Beyond recreation experience and expenditure: Well-being and resilience in natural area-human community systems



9th International Conference on Monitoring and Management of Visitors in Recreational and Protected Areas (MMV9)

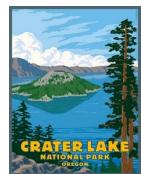
Bordeaux, France, August 2018

Kreg Lindberg

Oregon State University – Cascades, Bend, Oregon, USA Kreg.Lindberg@osucascades.edu

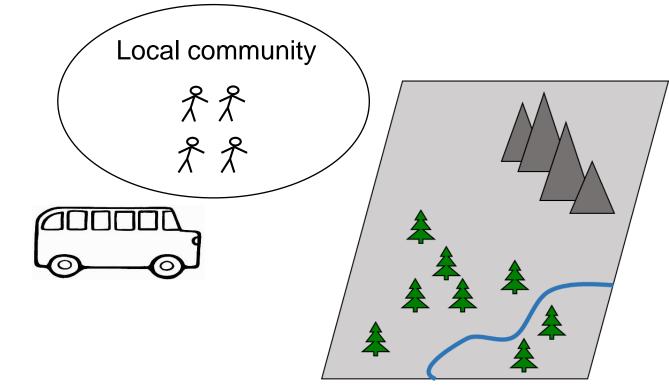


Conversion from PowerPoint to PDF removed animation. This distribution version reflects minor edits and image reductions.



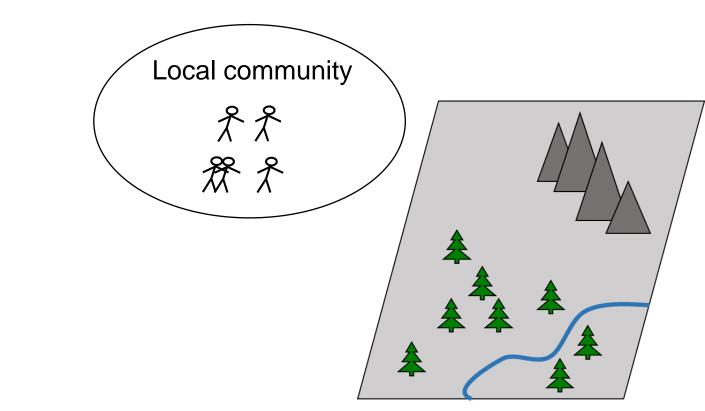
Semantics

- Natural area visitation as basic social-ecological system.
- Local visitors (outdoor recreationists).
- Non-local visitors (nature-based tourists)...
 - ...who may hire a local firm (tour operator) when accessing natural area.





- Perhaps some NB tourists become local residents through amenity migration.
- Perhaps more tourists arrive.



- One perspective on the evolution of focus areas over time
 - Recent focus areas often build on historical seeds.
 - And there is complementarity across focus areas.
- Do these focus areas provide useful lenses for:
 - Understanding, developing, and managing natural experiences?
 - Conveying the benefits of visitation (and natural areas) to key audiences?

PARKS 2012 Vol 18



Managing to Optimize the Beneficial Outcomes of Recreation



HUMAN HEALTH AND WELL-BEING MOTIVATIONS AND BENEFITS ASSOCIATED WITH PROTECTED AREA EXPERIENCES: AN OPPORTUNITY FOR TRANSFORMING POLICY AND MANAGEMENT IN CANADA

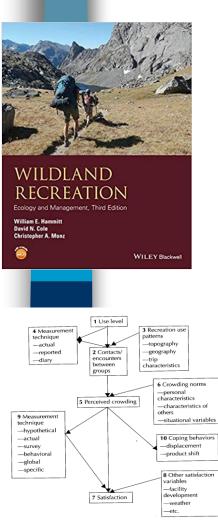
Christopher J. Lemieux¹, Paul F.J. Eagles^{1*}, D. Scott Slocombe², Sean T. Doherty², Susan J. Elliott³, and Steven E. Mock¹

Corresponding Author, email: pfjeagles@uwaterloo.ca ¹ Department of Recreation and Leisure Studies, University of Waterloo, Waterloo, Ontario, Canada

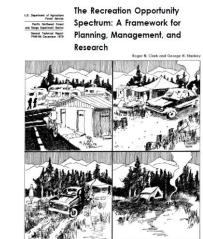
² Department of Geography and Environmental Studies, Wilfrid Laurier University, Waterloc Ontario, Canada
³ Faculty of Applied Health Sciences, University of Waterloo, Waterloo, Ontario, Canada

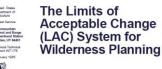


 Classic focus – sustaining experiential and ecological quality.



Experience (social) Ecology (resource)





George H. Stankey David N. Cole Robert C. Lucas Margaret E. Petersen Sidney S. Frissell



 Effects on local economies and (sometimes) other community aspects.



Contents lists available at ScienceDirect

Landscape and Urban Planning

journal homepage: www.elsevier.com/locate/landurbplan

The economic impact of tourism in six German national parks Marius Mayer^{a,*}, Martin Müller^b, Manuel Woltering^a, Julius Arnegger^a, Hubert Job^a ^{*}Institute of Geography, Julius-Maximilians-Universität Würzburg, Am Hubland, 97074 Würzburg, Germany¹ ^bSchool of Humanities and Social Sciences, Universität St. Gallen, Gatterstr. 1, 9000 St. Gallen, Switzerland²



The economic impact of tourism in Swiss parks



NATURVÅRDSVERKET RAPPORT 6547

10. Friluftslivet i samhällsekonomin

Peter Fredman, Mattias Boman, Linda Lundmark, Bo Svensson & Kreg Lindberg

Inledning

National Park Service

U.S. Department of the Interio

and the Nation

Natural Resource Stewardship and Science

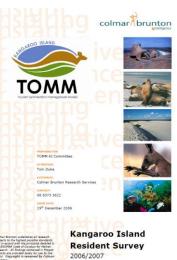
Federal Outdoor Recreation Trends: Effects on Economic Opportunities

2017 National Park Visitor Spending Effects Economic Contributions to Local Communities, States,

Natural Resource Report NPS/NRSS/EQD/NRR-2018/1616

Expenditure Other local community effects

> Experience (social) Ecology (resource)



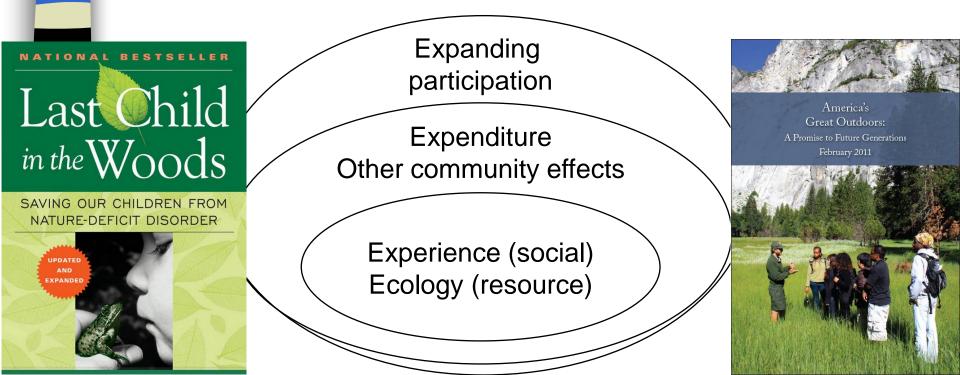
 Recent interest in ensuring visitation by youth, underrepresented groups, and other targeted groups.

4.7 Rekruttering av barn og unge til friluftsliv

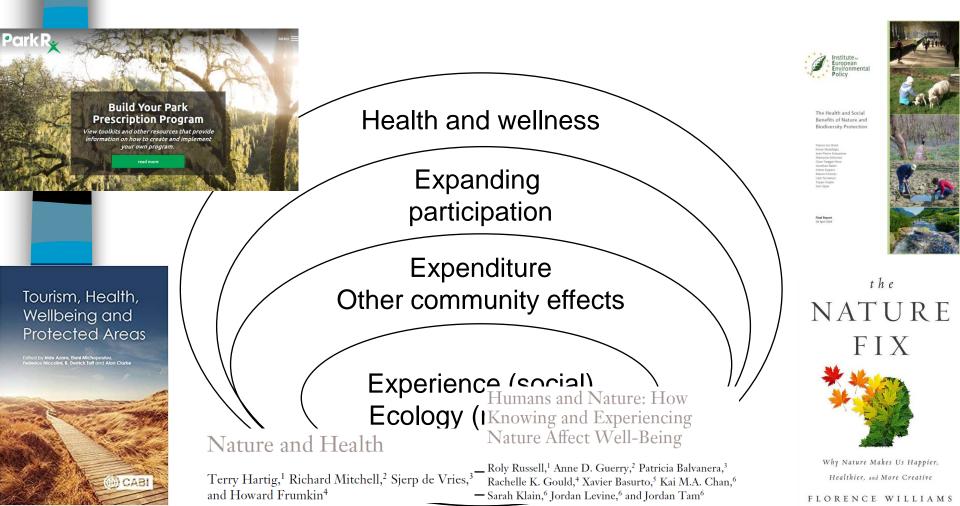
Prioritere barn og unge i tilskuddsordningene til friluftsliv.

4.6 Rekruttering av grupper og personer med lav deltakelse i friluftsliv

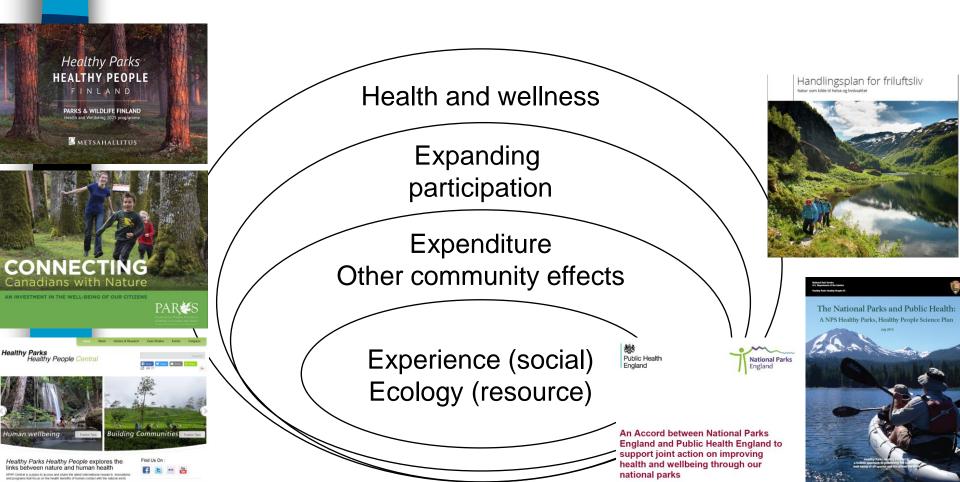
- Gjennom aktuelle tilskuddsordninger, områdesatsinger og andre prosjekter og satsinger bidra til utvikling av tiltak som kan rekruttere personer med minoritetsbakgrunn til økt deltakelse i friluftsliv.
- Gjennom aktuelle tilskuddsordninger, områdesatsinger og andre prosjekter og satsinger bidra til utvikling av tiltak som kan rekruttere personer med nedsatt funksjonsevne til økt deltakelse i friluftsliv.



Physical and mental health. Combines benefit of leisure, exercise, and nature.



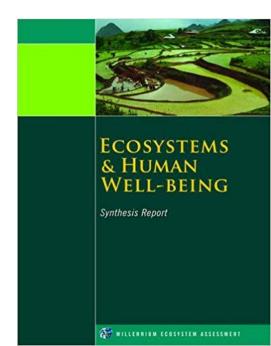
These effects embraced by Healthy Parks Healthy People programs (Parks Victoria, Australia; 2010 HPHP Congress) and applications by various agencies.



- Extend health and wellness to well-being and resilience...
 - A combination of previous focus and new considerations.



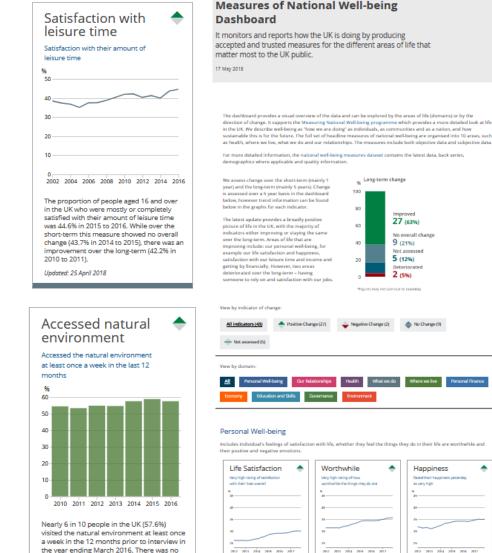
- Two strands to well-being beyond Healthy Parks Healthy People.
- Millennium Ecosystem Assessment and field of ecosystem services – the benefits that flow from nature to people.
- "Human well-being" is the focus, with broad conception.
 - HWB: includes basic material for a good life, freedom and choice, health, good social relations, security, etc.



- Well-being measures implemented in Healthy Parks Healthy People programs often consistent with this broad conception (e.g., Bryce et al. 2016; Dallimer et al. 2014; Puhakka, Pitkänen, and Siikamäki 2017).
- Finnish program includes HPHP measures in on-site and follow up internet surveys. Sample results, Urho Kekkonen National Park.
- Strong perceptions that visits increased social, psychological and physical well-being.

	Assessment (%)									
Enhanced areas of well-being	Fully disa- gree	Some- what disagree	No opinion	Some- what agree	Fully agree	Average (1-5)				
Social well-being enhanced (e.g. pro- moting working capacity, strengthening personal relationships)	0	2	14	38	45	4.26				
Mental well-being enhanced (e.g. atisfaction with life, improved mood, ecovery from mental fatigue, learning new things)	0	1	8	35	56	4.44				
Physical well-being enhanced (e.g. maintenance of physical health and overall well-being, learning new skills)	0	1	6	30	56	4.55				

- Such results enter reports and perhaps are read by decision makers in natural area (and public health?) agencies.
- How reach a broader audience - decision makers beyond these agencies?
- Will integration in national indicator sets help?
- UK ONS example.
- Headline measures.



eteriorated

A No Change (9)

Happiness

the user and the December 2017, 25, 19, 1

he year ending December 2012

as very high

the year ending December 2017, 35,7% o

opie in the LK aged 16 and over revery high rating that the things the ene worthwhile (9 and 10 out of 10 and 10 out of 10

and the los

haled: 77 May 2018

nding December 20121

in the year ending December 2017, 3 in 1

eported a very high rating of satisfacti-ish their lives overall (9 and 10 out of hile there was not in eople aged 16 and over in the UK (30.1%

ong-serm (26.2% in the year ending December 2012).

2016) there was

Dedated 17 May 2011

Updated: 10 October 2017

overall change from the previous year

(58.9%) and an improvement over the long-

term (53.4% in the year ending March 2011).



Achieve coverage of natural area visitation's contribution in bulletin?

Office for National Statistics

Statistical bulletin

Personal well-being in the UK: January to December 2017

Estimates of personal well-being in the UK, with analysis by country.



Release date: tockley 17 May 2018 v.uk Next release: To be announced

Table of contents

- 1. Main points
- 2. Statistician's comment
- 3. Things you need to know about this release
- 4. Average worthwhile and happiness ratings increase in the UK
- 5. Scotland is the only country to show improvements across any measures of personal well-being

 A larger proportion of people in Wales report low ratings of life satisfaction, worthwhile and happiness compared with the UK average.

7. Are the current personal well-being thresholds the best way to measure well-being inequality?

Goal – exposure of natural area visit outcomes to additional sets of eyes.

Demonstrate that "happiness yesterday" higher in natural areas

ndicators either improving or staying the same No overall change over the long-term. Areas of life that are 9 (21%) proving include: our personal well-being, for Not assessed example our life satisfaction and happines 5 (12%) getting by financially. However, two areas ated over the long-term - hav 2 (5%) eone to rely on and satisfaction with ou View by indicator of cham All indicators (43) A Positive Change (27) 🔶 Negative Change (2) 🛛 🗄 No Change (9) Not assessed (5) View by domain 41 What we do Where we live Personal Finance Personal Well-being Includes individual's feelings of satisfactio their positive and negative Life Satisfaction Worthwhile ۰ Hanniness Very high rating of saded 012 2011 2014 2016 2016 201

Measures of National Well-being

It monitors and reports how the UK is doing by producing accepted and trusted measures for the different areas of life that

being programme which provides a more detailed look

ures of national well-being are organised into 10 area

eing as "how we are doing" as individuals, as communities and as a nation, and how

% Long-term change

do and our relationships. The measures include both objective data and subjective data.

27 (63%)

Dashboard

in the UK. We de

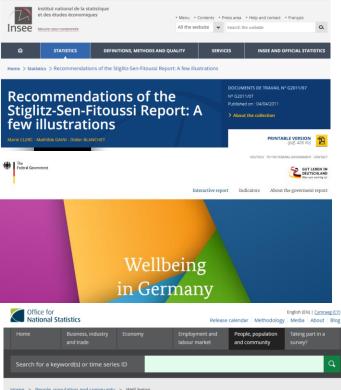
as health where y

We assess change over the short-term (mail year) and the long-term (mainly 5 years). Ch is assessed over a 5 year basis in the dashbo below, however trend information can be fo below in the graphs for each indicator. The latest update provides a broadly positive

picture of life in the UK, with the majority of

matter most to the UK public.

Leads to second (broader societal) interest in well-being, including subjective well-being. Often seen as complement to gross domestic product in measuring progress.



Home > People, population and community > Well-being

Well-being

Societal and personal well-being in the UK looking beyond what we produce, to areas such as health, relationships, education and skills, what we do, where we live, our finances and the environment. This data comes from a variety of sources and much of the analysis is new.





How's life?





- Subjective well-being (SWB) is a sub-set of well-being measures that reflects how people experience and evaluate their lives and specific domains within those lives (US National Research Council 2013).
- OECD (2013), Annex A, provides sample question items. Categories include:
 - evaluative satisfaction with life overall and life domains (e.g., financial, social, recreation)
 - eudaimonic flourishing, sense of purpose
 - experienced affect, emotion, happiness

OECD Guidelines on Measuring Subjective Well-being



SWB + Natural Area Visitation

- Natural area visitation involves leisure, exercise, and nature interaction, so positive SWB effect is expected.
- Cross-sectional and/or longitudinal analysis with secondary or primary data.
- Bertram and Rehdanz (2015) found urban green space in Berlin affected evaluative SWB, though non-linearly.
- Wolsko and Lindberg (2013) found that participation in appreciative outdoor recreation was positively correlated with eudaimonic and experienced SWB.
- MacKerron and Mourato (2013) used an experience sampling approach with Apple mobile devices (the Mappiness project). They found that experienced SWB in the UK was greater outdoors than indoors, greatest in marine / coastal environments.

Even a Little Exercise Might Make Us Happier



By Gretchen Reynolds

f y a + 🗌 108

- Different approach local resident preference for community expansion in Bend.
- First, more about Bend... Bordered by natural areas; many trail and other recreation / tourism opportunities.



4 Bend, Oregon





Only 21 mile playground fi **Don't miss** • High Dese • Newberry • Deschutes

All 199 thing:



NATIONAL GEOGRAPH



BEND, OREGON Located in central Oregon's high desert at the eastern flank of the Cascade Mountains, <u>Bend</u> offers around 300 miles of easily accessible linked trails, Exhaust the smooth, rolling... **Read More**

ADVENTURE

America's 20 Best Mountain Bike Towns

- Bend has grown dramatically, partly due to amenity migration after past nature-based tourism experiences.
- Rapid growth generates diverse effects in the community and not everyone welcomes that level of growth.
- Car stickers available on Amazon.com.

200.000

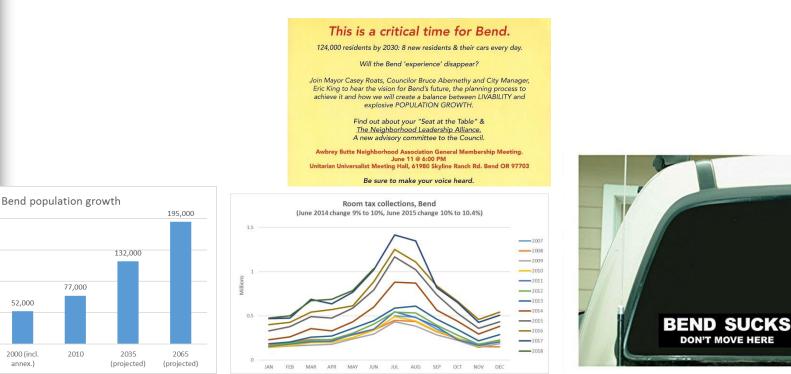
150.000

100,000

50.000

20,000

1990

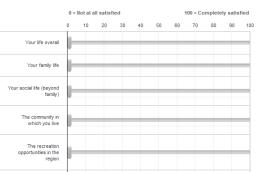


- 2012-2013 resident survey focused on SWB and how it may be affected by future growth.
- "Contingent" SWB in response to vignettes involving growth and potential loss of recreation connectivity.
 - Attribute levels change across presented vignettes (contact author for details).



sing your mouse, click and drag the vertical bar to indicate your level of satisfaction <u>with each aspect</u>. Or use your ouse to click on the appropriate point on the line, then drag the bar (as needed) to fine-tune your answer. Your ting is shown to the right of the scale.

you are "Not at all satisfied" with an aspect, please click on the vertical bar for that item without moving it ("0" nould show to the right of the scale).



Features	Option 1					
Unemployment rate (current is about 9%)	9% (no change)					
Population (current is about 80,000)	160,000					
Total utility costs per year	Increase by \$150					
Trail connectivity	Maintain connectivity (no change)					
Public involvement	Low involvement					

You previously	r indicated	vour	current	satisfaction.	on a 0 t	o 100	scale.	is as	follows.	Forv	our

Life overali: 87 Community: 82 Recreation opportunities: 96 Natural environment: 86 Mental / emotional well-being: 92 Financial situation: 92

If the Option 1 change shown in the table above occurred, would it affect your satisfaction with your life overall or wi any specific aspect?

If <u>yes</u>, please move the relevant bars below to indicate what your <u>new</u> ratings would be for any satisfaction affected by Option 1.

If no, please proceed to the next question without moving any bars

	0 = Not at all satisfied							100 = Completely satisfied				
	0	10	20	30	40	50	60	70	80	90	100	
Your life overall	H										_	
The community in which you live	H							-				
Recreation opportunities												

- SWB decreases with loss of trail connectivity amongst those who engage in outdoor recreation.
- Effect greater in recreation domain than life overall.
- Importance of inclusive public process.

Overall			Community			Recreation		
	Coeff.	Sig.		Coeff.	Sig.		Coeff.	Sig.
Constant	5.431***	0.004	Constant	7.046**	0.013	Constant	-0.894	0.783
Pop_20ª	-3.100***	0.003	Pop_20ª	-4.528***	0.001	Pop_20ª	-3.741**	0.025
Pop_60 ^b	-5.661***	0.000	Pop_60 ^b	-11.304***	0.000	Pop_60 ^b	-9.954***	0.000
Pop_80 ^b	-5.192***	0.000	Pop_80 ^b	-10.171***	0.000	Pop_80 ^b	-8.216***	0.000
Pop_120 ^b	-6.163***	0.000	Pop_120 ^b	-11.669***	0.000	Pop_120 ^b	-8.124***	0.000
Tr_loss	-0.795	0.402	Tr_loss	-1.012	0.424	Tr_loss	-2.332	0.128
Tr_rec	-0.018**	0.049	Tr_rec	-0.017	0.155	Tr_rec	-0.044***	0.003
Proc_hi	2.061***	0.003	Proc_hi	1.701*	0.077	Proc_hi	1.563	0.149

- The Bend example is a reminder that tourism (and growth) can generate diverse effects within communities.
- SWB can be used to evaluate those effects, focused on residents as hosts not just as recreationists. In-process survey in Oregon.
- Contingent SWB still an exploratory method...
 - 23. Now please assume that the <u>number of tourists to your community increases by 20%</u> in the near future, with the potential for both positive and negative effects.

In <u>Column A</u>, please circle a number to indicate whether this increase in tourism would decrease, have no effect on, or increase your well-being for each aspect. For each aspect that would be decreased or increased, please also write a number from 0 (not satisfied) to 100 (completely satisfied) in <u>Column B</u> to indicate what your <u>new</u> <u>well-being</u> would be. New well-being equals well-being in past 12 months adjusted for any decrease or increase.

- Effects may depend on how tourism is developed and managed. Please consider what you would expect to happen in your community.
- Please consider how important the effects would be relative to everything that affects your well-being. Also consider how you would adjust to any effects, not just their immediate impact.

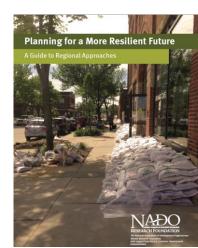
		Direction		Column B. New well-being			
Aspect	Decrease a lot	Decrease a little	No effect	Increase a little	Increase a lot		Write number (0 to 100)
Your life overall	1	2	3	4	5	➡	
Your financial situation	1	2	3	4	5	➡	
Your job situation	1	2	3	4	5	⊨	
Your social life, beyond family	1	2	3	4	5	⇒	
Your community and its culture	1	2	3	4	5	⇒	
Recreation opportunities	1	2	3	4	5	➡	
Quality of the natural environment	1	2	3	4	5	➡	

Resilience

- Resilience in the social context (focus here):
 - The ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change (Adger 2000:347).
- Distilled, and focused on communities:
 - A community's ability to thrive in the face of change (Steiner, Woolvin, and Skerratt 2016).
- Common component is adaptability.
- Resilience as a potentially useful lens.



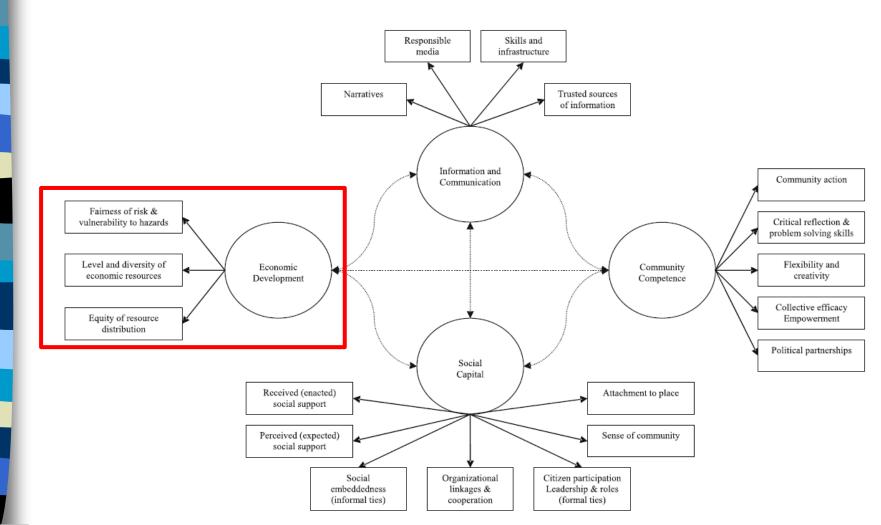




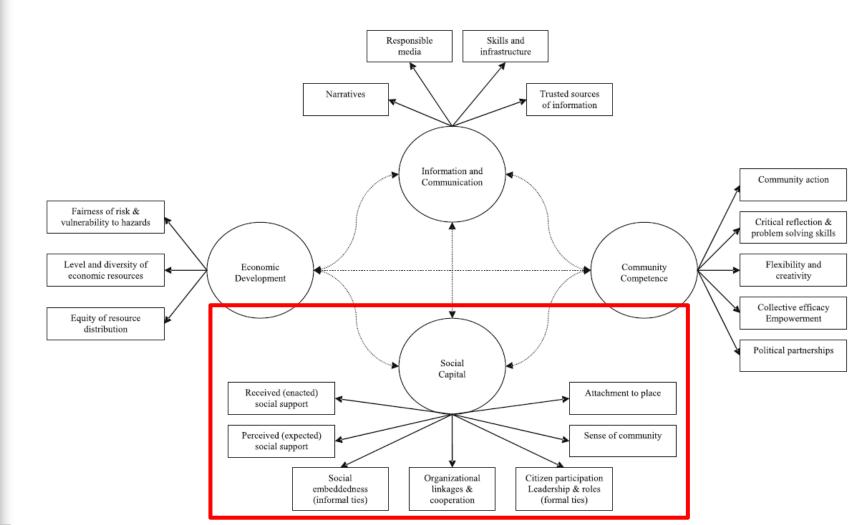
Resilience

- Applied in diverse ways to many contexts, so helpful to define "of what, to what."
- Focus here:
 - Resilience of (rural) communities...
 - to economic and demographic change.
- Not of ecosystems or visitor destinations. Nor of individuals or households, though community-level effects often are paralleled at personal and family scales (e.g., social connections).
- Possibility of generalized resilience, with factors enhancing resilience to slow variables (e.g., economic and demographic change) also potentially enhancing resilience to fast variables (e.g., natural disasters and terrorism).

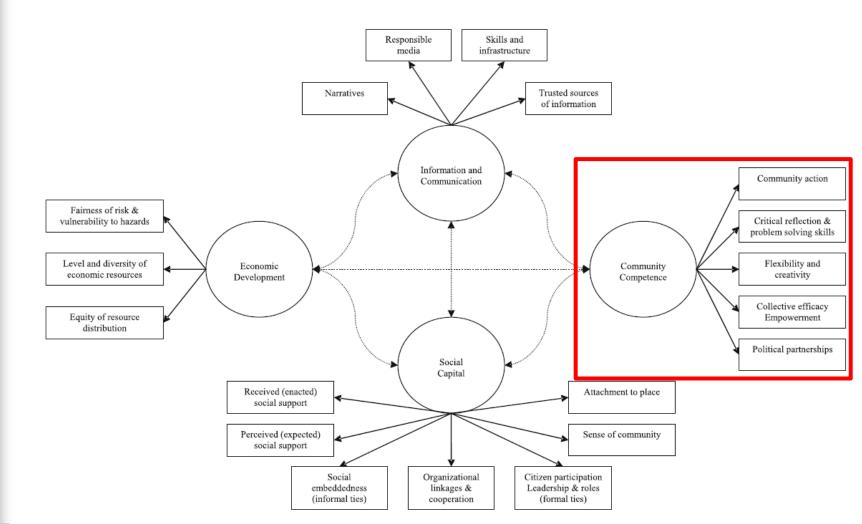
 Norris et al. (2008:136) illustrate components and provide foundations for assessment.



 Norris et al. (2008:136) illustrate components and provide foundations for assessment.



 Norris et al. (2008:136) illustrate components and provide foundations for assessment.



- Much conceptual discussion in the literature (e.g., Walker and Salt 2012), but empirical evaluation less common.
- That is present focus. Difficult to assess community resilience directly, so often rely on secondary data potentially reflective of contributors identified by Norris et al. (2007) or others (e.g., Cutter, Ash, and Emrich 2014).
- Norway analysis basic, but relies on primary data.

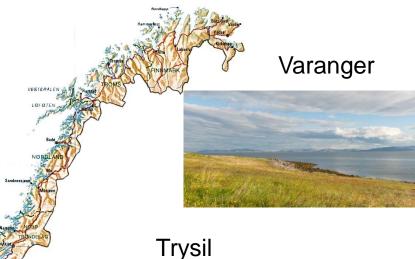


- Present focus on primary data evaluation of resilience contributors at the level of nature-based tourism firms.
- Contributors also at the level of visitors. Examples.
- Enhancing creativity (Atchley, Strayer, Atchley 2012).
- Enhancing connections / social capital (Wolf, Stricker, Hagenloh 2015).
 - Visit Finland notes bonding in the sauna and that more decisions are made in saunas than in meetings (sauna as a resilience tool?).
 - In Bend, parallel is recreation relationships are created and strengthened on trails, on ski slopes, and on the river.
 - Resident experiences in natural areas play important roles in community character and cohesion.



Norway Example

- BIOTOUR project: 2017 nationwide firm survey (led by Stensland and Fossgard), interviews at three case study sites (Forbord et al. presentation). Preliminary results.
- Nationally wealthy, but rural Norway faces stresses similar to those in other countries, including economic and demographic change (Sae-Khow, N., and P. K. J. Hasselberg. 2016).



Hardanger

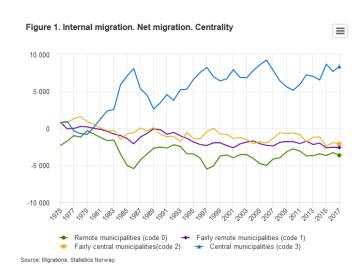


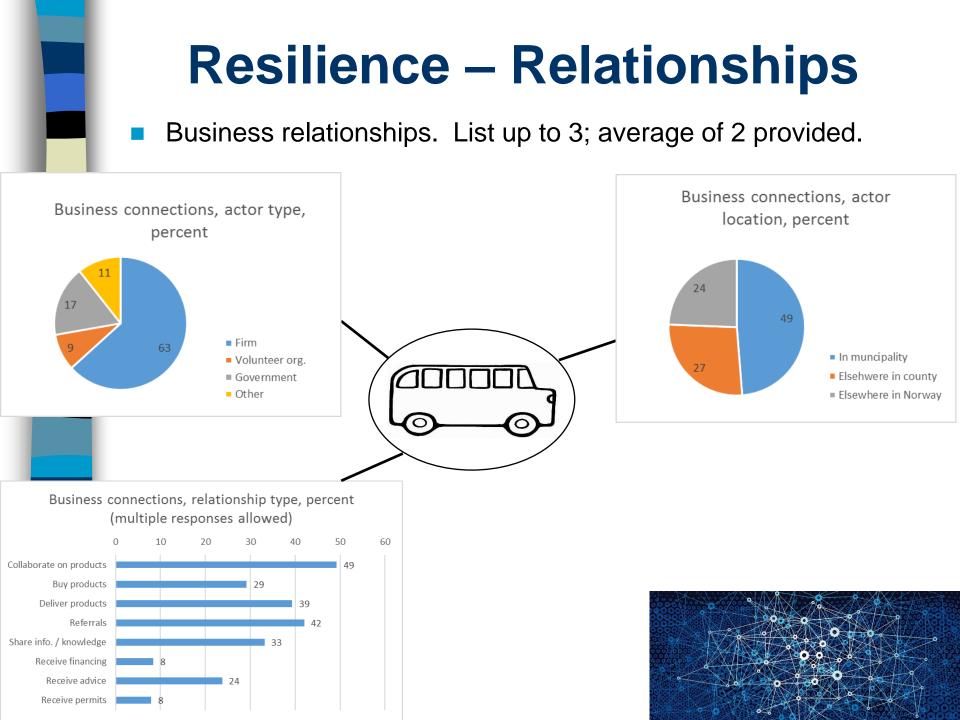




Norway Example

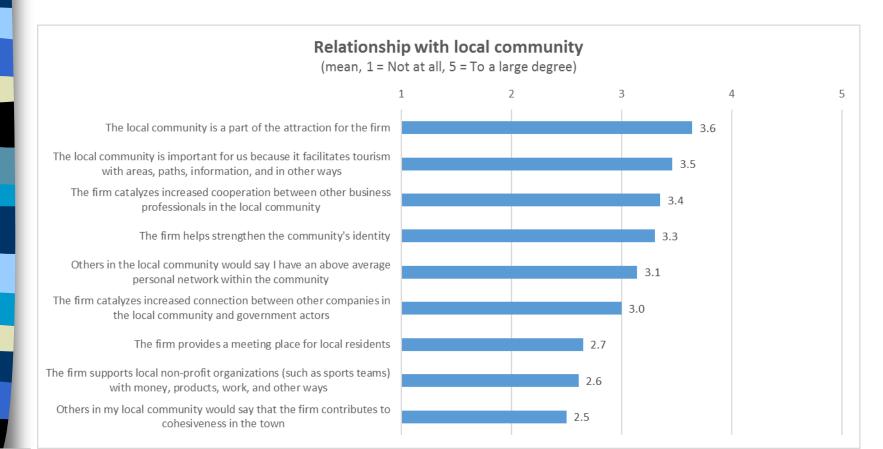
- Community
 - Professional and personal networks / ties.
 - Additional aspects, including identity and cohesion.
- Economy
 - Not possible to assess contribution to sectoral diversity, as firms operate across regions with variable diversity.
 - Job type diversity, potential livelihood diversity.
 - Job creation, potential to reduce out-migration and/or increase in-migration, which may sustain human and social capital, as well as local facilities and services (link to community dimension).





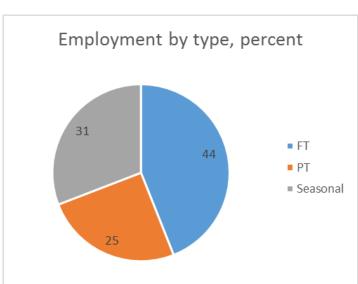
Resilience – Relationships

- But go beyond business connections.
- "To what degree do you agree with the following statements?"
- Strongest relationships reflect community contribution to tourism product. Firm's contribution to community also recognized.



Resilience – Employment

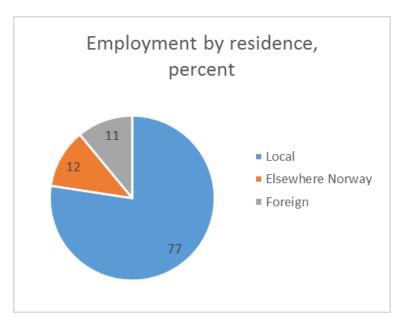
- Approximately 3 full-time equivalent (FTE) employees per firm, including respondent. Most firms are small.
- Pros / cons across job type (full-time, part-time, seasonal).
 - Part-time and seasonal jobs may be desirable for some employees, such as summer jobs for students or by providing livelihood diversity (occupational plurality) options for individuals and households (Alberts and Baldacchino 2017).
 - However, full-time jobs may be best for improving net migration, and employee contribution to community (human and social capital, population basis for infrastructure, etc.).





Resilience – Employment

Likewise, jobs for local employees may reduce outmigration, but jobs for non-local employees may increase in-migration and associated diversity in human and social capital.



Norway Example

- Assessment of resilience and factors affecting it is complex and difficult.
- This (preliminary) analysis is a first step in empirical evaluation – but is limited in scope and relies on the perceptions of firm representatives.
 - Also similar to past evaluations (e.g., jobs), but slightly different lens overall – and add relationship perspective.
- It also focuses on positive effects, while NBT may generate diverse (not always positive) effects.







Diverse Effects

There are substantial concerns in some locations – about issues including loss of

Tangibles, such as rental housing stock.

Intangibles, such as community character and social interaction / cohesion.

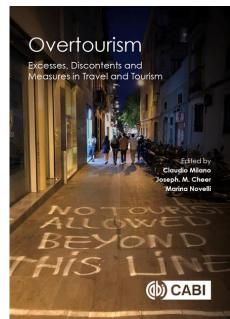


Overtourism: Status Quo, Measures, Best Practices From European Tourism Destinations

Category Destinations, Wellness

Date March 7, 2018

Time 11:00 - 11:45 Exclusive Market Study from DGT and AIEST for ITB Berlin Tourism is threatening to suffocate itself: Due to space limitations, further growth in tourism will inevitably lead to ever more and even larger conflicts in touristic destinations worldwide. This quantitative and qualitative study, exclusively presented at ITB Berlin, will feature a report about the status quo. What differences and similarities exist between urban and rural destinations, which measures offer possible solutions and which strategies do tourism experts regard as promisine?



Diverse Effects

- Effects on natural areas likewise can be diverse, including potential for negative effects on well-being and resilience.
- Example: crowding or competition across activity groups for natural area recreation resources (conflict and contested spaces).
 - That competition may increase bonding (intra-group) social capital but harm bridging (inter-group) social capital.
 - May reduce generalized reciprocity, trust, and cohesion in community.



New Social Media Guidance Bedder CO: There is the quotien that node india plays in this in the and social quoties. If is lighted to all the quotient is the social profile and social quoties. If is lighted to air, "Node The place are annotated motion and in the plan of indiagoun, "Faebook, "Note: Subcotate C river motion. In any our or planting on a latence in pool of an Interior motion. In any our or planting on a latence in pool of an Interior



Arches National Park was once immortalized for its red cliffs and empty

ss always, I arrived too late. The time to be ere, the real sweet spot? I missed it. Try a good half-century ago, I was told by locals, efore the place was discovered by the outide world, back when it was still Arches Vational Monument and not yet a designatere many simply turned The saded back the way they Ard tirrast, 4,000 visitors now Pari w day at Arches.) Dec s was a time when one could Edw to be the "sole inhabitant, wro bserver and custodian" of biss

Is Land Tourism Threatening the Galápagos?

Revenue from tourism has helped protect parks on the islands, tour operators say, but they are worried that popular land-based trips could harm beaches and wildlife.

- The health and wellness benefits of natural area visitation have been known for many years, but the Healthy Parks Healthy People lens apparently has helped:
 - Enhance development, management, and marketing decisions.
 - Enhance the rationale for funding natural area visitation and the agencies and ecosystems on which it depends.
- Would well-being and resilience lenses provide additional perspective and likewise contribute to these goals?



- Well-being is intuitive and an extension of the existing foundation in HPHP programs.
- In some cases existing or new HPHP measures match national indicator programs, with potential to reach policy makers beyond park agencies.
 - E.g., UK ONS and subjective well-being measures
- But not always... The German government well-being report lists 46 indicators across 12 dimensions and mentions recreation's importance to well-being, but the closest indicator appears to be prevalence of obesity.



- Resilience has significant cachet and exposure, as well as significant overlap with well-being.
 - Norris et al. (2008): well-being as one outcome of resilience.
- However, it is conceptually more complex and more difficult to assess – and to connect to national-level indicators.
- May require substantial foundational work, with potential benefit from such an investment (similar to past investment in HPHP).

- These lenses may contribute to evaluation, development, management, and marketing decisions. Examples.
 - Evaluation assess effect of crowding and conflict in SWB units in addition to satisfaction or monetary units.
 - Public input processes goals might expand beyond implementing decisions to include building social capital.
 - Visitor facilities, access, and programs additional orientation to achieve social and physical activity goals.
 - Role of commercial providers (NBT firms) beyond facilitating access to include community resilience effects.



"My commitment to helping clients comes from my belief that people who solve problems together, are truly building community."

- Mary Orton

- Growing knowledge base for understanding how natural area visitation contributes to well-being.
- Consider adding subjective well-being measures à la OECD (2013) Annex A?
- By-product is additional method development, such as "Mappiness" (experience sampling) and contingent (vignette) SWB approaches.
- Beginning of a knowledge base regarding how natural area visitation contributes to community resilience.
- Much opportunity for conceptual development and empirical evaluation.

Merci beaucoup!

Questions? Discussion?



References

- Adger, W.N. 2000 Social and ecological resilience: Are they related? *Progress in Human Geography* 24:347–364.
- Alberts, A. and G. Baldacchino. 2017. Resilience and tourism in islands: Insights from the Caribbean. In. R. Butler, ed. *Tourism and resilience*. CABI: Wallingford, UK.
- Atchley, R. A., D. L. Strayer, and P. Atchley. 2012. Creativity in the wild: Improving creative reasoning through immersion in natural settings. PLOS One 7(12).
- Bertram, C., and K. Rehdanz. 2015. The role of urban green space for human well-being. *Ecological Economics* 120:139–152.
- Bryce, R., K. N. Irvine, A. Church, R. Fisher, S. Ranger, and J. O. Kenter. 2016. Subjective well-being indicators for large-scale assessment of cultural ecosystem services. *Ecosystem Services* 21:258-269.
- Cutter, S. L., K. D. Ash, and C. T. Emrich. 2014. The geographies of community disaster resilience. *Global Environmental Change* 29:65-77.
- Dallimer, M., D. Tinch, N. Hanley, K. N. Irvine, J. R. Rouquette, P. H. Warren, I. Maltby, K. J. Gaston, and P. R. Armsworth. 2014. Quantifying preferences for the natural world using monetary and nonmonetary assessments of value. *Conservation Biology* 28(2):404-413.
- MacKerron, G., and S. Mourato. 2013. Happiness is greater in natural environments. *Global Environmental Change* 23:992-1000.
- Norris, F.H., Stevens, S.P. Pfefferbaum, B., Wyche, K.F. and Pfefferbaum, R.L. 2008. Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology* 41:127-150.
- OECD. 2013. OECD Guidelines on measuring subjective well-being. Paris: OECD Publishing.
- Puhakka, R. K. Pitkänen, and P. Siikamäki. 2017. The health and wellbeing impacts of protected areas in Finland. Journal of Sustainable Tourism 25(12):1830-1847.
- Sae-Khow, N., and P. K. J. Hasselberg. 2016. Ved veis ende. Grendene i utkantene dør sakte, men sikkert ut. Står Bygde-Norge foran et nytt hamskifte? At the end of the road. The hamlets on the fringes die slowly but surely. Does rural Norway face a new shedding? *Aftenposten*, 12 November 2016. Accessed at: https://www.nrk.no/trondelag/xl/bygde-norge-tommes-for-folk-1.13196312.
- Steiner, A. and Atterton, J. 2015. Exploring the contribution of rural enterprises to local development and resilience. *Journal of Rural Studies* 40:30–45.
- U.S. National Research Council. 2013. Subjective well-being: Measuring happiness, suffering, and other dimensions of experience.
 Panel on Measuring Subjective Well-Being in a Policy-Relevant Framework, eds. A. A. Stone and C. Mackie. Committee on
 National Statistics, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.
- Walker, B. and Salt, D. 2012. Resilience practice: Building capacity to absorb disturbance and maintain function. Washington, D.C.: Island Press.
- Wolf, I. D., H. K. Stricker, and G. Hagenloh. 2015. Outcome-focused national park experience management: transforming participants, promoting social wellbeing, and fostering place attachment. *Journal of Sustainable Tourism* 23(3):358-381.
- Wolsko, C., and K. Lindberg. 2013. Experiencing connection with nature: The matrix of psychological well-being, mindfulness, and outdoor recreation. *Ecopsychology* 5(2):80-91.