

A close-up photograph of a green plant with yellow flowers and a small insect on a leaf. The background is a soft, out-of-focus green. The text is overlaid on the left side of the image.

Caring for Our Piece of the Earth

Session 1: The American Landscape

Compiled by Janet Allen

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By Janet Allen

Syracuse, NY

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Updated 10/2/19

The image is a composite of two photographs. The left side shows a two-story house with a brown roof, white trim, and a brick chimney, set against a backdrop of green trees. The right side shows a wide, green golf course with a black lamppost in the middle ground and a dense line of trees in the background.

Caring for Our Piece of the Earth

The American Landscape

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,
Sand County Almanac*

About this session


In this session we'll explore the impact of the conventional American landscape on biodiversity and ecosystems.

We'll consider the role of lawns in American culture and their environmental costs, such as impacts of pesticides and fertilizers, water use, and pollution.

We'll also consider how humans have "taken it all," leaving little room for wildlife – and how homeowners can make a difference.

PRESSED for time?

Please download and read the Introduction. As the Introduction mentioned, you don't have to read or view everything! We hope you read the short quotes or anecdotes included in the text, but follow these symbols for the rest:

- A leaf symbol  = **Important** to read or view
- Titled in **BOLD** = **Recommended** if you have time or interest in that topic
- Titled in **GREY** = **OPTIONAL** - Read or view if you want to learn more

Pre-meeting activity:

Experience nature in your yard

Sit back and relax in your yard (perhaps 10 minutes? 30 minutes?) and just OBSERVE.

NOTE: If the season or weather doesn't permit being outdoors, sit near a window and observe.

- Did you notice any creatures in your yard?
- How do you feel after being out in your yard?
- How was this experience different from being in a "real" natural area? Similar?

We'll share our observations when we meet.

Opening

If your group chooses to have this role, the Opener starts the session with an opening, *not more than two or three minutes*, about their relationship to the natural world.

The circle question

What has been your main goal for your home landscape through the years?

Reminder to the facilitator: The circle question should move quickly. Elicit an answer from each participant without questions or comments from others.

Discussion questions

1. **ACTIVITY:** How did you “Experience nature in your yard”?
2. Did one or two ideas from the articles or videos especially resonate with you? Briefly share why.
3. What was your reaction to the authors’ perspectives in “Gardening for Pleasure” and “On Improving the Property”?
4. Do you agree with Pollan that lawns are a symptom of our skewed relationship with the land?
5. Why do you think we have so easily accepted the risks of pesticides for people (especially children), pets, wildlife, and the environment in general?
6. Regarding the articles on the carbon cycle: Is the idea of accounting for a full range of inputs and outputs a new one for you? Does it make sense to you?
7. Did Tallamy’s article “Gardening for Life” change your ideas about the importance of our own yards?

Putting it into practice

Consider how you can apply what you are learning in the coming days, weeks, months, and years.

Here are some suggestions to get you started. You might choose one thing to do now and then use these suggestions to take further actions in the future.

- Calculate a rough estimate of the proportion of lawn in your landscape.
- Observe how you and your family use your yard. Are there parts of your yard where lawn is unnecessary?
- Think how you could reduce the size of your lawn. Take one small step toward this goal now and then create a plan to continue to reduce the size of your lawn over the next few years.
- Assess how many chemical pesticides you’ve used over the years and for what purposes.
- Create a plan to reduce or eliminate pesticides and fertilizers in your landscape.

The American landscape

A new kind of gardener by Sara Stein

“This is not someone else's problem.

We—you and I and everyone who has a yard of any size—own a big chunk of this country.

Suburban development has wrought habitat destruction on a grand scale.

As these tracts expand, they increasingly squeeze the remaining natural ecosystems, fragment them, sever corridors by which plants and animals might refill the voids we have created.

To reverse this process — to reconnect as many plant and animal species as we can to rebuild intelligent suburban ecosystems — requires a new kind of garden, new techniques of gardening, and, I emphasize, a new kind of gardener.”

~ NOAH'S GARDEN, P. 16

Sara Stein was the author of *Noah's Garden: Restoring the Ecology of Our Own Backyards* (1993), *Planting Noah's Garden: Further Adventures in Backyard Ecology* (1997), and *Noah's Children: Restoring the Ecology of Childhood* (2002). She was an early advocate for gardening with native plants and was an Honorary Board Member of Wild Ones when it was still a fledgling organization.



We lose more than **2,000,000** acres a year to various forms of development such as these suburbs. Image by David Shankbone - CC BY-SA 3.0
<https://commons.wikimedia.org/w/index.php?curid=3781585>

Definitions

Let's clarify some terms that will occur throughout the course.

What is an ecosystem? by Doug Tallamy

"An ecosystem is the combination of an interacting community of living organisms and their physical environment, functioning as an ecological unit in a given place. The operative word in this definition is 'interacting'."

~ **THE LIVING LANDSCAPE, PP. 106**

Doug Tallamy, co-author of *The Living Landscape*, is Professor and Chair of the Department of Entomology and Wildlife Ecology at the University of Delaware. Chief among his research goals is to better understand the many ways insects interact with plants and how such interactions determine the diversity of animal communities.

What is biodiversity? ~ National Wildlife Federation

From the website (below):

"Biodiversity is the variety of life. It can be studied on many levels. At the highest level, one can look at all the different species on the entire Earth. On a much smaller scale, one can study biodiversity within a pond ecosystem or a neighborhood park.

Species diversity is only one part of biodiversity. To properly catalogue all the life on Earth, we also have to recognize the genetic diversity that exists within species, as well as the diversity of entire habitats and ecosystems."

To learn more about species and ecosystem diversity:

<https://www.nwf.org/en/Educational-Resources/Wildlife-Guide/Understanding-Conservation/Biodiversity>

Look closely at nature.

*Every species is a masterpiece,
exquisitely adapted to the particular
environment in which it has
survived.*

*Who are we to destroy or
even diminish biodiversity?*

*~ E. O. Wilson,
biologist and author*

What is biodiversity?

~ Cofrin Center for Biodiversity (Univ. Wisconsin)

This article explains what biodiversity is and why it's important both to humans and to healthy ecosystems.

OPTIONAL:

<http://www.uwgb.edu/biodiversity/about/biodiversity.asp>

🌱 Safety in numbers by Sara Stein

“Diversity of species is a form of safety in numbers — not numbers of individuals, but numbers of ways in which each individual's prodigious reproductive power is modulated by conflicts of interest among all the individuals with which it shares the land.

The more species there are, the less likely it is that any one of them will get out of hand and — just as true — the less likely that any one of them will suffer unduly.”

~ NOAH'S GARDEN, P. 13



Many species of sparrows visit this backyard stream — in this case, a song sparrow and a chipping sparrow.

🌱 **What are ecosystem services?**
~ **California Academy of Science**

Healthy ecosystems provide crucial direct, indirect, and aesthetic-ethical benefits to humans.

Please watch this 9-minute animated video:

<https://www.calacademy.org/explore-science/ecosystem-services>

*We face the question whether
a still higher “standard of living”
is worth its cost in things
natural, wild, and free.*

*~ Aldo Leopold
Sand County Almanac*



Plants provide one of the most basic ecosystem services of all: using photosynthesis to harvest the energy of the sun.

The American lawn

Having a perfect, expansive lawn—often enforced by strong community norms—has long been an aspiration for Americans.

What has been the effect of this obsession on the environment ... and on ourselves?



According to the US Bureau of Labor statistics, men spend more time in lawn and garden care than in taking care of children.

Contributing to environmental problems by F. Herbert Bormann, Diana Balmori, and Gordon Geballe

“In our efforts to make it greener, to make it all grass, to keep it closely mowed, and to make it a constant companion of suburban development, we are unnecessarily contributing to some of the most severe environmental problems facing the world today.”

~ **REDESIGNING THE AMERICAN LAWN, PP. 88-89**

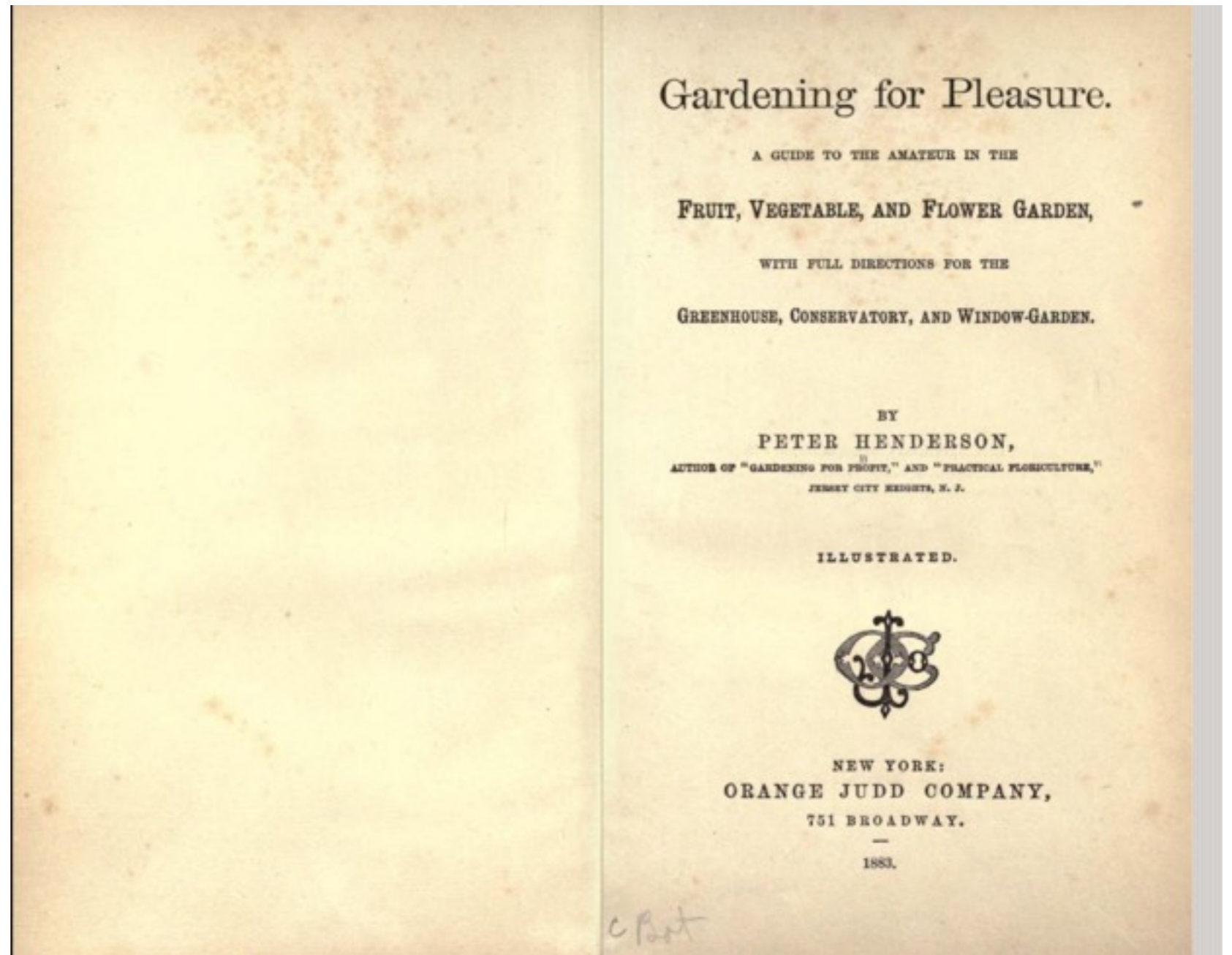
F. Herbert Bormann, emeritus professor of forest ecology at the School of Forestry and Environmental Studies, Yale University, was co-recipient of the 1992 St. Francis Prize for the Environment. Diana Balmori is a lecturer in the Yale University School of Forestry and Environmental. She is also principal at Balmori Associates, Inc., New Haven, a landscape and urban design firm. Gordon T. Geballe is assistant dean and lecturer in forest microbiology at the Yale University School of Forestry and Environmental Studies.

Gardening for pleasure by Peter Henderson, 1883

“Since the introduction of the lawn-mowers, the keeping of the lawn has been so simplified that no suburban residence is complete without one, and there is now no more excuse for tall grass “going to hay” in the door yard than there would be for cobwebs taking possession of the rooms inside the dwelling.

We occasionally see some parsimonious individual, even now, who remembers that in his grandfather’s days, grass was allowed to grow for the food of the “critters,” and he leaves it for food for his “critters” still. Though at the same time his furniture inside, that nobody but himself ever sees, or has an opportunity to admire, for such men are not troubled with friends, may have cost him \$5,000 or \$10,000.

We have two or three notable examples of this kind in my immediate neighborhood, but it is gratifying to know that such neighbors are not numerous, for the example of the majority will soon shame them into decency.”



Not in copyright; Image: <https://archive.org/details/gardeningforplea00hendrich>

Henderson's contemporaries called him “the father of horticulture and ornamental gardening” in the U.S. His writing was aimed at teaching good horticultural practices.

On improving the property by May Theilgaard Watts

~ Written in the 1920s or 1930s

“They laid the trilliums low, and where drifted anemones and wild sweet phlox were wont to follow April's hepaticas — they planted grass.

There was a corner that held a tangled copse of hawthorne and young wild crabs bridal in May above yellow violets, purple-twigged in November. They needed that place for Lombardy poplars — and grass.

Last June the elderberry was fragrant here, and in October the viburnum poured its wine beneath the moon-yellow wisps of the witch-hazel blossoms. They piled them in the alley and made a burnt offering — to grass.

There was a slope that a wild grapevine had captured long ago. At its brink a colony of mandrakes held green umbrellas close, like a crowd along the path of a parade. This job almost baffled them; showers washed off the seed and made gullies in the naked clay. They gritted their teeth — and planted grass.



**May Theilgaard Watts
(1893-1975)**

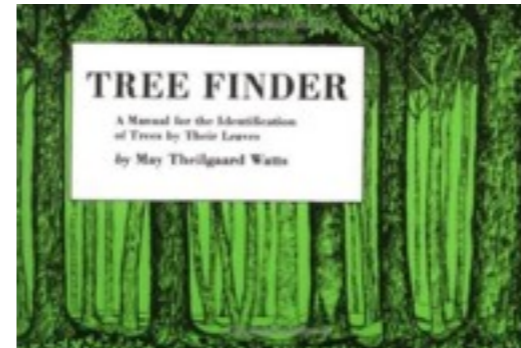
Photo: Public Domain

At the base of the slope there was a hollow so lush with hundreds of years of fallen leaves that maiden-hair swirled above the trout-lilies, and even a few blood-roots lifted frosty blossoms there. Clay from the ravaged slope washed down and filled the hollow with a yellow hump. They noticed the hump — and planted grass.

There was a linden that the bees loved. A smug catalpa has taken its place, but the wood ashes were used to fertilize the grass.

People pass by and say: "Just look at that grass — not a weed in it. It's like velvet!"

(One could say as much for any other grave.)”



Still in print and still useful

May Theilgaard Watts was well known as a naturalist, teacher, writer, and conservationist in her native Midwest and beyond, through her lectures, classes, books, and newspaper column. She was the first to introduce a broad readership to concepts from ecology.

In her books *Reading the Landscape of America* and *Reading the Landscape of*

Europe, Watts pioneered the idea of studying natural history at the landscape level, considering the biological and cultural forces that have shaped the world around us. Her books are considered classics in landscape interpretation and field ecology. She received the Margaret Douglas Medal for Conservation Education from National Garden Club of America, the Arthur Hoyt Scott award in Gardening and Horticulture, and was honored by the Dept. of the Interior and the Audubon Society for her conservation work.

🌱 Why mow?

by Michael Pollan

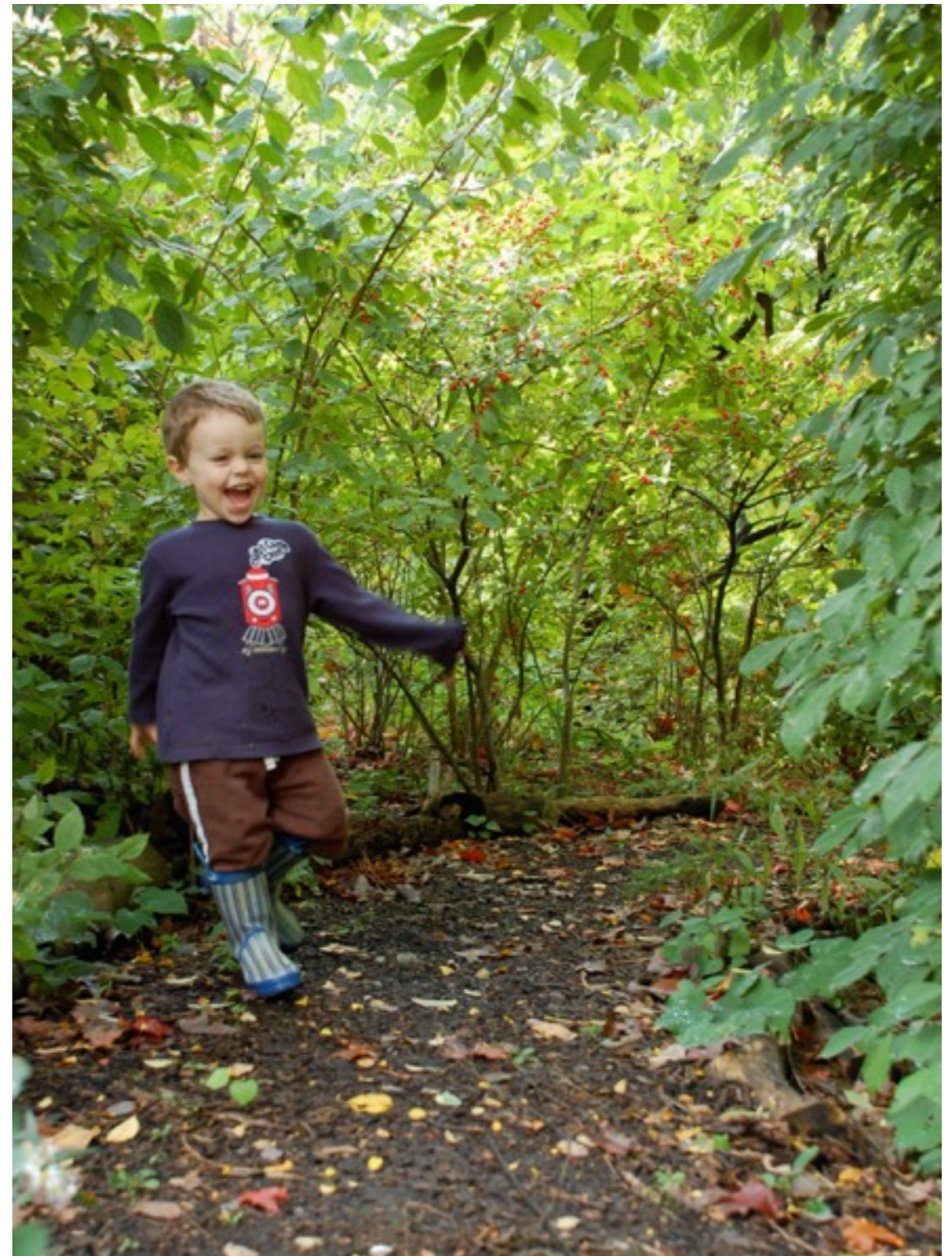
This article provides some facts about the amount of lawn in the country and how much we spend to maintain it. Pollan provides insight into why we mandate lawns in our communities and how it may affect our relationship to the land.

Please read:

<http://michaelpollan.com/articles-archive/why-mow-the-case-against-lawns/>

NOTE: Most of the plants Pollan planted in his meadow and his hedge are common non-native species: ox-eye daisies, forsythia, lilac, bittersweet (unless it was the less-common native variety), and bridal wreath spirea. We'll discuss the role of native vs. non-native plants later in the course.

Michael Pollan is the author of five books: *Second Nature*, and other bestsellers, such as *The Omnivore's Dilemma*, and *In Defense of Food*. A contributing writer to The New York Times Magazine, Pollan is also the Knight Professor of Journalism at UC Berkeley. His writing on food and agriculture has won numerous awards, including the Reuters/World Conservation Union Global Award in Environmental Journalism, the James Beard Award, and the Genesis Award from the American Humane Association.



Lawns aren't the only way to get you around your yard! This path connects the side and front landscape of a suburban home.

Pesticides and fertilizers

One of the most problematic aspects of lawns is the use of chemicals applied to keep this non-native plant green and growing.

How do pesticides affect people, pets, and wildlife?

Are their cumulative effects tested?

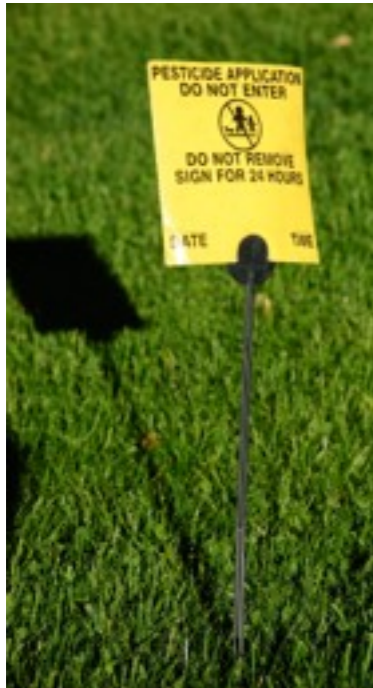
Are possible interactions among these chemicals tested?



A bee dying from pesticide exposure



🌱 Canadian bylaws; American lawn flags by Sandra Steingraber



Rachel Carson's phrase "*the harmless aspect of the familiar*" inspired Sandra Steingraber to consider the differences between how Canada and the United States have regulated lawn pesticides.

Please read:

http://www.huffingtonpost.com/sandra-steingraber/canadian-bylaws-american_b_569231.html

Biologist, author, and cancer survivor, Sandra Steingraber, Ph.D. writes about climate change, ecology, and the links between human health and the environment.

Steingraber's book *Living Downstream: An Ecologist's Personal Investigation of Cancer and the Environment* was the first to bring together data on toxic releases with data from U.S. cancer registries and was adapted for the screen in 2010.

Continuing the investigation begun in *Living Downstream*, Steingraber's books, *Having Faith: An Ecologist's Journey to Motherhood* and *Raising Elijah: Protecting Our Children in an Age of Environmental Crisis*, explore the intimate ecology of pregnancy and reveal the ways which environmental hazards now threaten each stage of infant and child development.

Steingraber is currently a Distinguished Scholar in Residence at Ithaca College.

Pesticides and pets ~ Beyond Pesticides

"The smaller bodies of companion animals make them more susceptible to chemicals, and their behavior patterns make them more likely to be exposed to toxic pesticides. ... Companion animals are more vulnerable to pesticides for several reasons. They walk through chemically-treated areas unknowingly, absorb pesticides through their mouth, nose, and eyes, and can absorb through their skin any powder that sticks to their fur."

OPTIONAL- more about pets and pesticides:

<https://www.beyondpesticides.org/assets/media/documents/infoservices/pesticidesandyou/Fall%2007/pets.pdf>



Like children, pets are on the lawn and on floors after lawn chemicals are tracked in, so they disproportionately suffer the consequences. (And, as it happens, our dog Sheena did die of cancer when we still used lawn chemicals ...)

🌱 Greatest of all celestial ironies by Eric Grissell

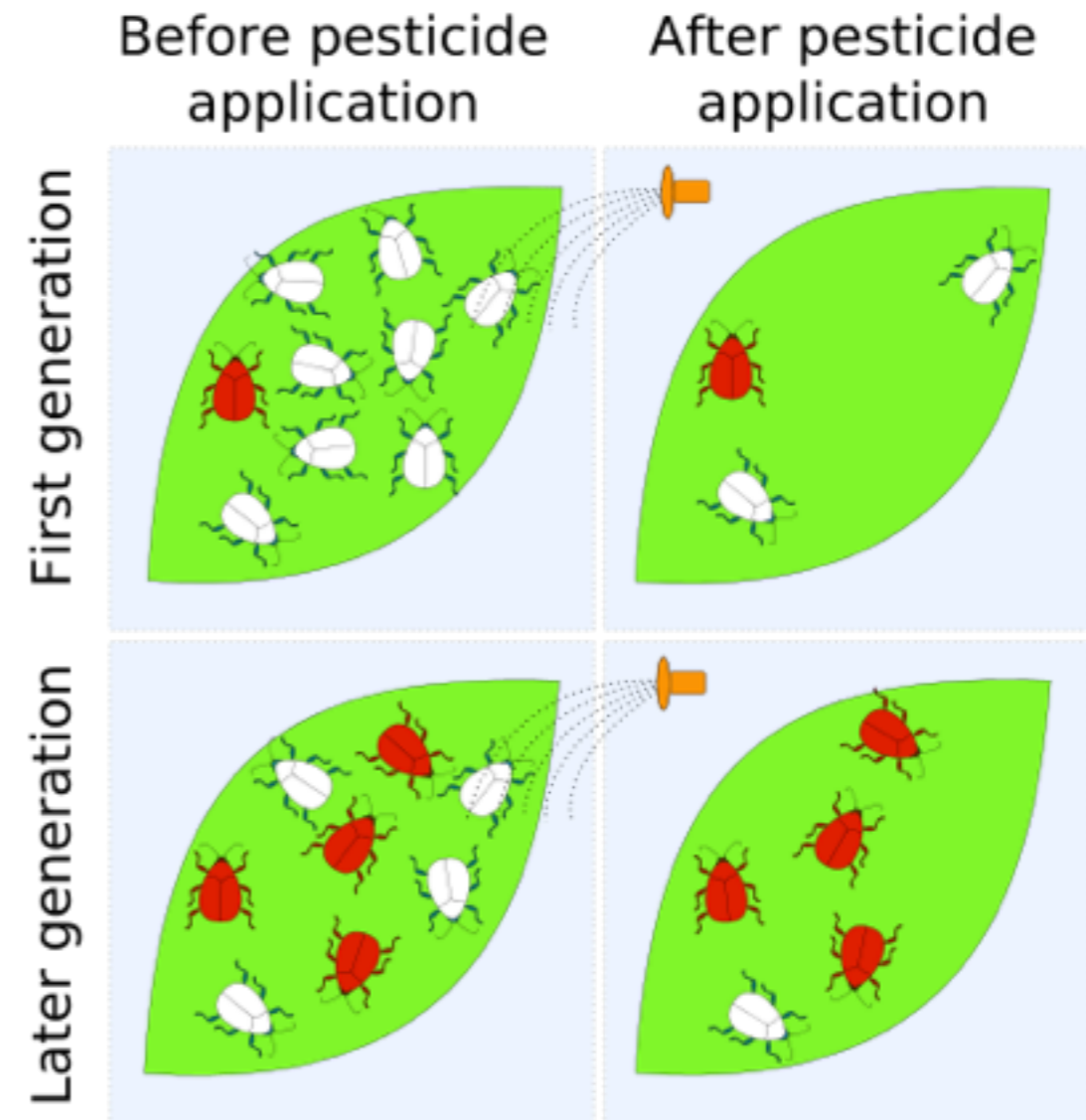
“In fact, insects are evolving resistance to chemicals just about as fast as we humans can devise new ones.

Perhaps the greatest of all celestial ironies is being played out.

As we increasingly risk our own health in a war of toxic terror — a process of unnatural selection — we are encouraging insects to become ever more dominant life-forms.”

~ INSECTS AND GARDENS, P. 115

After receiving his doctorate in entomology in 1973 from the University of California, Davis, Grissell worked as a taxonomic entomologist for the Florida Department of Agriculture, a research entomologist for the U.S. Dept. of Agriculture, a research associate for the Smithsonian Institution and an adjunct associate professor at the Univ. of Maryland. Despite many gardeners' belief that insects are the enemy of their gardens, his books highlight the benefits of insects for the garden (and the gardener).



Creative Commons BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=3965987>

Pesticide application can artificially select for resistant pests.

In this diagram, the first generation happens to have an insect with a heightened resistance to a pesticide (red).

After pesticide application, its descendants represent a larger proportion of the population because sensitive pests (white) have been selectively killed.

After repeated applications, resistant pests may comprise the majority of the population.

Risks from lawn-care pesticides by John Wargo / Yale University

This 2003 report details the health effects and ecological effects of pesticides.

The report reports one issue seldom addressed: the prevalence of torn pesticide packages in stores, exposing anyone in the store to these toxic substances. And these products are often sold in stores that sell food and other consumer products.

OPTIONAL summary as well as a full report available at:
<http://www.ehhi.org/pesticides.php>

American Academy of Pediatrics Statement on Children and Pesticides

From the Abstract:

“Children encounter pesticides daily and have unique susceptibilities to their potential toxicity. Acute poisoning risks are clear, and understanding of chronic health implications from both acute and chronic exposure are emerging. Epidemiologic evidence demonstrates associations between early life exposure to pesticides and pediatric cancers, decreased cognitive function, and behavioral problems.”

OPTIONAL abstract and full statement:

<http://pediatrics.aappublications.org/content/130/6/e1757.full>

Beyond Pesticides Lawn Pesticide Fact Sheets

This non-profit organization addresses the science, policies, and action steps related to pesticides. And their free newsletter is a good way to stay up-to-date with the latest information.

OPTIONAL:

<http://www.beyondpesticides.org/programs/lawns-and-landscapes/overview/hazards-and-alternatives?pid=295>



There's no shortage of pesticide choices!

Lawns and water use

There are increasing concerns about water quality and quantity throughout the world, yet a huge amount of water is used on lawns, depleting aquifers in some regions.

Conventional lawns in much of the U.S. are composed of Kentucky blue grass, fine fescues, or other cool season grasses. Without constant input of chemicals and water, they naturally brown in the summer.



Photo: Diego V on Flickr; Creative Commons

The miracle of the modern water supply by Christopher Ingraham / Washington Post

This article comments on the absurdity of our use of water for lawns.

It also explores an additional human cost of lawn maintenance.

Please read:

“Lawns are a soul-crushing timesuck and most of us would be better off without them”

<https://www.washingtonpost.com/news/wonk/wp/2015/08/04/lawns-are-a-soul-crushing-timesuck-and-most-of-us-would-be-better-off-without-them/>

Christopher Ingraham writes about politics, drug policy and all things data at the Washington Post. He previously worked at the Brookings Institution and the Pew Research Center.

Update: Ingraham and his family moved to Minnesota and now have a vegetable garden in their backyard. <http://www.twincities.com/2016/07/01/relocated-washington-post-reporter-family-are-enjoying-life-in-minnesota/>

Know your roots

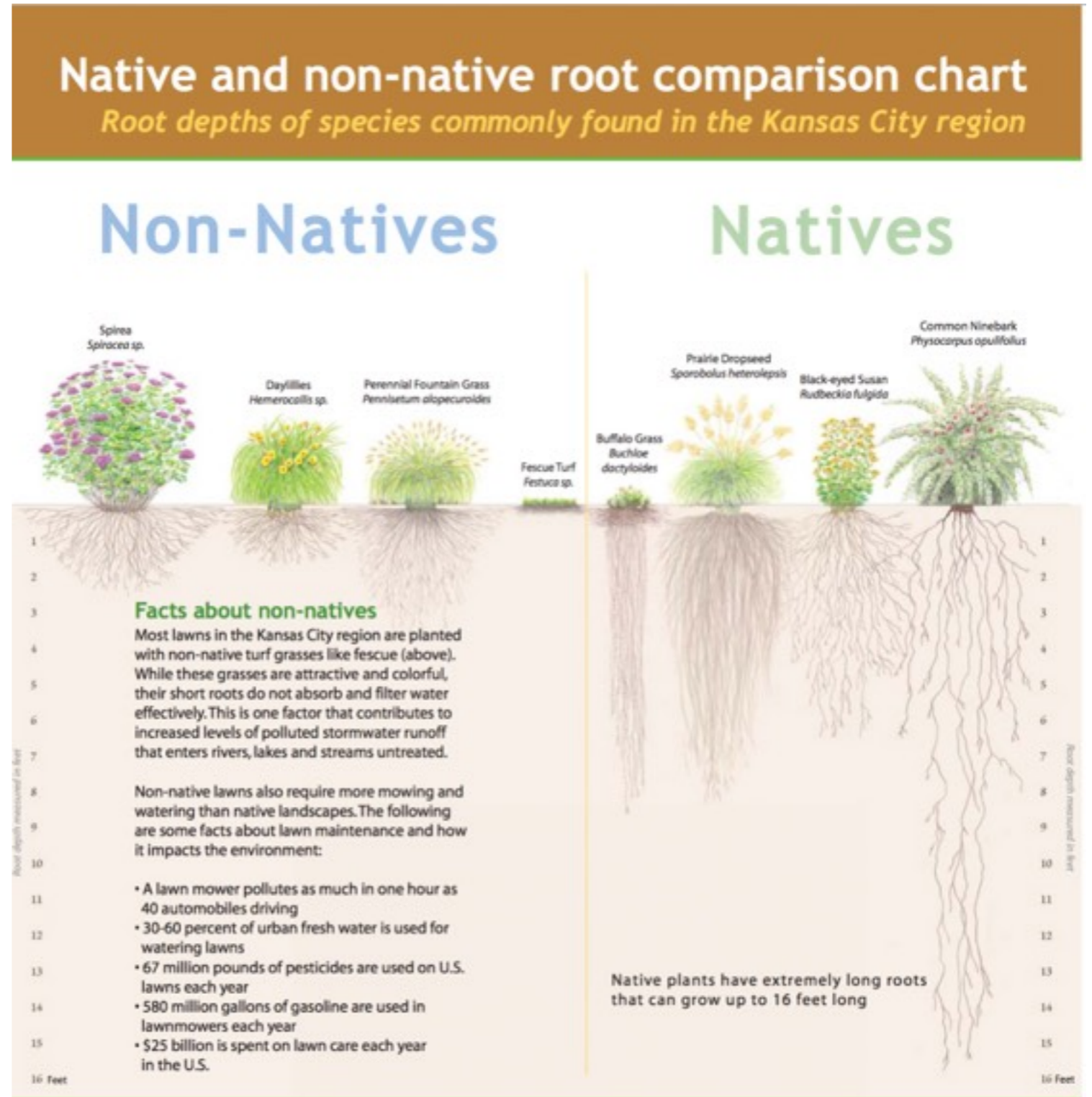
~ Mid-America Regional Council

Native plants have deeper root systems that increase the ability of soil to absorb and retain water.

Turf grass absorbs less stormwater, leading to more runoff and water pollution.

Notice the shallow roots of the turf grass (the fourth plant from the left).

Wherever you live and whatever plants are native to your own region, the roots of the native plants are likely to extend much deeper into the soil.



Courtesy of Mid-America Regional Council at [marc.org](http://www.marc.org)

From <http://www.marc.org/Environment/Water-Resources/Landscaping-and-Lawn-Care/Know-Your-Roots>

Comparing a native plant garden and lawn during drought

During a drought, neither the perennials nor the lawn (in the photo below) were watered.

The native plants in this garden were unaffected, while the turf grass browned.



Besides being a cool weather grass, the roots of the turf grass are much shallower than the roots of the perennials growing in this garden bed.



This home landscape has a diversity of plants, mostly native, none of which need any supplemental watering.

Ecosystem and health impacts

Someone living in today's suburbs may find it hard to believe that decades ago one of the reasons people moved to the suburbs was to escape the noise of the city.

Fossil-fuel powered equipment not only contributes to climate change but it also produces quiet-shattering (and nerve-shattering) noise that affects our own health and that of wildlife.

If it's too much work to use human-powered equipment, you may have too much lawn and may be raking up too many leaves.



Even a two-year-old can wield a hand broom!

Ecosystem and health impacts of noise ~ Quiet Communities

Please read about the impacts of noise on ecosystems:

<https://www.quietcommunities.org/bluebird-coal-mine/>

OPTIONAL: The human health impacts of noise:

<https://www.quietcommunities.org/noise-health/>



The average blower measures 70-75 dB at 50 feet, louder at closer distances. Levels of 60-70 are considered only "conditionally acceptable." For more information, visit the Noise Pollution Clearinghouse at <http://www.nonoise.org/quietnet/cqs/leafblow.htm>

Lawns and climate

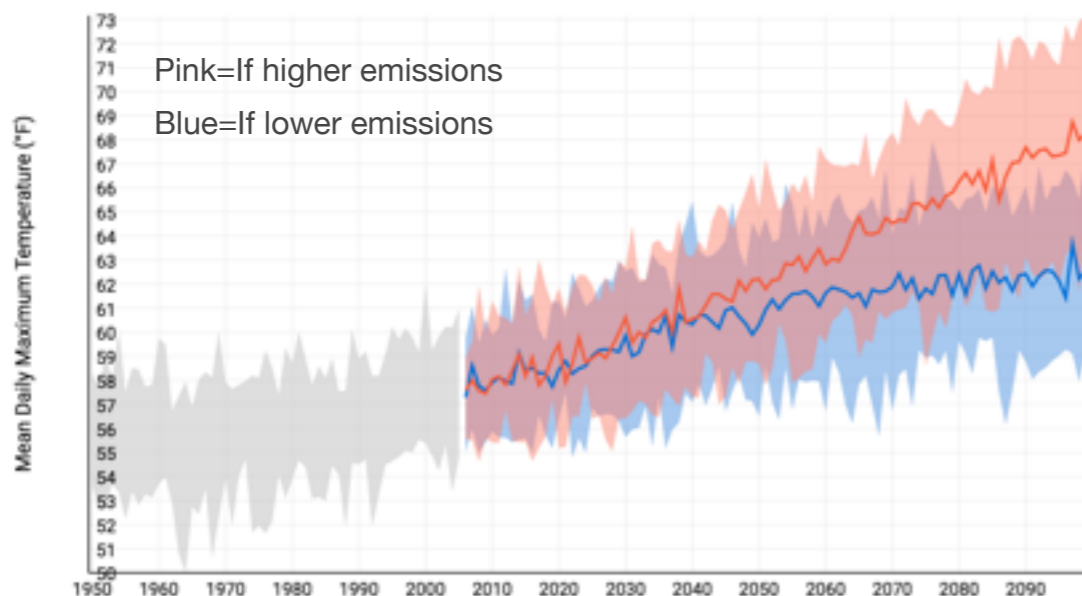
The climate is changing, and the vast majority of scientists have concluded it is human-caused. ***How do our lawns and their maintenance affect climate?***

Consider: Children born today will be alive throughout the time represented in this chart and will experience this temperature increase. Don't we owe them a better world than that?

You can check the expected climate from now until 2100 in your own area. Go to U.S. Climate Resilience Toolkit:

<https://toolkit.climate.gov/#climate-explorer>

[Example below: Onondaga County NY]



🌱 Is lawn a carbon sink? by Susan Reed

If you listen to lawn care ads – or even to some university extension services – you'd think lawn is benign or even an important part of our fight against climate change.

But do they tell the whole story?

Please read:

http://beautifulnativeplants.blogspot.com/2016/07/is-lawn-carbon-sink_9.html

Susan Reed is a licensed Landscape Architect, and author of **Climate-Wise Landscaping: Practical Actions for a Sustainable Future**.

🌱 The industrial lawn's carbon cycle

by F. Herbert Bormann, Diana Balmori, and Gordon Geballe

Regarding the oft-repeated claim that through photosynthesis a 50'x50' lawn generates enough oxygen to meet the needs of a family of four:

“This kind of accounting fails to consider the oxygen consumed by microorganisms as they decompose grass clippings, nor does it account for the large amounts of oxygen consumed in burning fossil fuels associated with lawn mowing and the production and distribution of fertilizers and pesticides.”

When these factors are included in the calculations, the fifty-by-fifty-foot lawn becomes responsible not for a gain but for a substantial net loss of oxygen from the atmosphere.”

REDESIGNING THE AMERICAN LAWN
(P. 72)

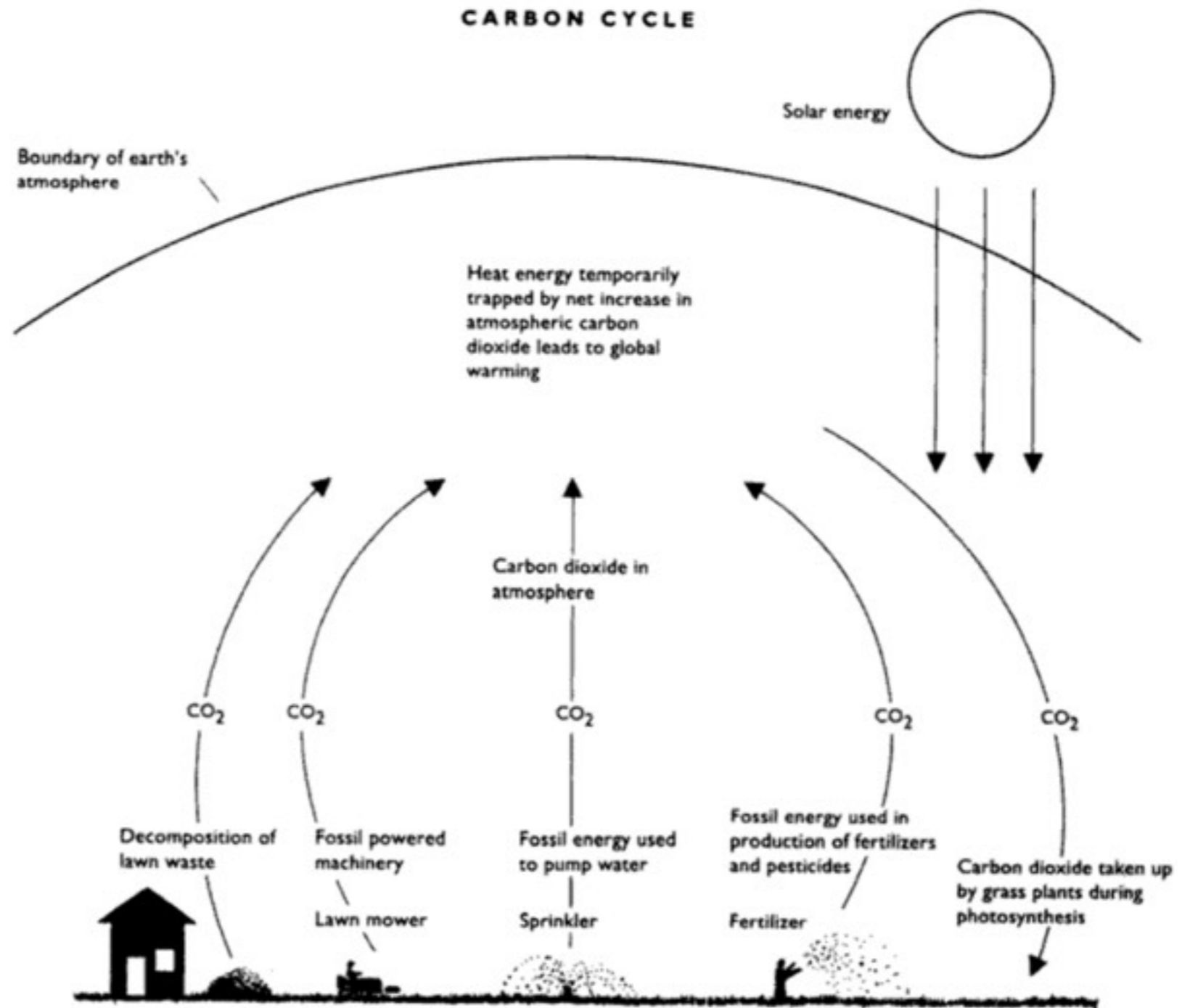


FIGURE 29. The carbon cycle as it pertains to the Industrial Lawn. As the diagram shows, the Industrial Lawn adds more carbon dioxide to the atmosphere than it removes, contributing to global warming.

Graphic from Redesigning the American Lawn, p. 72; used by permission



A thought experiment: tree or lawn?

Imagine a given area — perhaps a 10'x10' plot — growing either lawn or a tree [or other regionally-appropriate plants].

Which is more likely to:

- store more carbon?
- produce more oxygen?
- create less water runoff?
- create fewer pollutants resulting from its care?
- have a greater cooling effect?
- support biodiversity?

And you can probably think of other important differences in these two landscape choices.



Perhaps our future status symbols will be based not on how much we consume, but on how little impact we each have on our planet. Instead of measuring success by how large a house we own, or how big a vehicle we drive, social status will be awarded based upon how little of the Earth's bounty we consume. Maybe, just maybe, we will someday be measured in terms of how much of the world's resources and natural beauty we preserve for future generations.

~ Neil Diboll, founder of Prairie Nursery

From his speech "What's on the Horizon? The Future of Natural Landscaping in America" at the 2008 Wild Ones Annual Meeting.

The big picture



The Great Smoky Mountains National Park

We have national parks, state parks, local parks, and other natural areas.

Isn't this enough space for wildlife?

Isn't this enough space to provide the benefits of nature (clean air, clean water, etc.) people need?

Do our comparatively small yards matter?

Gardening for life **by Doug Tallamy**

This article discusses the causes of habitat loss and how our yards can and must play an essential role in creating habitat and preserving biodiversity.

The article and the following video both preview important ideas explored in the rest of the course.

Please read:

<https://www.hgcny.org/factsheets/>

Dr. Doug Tallamy in his garden on the importance of native plants **by Kim Eierman / EcoBeneficial**

This video interview features Doug Tallamy in his home landscape.

Please view this 30-minute video:

https://www.youtube.com/watch?v=w39g_f7BMUk

Recommended books

These books provide a solid foundation for understanding why good stewardship of our yards is important. They also provide ideas and strategies for creating a yard that supports life.

Stein, Sara

Noah's Garden: Restoring the Ecology of Our Own Back Yards

A very well-written classic that informs and inspires! It's a vivid description of Stein's "un-gardening" a conventional landscape to recreate the earth-friendly landscape that had previously existed.

Sara Stein's companion book, *Planting Noah's Garden: Further Adventures in Backyard Ecology*, is full of practical landscaping tips. Sadly, this one is out of print, but it's still widely available online as used copies or at Google Books. Libraries may also have a copy. Worth looking for!



Highly recommended!

Darke, Rick and Doug Tallamy

The Living Landscape: Designing for Beauty and Biodiversity in the Home Landscape

In their words, *"It is not a how-to book. Rather it aims to provide readers with inspiration and strategies for making and maintaining truly living landscapes — gardens that are full of life and truly vital to both human needs and the needs of local and regional wildlife communities."*

This book is abundantly illustrated with photos showing living landscapes, and the appendices recommends plants for each region of the country.

Tallamy, Douglas

Bringing Nature Home: How You Can Sustain Wildlife with Native Plants

This book has changed the conversation about our landscape and has been immensely influential. Grounded in science, but easy to read and written for a lay audience. Tallamy has the ability to communicate sound science for a lay audience in an entertaining and inspirational manner! EXCELLENT!

Bormann, F. Herbert, Diana Balmori, and Gordon Geballe
Redesigning the American Lawn: A Search for Environmental Harmony

This book provides a history of lawns in our country and the environmental consequences of what they call the Industrial Lawn. They also offer a solution: the Freedom Lawn.



Reed, Sue and Ginny Stibolt
Climate-Wise Landscaping: Practical Actions for a Sustainable Future

What can we do, *right now*, in our own landscapes, to help solve climate change? Based on decades of experience, this book is packed with simple, practical steps anyone can take to

beautify any landscape or garden, while helping protect the planet and the species that call it home. (Published in 2018)

Reed, Sue

Energy-Wise Landscape Design: A New Approach for Your Home and Garden

This book presents hundreds of practical ways everyone can save money, time, and effort while making their landscapes more environmentally healthy, ecologically rich, and energy efficient. (Published in 2010.)



A diversity of plants fosters biodiversity