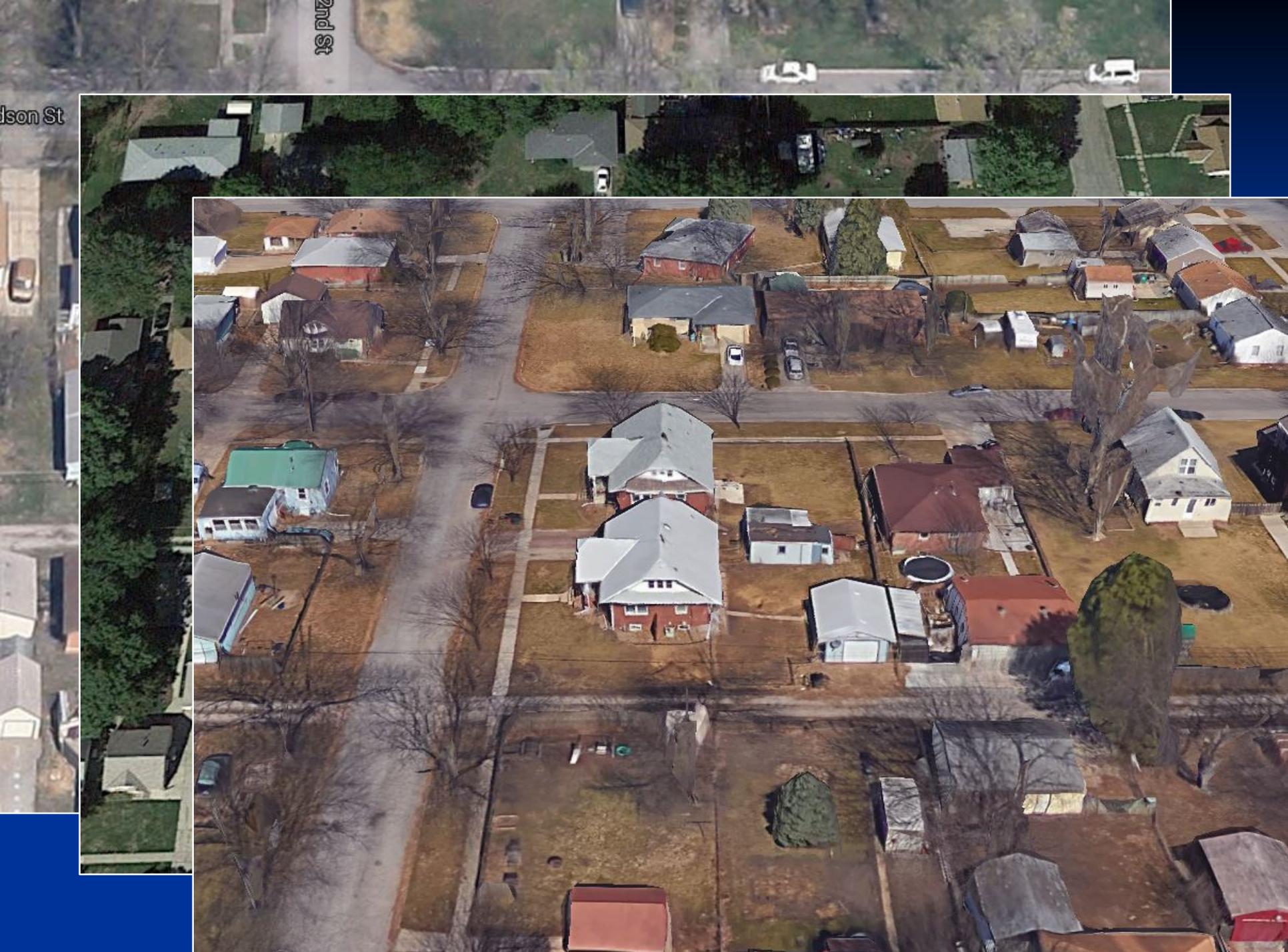
I'd make these tree assaults punishable by public humiliation & retribution of some kind.



HOME HomeRealEstate.com



HOME HomeRealEstate.com



son St

2nd St

One of my favorite trees in Lincoln.







What should the punishment be for this?



Photos: NFS



For this?



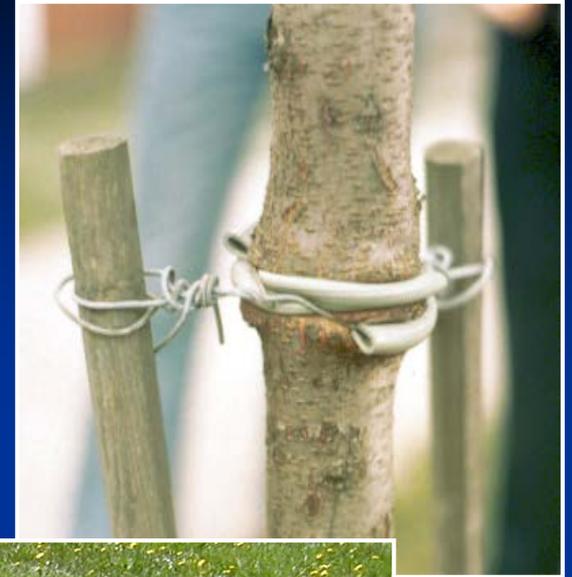
For this?



For this?



For this?



For this?



For selling this?



For selling this?



For putting trees here?



Photos: Tim McDonnell

For planting a monoculture?



Would this be excessive punishment?



Kingly pronouncements for doing better:

1. Pick good species emphasizing natives and large-canopy trees.
2. Strive for species/age diversity.
3. Implement good design and plant in communities.
4. Use high-quality nursery stock.
5. Place and plant properly.
6. Give good care.
7. Stop fussing over the lawn.
8. Recycle nutrients & build soil!
9. Get educated.
10. Do no harm – or else!



It's not rocket science. So why aren't we doing better?

1. We're busy doing other things.
2. Our disconnect from nature.
3. It's depressing and hard to think about.
4. \$\$ - Sustainability is not as profitable.

Your thoughts?

Are you hopeful?

Please send me your thoughts!

Justin Evertson - jeverson1@unl.edu

