



Tree Committee Meeting of the City of Spokane Park Board

Tuesday, June 2, 2015, 4:15 p.m. – 5:45 p.m.
Willow Room, Woodland Center
John A. Finch Arboretum
Angel Spell – Urban Forester

Committee Members:

- X Pendergraft, Lauren – Chairperson
- A Potratz, Preston
- A Gifford, Guy
- X Davis, Garth
- A Cash, Kevin

Park Board:

Ken VanVoorhis

Parks Staff:

Angel Spell

Guest(s):

Carrie Anderson
Nancy MacKerrow

Summary

Action Items:

- None

Discussion Items:

- 2016 Budget Guidelines ~ *Lauren Pendergraft*

Lauren asked the group for guideline suggestions to the upcoming 2016 budget. Several items were discussed and offered to Lauren for future consideration.

- Heritage Tree Program Update ~ *Angel Spell*

Angel demonstrated how the approved Heritage Trees now appear on the City's website Historical Preservation map.

- Finch Arboretum Educational Series Project Update ~ *Angel Spell*

The Educational Series was very successful, receiving overwhelming support by the public. Angel will be sending a report this month to the State regarding this project.

- Staff Report ~ *Angel Spell*

Angel presented current and future activities, including number of issued permits, busy spring planting, and progress with the City Engineering projects.

Standing Report Items:

- Citizen Advisory Committee Report ~ *Angel Spell*

Angel informed the group about an upcoming City project, involving 58 trees that will include repairing vaults beneath Downtown sidewalks and improving sidewalks and street trees. In addition, the next regular CAC/UFTC Committee meetings will be replaced by the CAC's scheduled field trip for June 30th, 3:00 p.m. at High Drive and 37th Avenue.

- Research & Data Report ~ *Angel Spell*

Materials were distributed from Dr. Kathleen Wolf's May 9th presentation "Urban Trees and Nature for a Better Human Habitat: Exploring the Research Evidence".

- Urban Forestry Financial Report ~ *Angel Spell*

Angel presented the financial report ending April 30th, which was followed by group discussion.

MINUTES

The meeting was called to order at 4:22 p.m. by Chairperson, Lauren Pendergraft.

Action Items:

None

Discussion Items:

1. 2016 Budge Guidelines ~ *Lauren Pendergraft*

In order to begin preparation for the 2016 Budget, Lauren asked the group for guideline suggestions they would like added for consideration. Suggestions included monies from the General Fund and storm water utility funds. Also to be considered in the guidelines are upgrades to Finch Arboretum and the maintenance of Park and City trees.

2. Heritage Tree Program Update ~ *Angel Spell*

Angel showed the group how the approved Heritage Trees now appear on the City's website Historical Preservation map.

3. Finch Arboretum Educational Series Project Update ~ *Angel Spell*

The Educational Series received great support from the public. Angel will send a report to the State this month and will provide that report at the next meeting.

4. Staff Report ~ *Angel Spell*

Angel provided recent Staff activities, including the very busy planting season, numbers of permits written, a listing of the Finch Arboretum Educational Series presentations, City project participation, cooperation with the Forest Service regarding tree pest monitoring, and more.

Standing Report Items:

5. Citizen Advisory Committee Report ~ *Angel Spell*

Angel provided information about the City's 2013 Downtown Pedestrian project that has federal grant funding matched with City funding to repair the vaults beneath Downtown sidewalks. There are 58 trees within the project scope that will then be surrounded by Silva Cells/Strata Cells due to additional parking revenue. The trees planted in front of the Apple Store are examples of this type of construction and planting. Also, the CAC's June 30th field trip will be in lieu of next month's CAC/UFTC meeting.

6. Research & Data Report ~ *Angel Spell*

Materials were distributed from Dr. Kathleen Wolf's May 9th presentation "Urban Trees and Nature for a Better Human Habitat: Exploring the Research Evidence".

7. Urban Forestry Financial Report ~ *Angel Spell*

Angel presented the financial report, followed by group discussion.

Meeting adjourned at 5:40 p.m.

The next regularly scheduled meeting is cancelled, replaced with the CAC's June 30th field trip at 3:00 p.m.; 37th Avenue/High Drive.

YTD Report – May 31, 2015

Field Operations

1. Planting: 87
2. Pruning: 133 trees
 - a. Finch, Manito, Byrne, Indian Canyon GC, Corbin Park, Comstock, Mission, Cannon Hill and others
3. Removal: 271 trees
 - a. Indian Canyon GC thinning of invasive maples/cottonwood/linden (132)
 - b. Finch (51)
 - c. Audubon, Corbin, Polly Judd, Riverfront, Manito Parks and others
 - d. Plus 1.5 acres of forest health thinning (Camp Sekani and Finch Arboretum)

Permitting & Plan Review

4. 90 permits processed representing 1001 trees
5. 11 courtesy and violation notices to property owners
6. Plan review and comment – (17)
Washington Cracker, Washington Federal, Father Bach, VOA Phase 2, Alcobra Metals, LHM Service, University Apts, Yokes Fresh Market, Spokane Falls & Division St, Larry Miller, Able label, LHM Lexus, Big Badness, Franklin Park Pavement Rehab, Homestead McCarroll's Apts, Spokane River Properties, Starbucks Greene St.

Administration

7. Andy Thew was selected to fill the vacant full time permanent Arborist position. (Dec 2014)
8. Kay Bisaro was selected as the new Clerk II serving UF (80%), Rec (10%), and Golf (10%). (Jan)
9. Provided review and comment of City Design Standard revisions for Comp Plan update. (Feb)
10. Continuing participation on NUCFAC Ten-year Action Plan Strategic Advisory Team.
11. Utility Bill Donation option implemented for on-line payments. (Mar)
12. Presentation to Business & Development Services staff re: proper planting and permitting (Apr 15)

Finch Arboretum

13. Arbor Day Celebration – April 25
14. Presented 11 public education workshops –
 - a. Letting Kids be Kids: Nature-Based play and Learning Landscapes for Healthy Childhoods (Jan 31)
 - b. Designing Women: Landscape Design Essentials (Jan 31)
 - c. Chainsaw Safety & Maintenance (Feb 21)
 - d. Landscape Restoration and Low Impact Development for Better Water Quality (Mar 20)
 - e. Landscaping with Natives: Trees, Shrubs, Flowers, and Grasses (Mar 27)
 - f. Spokane's Edible Forest (Apr 11)
 - g. Tree Tours of Finch Arboretum (Apr 25)
 - h. Creating Wildlife Habitat in your Backyard (May 8)
 - i. Urban Trees and Nature for a Better Human Habitat: Exploring the Research Evidence (May 9)
 - j. Healing Gardens: Their Purpose & Design (May 16)
 - k. Guidelines for Identifying Local Mushrooms (May 22)

Staff Development & Training

15. WSDA Pesticide License – Jeff Perry, Andy Thew, Kacey Burke, Johnna Woodruff. (Feb 17-18)
16. Turf, Tree, and Landscape Conference – Matt Stewart, Alex Moe, Amber Ramirez. (Feb 19)
17. Municipal Forestry Institute, Society of Municipal Arborists – Angel Spell. (Feb 22-27)
18. CDL training and certification – Andy Thew (Apr 6 – May 5)
19. First Aid/CPR for all staff (Apr 14)
20. Bare Root Tree Transplanting – Melissa Burt & Matt Stewart (Apr 16)
21. Trees and the Law - Angel Spell, Melissa Burt, Jeff Perry (May 4)

City Projects

22. Consultation, Permitting, and Contracting tree protection on City construction projects (20) – CSO 6 Phase 1 & 2 (2010044/075), CSO 20 (2013042), Monroe St 8th to Main (2012115), High Drive Phase 2 (2014056), Havana St (2014079), Hartson Ave (2014083), Rebecca St (2014090), 2013 Traffic Calming (2013098/99/100), 2014 Traffic Calming (2014066/067), Arterial Curb Ramps (2015042), 2015 CD Sidewalks (2015041), Panorama Drive (2014075), 2015 Residential Chip Seal (2015043), Indiana Ave Phase 1 (2014134), Rowan Ave Phase 1 (2014135), 1st Ave Erie to Altamont (2014118), 2013 Downtown Pedestrian Improvements (2013156), Wall St Main to Spokane Falls (2015083), Ray St 29th to 17th (2012116)
23. Coordination with Forest Spokane staff for spring planting events.
24. Integrated Strategy Studio meetings – projects include: Indiana Ave, Five Mile, Rowan Ave, CSO 33C, 25th & SE Blvd, and Levy projects.

Other Projects

25. Coordination with Sister Cities Garden and assistance with tree protection, removals and pruning.
26. Meetings with STA to provide review and comment re: new bus stop development policy.
27. Working with City Planning staff and GHBA and ESBA to improve street trees in business districts.
28. Working with USDA Forest Service entomologists on Walnut Twig Beetle trapping at Cowley Park for their research.

Public Outreach & Events

29. South Perry Business District (Marshall Powell) re: street tree pruning (Jan 22)
30. Browne's Addition Neighborhood Council (Feb 12)
31. Cliff Cannon Neighborhood Council re: Greening Grants (Mar 3)
32. Proper Tree Pruning presented by Jeff Perry for Friends of Comstock Park (Mar 10)
33. Friends of Coeur d'Alene Park (Mar 15)
34. Cliff Cannon Neighborhood Council re: proper pruning (Apr 7)
35. Mayor's Arbor Day Proclamation and Tree City USA presentation (Apr 24)
36. Arbor Day Celebration at John A. Finch Arboretum (Apr 25)

Media

37. Spokesman-Review 2/5/15 (Mike Prager) – [Spokane Area Greening Up](#)
38. Spokesman-Review 2/21/15 (Rich Landers) – [Another live tree hacked along South Hill bluff trails](#)

Upcoming

39. Pruning Fire Station 1
40. Pruning 2015 priority parks – Polly Judd, Dutch Jakes, Webster, Logan, Ruth, Pacific, Cliff, and A.M. Cannon
41. Fall planting at Audubon Park
42. Fall planting at Comstock Park



The Sacred in Nearby Nature vocabulary, principles, & evidence

Kathleen Wolf, Ph.D., University of Washington
Elizabeth Housley, M.A. Enviro Psych

May 9, 2015





cities are centers of

sustainability
entrepreneurship

arts
culture

innovation
talent





Population Trends

- > 80% of U.S. population lives in urban areas
- > 50% of global population is urban



**lives
of
stress,
challenge,
need,
angst**



Restorative Nature
need to get away from the city?



Ascending the Giants

Portland,
Oregon



Old-growth Ecology Tour

The third aspect of the Old Growth Eco Tour is a vertical exploration in an ancient grove of towering Douglas-fir, Grand Fir and Western Red Cedar. Here, the ATG team will assist your 100 foot ascent toward the top of an old growth tree with PhD Ornithologist, Dr. David Anderson, for a captivating view over the nation's largest and wildest city park, Forest Park. Dr. Anderson will be your personal guide explaining the ecological functionality of this forest and the forest/urban forest interface.

Explore and experience the true Northwest in an actual Oregon old-growth forest grove in a real and unique manner that is guaranteed to be safe and unforgettable.

230'

Sawyer Line

Participant Line

Pacific Northwest Chapter
ISA
International Society of Arboriculture









Civic Sacred :: Background

- Sacred – often implied, often felt, rarely discussed
- Local, public discourse & projects – sacred can introduce tension or disconnect
- What is an extended, expanded vocabulary of sacred?





The Nature Sacred Project

- Open Spaces – Sacred Spaces
- garden benches - journal entries
- national projects – integrated design/research
- Nature Sacred





**reconnecting
to nature
in the city**

**restoration
mindfulness
healing**

**design for
co-benefits**



urban systems integration



**neighborhood
social cohesion**

**environmental
education &
social learning**



water, energy & sacred



healing spaces



Legacy Hospitals, Portland OR



a language of sacred for public discussions

Design, Nature & Space	Sensations in Nature Space	Experiences or Behaviors Within	Initial Personal Outcomes	Carry-Over Beyond Space & Visit	Community & Culture
<ul style="list-style-type: none"> • beauty • compatibility • comfort • safety • fascination • refuge • dedicated • designed 	<ul style="list-style-type: none"> • sun • brightness • warmth • water • coolness • calm • episodes • peaceful 	<ul style="list-style-type: none"> • meditation • reflection • contemplate • immersion • w/loved ones • reverence • drawn in 	<ul style="list-style-type: none"> • serenity • calm • cleansing • mindfulness • inspiration • restored • lifted up • revitalized 	<ul style="list-style-type: none"> • mind/body reset • self-discovery • creative • lifted up • refreshed • connected 	<ul style="list-style-type: none"> • memorial • stories • friendship • secular/spiritual • ceremony place • sharing differences



The Sacred in Nearby Nature

science & civic sacred connections



Nature and Mindfulness

credit: Michael Hellgren

focus

soft fascination

undirected attention

Attention Restoration Theory, Kaplan & Kaplan





busyness

multi-
tasking

‘out of
balance’

Mindfulness/Meditation Training

- meta analysis; clinical/non situations
- focus on moment-to-moment experience and mental awareness
- more veridical perception (reality check)
- reduce negative affect
- improve vitality and coping
- medical symptoms & sensory pain

Grossman et al. 2004.
Mindfulness-Based Health
Benefits. Journal of
Psychosomatic Research

Mindfulness/Meditation Training

- healthy workplace employees
- 8 week mindfulness training
- brain electrical activity – positive affect
- brain activation – reduce stress event response
- more antibodies after influenza vaccine = better immune function

Davidson et al. 2003. Alterations in
Brain and Immune Function
Produced by Mindfulness Meditation.
Psychosomatic Medicine

Nature Sacred :: bench journals

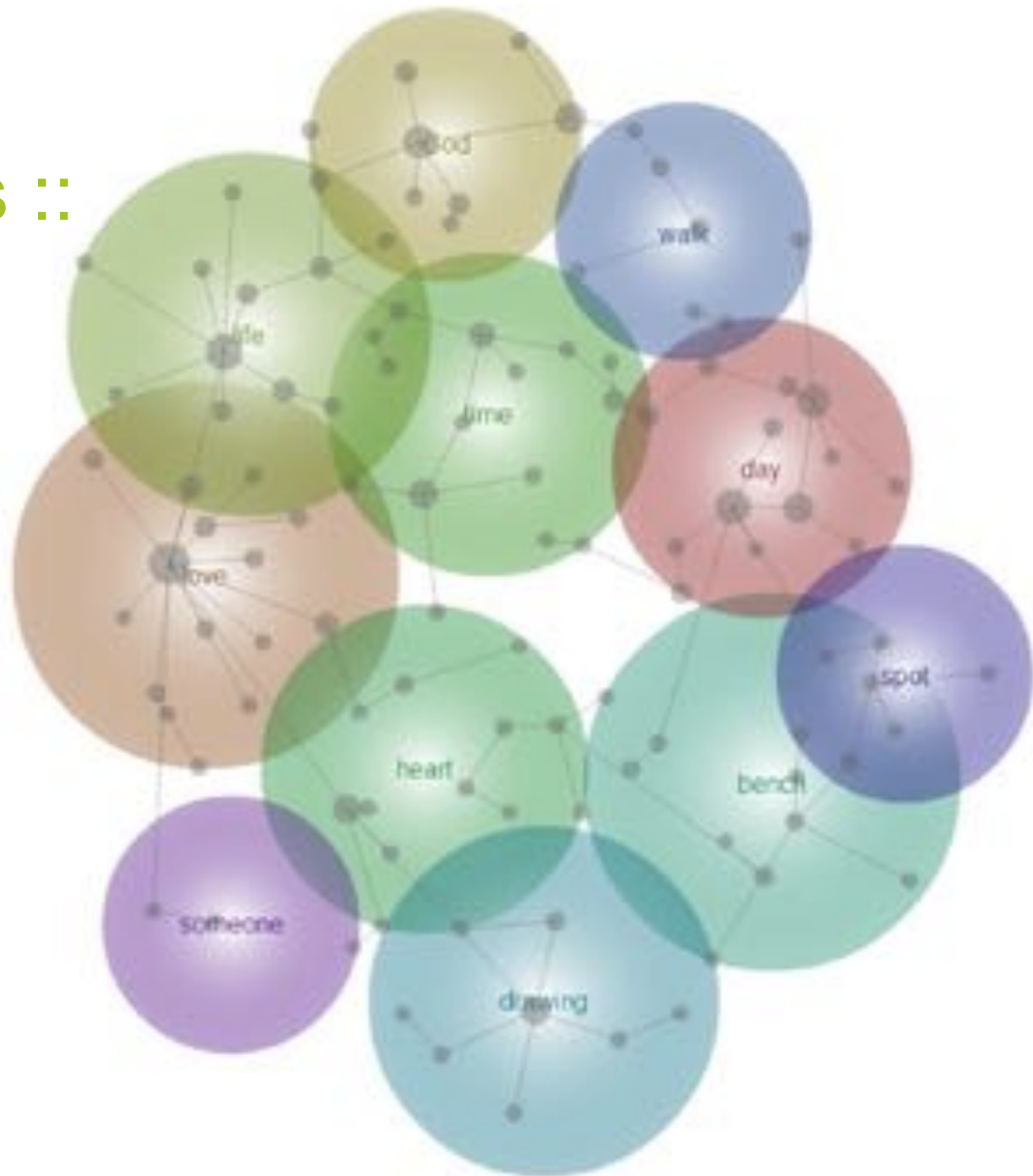


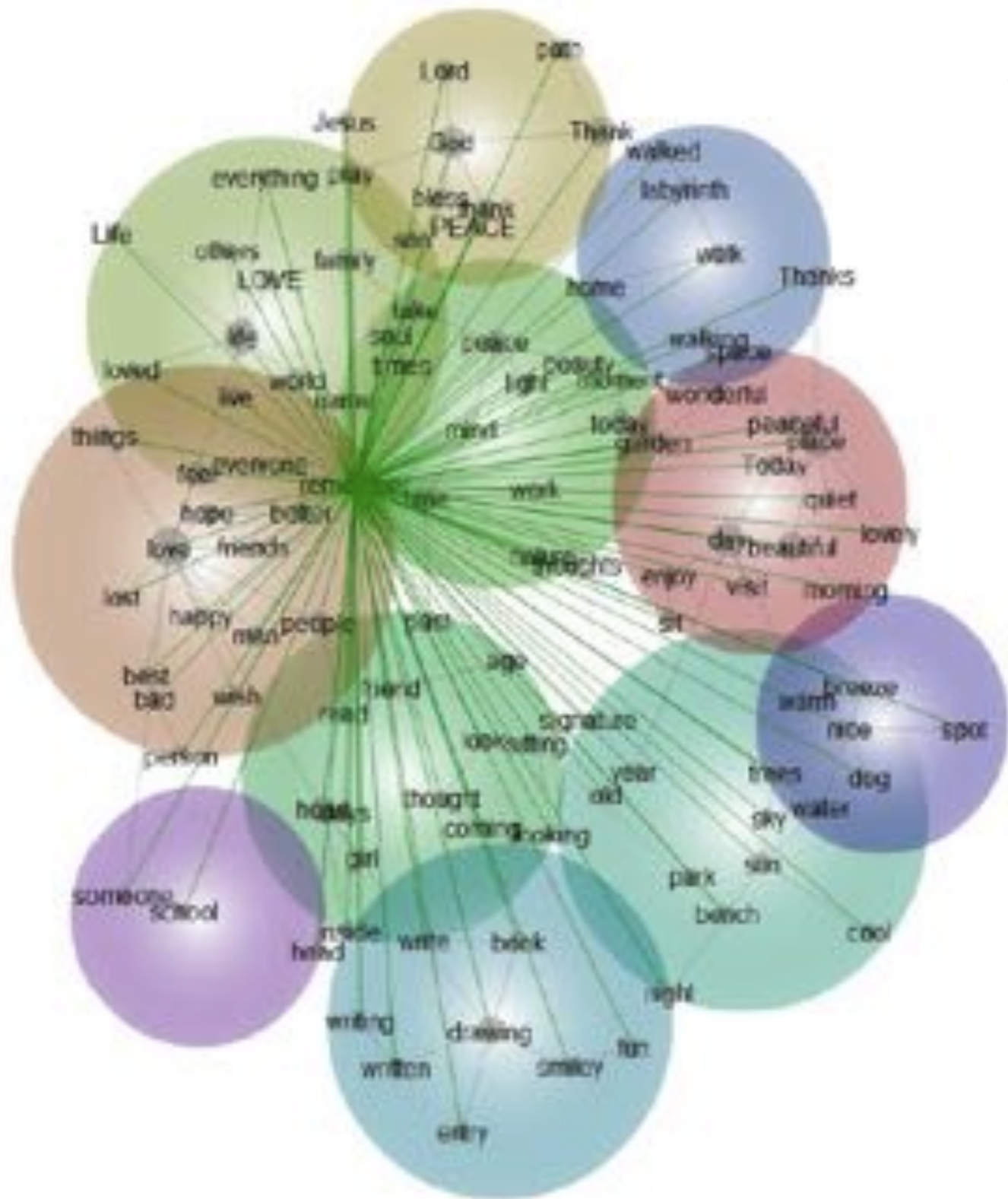
- > 10 years
- > 100 gardens
- > 10,000 journal entries



mindfulness :: journal analysis

Tidball et al. 2012.
Preliminary Analysis
of Nature Sacred
“Book & Bench” texts
using unsupervised
semantic mapping of
natural language.
Cornell (University)
Civic Ecology Lab.





Tidball et al. 2012

Preliminary Analysis of
Nature Sacred
“Book & Bench”
journal entries

by Cornell University’s
Civic Ecology Lab



Place and Design

creating sacred spaces

respite, restoration, mindfulness



Design Elements



 Portal




 Path



 Destination



 Surround

NatureSacred :: Open Spaces Sacred Places

portal :: path :: surround :: destination



portal :: path :: surround :: destination



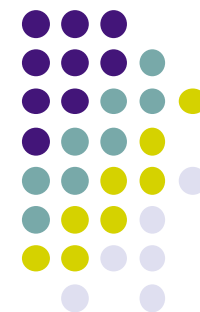


Closing & Summary

- sacred has a place in public spaces?
- many expressions – not just faith-based
- evidence of benefit – more urgent
for life balance
- respite - mindfulness – restoration
- design and place-making



www.naturewithin.info



College of the Environment

University of Washington

Human Dimensions of Urban Forestry and Urban Greening

featuring research on peoples'
perceptions and behaviors
regarding nature in cities

Green Cities and Health

human health & well-being research

Projects Director
Kathleen L. Wolf, Ph.D.



What's New?

Nature and Consumer Environments

Research about how the urban forest
influences business district visitors.

Trees and Transportation

Studies on the value of having quality
landscapes in urban roadsides.

Civic Ecology

Studies of human behaviors and benefits when
people are active in the environment.

Policy and Planning

Integrating urban greening science
with community change.

Urban Forestry and Human Benefits

More resources, studies and links . . .

Sponsors





Trees in the Business District studies about consumer ‘habitat’

Kathleen Wolf, Ph.D.
Research Social Scientist

University of Washington
College of the Environment

Spokane Urban Forest Workshop
May 9, 2015



overview

trees in retail settings
studies overview
design ideas
conclusions

Trees & Retail Environments Research



Trees & Shopper Environments Research

- Research Questions •
 - trees and visual quality?
 - trees and consumer behavior?
 - trees and product pricing?

- **Methods:**
 - mail out/in surveys**
 - national or local sample**
 - residents/nearby city residents**

partners: U of Washington, NGOs, business organizations
funded by USDA Forest Service

Image Categories (sorted by ratings)

Pocket Parks
mean 3.72
(highest)



Scale : 1=not at all,
5=like very much,
26 images

Full Canopy
mean 3.63

Enclosed
Sidewalk
3.32



Intermittent
Trees
2.78



No Trees
mean 1.65
(lowest)

(high - 3.72)



1. Place Perceptions

- Place Character
- Interaction with Merchants
- Quality of Products

2. Patronage Behavior

- travel time, travel distance
- duration & frequency of visits
- willingness to pay for parking

3. Product Pricing

- higher willingness to pay for all types of goods
- higher in districts with trees – 9-12%



Place Marketing

Relationship
Marketing

Shopping Area Two

Refer
survey



View "A"



View "B"



View "C"

Shopping Area One

Use the
survey



View "A"



View "B"



View "C"

strip malls

vegetation
varied using
image editing

shopper survey

freeway roadside



1. Place Perceptions

- Place Character
- Interaction with Merchants
- Quality of Products

2. Patronage Behavior

- travel time, travel distance
- duration & frequency of visits
- willingness to pay for parking

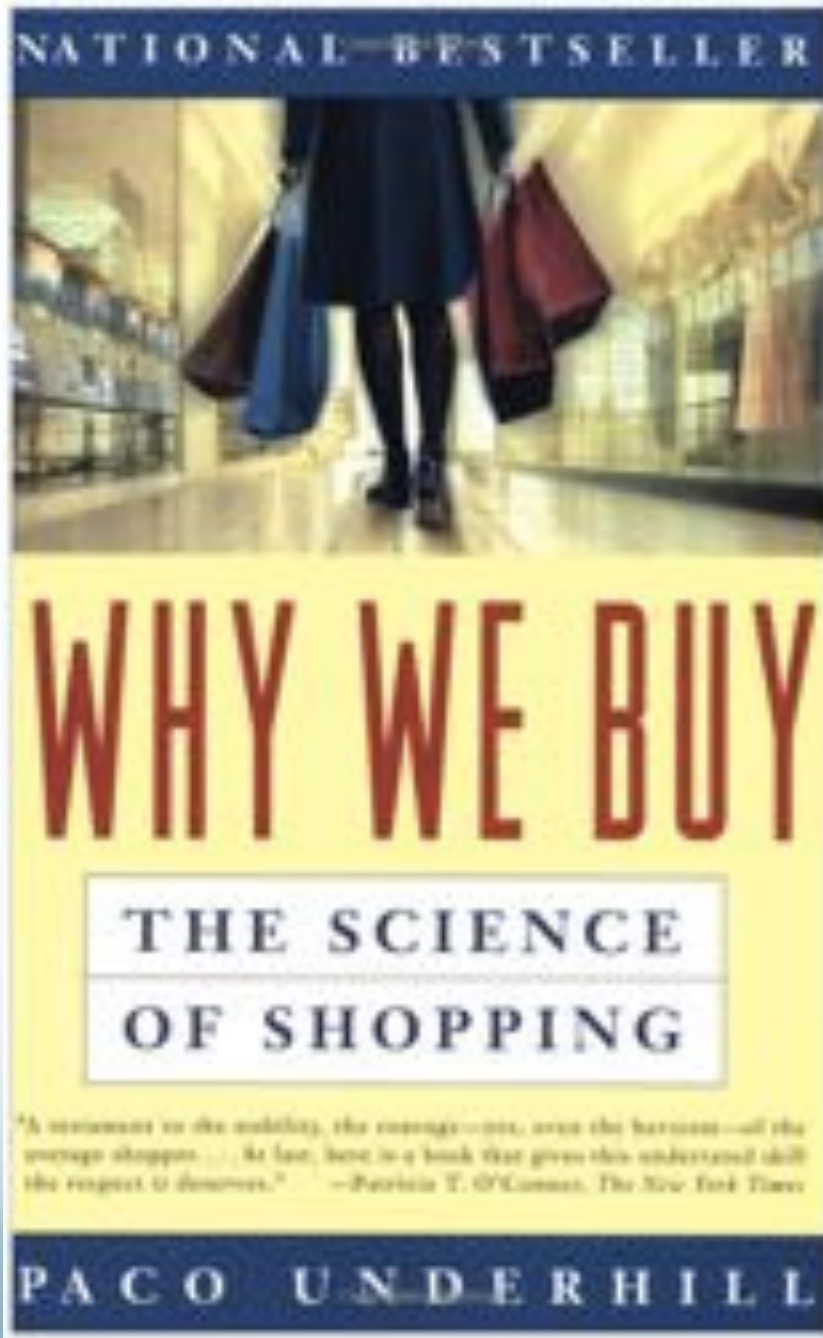
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Place Marketing

Relationship
Marketing

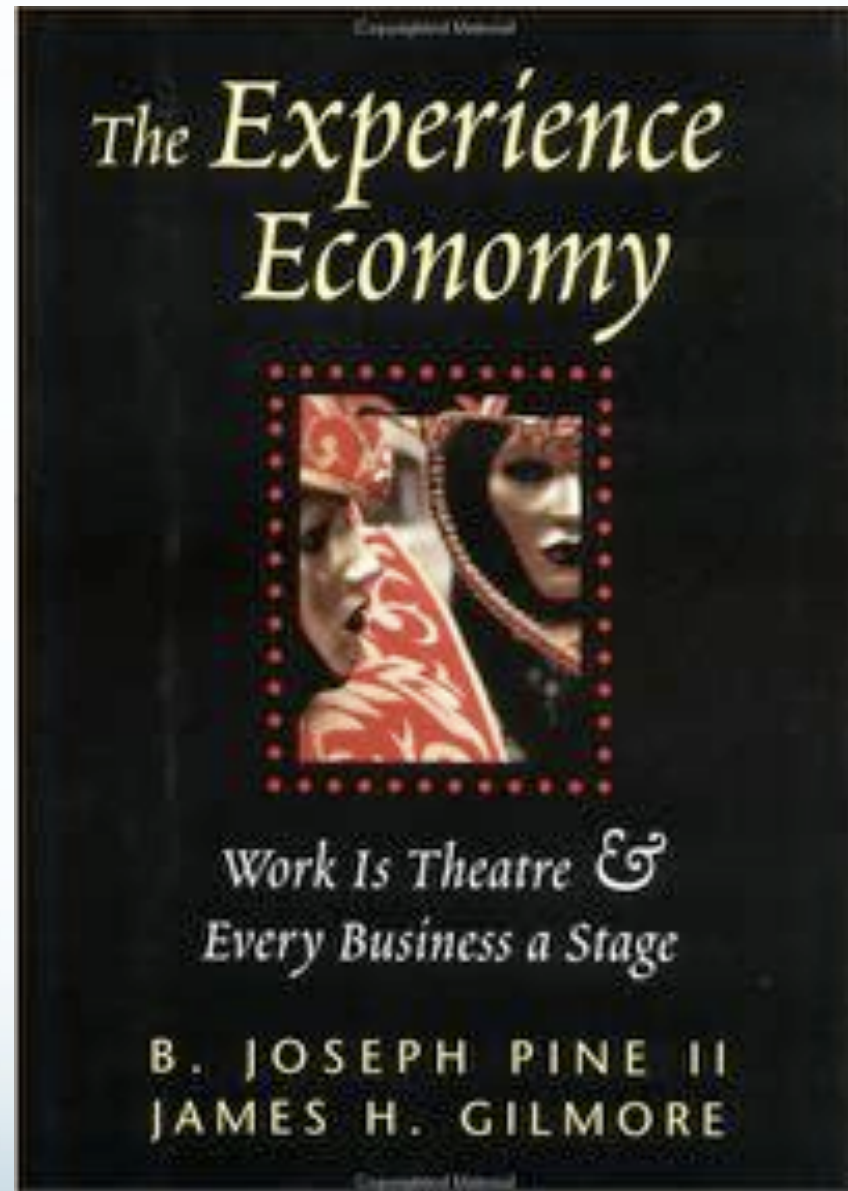


social science of
consumer behavior

‘atmospherics’

retail & place
marketing

“Companies stage
an experience when
they engage
customers in a
memorable way.”



ALPHA

Awaji Landscape Planning & Horticulture Academy

The screenshot shows the homepage of the Awaji Landscape Planning & Horticulture Academy. At the top, there is a navigation bar with the school's logo and name in Japanese: 兵庫県立淡路景観園芸学校 (Awaji Landscape Planning & Horticulture Academy). Below the logo, it says 兵庫県立大学淡路キャンパス (Awaji Campus of Hyogo Prefectural University). To the right of the logo, there are links for お問い合わせ (Contact), 交通案内 (Transportation), and サイトマップ (Site Map). There are also language options for 中文 (Chinese) and English. A search bar with the text "Google" カスタム検索 (Custom Search) and buttons for 検索 (Search), 文字サイズ (Text Size), and 小 (Small) 標準 (Standard) 大 (Large) is present. Below the search bar, there is a green navigation bar with links for 受験生の皆様へ (For Applicants), 教職員及び在学生の皆様へ (For Faculty and Students), 卒業生の皆様へ (For Graduates), 企業の皆様へ (For Companies), and 一般・地域の皆様へ (For General/Local Community). Below this, there is a white navigation bar with links for ホーム (Home), 学校案内 (School Information), 教育課程 (Education Course), 施設案内 (Facilities), 入試案内 (Admission Information), 国際交流・留学 (International Exchange/Study Abroad), キャンパスライフ (Campus Life), and 就職・資格 (Employment/Qualifications). The main content area features a large image of the school building with the text 景観園芸の実践 (Practical Landscape Horticulture) and 淡路島から世界へ (From Awaji Island to the World). To the right of this image is a green box titled 見頃の植物 (Seasonal Plants) featuring a photo of purple flowers and the text アガパンサス (Agapanthus), Agapanthus africanus, 科名: ネリ科 (Family: Amaryllidaceae), 花期: 6月半ば〜7月 (Flowering: Mid-June to July), and a link to 詳細を見る (View Details). Below the main content area, there are three blue boxes with white text: 専門職大学院課程 (Professional Master's Course) with the logo of the Faculty of Environmental Landscape Management, 園芸療法課程 (Horticultural Therapy Course) with the school's logo, and 生涯学習課程 (Lifelong Learning Course) with the school's logo.

typical
retail street
in urban Japan





Namba Parks, Osaka

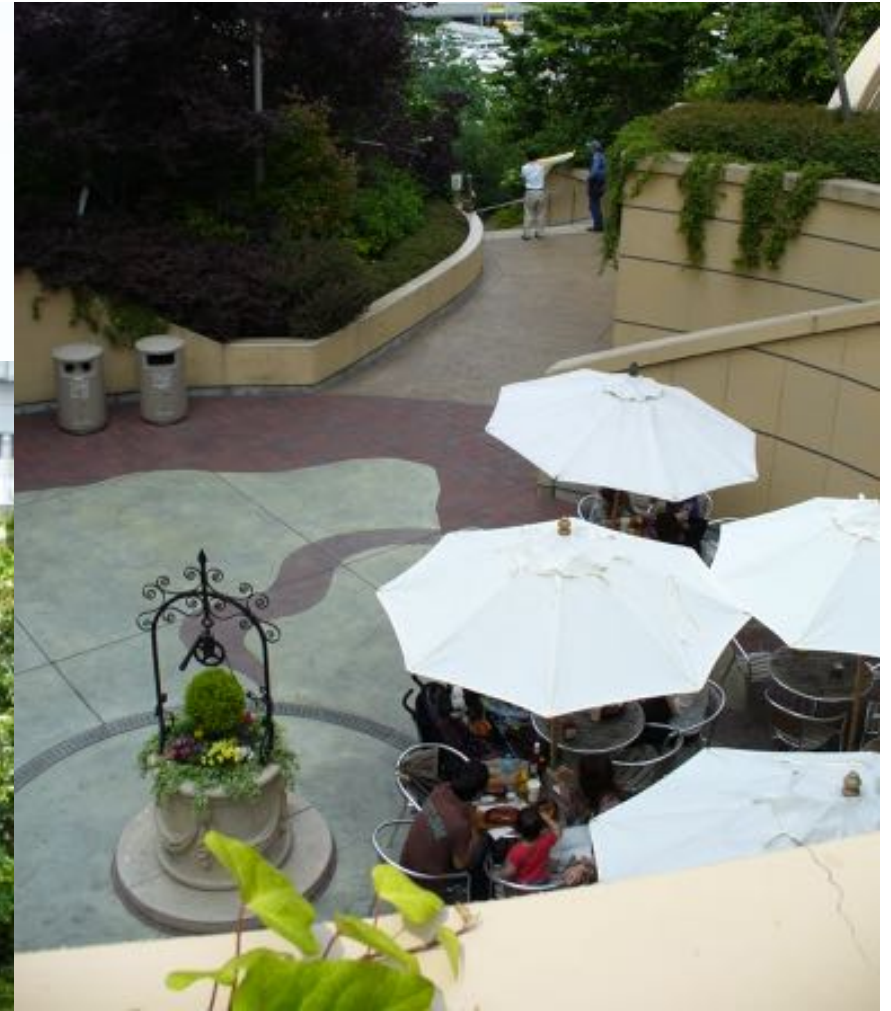
view from
nearby hotel



interior
retail space
ground level



small plazas
retail entry



up-close nature
experiences



place of
respite



Namba Parks
retail success & nature experience benefits

lessons learned?

social spaces

small rooms

variety within
unity



Bainbridge Island, WA
“main street”







Austin, TX



identity

affordable
materials

message of
renewal



public xeriscape

shared design &
management



summary

studies of trees in business districts
perception, preference & behavior
design & place messaging/identity



Nature and Consumer Environments

Shoppers are increasingly interested in the experience of shopping, as well as the goods and services they expect to purchase. A series of studies has investigated associations between the urban forest and people's response to shopping settings.

These studies show that providing for trees in the streetscape is an important investment for a business community. The presence of a quality urban forest positively influences shoppers' perceptions, and probably, their behavior. Information below includes research studies, a fact sheet, a professional publication, and a booklet to help create and sustain beautiful streets.

Kathleen L. Wolf, Ph.D.
Research Director
University of Washington
[contact info...](#)

- List of all
- [Presentations](#)
 - [Products](#)
- = Fact Sheet
 = Professional Publication
 = Scholarly Publication

Studies

Trees and Business - Growing Together A National Research Program

Trees provide environmental benefits in cities, but also contribute to the quality of life. A national program of scientific studies has found that shoppers respond positively to urban forests. These findings have been consistent across large, metropolitan areas in the United States. The most positive consumer response is associated with urban forests where overarching tree canopy helps create a "sense of place." The results across several research studies. Details of research found in sections below.

College of the Environment | University of Washington

Human Dimensions of Urban Forestry and Urban Greening

What's New?

- Nature and Consumer Environments**
Research about how the urban forest influences business district visitors.
- Trees and Transportation**
Studies on the value of having quality landscapes in urban roadsides.
- Civic Ecology**
Studies of human behaviors and benefits when people are active in the environment.
- Policy and Planning**
Integrating urban greening science with community change.
- Urban Forestry and Human Benefits**
More resources, studies and links ...

featuring research on peoples' perceptions and behaviors regarding nature in cities

Green Cities: Good Health
human health & well-being research

Projects Director
Kathleen L. Wolf, Ph.D.

Sponsors





**in the
background**

**trees &
forests
provide
so many
benefits!**



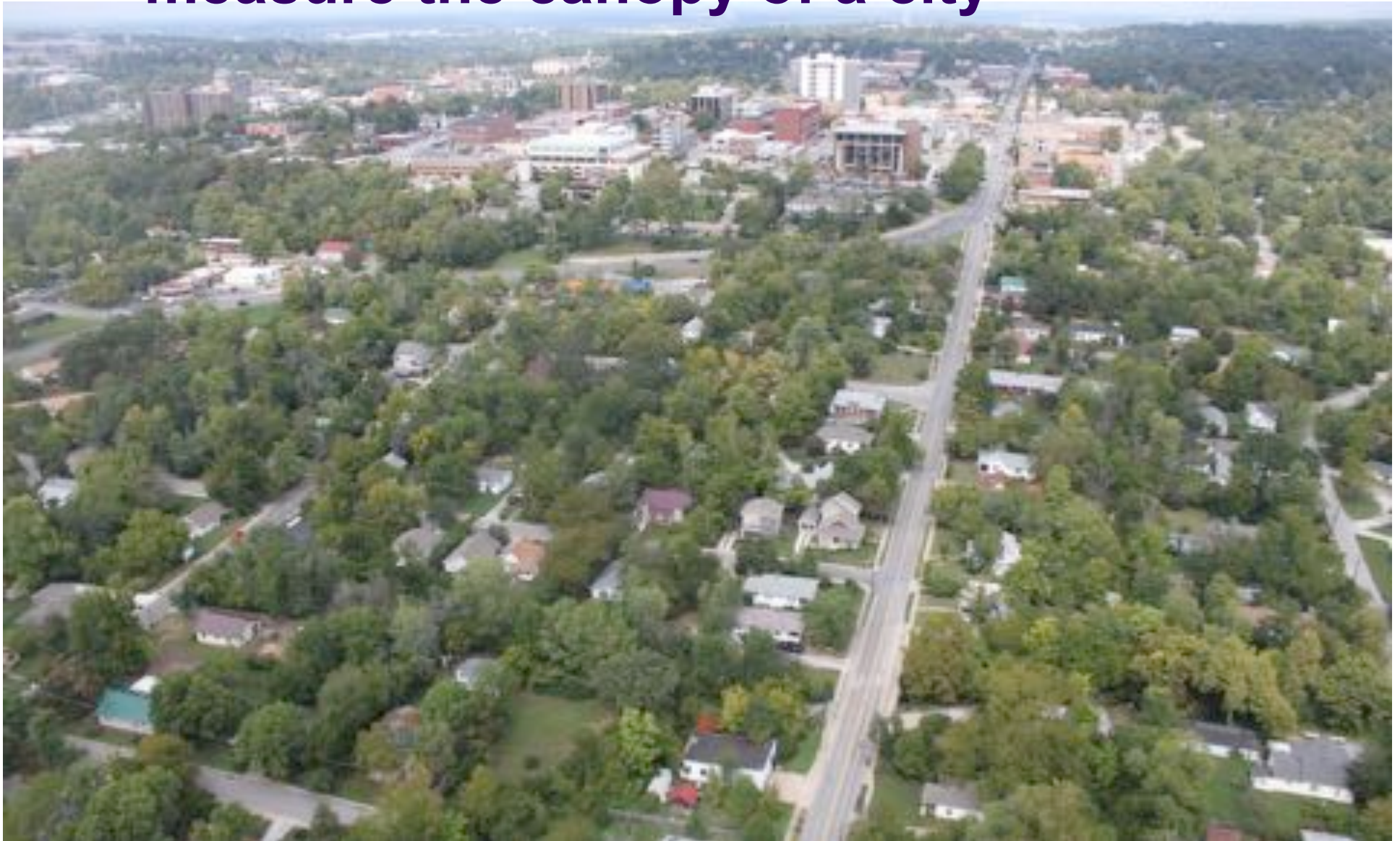
To Your Good Health! **trees & nature as human habitat**

Kathleen Wolf, Ph.D.
Research Social Scientist

University of Washington
College of the Environment

Spokane Urban Forest Workshop
May 9, 2015

measure the canopy of a city

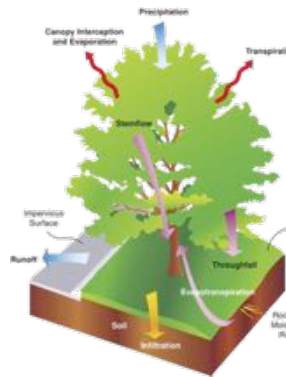




Eco (UFORE)
 Streets (STRATUM)
 Hydro
 Vue

tools provided
 by USDA
 Forest Service

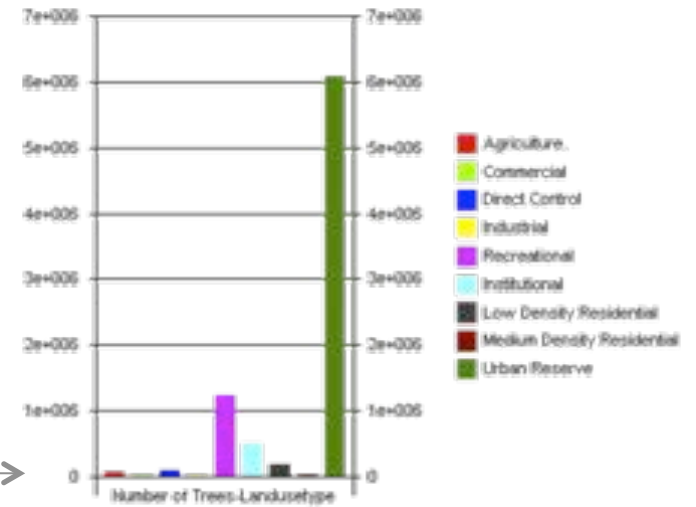
**STRUCTURE
 FUNCTION**



VALUE



MANAGEMENT



Improving Air Quality



Image courtesy of the Center for Urban Forest Research

Reducing Stormwater Runoff

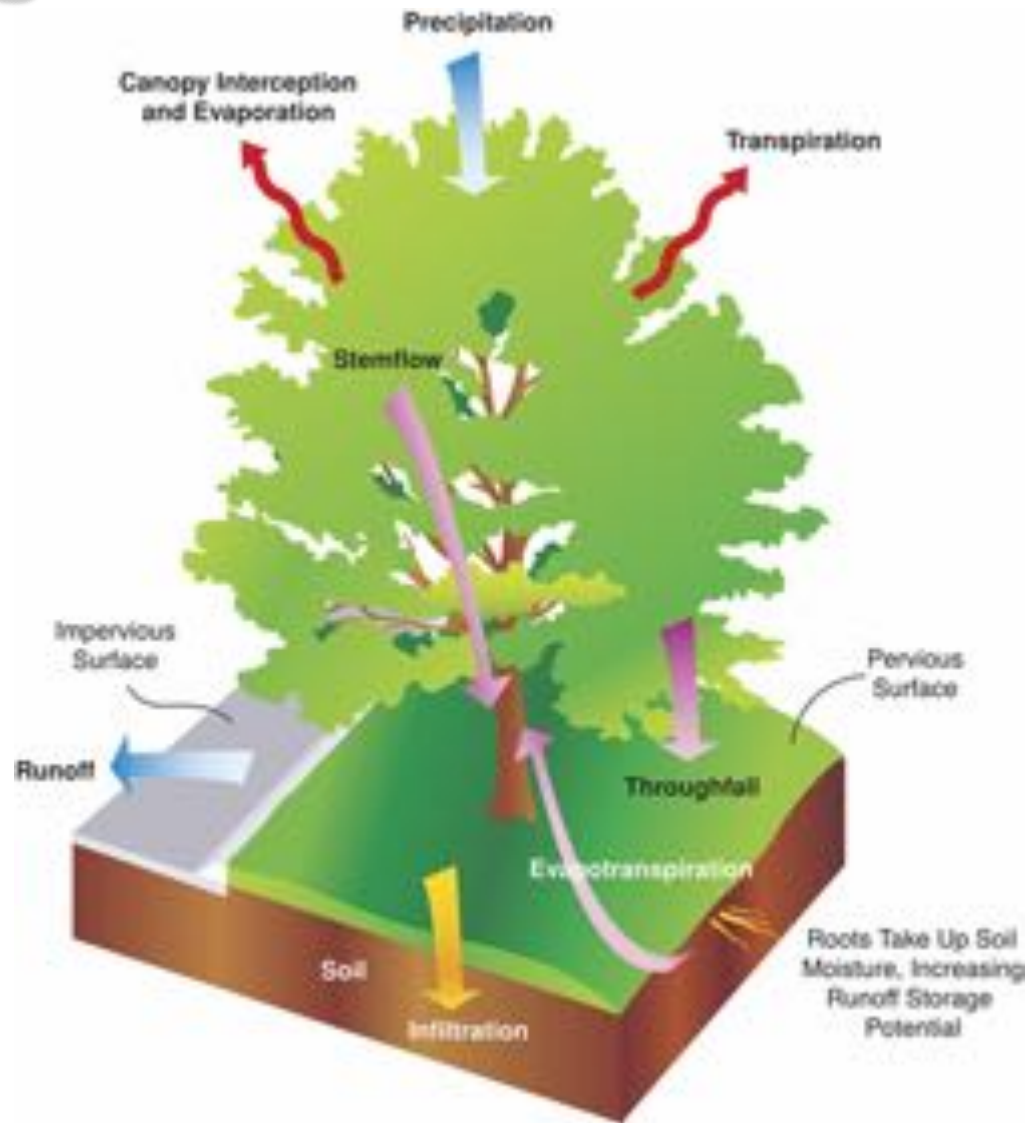


Image courtesy of the Center for Urban Forest Research

evidence about human wellness & 'nearby nature'





WHO health definition

*a state of complete
physical, mental, and social well-being
and not merely the absence
of disease or infirmity (1946)*

science & evidence re: environment
role of 'metro nature'?
not a panacea, but important!



Determinants of Health



Community Trees, Urban Forests, Metro Nature for Health

scientific evidence
health & well being benefits
life course concept
'cradle to grave'



Urban Forests and Newborns

the natural environment may affect
pregnancy outcomes . . .



10% increase in tree-canopy cover
within 50m of a house

= lower number of low weight births
(1.42 per 1000 births)

Donovan et al., Health & Place 2011;
Hystad et al., Env Health Perspectives 2014



Nature & Psych Development children's play & imagination



**Richard
Louv -
Last
Child in
the
Woods**



Japanese Version Click Here

TREE CLIMBING® JAPAN

Dedicated to Teaching Tree Friendly, Safe Tree Climbing for Rehabilitation, Recreation and Research

Welcome | About Us | What's New | Tree
Stories | Tree School | TreeHab | TreeGear
| Levels | Contact



- <http://www.treeclimbing.jp/>



- physically disabled & tree climbing!





recreational tree climbing – youth therapy

School & Learning





Green High School Campuses

- cafeteria & classroom window views with greater quantities of trees and shrubs
- positively associated with:
 - standardized test scores,
 - graduation rates
 - %s of students planning to attend a four-year college
 - fewer occurrences of criminal behavior



Trees & Crime Reduction

- trees in the public right of way are associated with lower crime rates
 - smaller, view-obstructing trees are associated with increased crime
 - larger trees are associated with reduced crime

Donovan & Prestemon. 2012.
Environment and Behavior





Green & Crime Reduction

- vacant lot greening in Philadelphia (4 sections)
 - consistent reductions in gun assaults across 4 sections
 - consistent reductions in vandalism in 1 section



Branas et al.
2011.
American Journal of Epidemiology

Donovan et al. 2013. Journal of Preventive Medicine

EAB Tree Loss & Public Health



1990 to 2007, 1,296 counties in 15 states

infected areas vs. no bugs

15,000 more deaths from cardiovascular disease

6,000 more deaths from lower respiratory disease

controlled for demographic, human mortality, and forest health data at the county level

Toledo, Ohio in 2006, pre EAB



2009, EAB in neighborhood



photos: Dan Herms, Ohio State University

Shinrin-yoku Forest Bathing

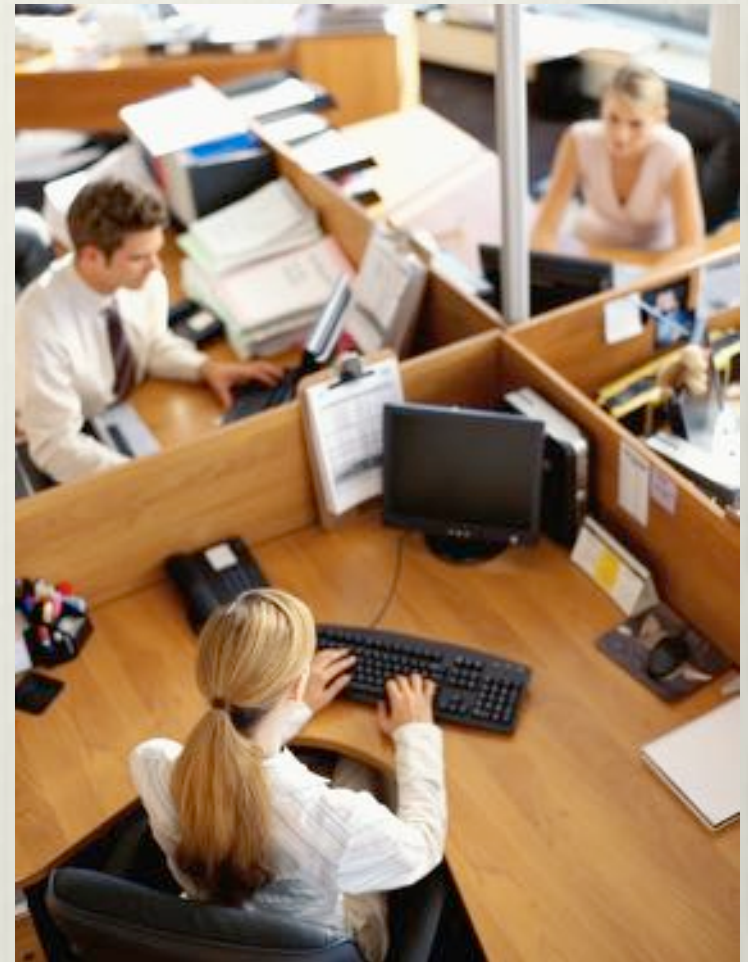


- extended forest walks
 - reduced ‘fight or flight’ nervous system activity
 - lower cortisol – a stress indicator
 - increased immune function
 - lower pulse rate & blood pressure



Attention Restoration Theory

Rachel & Stephen Kaplan, U of MI



directed attention
fatigue



Workplace Nature Views

❖ Well-being

- ❖ desk workers without view of nature reported 23% more ailments in prior 6 months

❖ Job Satisfaction

- ❖ less frustrated and more patient
- ❖ higher overall job satisfaction and enthusiasm



Kaplan, R. 1993. Landscape and Urban Planning

ART Design Elements

- ❖ being away
- ❖ 'soft'
fascination
- ❖ extent
- ❖ compatibility





the
better
office
cubicle!

bottom line =
\$\$ benefits of trees & nature



What is the Evidence?

Urban Greening & Nearby Nature
Human Health, Welfare & Function

Finding that study



Green Cities: Good Health

www.greenhealth.washington.edu



Sponsors:
USDA Forest Service, U&CF Program
University of Washington
NGO partners

thanks!
to U of WA students:
Katrina Flora
Mary Ann Rozance
Sarah Krueger



research review & summaries



Community Building

Local Economics ▶

Place Attachment & Meaning

Crime & Fear ▶

Safe Streets ▶

Active Living ▶

Reduced Risk

Wellness & Physiology

Healing & Therapy

Mental Health & Function ▶

Work & Learning

Culture & Equity

Lifecycle & Gender

Local Economics

Trees in cities are not grown and managed for products that can be bought and sold on markets, but they do provide many intangible services and functions! This article serves two purposes. First, it introduces valuation methods that are used to convert intangible benefits to dollar sums.^{1,2} Then, it shows how nonmarket valuations can support local decision-making.

Fast Facts

- The presence of larger trees in yards and as street trees can add from 3% to 15% to home values throughout neighborhoods.
- Averaging the market effect of street trees on all house values across Portland, Oregon yields a total value of \$1.35 billion, potentially increasing annual property tax revenues \$15.3 million.⁹
- A study found 7% higher rental rates for commercial offices having high quality landscapes.¹⁴
- Shoppers claim that they will spend 9% to 12% more for goods and services in central business districts having high quality tree canopy.³⁴
- Shoppers indicate that they will travel greater distance and a longer time to visit a district having high quality trees, and spend more time there once they arrive.³⁴

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street trees boost market value of houses, providing tax revenue for communities





Abraham Maslow Hierarchy of Needs



***back
on
track . .***



CDC moderate activity recommendations

parks, active living, active transit



Nature, Human Health & Walkable Neighborhoods



- Environments: Neighborhood Streets (Tokyo)
 - tree - lined
 - parks
- Outcomes: Elderly People & Walking
 - less illness
 - lower mortality rate over 5 years

Takano, Nakamura, Watanabe. 2002.
Journal of Epidemiology & Community Health



Green Streets for Walkability

evidence of lower frustration and higher meditation when moving into the greener streets

Aspinall et al. 2015. The Urban Brain: Analysing Outdoor Physical Activity with Mobile EEG. British Journal of Sports Medicine





Physical Activity & Depression Reduction

- Review of 13 high quality studies
 - exercise recommended for mild to moderate depression
 - people who are willing & motivated
 - associated meditation and mindfulness are important

Josefsson et al. 2013.
Physical Exercise Intervention
in Depressive Disorders.
Scandinavian Journal of
Medicine & Science in Sports





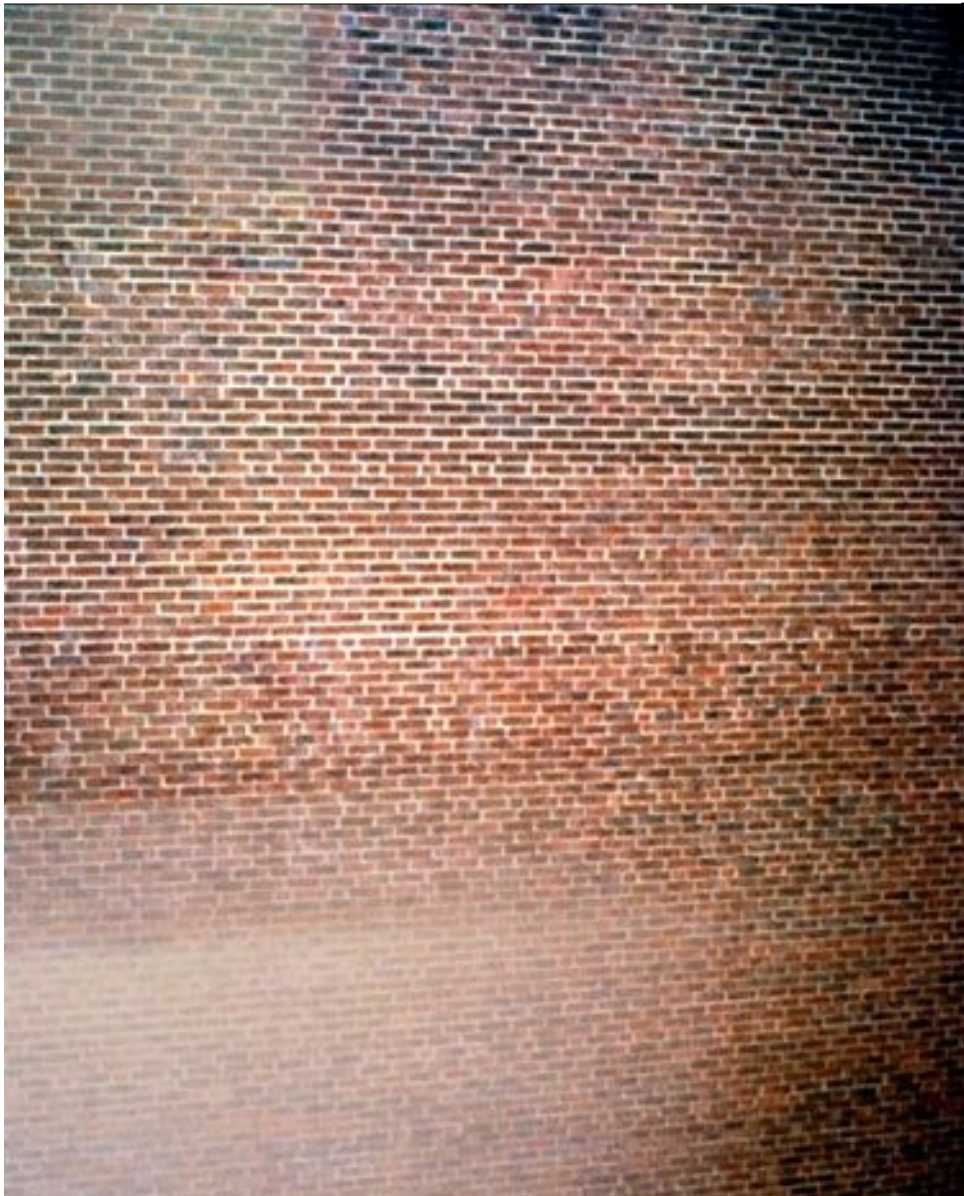
Hygiene Hypothesis

- presence of soil bacteria in body, *Mycobacterium vaccae* = increased serotonin
- may alleviate depression
- dirt or Prozac?

Lowry et al. 2007. Neuroscience



Effects of nature window view on recovery from surgery (Roger Ulrich, 1984)



- **Shorter stays**
- **Less pain**
- **Fewer minor complications**
- **Better emotional well-being**



hospital healing gardens: patients; family and friends; professional staff



**health
care \$\$
savings**

Legacy Good Samaritan Medical Center
Stenzel Healing Garden 1997
Rehabilitation Institute of Oregon



Oregon Burn Center Garden



Hospital Staff – Respite and Support



Nature: A stress coping resource for employees 24-7



thanks to
Teresia Hazen
for slides

Elders: mobility & social connections





Summary

nearly 40 years of health evidence
diverse health benefits
'cradle to grave'

nature for disease prevention
& health promotion
expand partnership, collaboration
& clients

www.naturewithin.info



College of the Environment University of Washington

Human Dimensions of Urban Forestry and Urban Greening

featuring research on peoples' perceptions and behaviors regarding nature in cities

What's New?

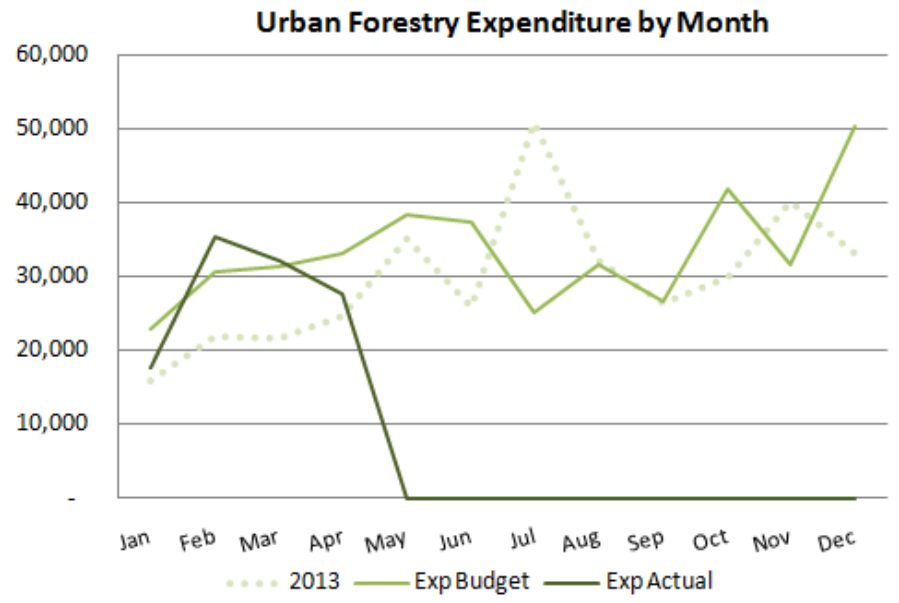
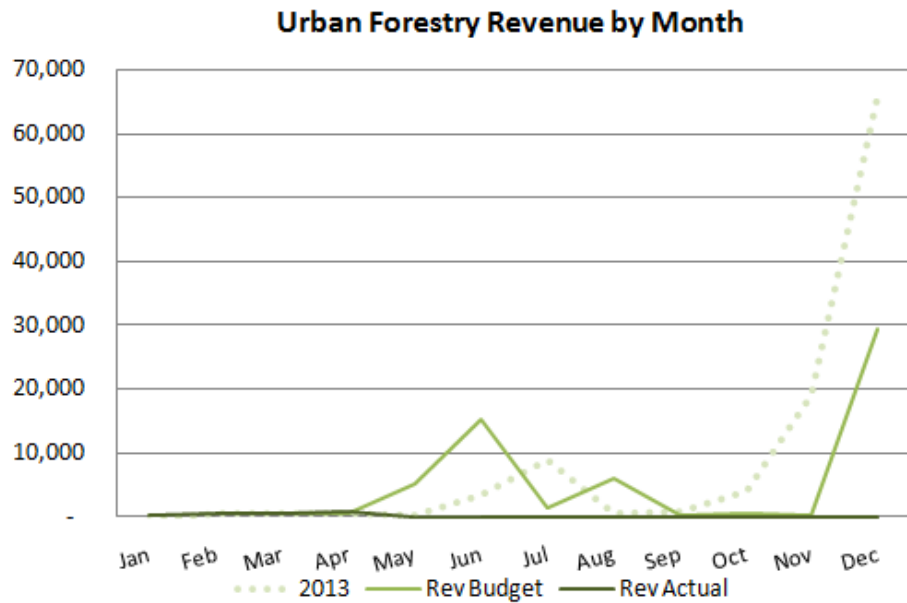
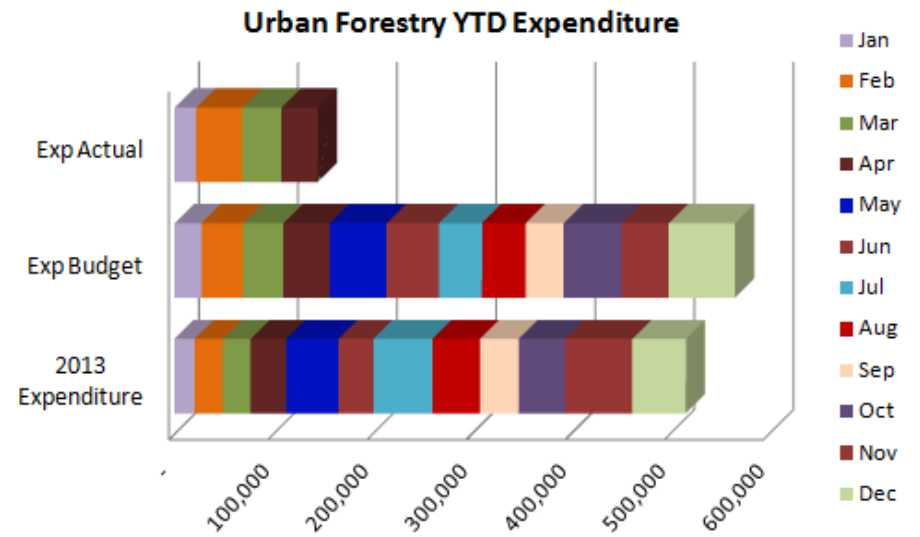
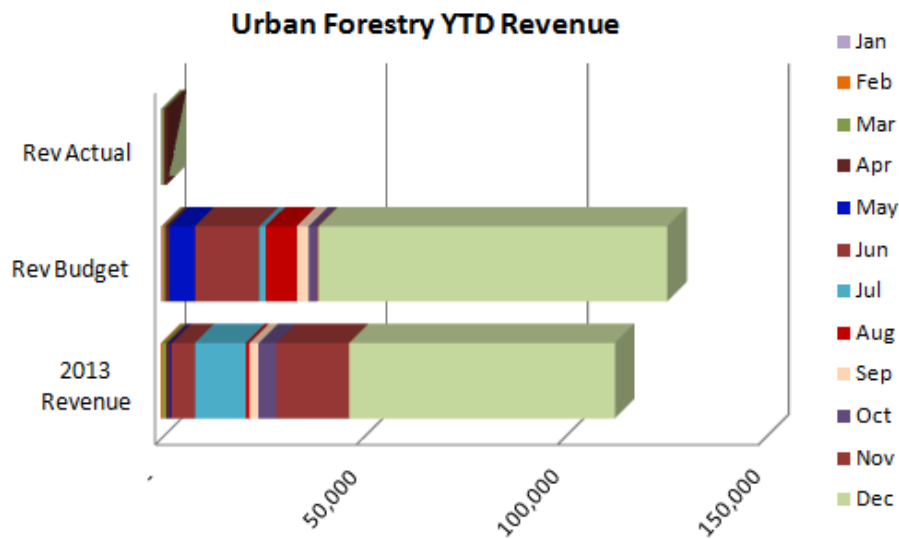
- Nature and Consumer Environments**
Research about how the urban forest influences business district visitors.
- Trees and Transportation**
Studies on the value of having quality landscapes in urban roadsides.
- Civic Ecology**
Studies of human behaviors and benefits when people are active in the environment.
- Policy and Planning**
Integrating urban greening science with community change.
- Urban Forestry and Human Benefits**
More resources, studies and links . . .

Green Cities: Good Health
human health & well-being research

Projects Director
Kathleen L. Wolf, Ph.D.

Sponsors

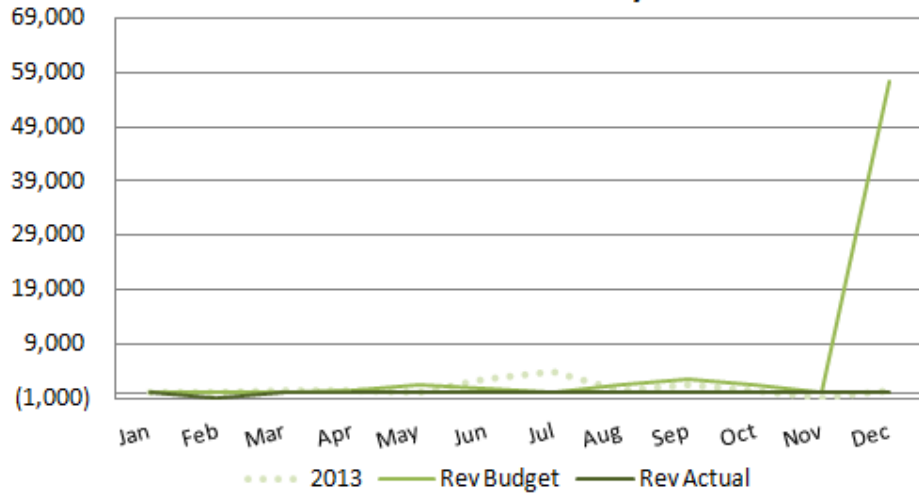




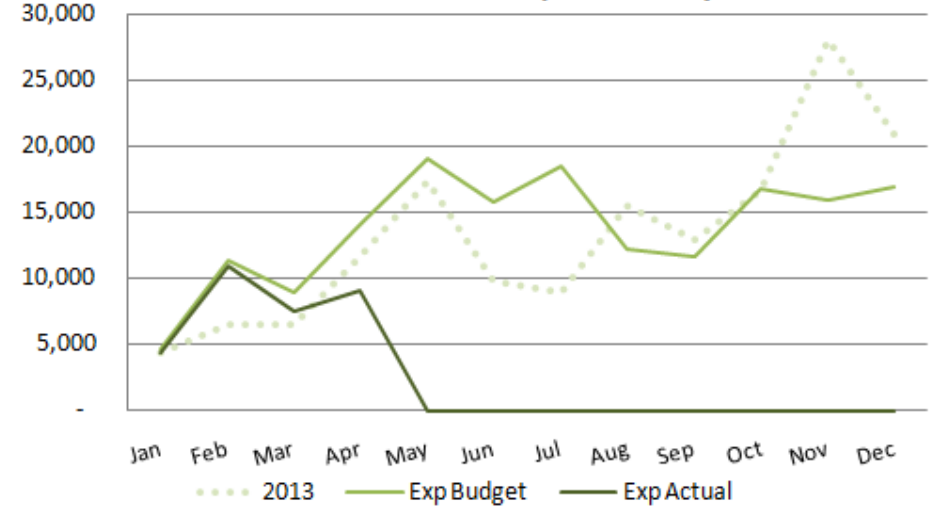
CITY OF SPOKANE PARKS AND RECREATION
STATEMENT OF ACTIVITY WITH ANNUAL BUDGET
URBAN FORESTRY
APRIL, 2015

	Month Actual	YTD Budget	YTD Actual	Budget Variance	Fav. ↑ Unfav. ↓	2014 YTD Actual	2013 YTD Actual	Annual Budget	% of Budget	Project Calc	Project Mgr
Revenue	<u>776</u>	<u>2,128</u>	<u>1,302</u>	<u>(826)</u>	↓	<u>2,104</u>	<u>1,793</u>	<u>126,000</u>	<u>1%</u>	<u>98%</u>	<u>100%</u>
Salaries and Wages	25,791	90,510	89,886	(624)	↑	88,651	82,068	345,581	26%	76%	100%
Personnel Benefits	7,028	33,398	27,626	(5,773)	↑	27,085	24,179	102,565	27%	66%	100%
Supplies	731	4,203	6,097	1,894	↓	4,859	742	29,083	21%	76%	100%
Services and Charges	<u>3,214</u>	<u>28,731</u>	<u>21,182</u>	<u>(7,549)</u>	↑	<u>13,922</u>	<u>6,043</u>	<u>88,860</u>	<u>24%</u>	<u>58%</u>	<u>100%</u>
Expenditures	<u>36,764</u>	<u>156,843</u>	<u>144,790</u>	<u>(12,052)</u>	↑	<u>134,517</u>	<u>113,031</u>	<u>566,089</u>	<u>26%</u>	<u>100%</u>	<u>100%</u>
Net Revenue	<u>(35,987)</u>	<u>(154,715)</u>	<u>(143,488)</u>	<u>11,227</u>	↑	<u>(132,413)</u>	<u>(111,238)</u>	<u>(440,089)</u>			
Transfers In	11,820	66,000	76,467	10,467		66,000	325,000	66,000	116%	116%	100%
Transfers Out	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>		<u>-</u>	<u>-</u>	<u>(27,000)</u>	<u>0%</u>	<u>100%</u>	<u>100%</u>
Net Transfers	<u>11,820</u>	<u>66,000</u>	<u>76,467</u>	<u>10,467</u>		<u>66,000</u>	<u>325,000</u>	<u>39,000</u>			
Net Operations	<u>(24,167)</u>	<u>(88,715)</u>	<u>(67,021)</u>	<u>21,693</u>	↑	<u>(66,413)</u>	<u>213,762</u>	<u>(401,089)</u>			
Capital Outlay	<u>(125)</u>	<u>-</u>	<u>(125)</u>	<u>(125)</u>		<u>-</u>	<u>-</u>	<u>(99,175)</u>	<u>0%</u>	<u>100%</u>	<u>0%</u>
Revenue less Expenditures	<u>(24,292)</u>	<u>(88,715)</u>	<u>(67,146)</u>	<u>21,568</u>	↑	<u>(66,413)</u>	<u>213,762</u>	<u>(500,264)</u>		YTD	33.33%

Finch Arboretum Revenue by Month



Finch Arboretum Expenditure by Month



City of Spokane Parks & Recreation - Urban Forestry

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Apr YTD	Total
Urban Forestry	Rev 2013	(574)	444	479	594	361	3,370	8,862	449	849	4,000	18,951	65,881	943	103,666
	Rev Budget	360	292	488	694	5,095	15,345	1,404	6,188	355	508	362	29,409	1,833	60,500
	Rev Actual	158	545	628	776	-	-	-	-	-	-	-	-	2,107	2,107
Finch Arboretum	Rev 2013	150	-	450	250	20	2,550	3,800	475	1,375	400	(850)	269	850	8,889
	Rev Budget	-	-	-	295	1,296	688	177	1,590	2,484	1,531	-	57,439	295	65,500
	Rev Actual	-	(805)	-	-	-	-	-	-	-	-	-	-	(805)	(805)
Urban Forestry	Exp 2013	15,987	21,937	21,570	24,529	35,079	25,819	50,717	32,190	26,288	29,886	40,097	33,237	84,023	357,337
	Exp Budget	22,882	30,517	31,301	33,166	38,260	37,281	25,150	31,689	26,737	41,875	31,569	50,219	117,867	400,647
	Exp Actual	17,717	35,461	32,199	27,708	-	-	-	-	-	-	-	-	113,086	113,086
Finch Arboretum	Exp 2013	4,380	6,440	6,511	11,678	17,370	9,755	8,964	15,541	12,866	16,638	28,021	20,881	29,008	159,043
	Exp Budget	4,667	11,299	8,977	14,032	18,988	15,719	18,410	12,127	11,656	16,769	15,901	16,896	38,976	165,442
	Exp Actual	4,303	10,873	7,473	9,055	-	-	-	-	-	-	-	-	31,704	31,704
Revenue Totals	Actual 2013	(424)	444	929	844	381	5,920	12,662	924	2,224	4,400	18,101	66,150	1,793	112,554
	Budget	360	292	488	988	6,391	16,033	1,581	7,779	2,839	2,040	362	86,848	2,128	126,000
	Actual	158	(260)	628	776	-	-	-	-	-	-	-	-	1,302	1,302
Expenditure Totals	Actual 2013	20,367	28,377	28,080	36,207	52,449	35,574	59,681	47,731	39,153	46,524	68,118	54,118	113,031	516,379
	Budget	27,549	41,816	40,278	47,199	57,248	53,001	43,560	43,816	38,393	58,644	47,470	67,115	156,843	566,089
	Actual	22,020	46,334	39,672	36,764	-	-	-	-	-	-	-	-	144,790	144,790