



The health, happiness, and **environmental** benefits of nature relatedness

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First, some gratitude

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Katherine Boyle
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Lisa Tejpar
Rob Toynbee
Gregg Treinish
John Zelenski

Why psychology?

Understanding...

Predicting...

Shifting...

Human behaviour

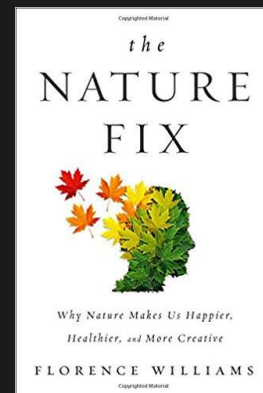
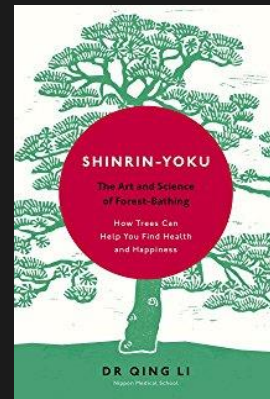
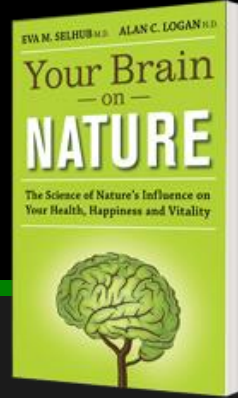


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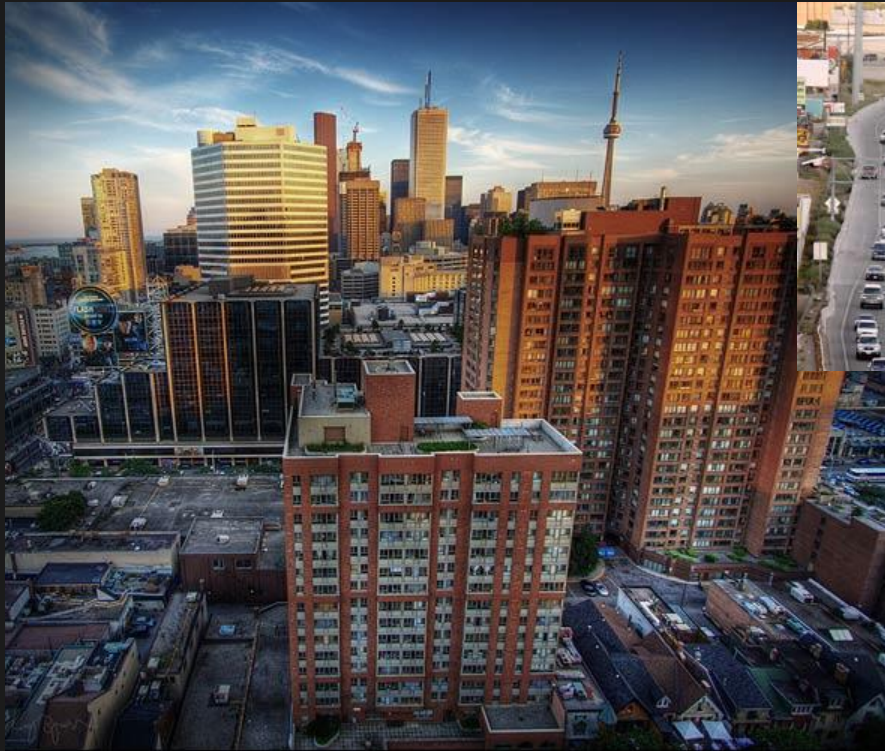
Nature is Good for Us

- Healing after surgery (Ulrich, 1984)
- Mortality rates (Mitchell & Popham, 2008)
- Stress Reduction (Tsunetsugu, Park, & Miyazaki, 2010)
- General health (Kardan et al., 2015)
- Child physical activity (Roemmich et al., 2006)
- CVD, respiratory illness (Donovan et al., 2013)
- Sleep (Wright et al., 2013)



Problem solved!

Why *not* nature?



Disconnection

Nature is scary, disgusting, and uncomfortable
(Bixler & Floyd,1997)

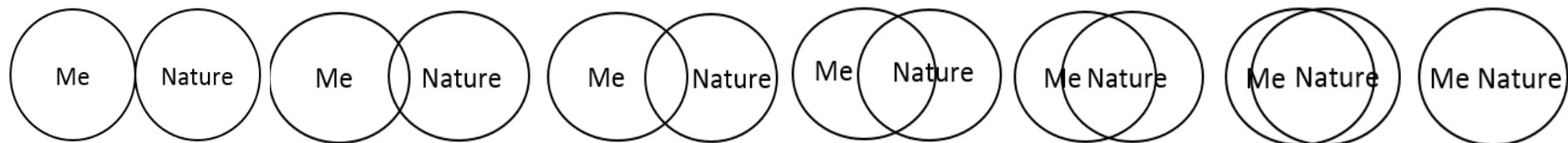


NATURE
it will freakin' kill you

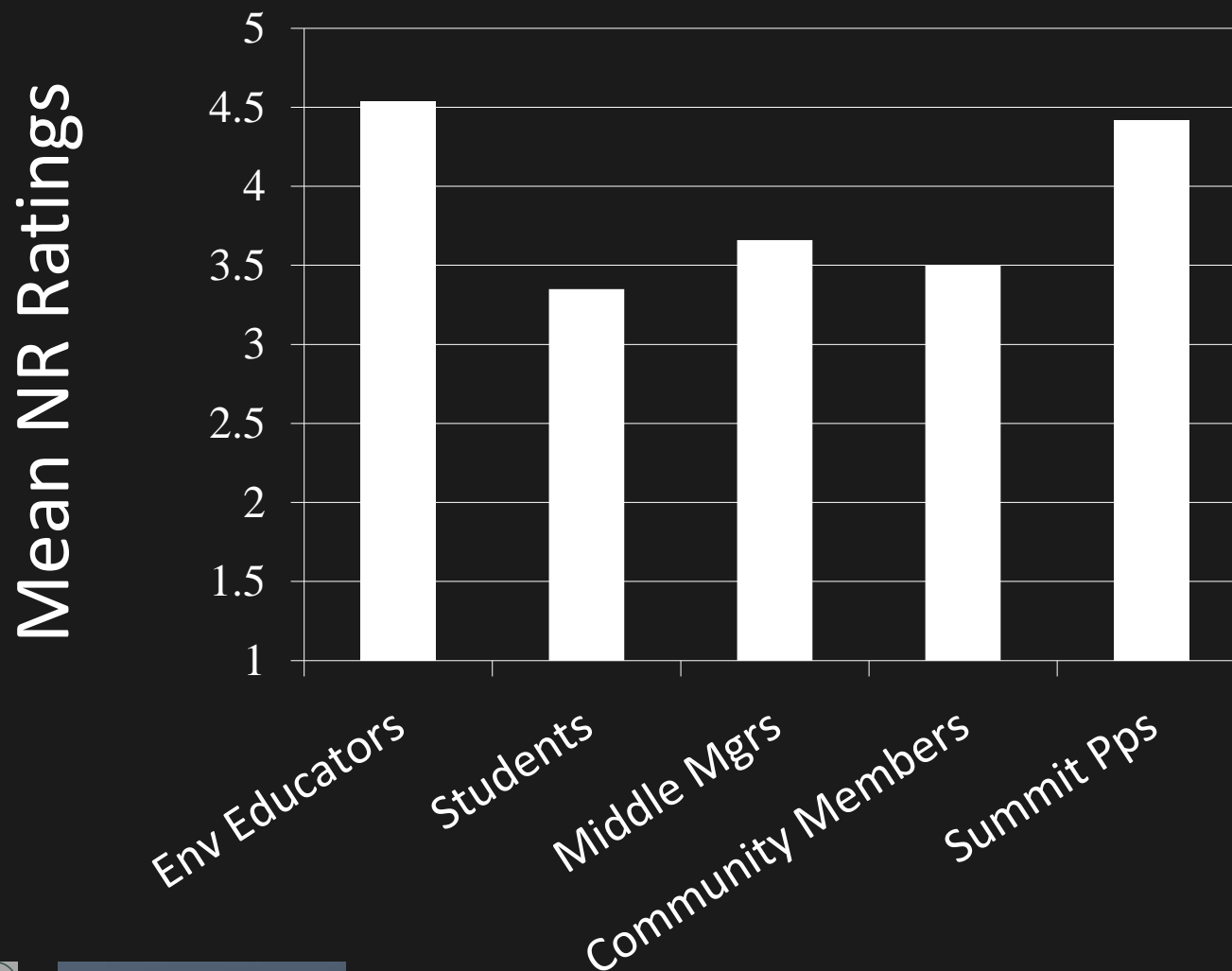
Measuring Nature Relatedness

or 'Nature Connectedness' (Mayer & Frantz, 2004; Nisbet et al., 2009; Nisbet & Zelenski 2013; Schultz, 2001)

- Individual differences in subjective connectedness
- Cognitive, affective, experiential relationship with nature



Individual Differences...



Validity: Nature Related Activities

- Nature related people own pets, buy organic, volunteer, spend time outdoors, self-identify as environmentalist
- *A better predictor of behaviour*

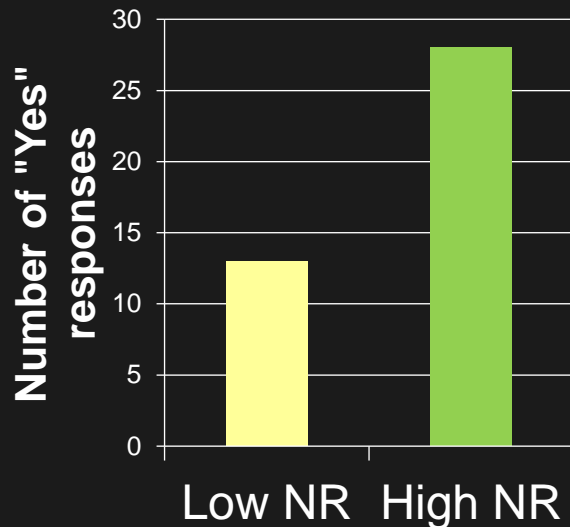


From connectedness to concern

- Trait NR predicts negative affect but also environmental concern, empathy, and action



Do you want to know more about wolves?



Ontario action jeopardize existence of Algonquin wolf

Province allows hunting and trapping of already threatened species

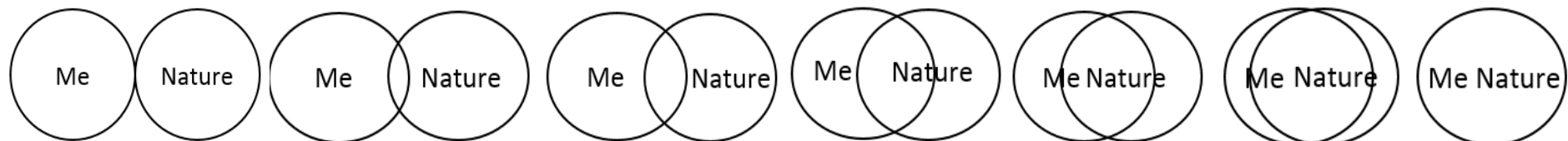
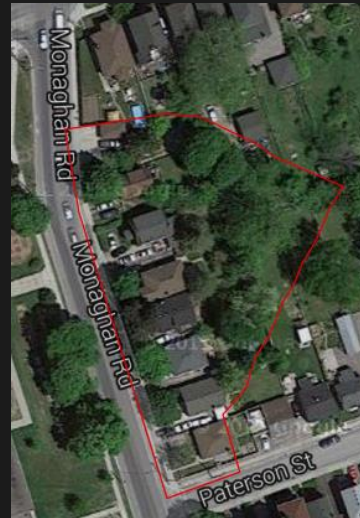
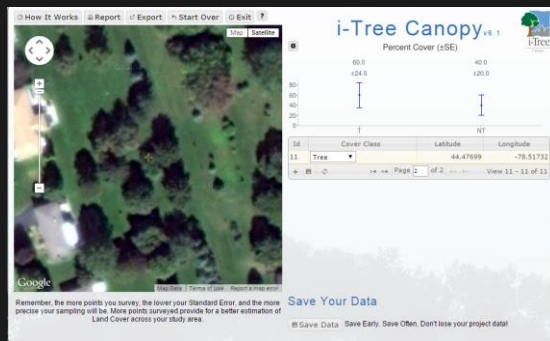


The province's decision to strip the Algonquin wolf of legal protect could lead to its extinction. "The government's own research shows that when Algonquin wolves travel into unprotected areas to find a new home or mate — something

Odds ratio: nature relatedness 1.93

Benefits of Connectedness

- neighbourhood, trees, and wildlife connection (Shaw & Nisbet, 2017)



Nature Relatedness and Happiness



- Life satisfaction
- Subjective Happiness
- Positive affect
- Fascination, awe
- Negative affect
- Depression
- Anxiety
- Personal Growth
- Autonomy
- Purpose
- Meaning in life
- Vitality


(e.g., Capaldi et al., 2015; Howell et al., 2013; Lawton et al., 2017; Martyn & Brymer, 2016; Nisbet & Zelenski, 2013; Nisbet & Zelenski, 2011; Passmore & Howell, 2014; Ryan et al., 2010; Zelenski & Nisbet, 2014)

Nature Related People are Happier

	<u>Study 1a</u>	<u>Study 1b^a</u>
Positive affect	.29**	.33**
Negative affect	-.11	-.29**
Autonomy	.28**	.26**
Personal Growth	.29**	.29**
Purpose in Life	.19*	.23**
Environmental Mastery	.09	.28**
Self Acceptance	.18*	.30**
Positive Relations with Others	.10	.22**
Life Satisfaction	.13	.24**

* $p < .05$, ** $p < .01$

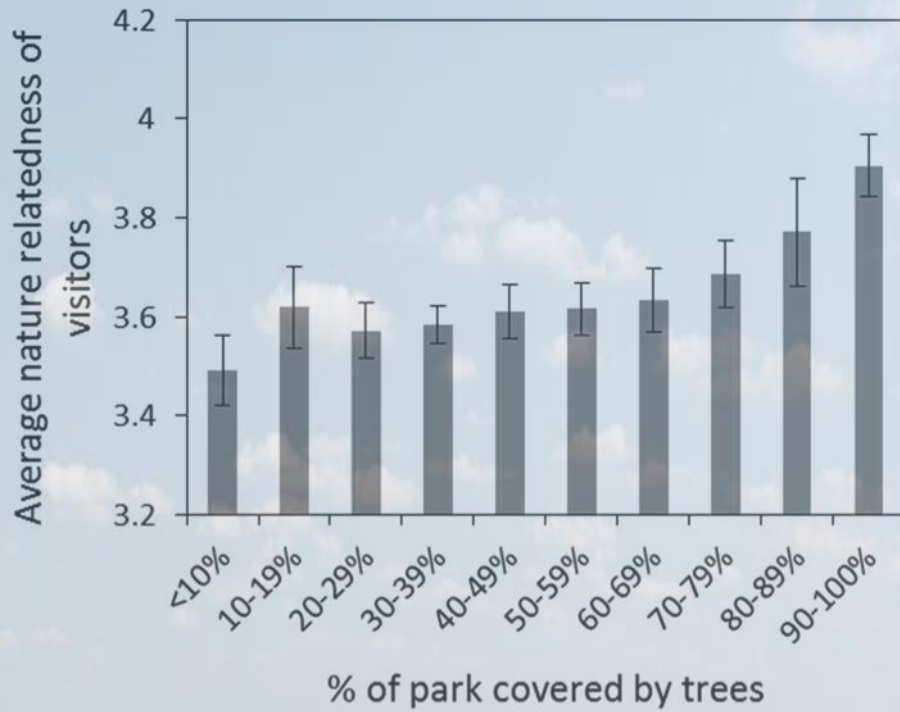
^a Partialling out the effects of NEP, NEC, Ecology scale (actual commitment/affect).
Zelenski & Nisbet, 2014)

A butterfly with orange and black wings is perched on a green stem. The background is a soft, out-of-focus green.

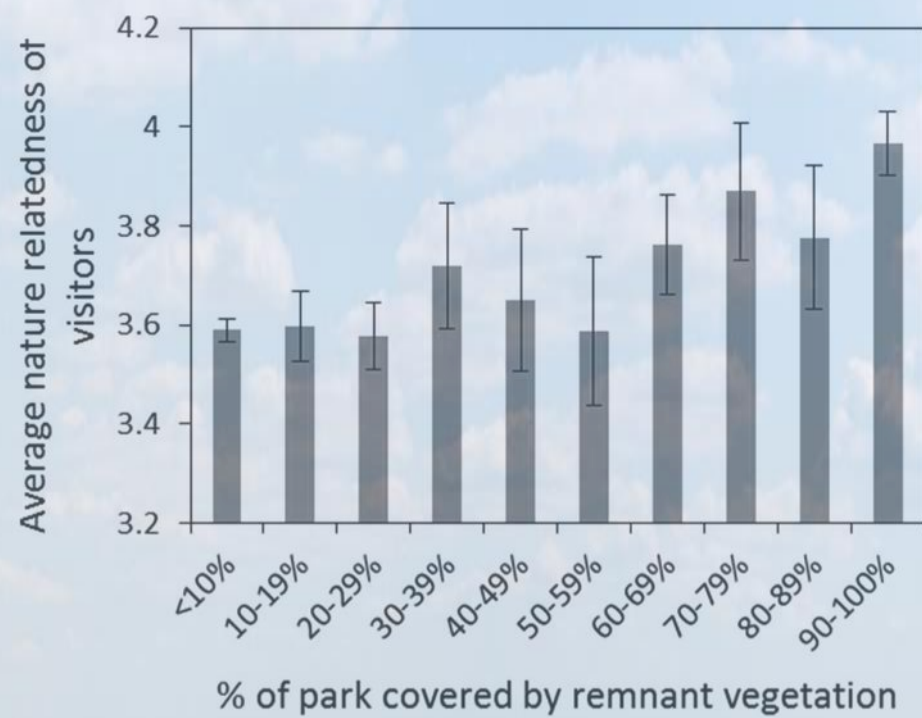
Nature relatedness = more nature contact

- Connected Australians use backyards, travel to parks, stay longer, and seek more vegetation (Lin et al., 2014; Shanahan et al., 2015)

a)



b)



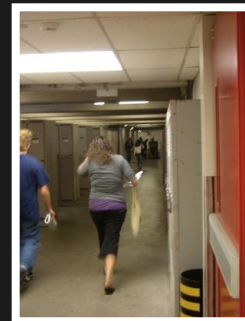
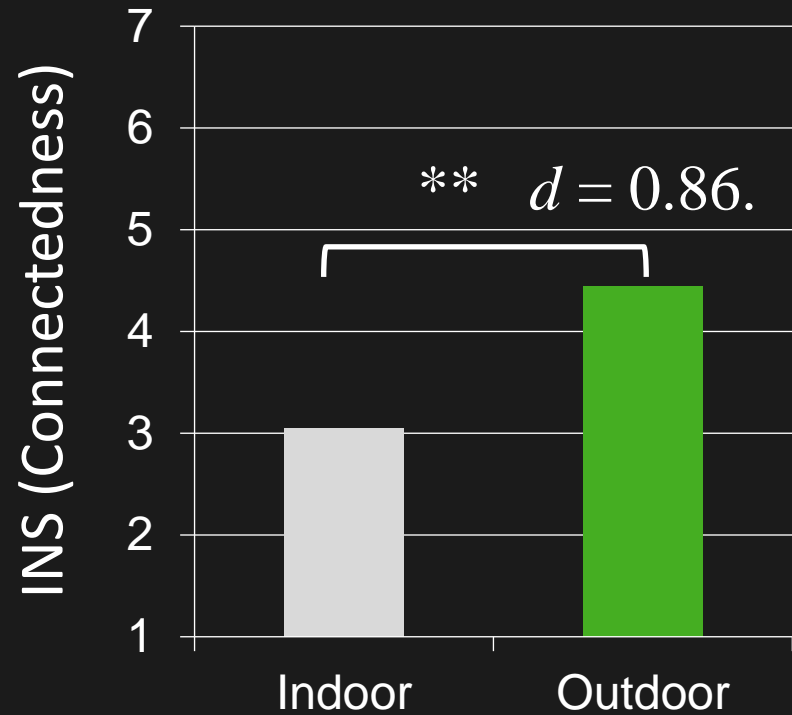
and more diverse nature

How to encourage nature contact?



Changing Connectedness (in the short term)

- Campus walk studies (Grandpierre-Nagy et al., in prep.; Nisbet & Zelenski, 2011)



Nature-Based Interventions

**YOU.
OUTSIDE.
IN NATURE.**



Find out how a daily dose of nature can make you happy and healthy.

Join Canada's 30x30 Nature Challenge.

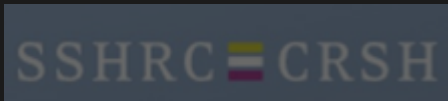
30 minutes a day. 30 days in May.

Find out more at davidsuzuki.org/30x30challenge

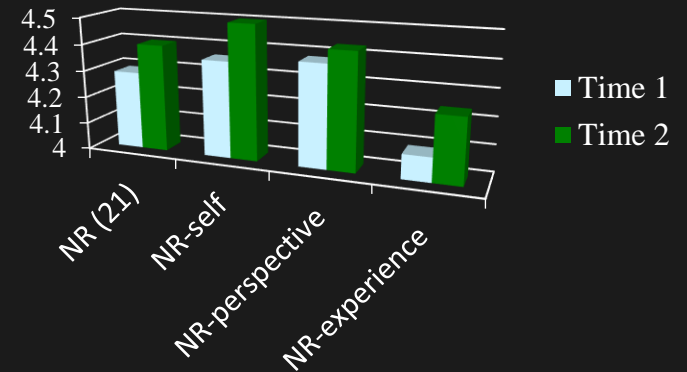
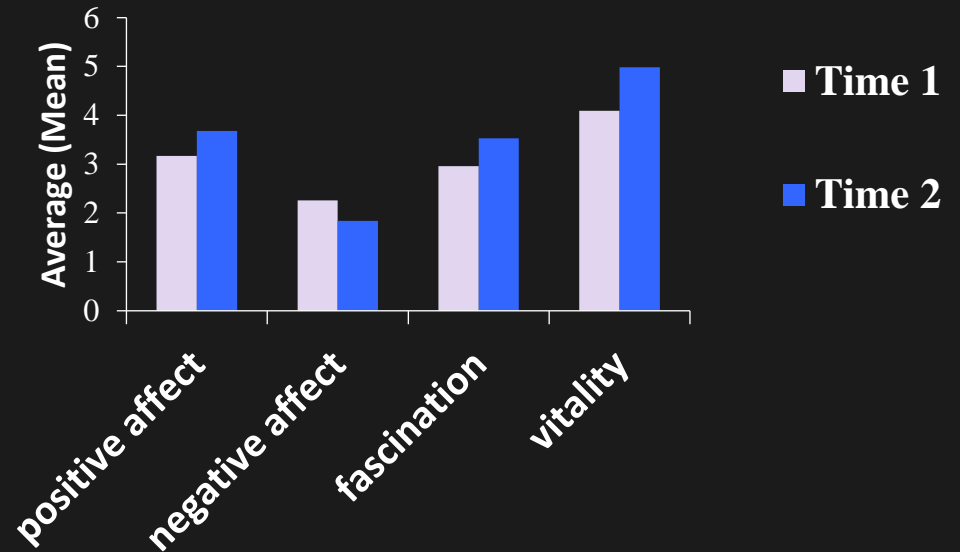
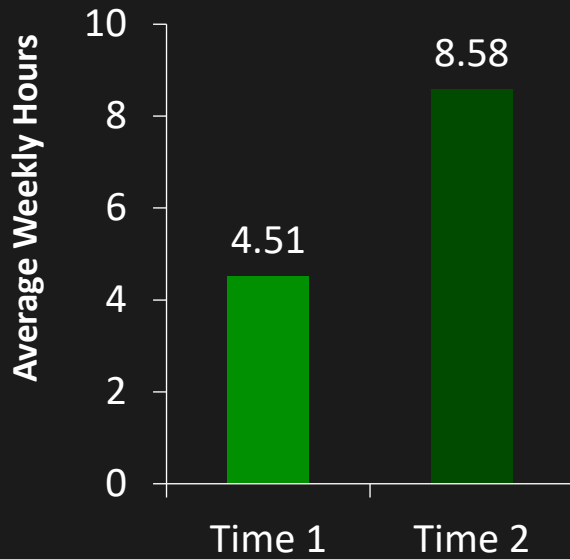


Join Canada's 30x30
Nature Challenge in May

MOOD WALKS

A decorative green dashed line arches across the bottom of the "MOOD WALKS" text.

30x30 DSF Nature Challenge

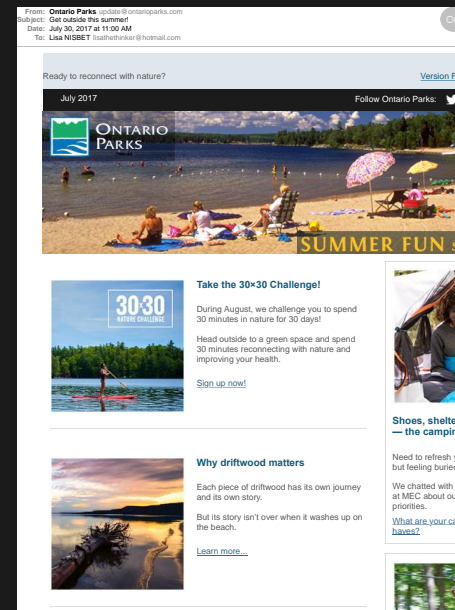


H

Nature Challenge Research:

30x30
NATURE CHALLENGE

Ontario Parks
website, email list,
social media



Method: Materials and Procedure

- Baseline and post-challenge surveys (Qualtrics)
- Mood, vitality, perceived physical and mental health (Ryan & Frederick, 1997; Statistics Canada, 2014; Watson et al., 1988)
- Trait nature connectedness: NR, INS (Nisbet et al., 2009; Schultz, 2000)
- Time use: active, relaxing in nature

Method and Procedure



THE CHALLENGE

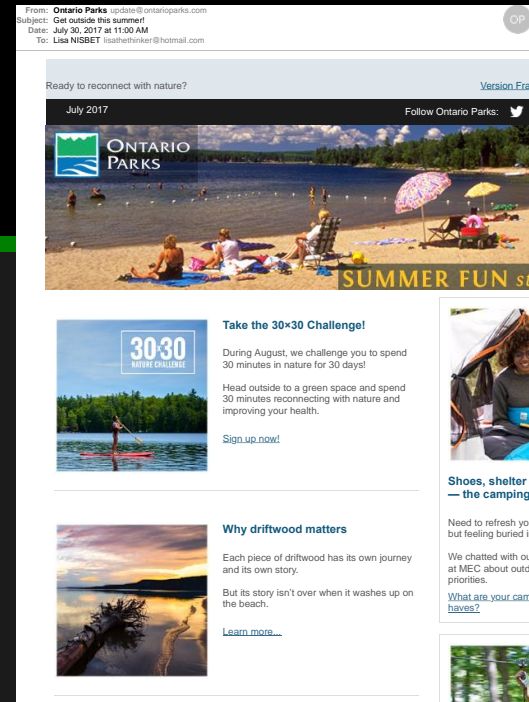
Spend **30 MINUTES IN NATURE**
for **30 DAYS**



SIGN UP TODAY!

www.OntarioParks.com/hphp

#HPHP
#30x30Challenge
@OntarioParks

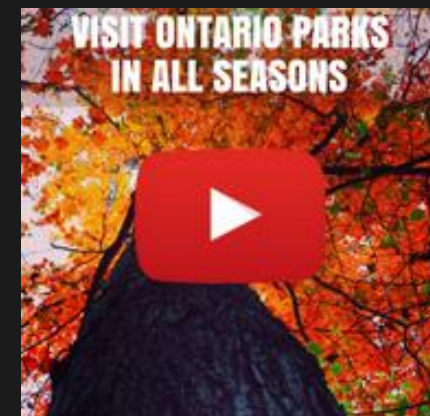
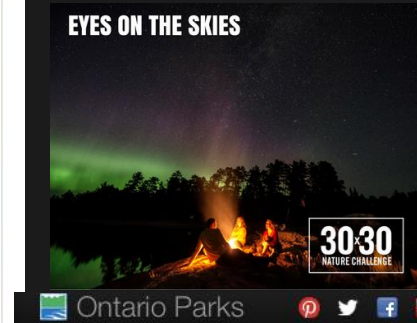


Method and Procedure

#HPHP
#30x30Challenge



That look you get when you remember the park opens Friday and you haven't booked your site yet! #MPPP #OntarioParks



CAMPING: IT'S BETTER OUTSIDE



Parks Blog

The web log of Ontario Parks

Ontario Parks

Français



Search ...

READ MORE!

#CoolThingsInOP

Art & Music

Astronomy

Backcountry

Beaches

Birding

Camping

Careers in Parks

Cultural Heritage

Cycling

Ecological Integrity

Fall

Fishing

Geology

Healthy Parks, Healthy People

GET OUTSIDE: FISHING



6 health benefits of cycling

If you've ever pedalled up a hill before, it probably wouldn't surprise you to hear that cycling is great for working the lower body, but did you know the health benefits reach far beyond your quads and hamstrings?

Check out these brain and body benefits of cycling:

Cycling:
good for your mind
and your body

LOWER BODY
Strengthens the quads, calves and hamstrings

MIND
Boosts your mood

HEART
Improves cardiovascular health

JOINTS
Low impact exercise

OntarioParks.com/hphp

Demographics

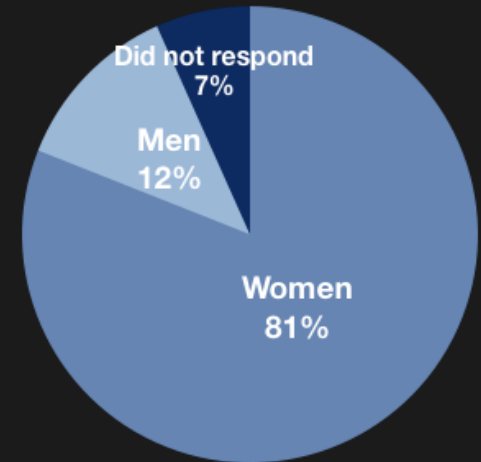
$N = 373$, 86% women ($n = 302$)

Ontario residents (Quebec: $n = 3$)

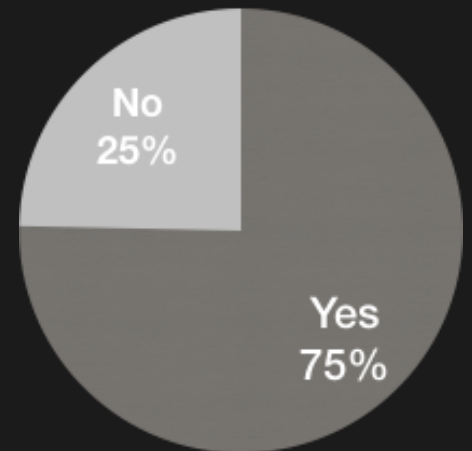
Age: $M = 42.37$, $SD = 13.56$ (16 to 79)

First time in any nature challenge: $n = 281$

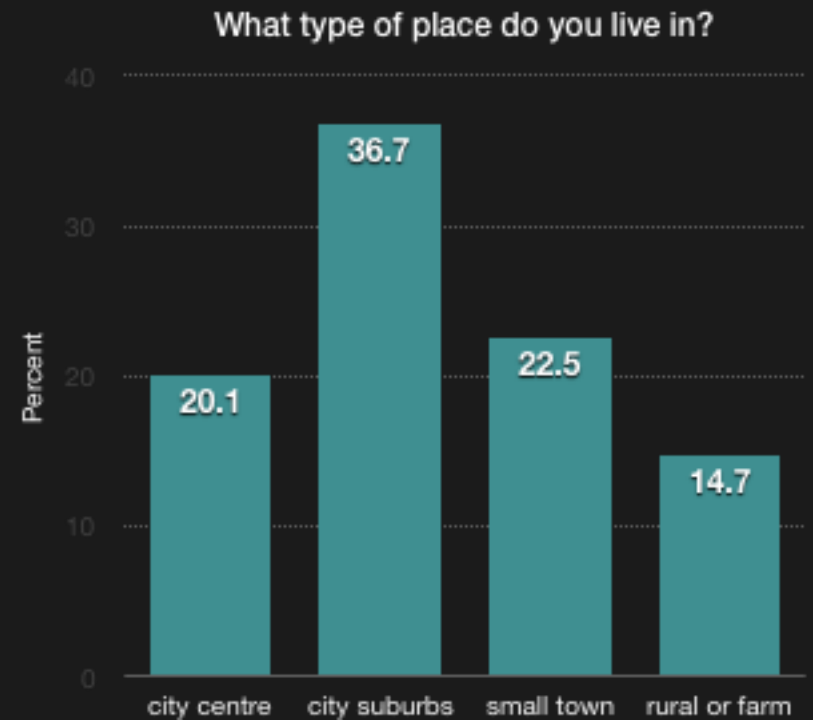
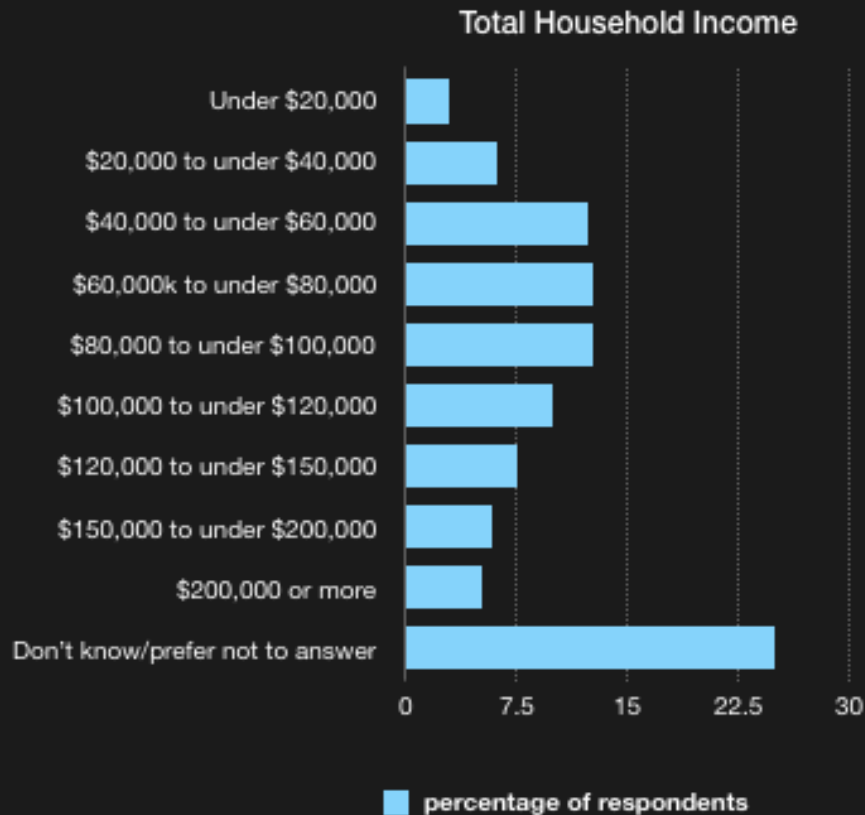
Education: 86.9% completed high school



First Time Participating in a 30x30 nature challenge?

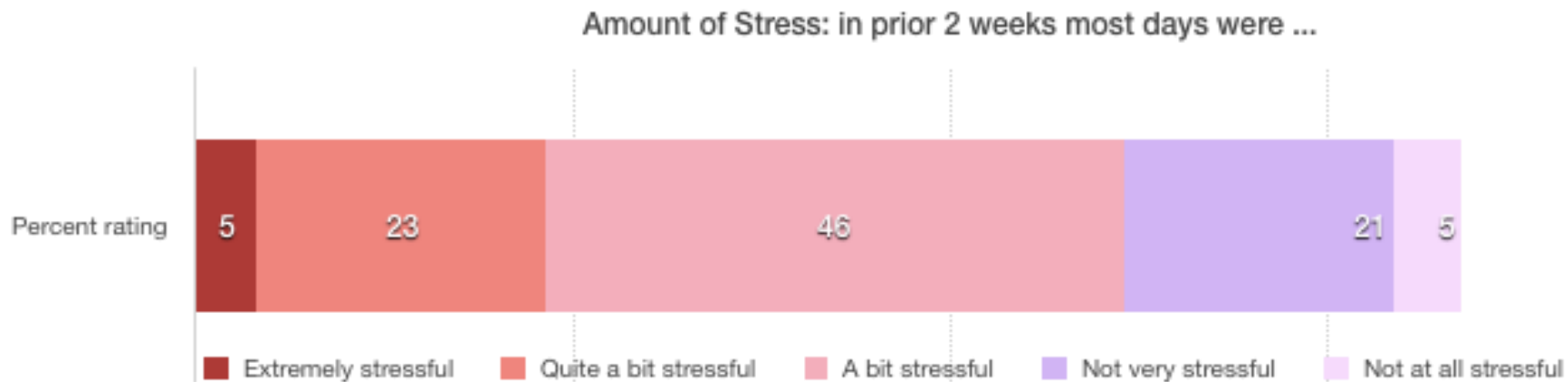
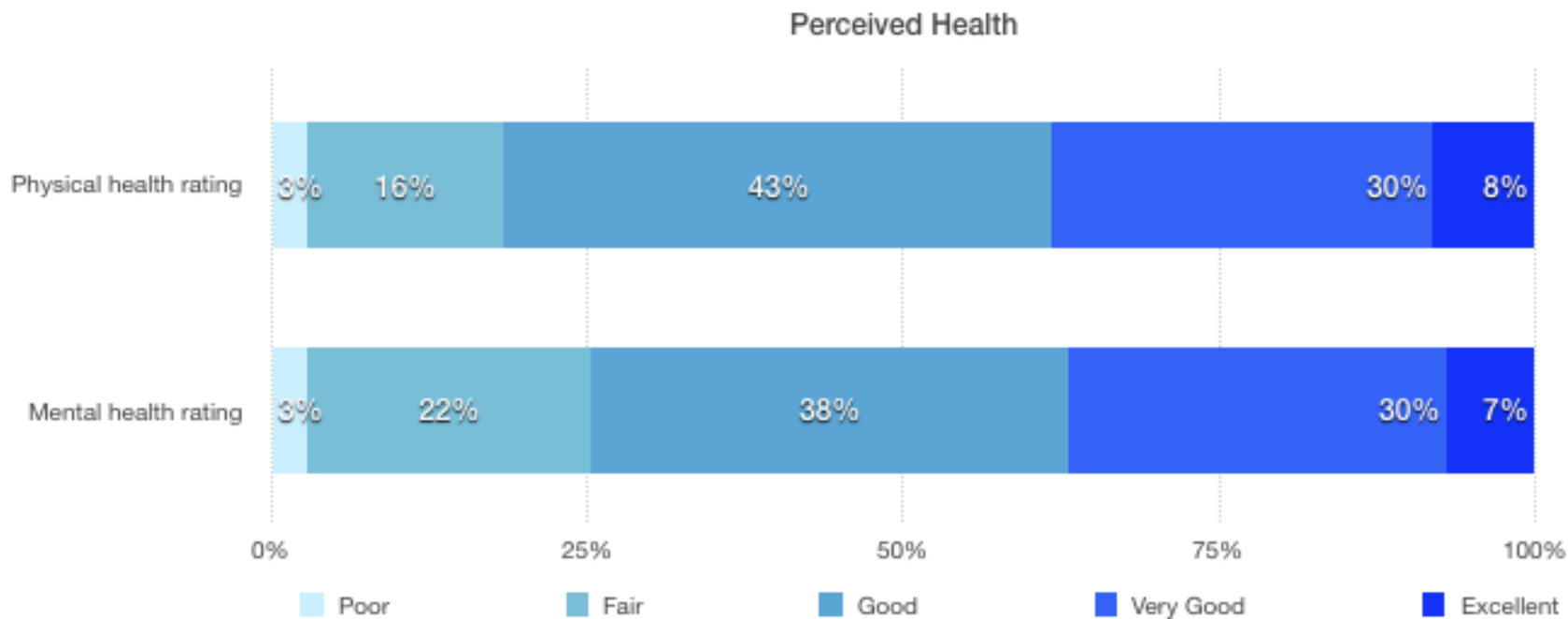


Demographics



Mid-range SES: half of pps with household income of \$80,000+
Urban/Rural: 56.8% from cities or city suburbs

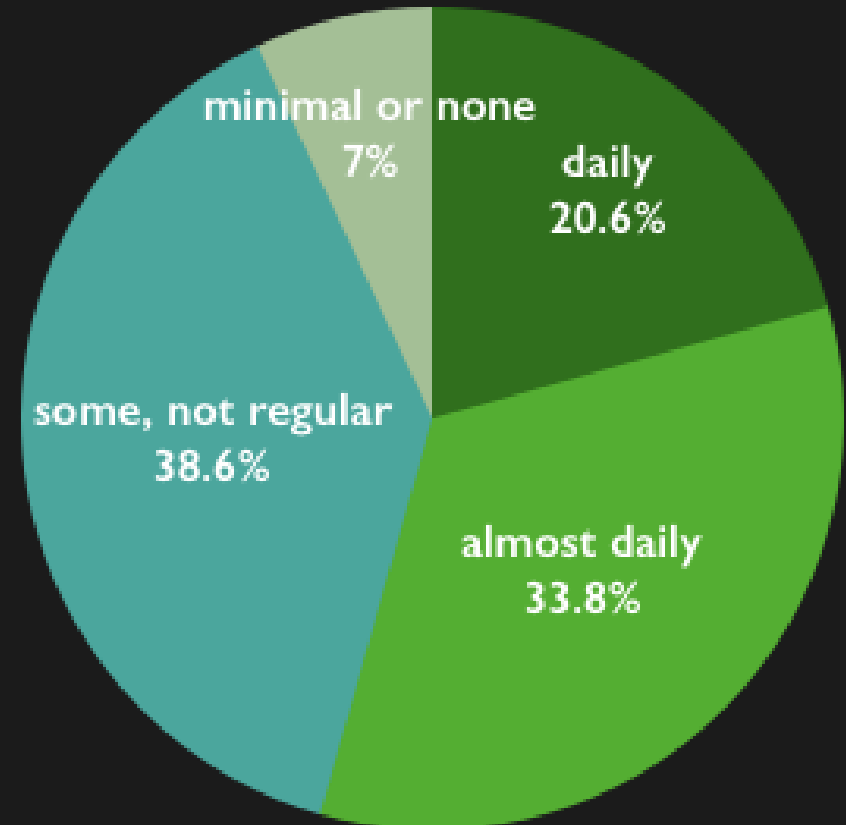
Well-Being Status



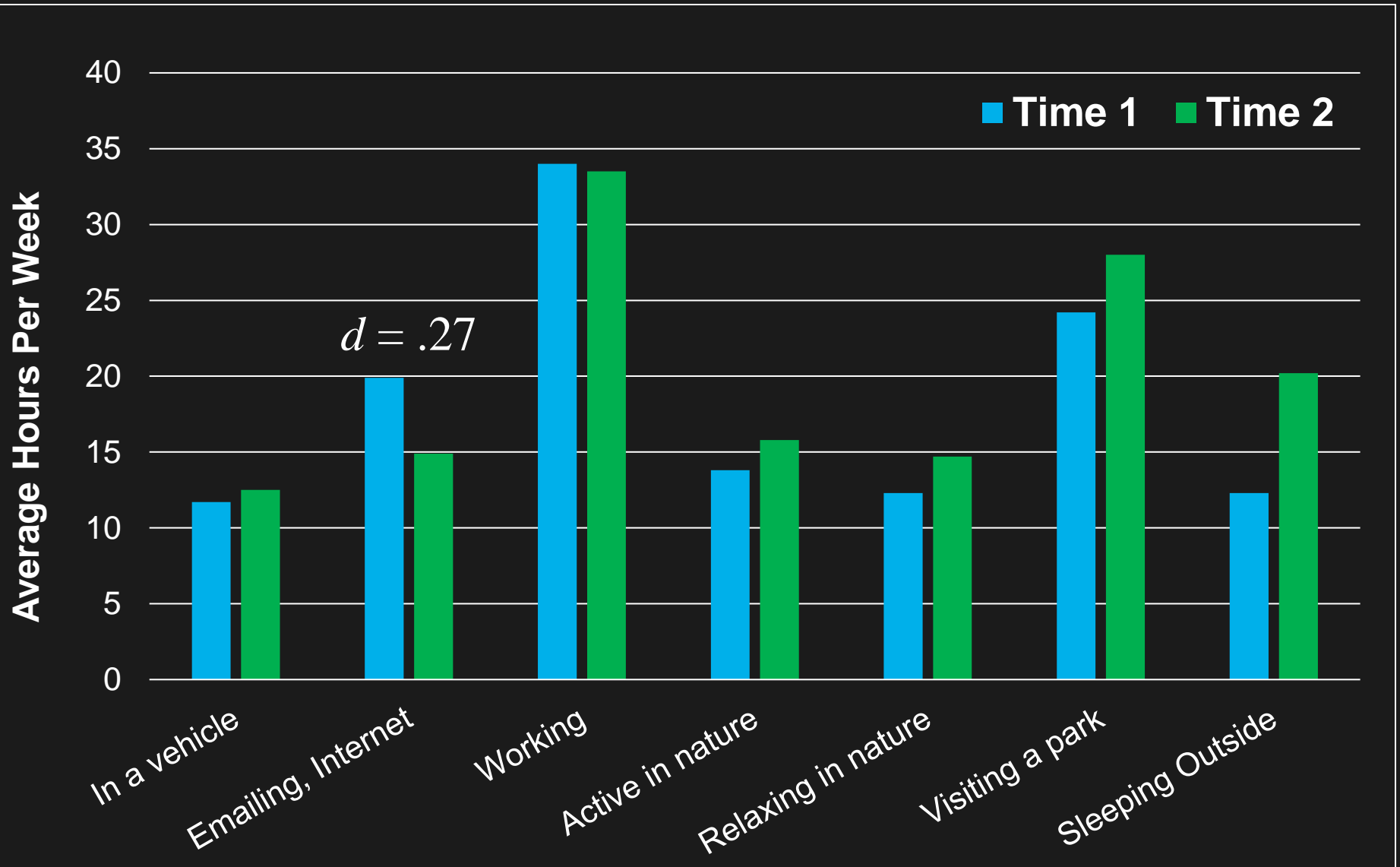
Baseline – Regular Nature Contact

Higher than typical nature contact

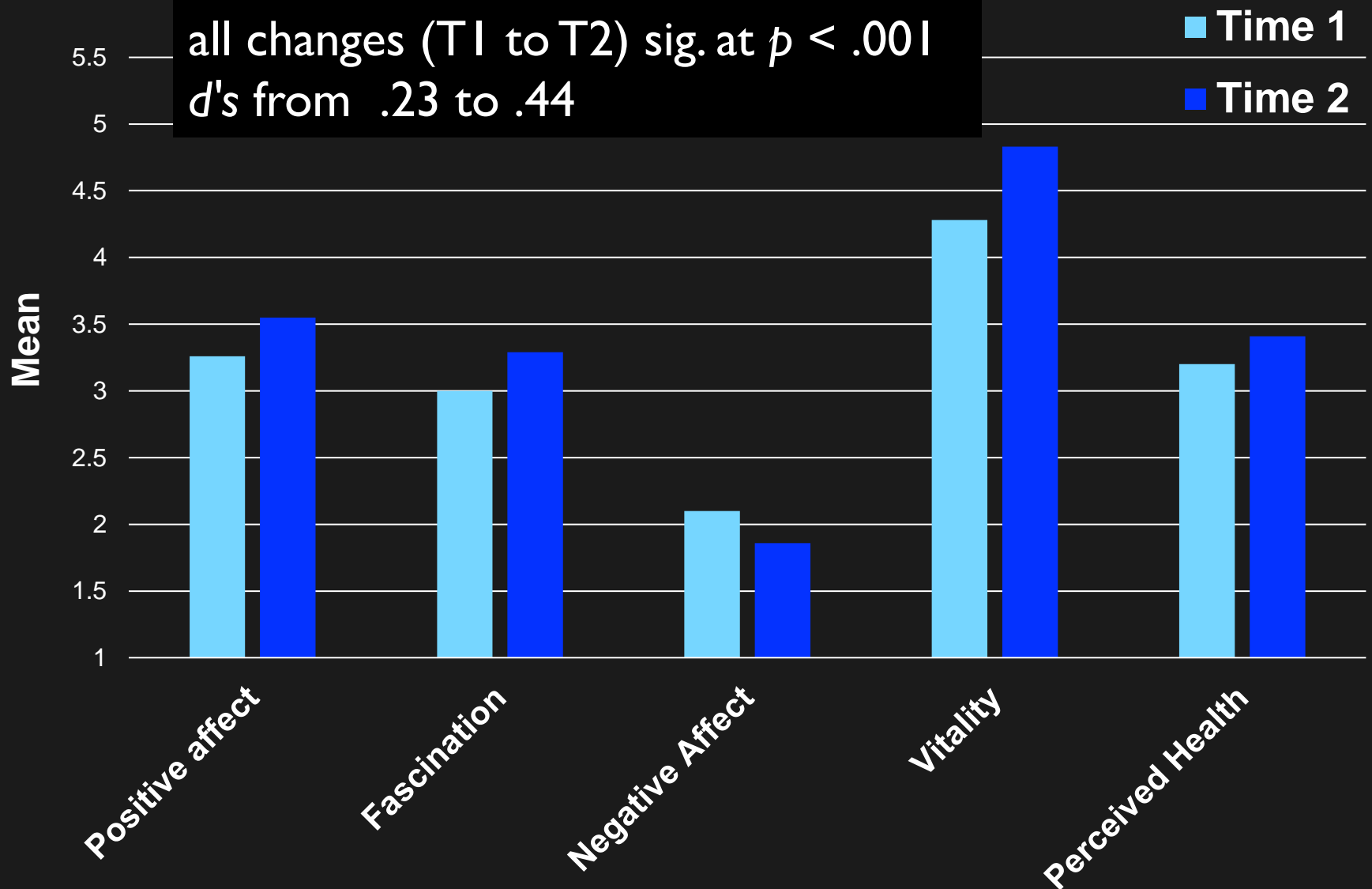
(cf. DSF 30x30; Nisbet 2013, 2014, 2015)



Change in activities, nature contact



Changes in Well-Being



Changes in Nature Connectedness

Nature Connectedness Changes from Pre-Challenge to Post-Challenge

	Time 1		Time 2				
	<i>M</i>		<i>M</i>		<i>t</i>	<i>r</i>	<i>d</i>
Inclusion with Nature in Self	4.61	(1.35)	4.95	(1.25)	4.68***	.71	.34
Nature Relatedness (overall)	4.31	(0.40)	4.37	(0.38)	2.71**	.77	.23
Short-form Nature Relatedness (NR6)	4.31	(0.54)	4.38	(0.50)	2.71**	.77	.20
Nature related Self	4.34	(0.52)	4.40	(0.48)	2.14*	.74	.17
Nature related Perspective	4.32	(0.49)	4.35	(0.48)	0.99	.69	.08
Nature related Experience	4.26	(0.55)	4.34	(0.51)	2.83**	.76	.23

Note: For each time point, table presents mean scores, with standard deviations in parentheses, correlations (T1, T2), and results of paired-samples t-tests, comparing means (Time2-Time1), with effect sizes (Cohen's *d*, paired-samples-corrected).

* $p < .05$, ** $p < .01$ *** $p < .001$.

Relative Changes Over Time

Correlations Between Nature Contact, Nature Relatedness, and Well-Being Change

Change variable	1.	2.	3.	4.	5.	6.	7.	8.
1. Active nature contact	1.00	-	-	-	-	-	-	-
2. Relaxed nature contact	.72***	1.00	-	-	-	-	-	-
3. Nature Relatedness	.18*	.05	1.00	-	-	-	-	-
4. Positive affect	.23**	.25**	.17*	1.00	-	-	-	-
5. Fascination	.26***	.30***	.10	.74***	1.00	-	-	-
6. Negative affect	-.06	-.18*	-.24**	-.43***	-.23***	1.00	-	-
7. Vitality	.24**	.22**	.16*	.75***	.57***	-.45***	1.00	-
8. Perceived health	.19**	.18*	.14	.51***	.34***	-.39***	.51***	1.00

* $p < .05$, ** $p < .01$ *** $p < .001$.

Citizen Science Interventions



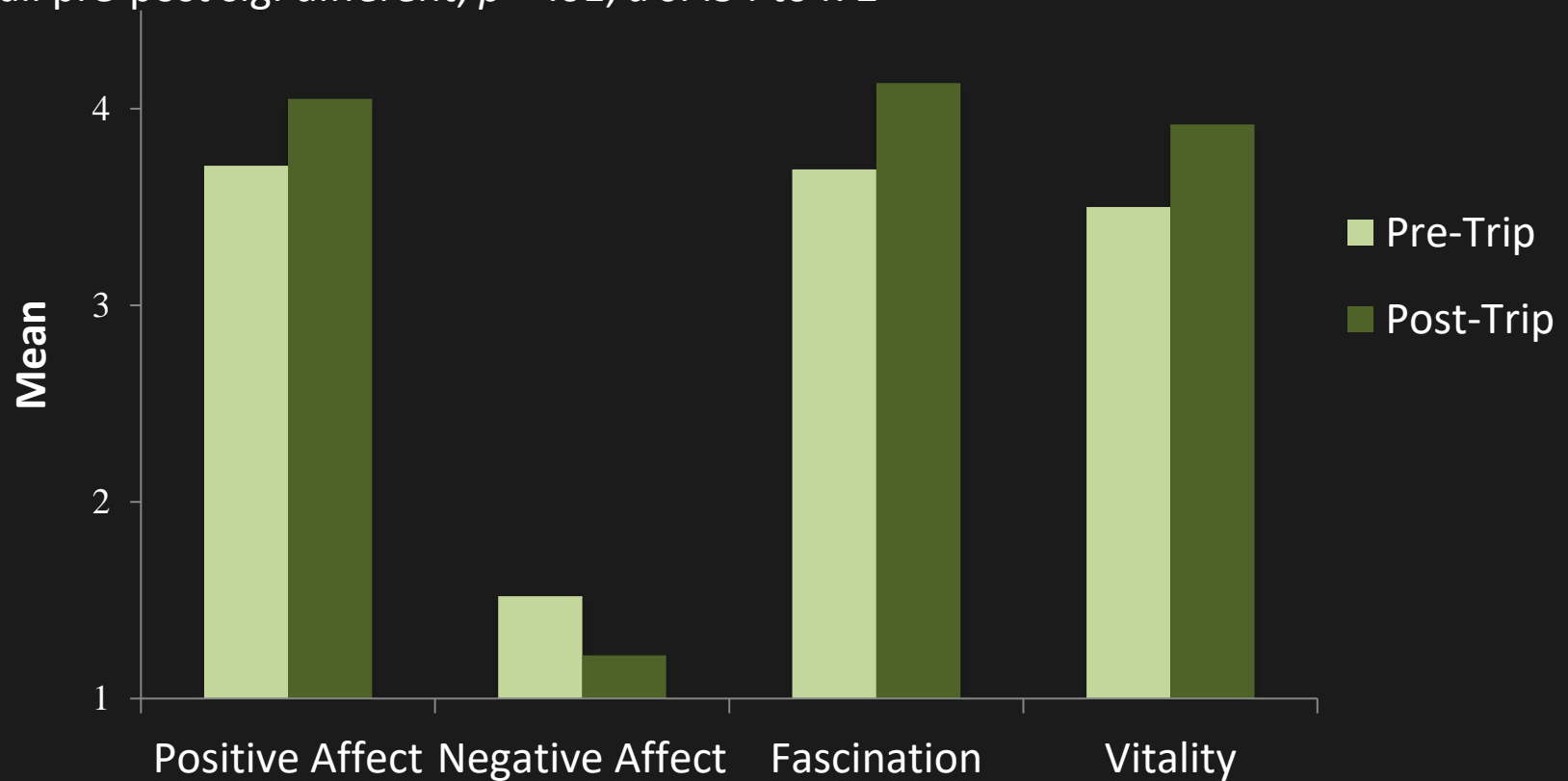
HRC



More connected and happier citizen scientists

NON-INVASIVE GRIZZLY BEAR TRACKING STUDY (Nisbet & Treinish, 2013)

all pre-post sig. different, $p < .01$, d 's: .54 to .72



Ecology + Psychology = WILDLIFE DETECTIVES CSI STUDY

Citizen Science for veterans

A Field Guide to Compost Visitors

Citizen Science at Work



[Introduction](#) [Alphabetical Species Listing](#) [Taxonomic Species Listing](#) [Glossary](#) [Literature](#) [About](#)

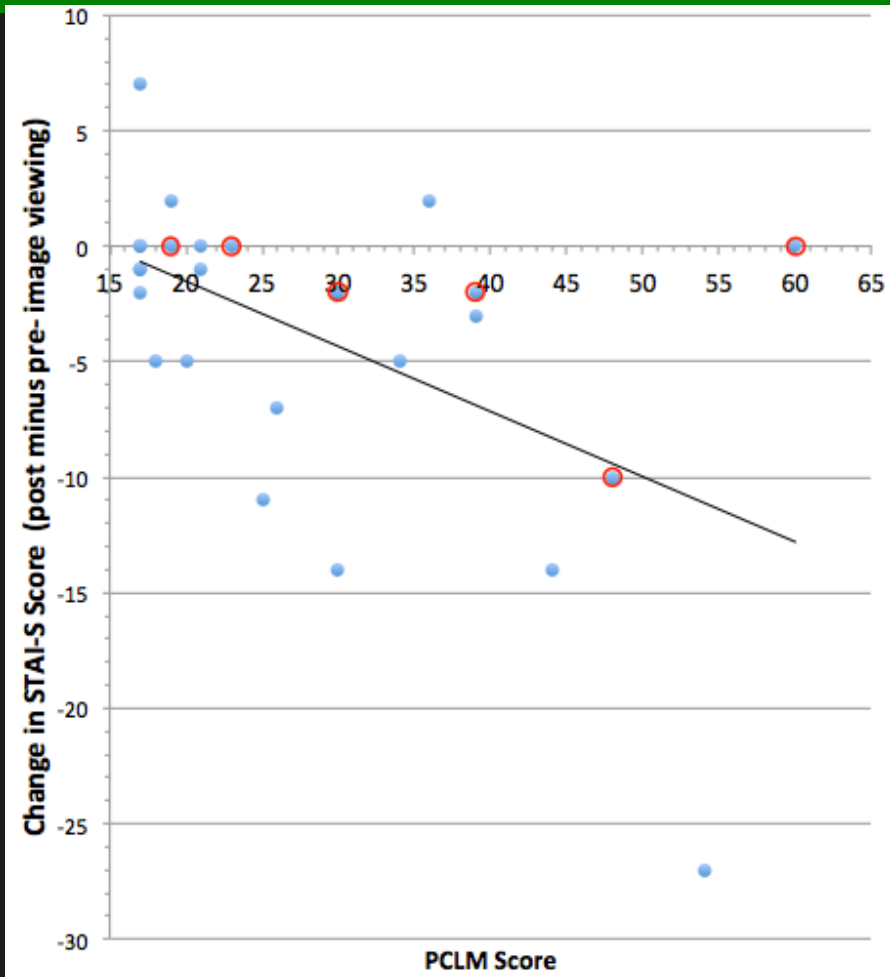
Red Fox (*Vulpes vulpes*)



Field Guide

- [Birds – Taxonomic Listing](#)
 - Wild Turkey (*Meleagris gallopavo*)
 - Turkey Vulture (*Cathartes aura*)
 - Red-shouldered Hawk (*Buteo lineatus*)
 - Red-tailed Hawk (*Buteo jamaicensis*)
 - Mourning Dove (*Zenaida macroura*)
 - Barred Owl (*Strix varia*)
 - Red-bellied Woodpecker

Citizen Science for veterans



Higher PTSD veterans showed greater reduction in anxiety

(Smedley, Evancho, Marinchak, & Nisbet, 2014)

Happy People, Happy Planet

- (Re)connecting with nature has benefits for psychological well-being
- Fosters intrinsic conservation motives
- Alternate message framing vs. fear, guilt (*"The Happy Path to Sustainability"*)



Thank You

elizabethnisbet@trentu.ca

Psychology Department

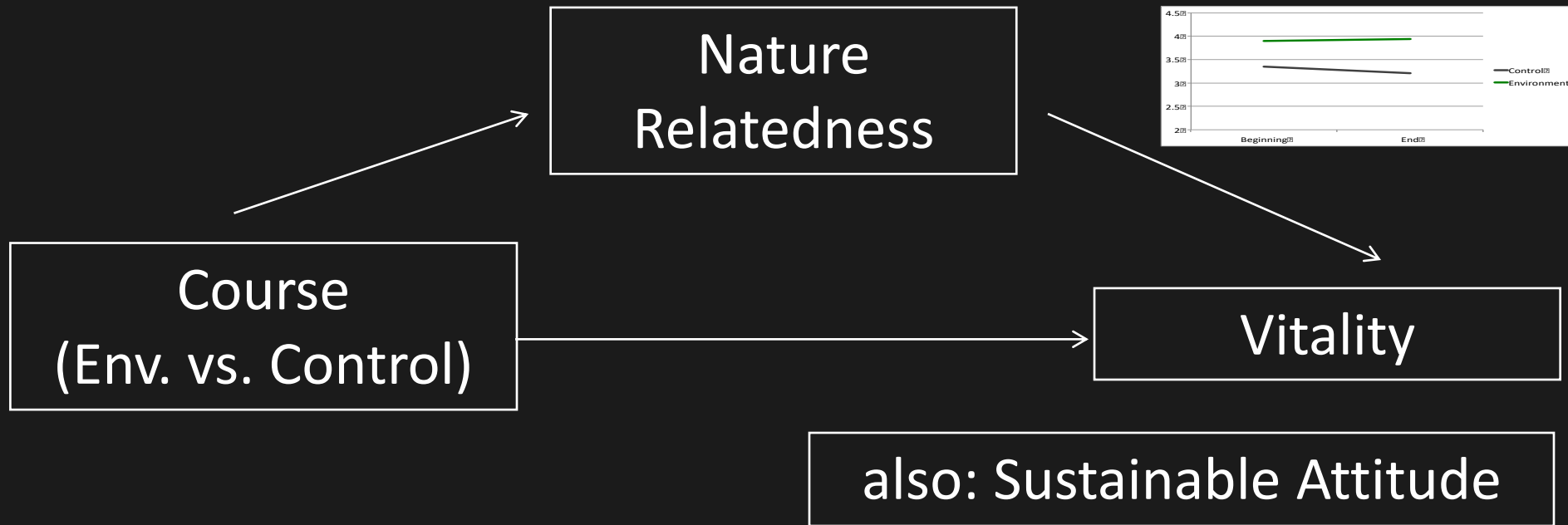
Trent University

Peterborough, Ontario, Canada

naturerelatedness.ca



Environmental Education

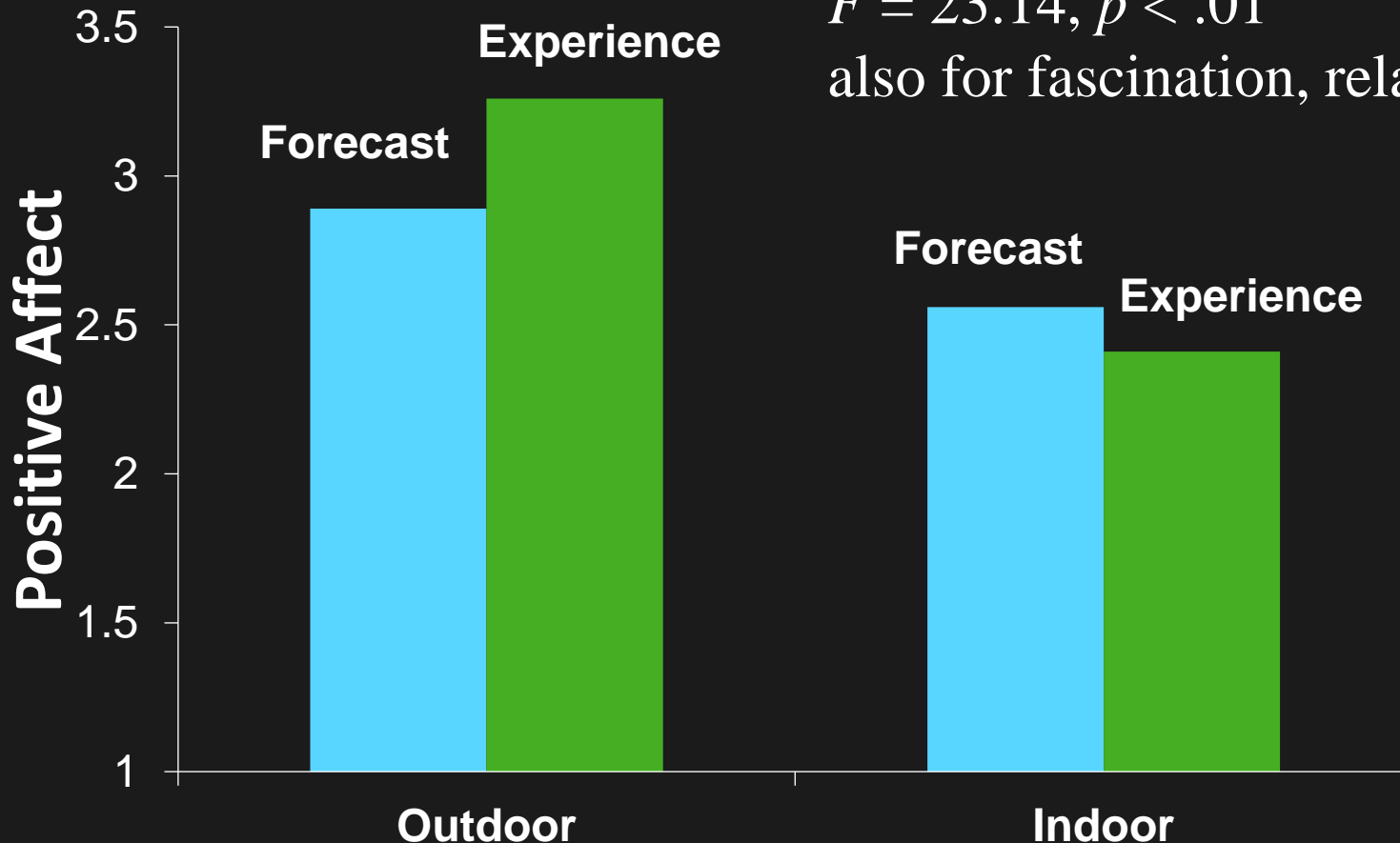


The Happy Path to Sustainability (Nisbet et al., 2009, 2011)

Nature relatedness in early childhood educators (Ernst & Tornabene, 2012)

People under-predict the benefits of nature

Location x Prediction Interaction:
 $F = 23.14, p < .01$
also for fascination, relaxation



Continuum of Parks: urbanization - nature

Source: Parks for All - Canadian Parks and Recreation Association / Association canadienne des parcs et loisirs



Healthy Parks Healthy People



- healthy parks contribute to human and environmental health
- connection with nature
- conservation and sustainability



#NATURE FOR ALL



CAPE COD NATIONAL SEASHORE | CAPE COD HEALTHCARE

ATLANTIC WHITE CEDAR SWAMP TRAIL, WELLFLEET

BY DAVID WEINTRAUB

TRAILS **i** HEALTH STATS NUMBER OF STEPS – 2,700 | ESTIMATED CALORIES BURNED – 121*

This mostly shaded loop, great on a hot day, explores one of the Cape's few remaining stands of Atlantic white cedar, located on the former site of Cape Wellfleet, a U.S. Army base. Trailside markers identify some of the common trees, and you will probably get to see and hear an assortment of forest birds as well. The Marconi Station Site, located just across the parking area from the trailhead, is well worth a visit after your walk. An elevated observation deck affords 360-degree views that include the Atlantic Ocean and Wellfleet Harbor.