



SESSION 4

ENVIRONMENTAL DECISION MAKING AND BEHAVIOR CHANGE



Sponsored by



Outline

- Background
 - Nature of Environmental Issues
 - Environmental Message Framing
 - Implications for Behavior Change
- Case Study
 - Yard Care Choices in the Twin Cities
- Model of Behavior Change
 - Community Based Social Marketing



Nature of Environmental Issues

- Complex
 - Interconnected
 - Aggregate effects
 - Conflicting reports on problems and solutions
- Long-term / delay in visible consequences
- Distance between action and consequence
- Focus on degradation
 - Human created – we're doing something



Environmental Messages

- How do we frame environmental messages?



**GLOBAL WARMING
IS LEAVING MANY HOMELESS**

ON ALL
SOURCES OF NITROGEN
OR FERTILISERS ON WHEELS
EST. MAY 1974
W. C. HESS & SONS



Get more information at the 10th Climate Change Convention of the United Nations.

An underwater photograph showing a large, dense accumulation of plastic waste, including bottles, cans, and other debris, floating in the water. To the left, a large, healthy coral structure is visible, contrasting with the pollution. The background is a deep blue, suggesting the ocean's depth.

THE GREATEST WONDER OF THE SEA IS THAT IT'S STILL ALIVE.

There will soon be more trash swimming in our seas than fish. Take the North Pacific, where a target of plastic twice the size of Germany floats. And if you're visiting the Mediterranean on your next vacation, just take a look around. The Greenpeace expedition «Defending our Oceans» is sailing for one year to battle against greed and thoughtlessness and to create global protection of the oceans. And thousands from all over the world are joining us.

Come on board: www.oceans.greenpeace.org

GREENPEACE 

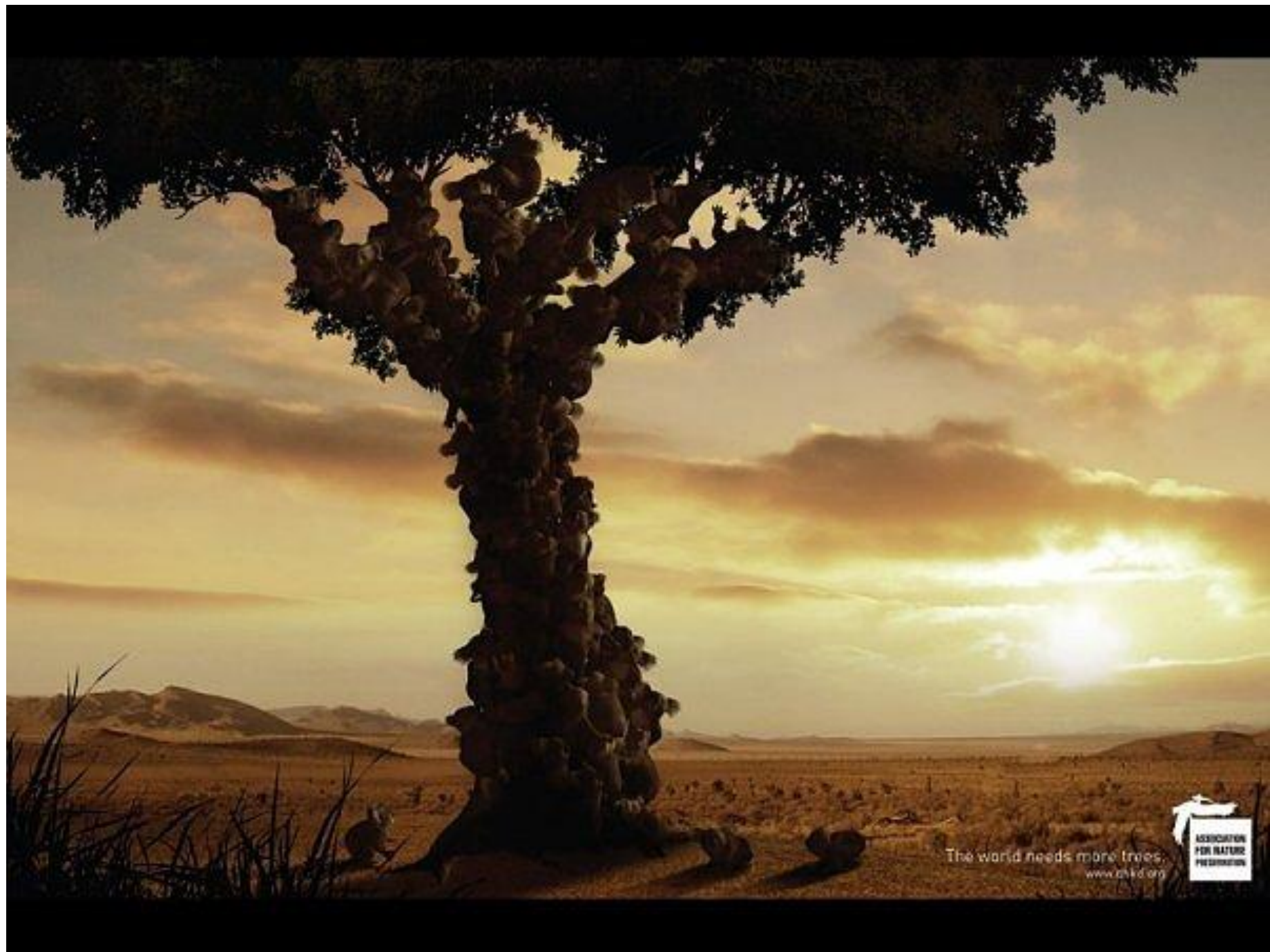
When you leave the **light on**
you're not the only one who pays.



panda.org/climate



community leadership for clean water



The world needs more trees.
www.ghd.org



Altruism / Self-Transcendence

- Altruism: “feeling or acting on behalf of the welfare of others in cases where self-interest could not be involved” (Kaplan 2000)
- Self-transcendence: goals that “transcend the individual, and instead ‘promote the interests of other persons and the natural world’” (Schultz and Zelezny 2003; Schwartz 1994)



Assumptions

- “Good” motives = “good” outcomes
- Self-interest or self-enhancing values cannot promote “pro-environmental behavior”
- Altruism and self-interest cannot both be present



Implications

- “The requirement of receiving no benefit from one’s action and the inclination to enshrine sacrifice as a paradigmatic environmental virtue communicate a powerful, if unintended, message, namely that **environmentally responsible behavior inherently leads to a reduction in quality of life**” (Kaplan 2000: 494).



Implications

- Associates “pro-environmental behavior” with sacrifice and a decrease in quality of life
 - Environmental action framed in terms of giving up X in order to solve environmental problem Y
- Activates defense mechanisms
 - Denial, rational distancing, apathy, and delegation (Opotow and Weiss 2000)

Content of Messages

- Broad problems and information intensive
- Implications
 - Sense of apathy and helplessness
 - Lack of empowerment
 - What difference can I really make?



How can we frame messages to promote:

- Realization of increased quality of life?
 - Ecological systems support what we value

- Empowerment?
 - Our actions can make a difference
 - We can create positive change nearby





Yard Stories:

Linking homeowners' yard care choices with urban ecosystems

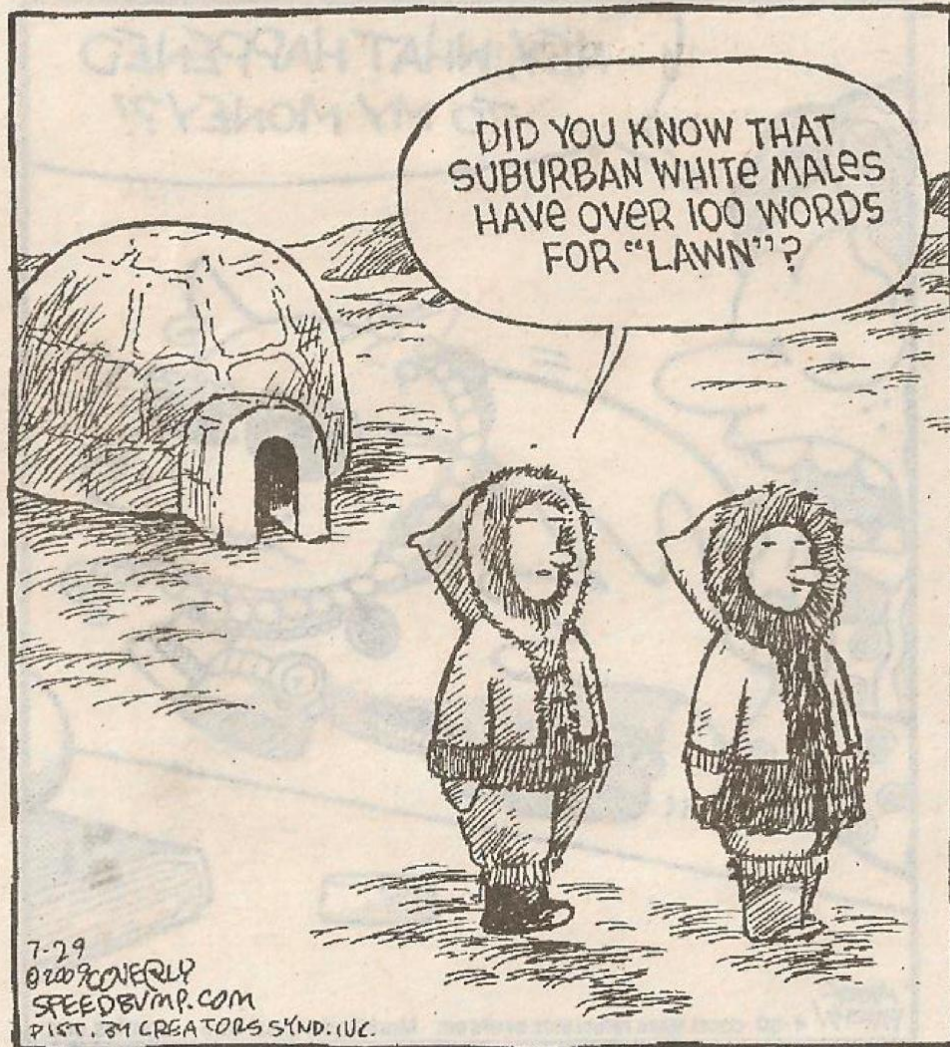


Maria Dahmus
and
Kristen C. Nelson

Twin Cities Household Ecosystem Project: www.tchep.umn.edu







DID YOU KNOW THAT
SUBURBAN WHITE MALES
HAVE OVER 100 WORDS
FOR "LAWN"?

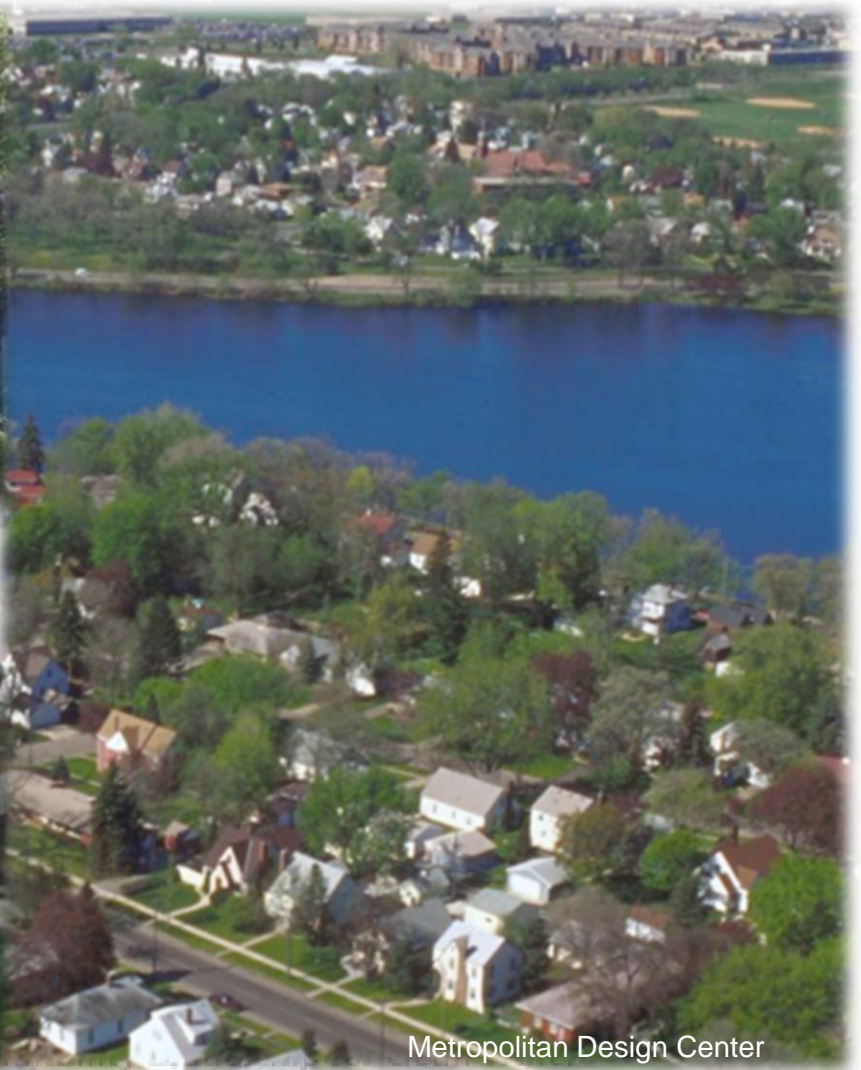
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©2007 OVERLY
SPEEDBUMP.COM
PICT. BY CREATORS SYND. INC.



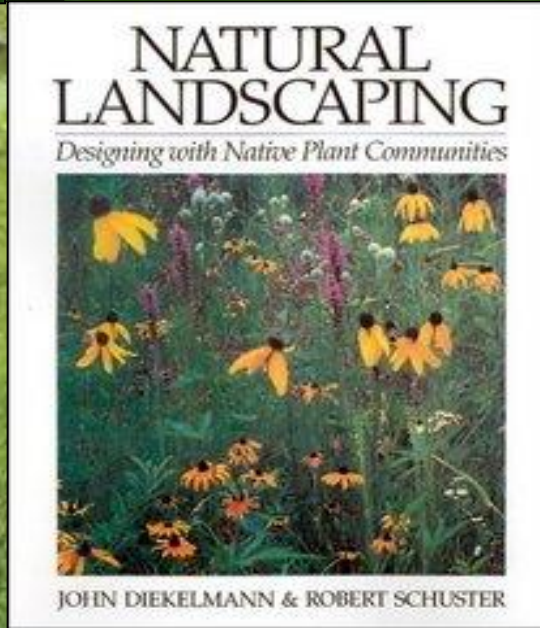
Individual parcels of land



Aggregate effects



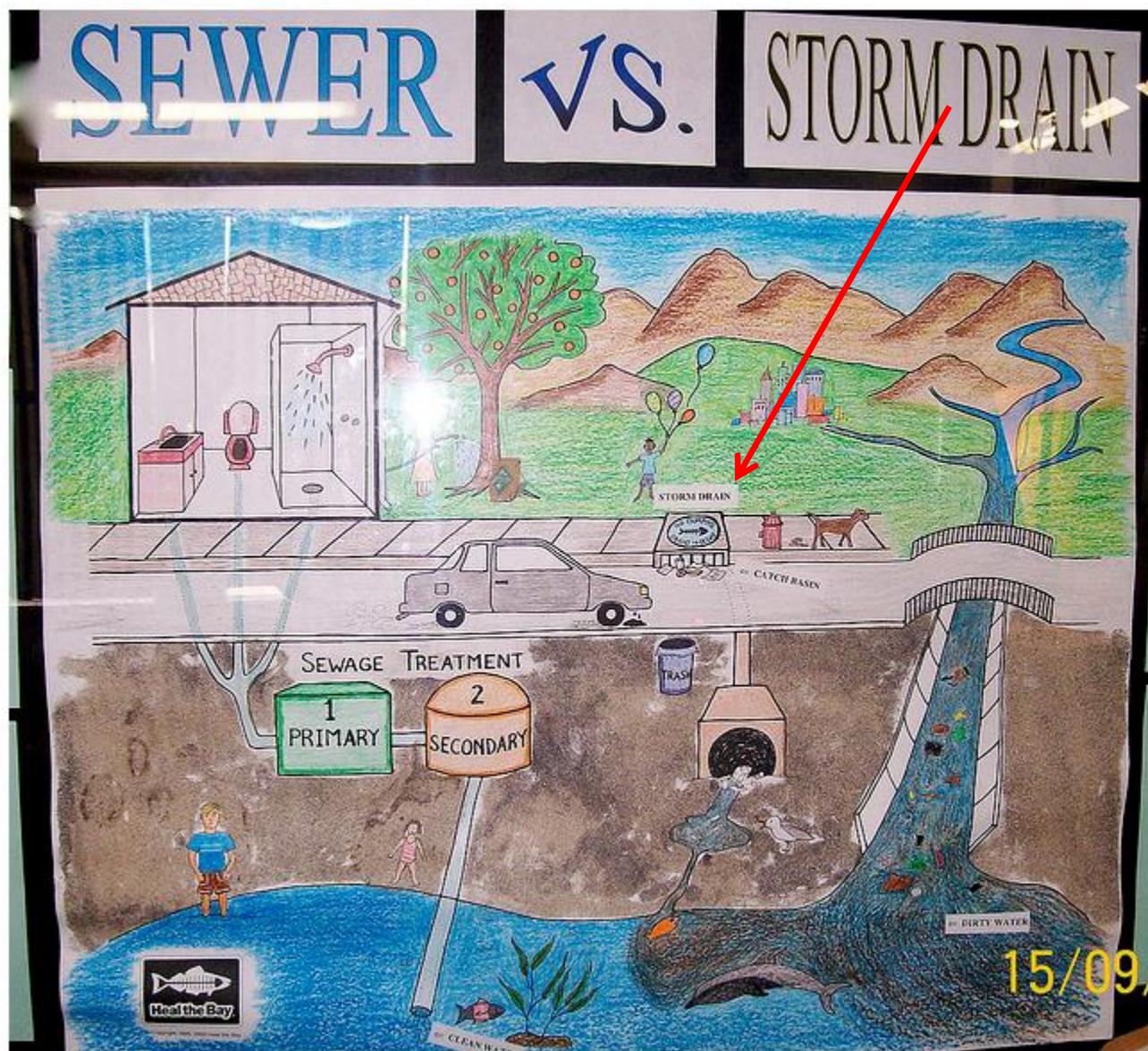
Yard care practices



Urban watersheds are comprised of storm sewers that transfer stormwater from impervious surfaces to lakes and rivers.



Source: Sustainable Landscape Series, University of Minnesota



Source: kidsgogreen.com

PLEASE DON'T POLLUTE



MISSISSIPPI RIVER







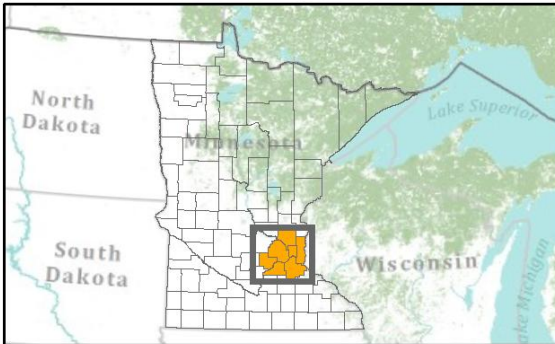




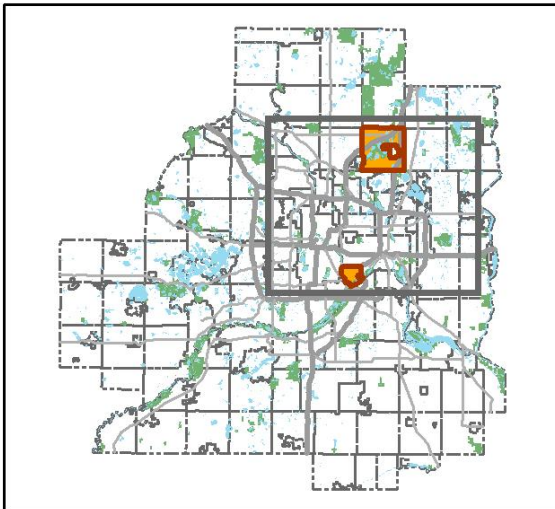
Source: Washington State Water Quality Consortium

Study sites

Twin Cities Metro Area

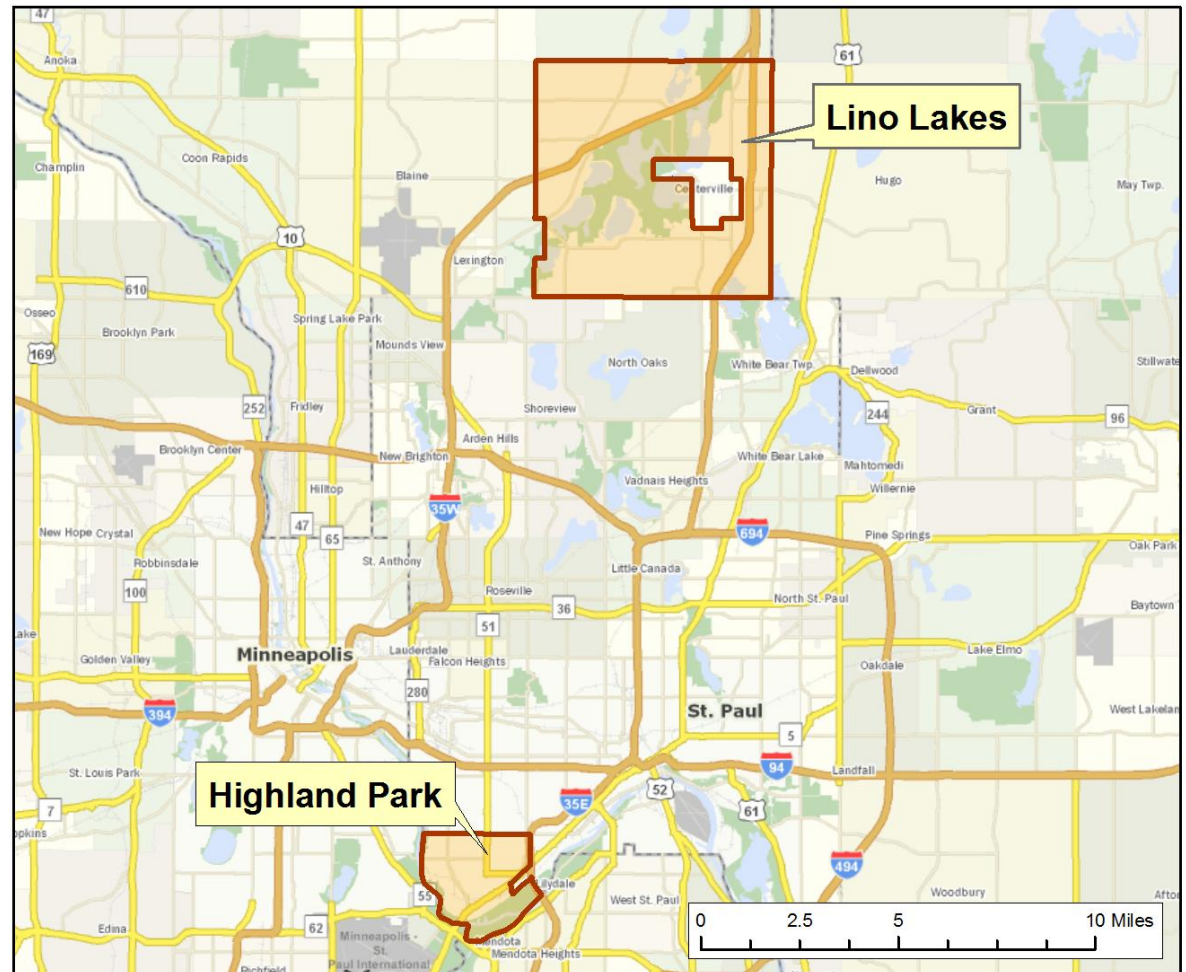


Twin Cities 7-County Metro Area



Data Sources: ESRI, MN DNR,
Metropolitan Council, City of St. Paul.

Lawn Care Survey Study Areas



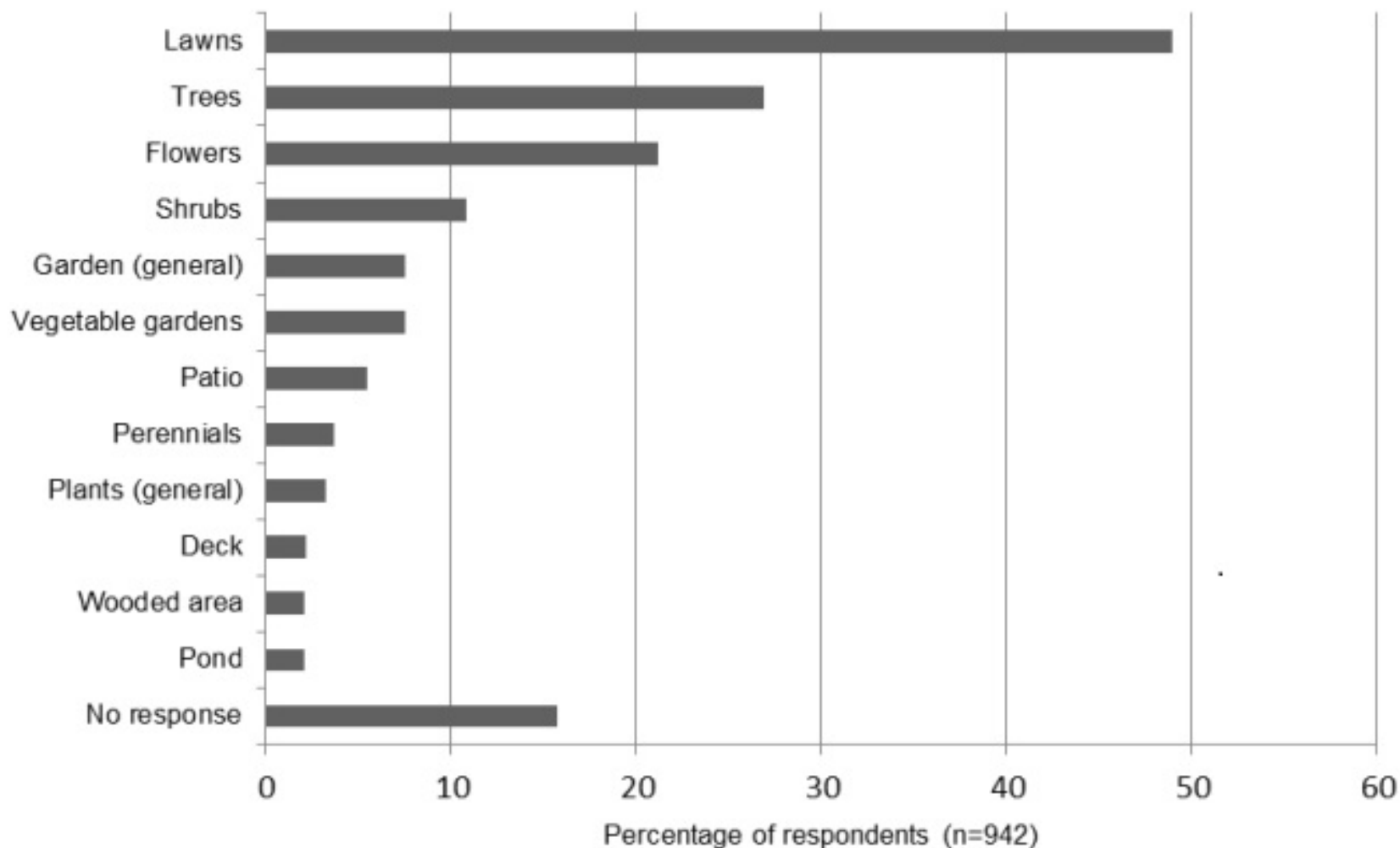
Context

- 99% of respondents have lawns
- 91% of respondents manage their lawns
- 78% of respondents normally fertilize their lawns

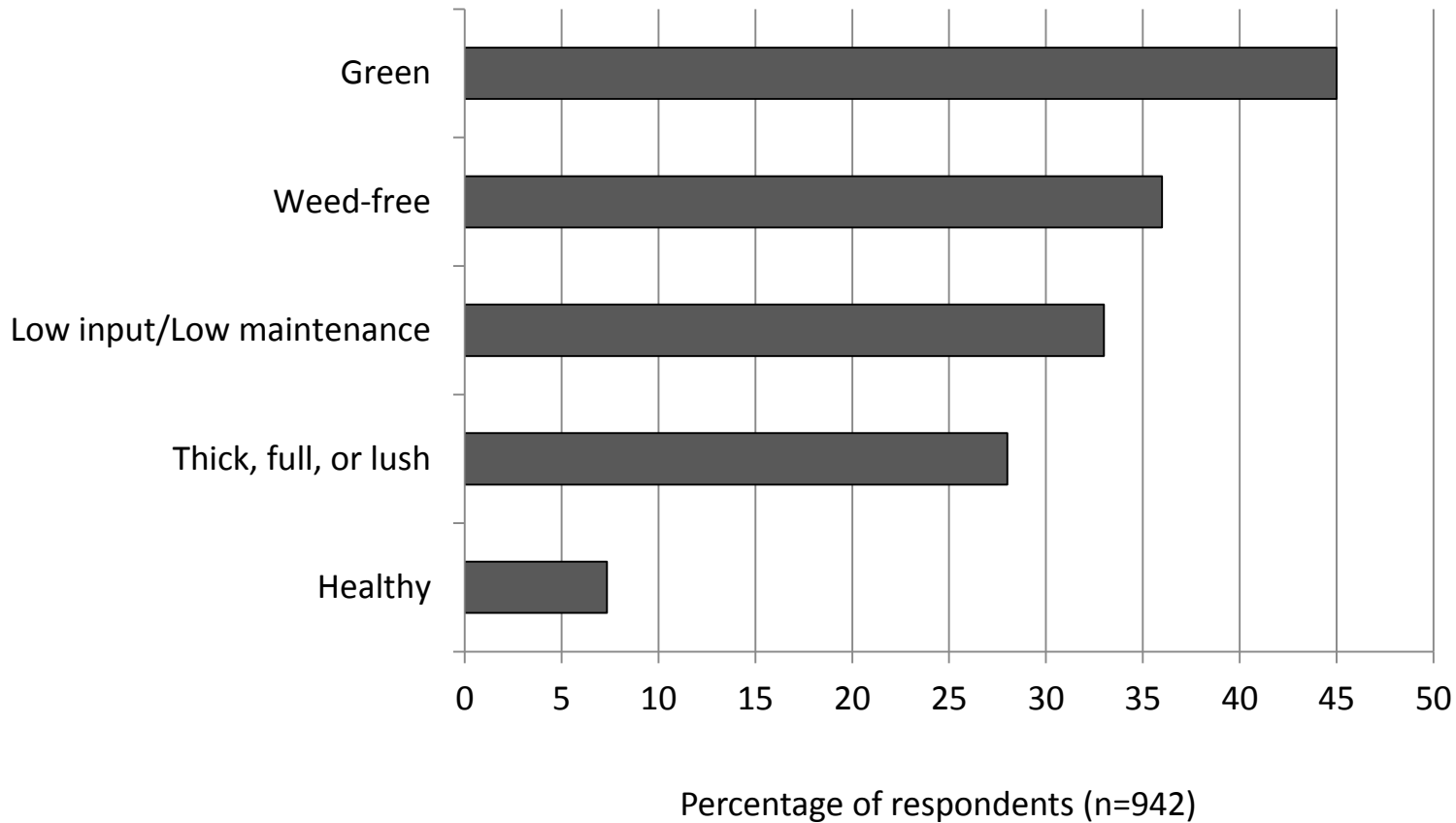
Reported knowledge

- Respondents reported that they *don't* know:
 - 49%, their grass type
 - 73%, the N:P:K ratio of their lawn fertilizer
 - 6%, the name of the closest water body to their house
 - 60%, the name of their watershed

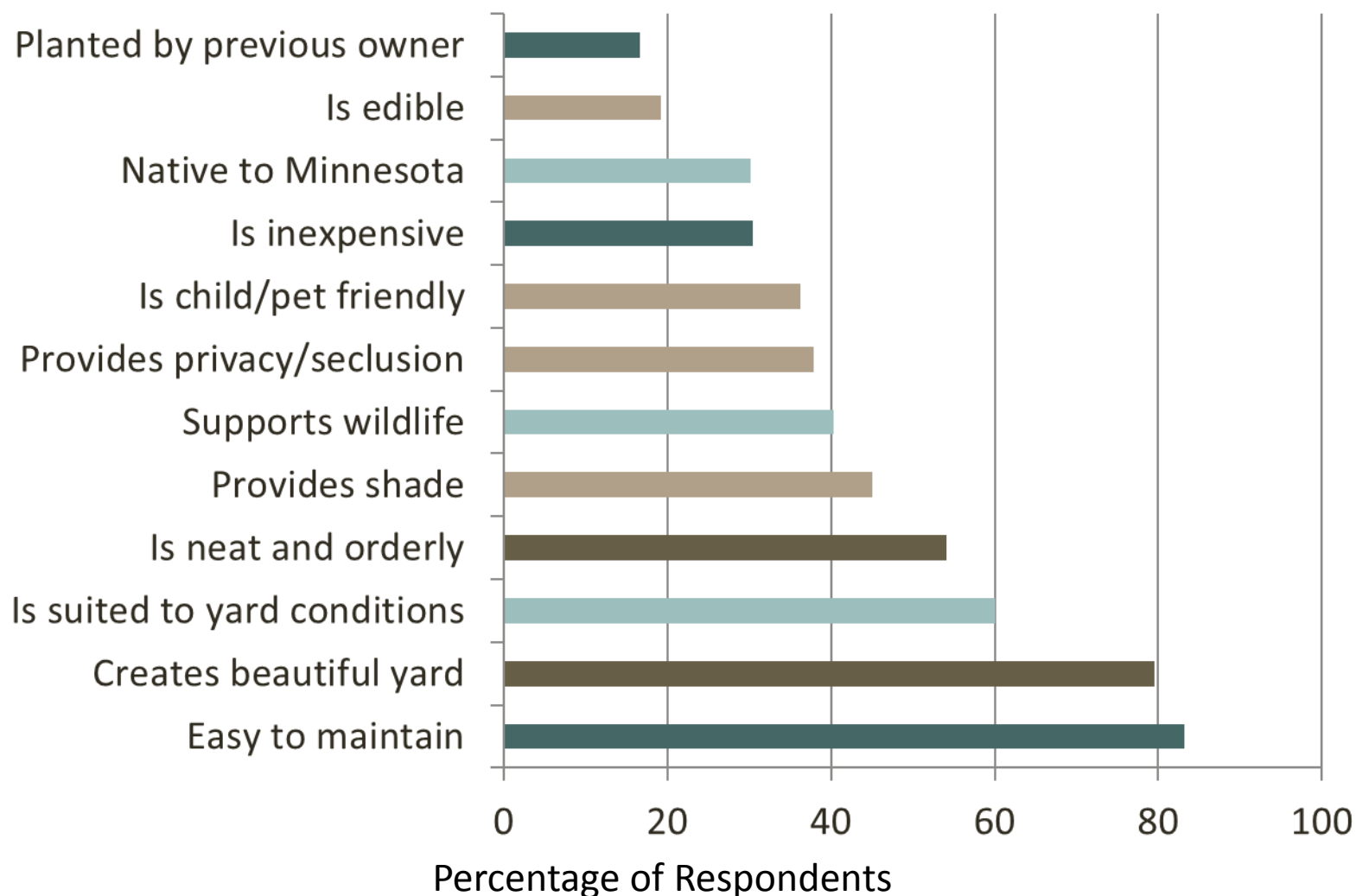
What features of your yard are most important to you?



Describe your ideal lawn.



What criteria guide your household's vegetation choices?



1



2



3



4



5



Table 3

Most preferred front yard design in each neighborhood context.

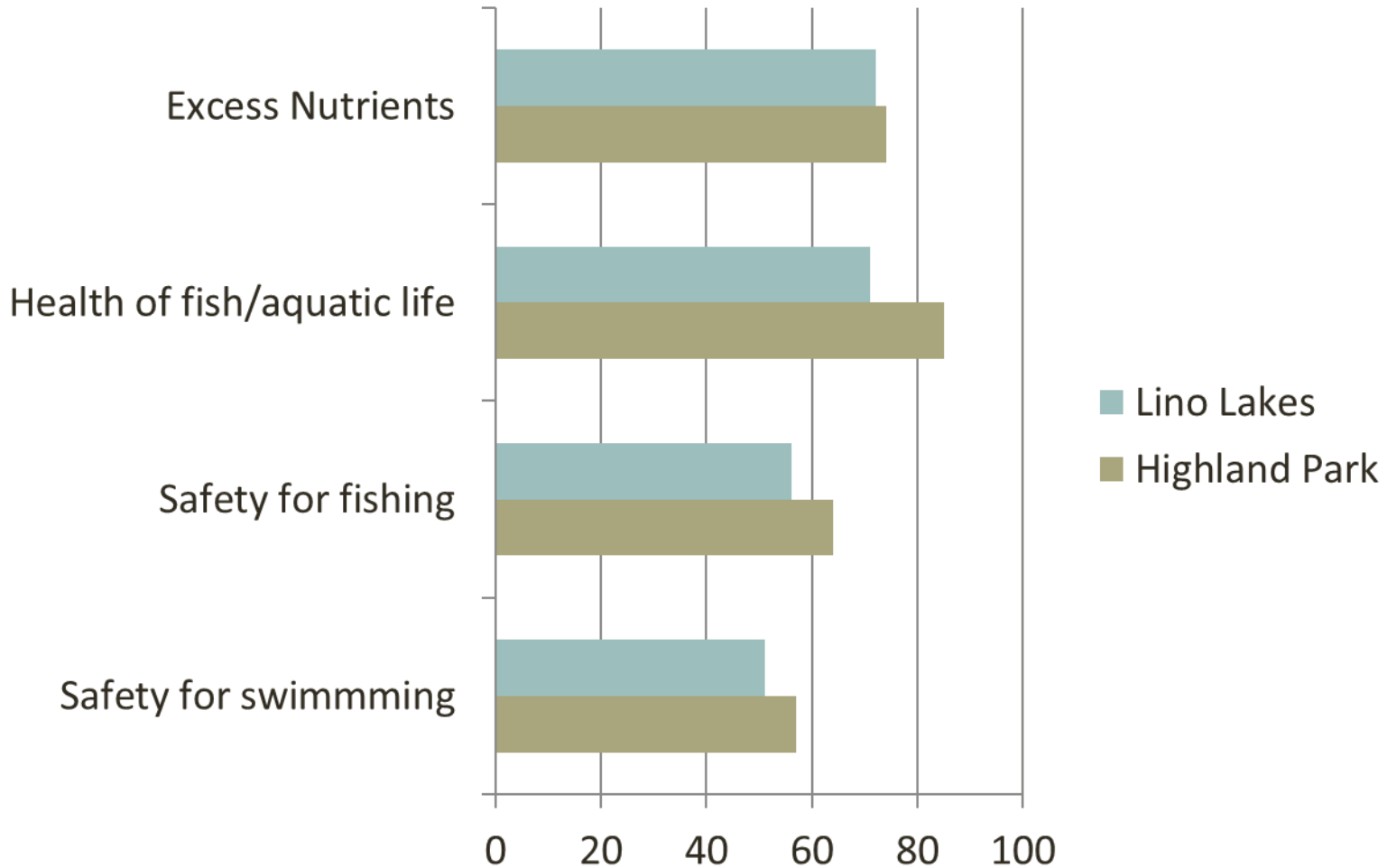
Neighbors' yards	Most preferred front yard design	No. who most preferred this design
Conventional (<i>n</i> = 169)	Conventional front yard design	118
	Mature trees front yard design	11
	Young trees front yard design	30
	50% native garden front yard design	6
	75% native garden front yard design	4
Mixed (<i>n</i> = 163)	Conventional front yard design	61
	Mature trees front yard design	20
	Young trees front yard design	9
	50% native garden front yard design	6
	75% native garden front yard design	67
Innovative (<i>n</i> = 162)	Conventional front yard design	5
	Mature trees front yard design	18
	Young trees front yard design	7
	50% native garden front yard design	6
	75% native garden front yard design	126

Most preferred in each context is shown in bold.

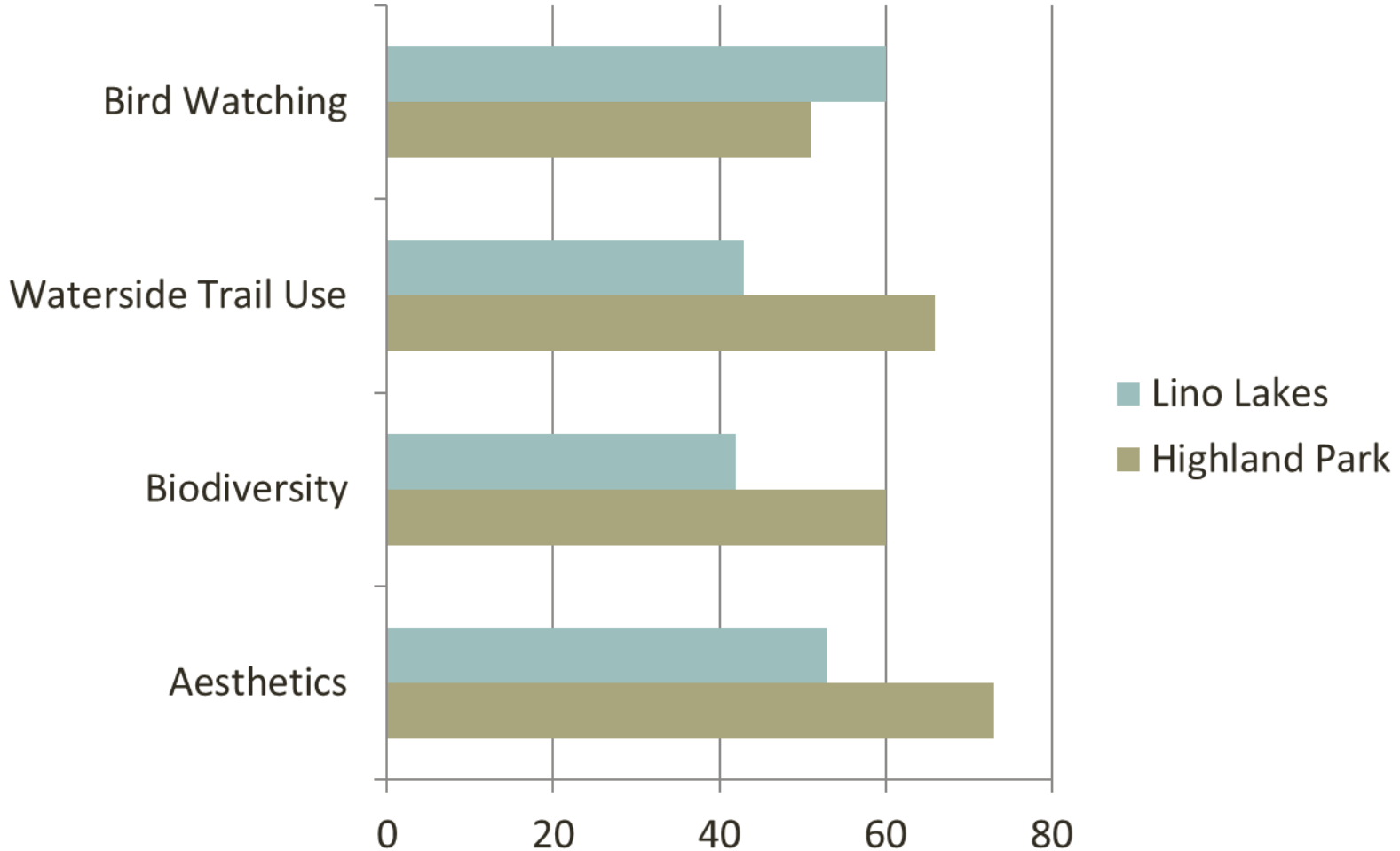
Reported norms

- Do you think the neighbors on your street have an expectation or value for a neighborhood with well maintained lawns?
 - Yes=83%; No=8%; Don't know=9%

Water quality concerns?



Values of nearby water bodies?



INVITATION FOR PARTICIPATION

We will continue this study by exchanging information and ideas with homeowners about lawn care decisions this summer. Your participation in this study would be very helpful.

Are you willing to participate in three information exchanges during the summer and early fall about lawn care?

- ☐ Yes, please add me to your list of participants.
- ☐ Possibly, please send more information on the project.
- ☐ No, we would not like to be considered.

If you are interested in participating, which lawn care practices are you most interested in learning more about? *Please check all that apply.*

- ☐ **Exceptional lawn quality:** Use basic lawn care practices (fertilizing, mowing, and watering) more efficiently to maintain your desired lawn quality.
- ☐ **Low input lawn care:** Maintain a healthy lawn with less fertilizer, water, mowing, and time.
- ☐ **Conversion of lawn to other vegetation:** Convert part or all of your lawn to other vegetation such as native plantings or other ground cover.

Interest: (check all that apply)	n	%
Exceptional lawn quality	343	54
Low input lawn care	442	70
Conversion of lawn	228	36

n=667, 70% of all survey respondents

Decisions and plans

Whether you choose an exceptional lawn, low input lawn, conversion of lawn, or a combination of types—



You can use your understanding of lawn biology, soil systems, and watersheds to maintain your desired yard qualities and improve soil and watershed system health.

Source: Dahmus et al. 2012, *Yard Care Choices Guide*

Yard Choices





Yard
Choices

Yard
Preferences



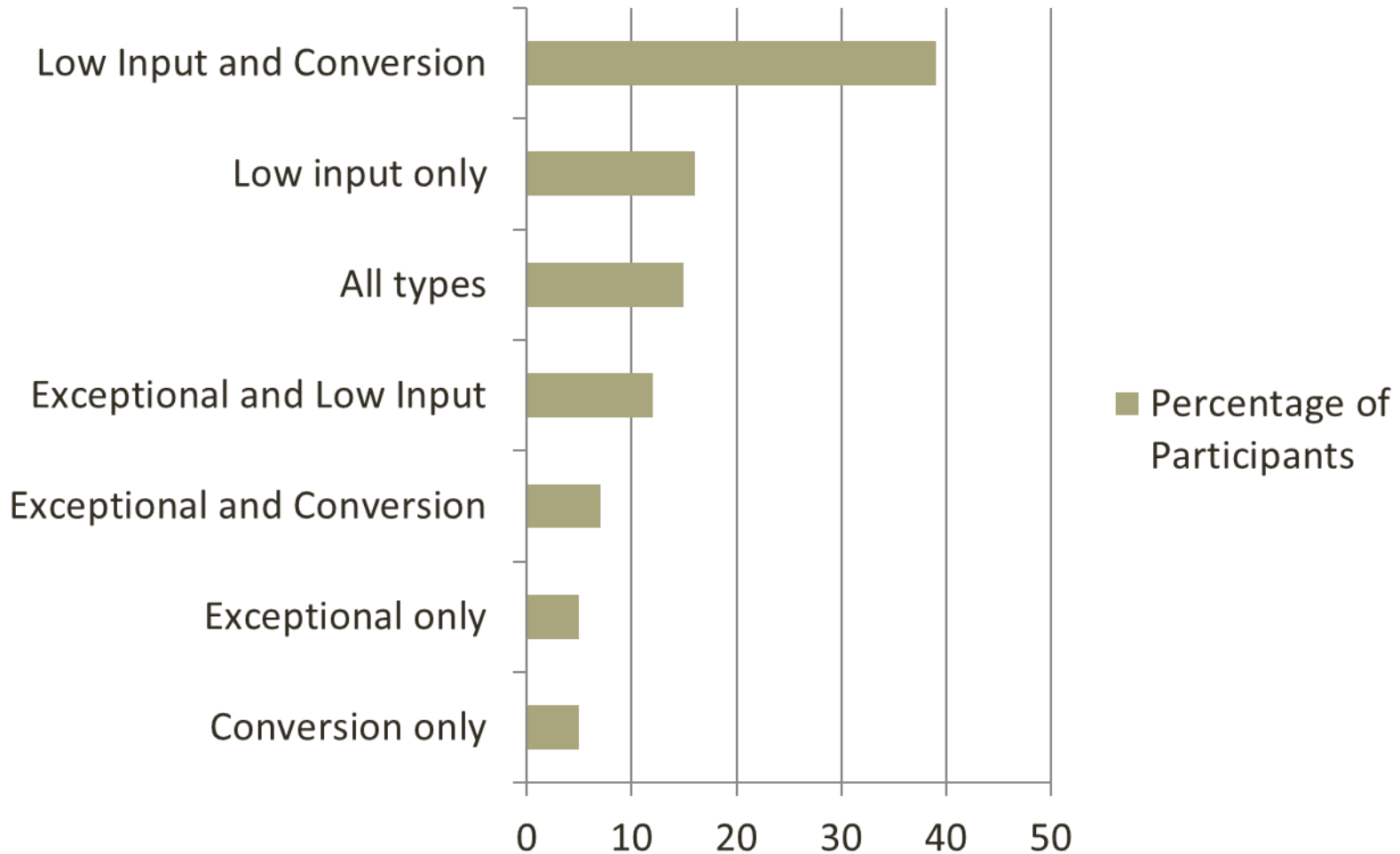
Yard
Choices

Yard
Preferences

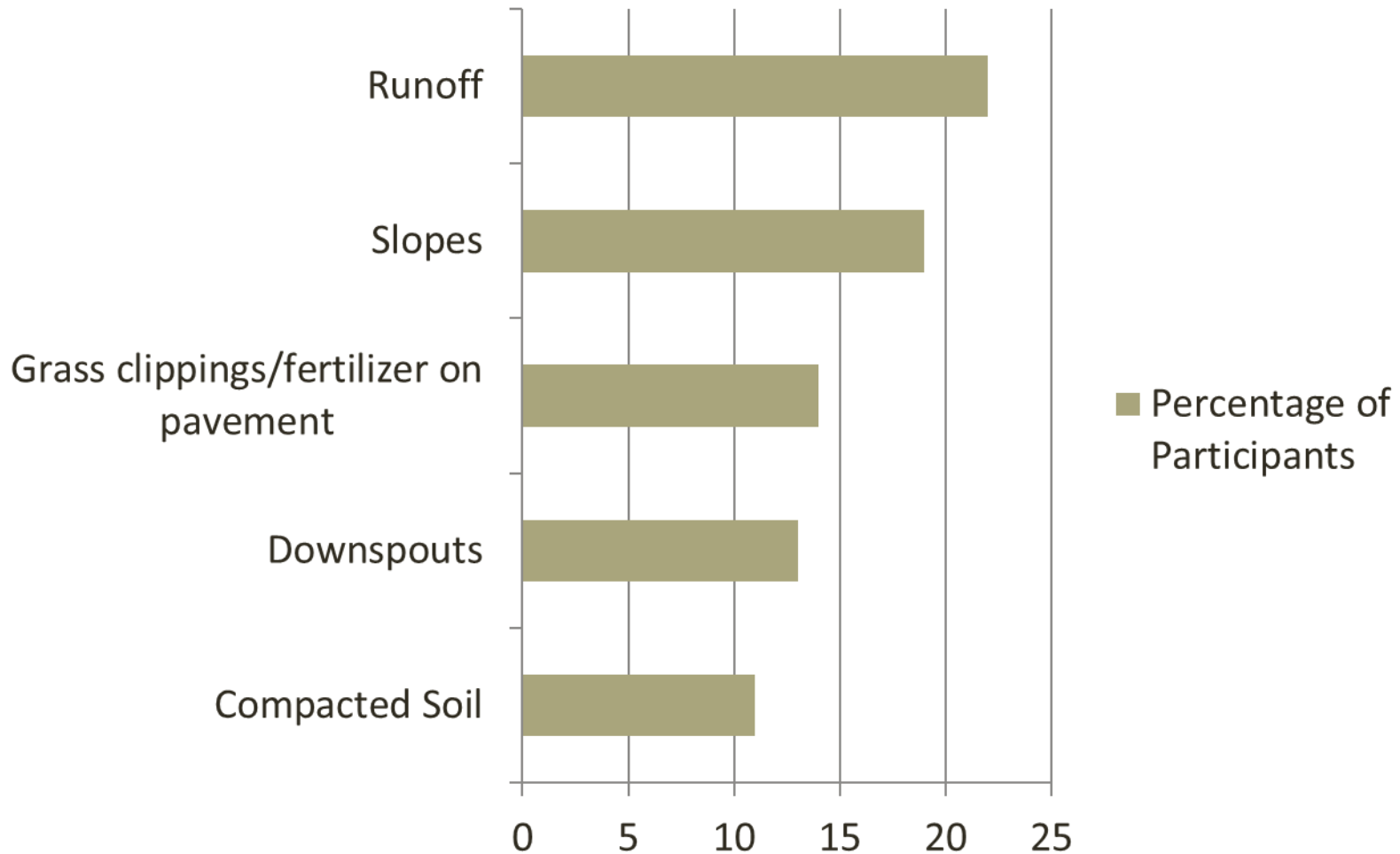
Ecosystem
Health



“Types” of yards



“Problems” identified



Social norms?

- Participants described their yards and yard care in relation to what their neighbors do
- Social norms expressed
 - to “maintain” yards
 - to control “weeds”

Yards as an ecosystem?

- How do residents understand their yards as part of the urban ecosystem?

Key concept	Scientific descriptions	Colloquial descriptions
1) Ecosystem Structure	<p>Biotic and abiotic components</p> <p>Examples: Species richness, abundance, and diversity; biomass; spatial heterogeneity; soil type</p>	<p>What is in the yard?</p>
2) Ecosystem Function	<p>Processes</p> <p>Examples: Biogeochemical and hydrologic cycles; food webs; ecosystem services</p>	<p>What is happening in the yard?</p>
3) Linkages	<p>Ecological and social systems</p> <p>Interactions of yard structure and function with ecological, biophysical, and social aspects of the urban area</p> <p>Flows of matter, energy, ideas, and norms across boundaries</p>	<p>How is the yard connected to the city?</p>

What features of your yard are most important to you?



What is happening in the yard?

Competition

- “Weeds” overtake lawns



- “Pests” destroy vegetation



Seasonal change



**How is the yard connected
to the city?**

Weeds across property lines



Human inputs across watersheds



Managing Interactions and Linkages

- People sought to keep their yards in a steady state by managing dynamic biotic and abiotic interactions
- People sought to limit linkages of their yards with the surrounding area by keeping things in or out of their yards

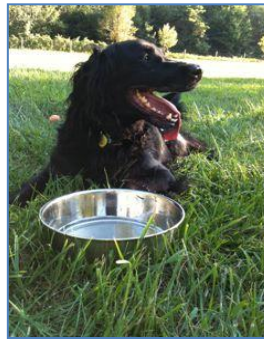


Gaps: Biodiversity

ATTRACT



MAKE USEFUL FOR



What's missing?

KEEP OUT!



Gaps: Ecological connectivity

- Example: Nutrients from grass and other vegetation not thought of as contributing nutrients to water bodies



Conceptualizations of the Yard

- Inputs, not cycles
- Gaps in biodiversity
- Barriers, not interconnections

Recommendations

- Move residents' conceptualizations of inputs towards inputs within cycles
- Fill key gaps in concepts of biodiversity
- Expand awareness of ecological interconnections



Community Based Social Marketing

Steps:

1. Identify a specific behavior
2. Identify barriers and benefits to desired behavior
3. Design a program to overcome barriers to selected behavior and emphasize benefits
4. Pilot the program
5. Evaluate it

<http://cbsm.com>



Tools

- Commitment strategies
- Prompts
- Norms
- Skill development
- Incentives
- Feedback



Watering lawns

- Group one
 - Visited by a student employee who talked with residents about efficient water use
 - Given a water gauge and prompt
 - Signed commitment

- Group two
 - Provided with information about water conservation only



Results

- Group one
 - decrease in lawn watering by 54%

- Group two
 - increase in lawn watering by 15%



Application

- Develop your own program for behavior change using the community based social marketing approach.
- Be sure to select a specific yard care behavior.



