Supplementary Material User-Generated Geographic Information for Visitor Monitoring in a National Park: A Comparison of Social Media Data and Visitor Survey

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Table S1. Place names of the surveyed sub-regions.

Code	Sub-Region Name
A	Kellostapuli-Kesänki-Kukastunturi
B	Pallastunturi
C	Pyhätunturi-Lainiotunturi
D	Hannunkuru
E	Pyhäkero
F	Vuontiskero
G	Aakenustunturi
H	Äkäskero
I	Pallasjärvi

The person collecting the forms will fill in this field:

numero	paikka	käyttäjä	haastattelija	posti	nimikirjaimet	pvm	kellonaika

Pallas-Yllästunturi National Park

Visitor Survey 2016

How to fill in this questionnaire:

The information collected by this Visitor Survey will be used in management and planning of the Pallas-Yllästunturi National Park. We hope that you answer to all the questions. Please note the following instructions:

1. Read the questions with care.
2. Answer the questions **personally** by ticking the appropriate circle (O). In multiple choice responses, tick all relevant boxes (□). In some questions, you will need to write your responses in a space reserved for it.
3. The questions are about **your current visit** to the Pallas-Yllästunturi National Park (map 1) and in some situations in the surrounding counties Kolari, Kittilä, Muonio or Enontekiö (map 2).
4. Please return the filled-in form to the person you got the form from.
5. For more information, please contact Visitor centre Kellokas tel. +358 206 39 7039 (kellokas@metsa.fi).

THANK YOU IN ADVANCE!

1. When did you arrive to the Pallas-Yllästunturi National Park (see map 1)?
date _____ and time of the day _____

2. How long did you stay or are going to stay during this visit...
a. in the Pallas-Yllästunturi National Park (see map 1)?
about _____ days or _____ hours
b. Altogether in the Pallas-Yllästunturi National Park or its vicinity; Kolari, Kittilä, Muonio and Enontekiö (see map 2)?
about _____ days or _____ hours

→ If your answer to the previous question (2b) was more than 1 day, how many times have you visited or will visit in the Pallas-Yllästunturi National Park during this trip?
_____ times

3. If you stayed or will stay overnight...
(if not applicable, please move on to question 4)
a. ...in the Pallas-Yllästunturi National Park (see map 1), how many nights did you spend or will you spend in
an open wilderness hut _____ nights; a reservable wilderness hut _____ nights;
your own accommodation (tent etc.) _____ nights; elsewhere, where? _____ nights
b. ...in the vicinity of the Pallas-Yllästunturi National Park (see map 2) how many nights did you spend or will you spend in
a hotel _____ nights; a rental cottage _____ nights;
your own cottage _____ nights; mobile home or car and trailer _____ nights;
your own accommodation (tent etc.) _____ nights; elsewhere, where? _____ nights
I live in the area □

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4. Which part of the Pallas-Yllästunturi National Park (see map 1) did you visit / will you visit this time?
(select more than one alternative if applicable)
□ Kellostapuli-Kesänki-Kukastunturi
□ Pyhätunturi-Lainiotunturi
□ Aakenustunturi
□ Äkäskero
□ Pallasjärvi
□ Pallastunturi
□ Vuontiskero
□ Hannukuru
□ Pyhäkero
□ elsewhere, where? _____

5a. Which means of transport did you use to travel from your home to the Pallas-Yllästunturi National Park?
(please, mark all the means of transport you used)
1 □ car
2 □ car and trailer or mobile home
3 □ bus (public transport)
4 □ charter coach
5 □ train
6 □ airplane
7 □ motorbike
25 □ own power (walking, skiing, snowshoeing, cycling, etc.)
99 □ other, please specify?

5b. Which of the means of transport mentioned above did you use last?
Write the number → _____

6. During this visit to Pallas-Yllästunturi National park, what is your group size?
I am alone □ → move on to question 8.
the size of the group? (including yourself) _____ persons
of which under 15 years of age? _____ persons
Please give the years of birth for under 15-years-olds. _____
(If all are almost the same age, please give the most common year of birth.)
physically disabled? _____ persons

7. During this visit to the Pallas-Yllästunturi National Park, your group mainly consists of...
(please, choose the most appropriate alternative)
O members of your own family
O other relatives
O friends
O co-workers
O a school class
O kindergarten children
O a student group
O senior citizens
O clients of guided tours
O club, association, etc.
O others, which?

8. During this visit to the Pallas-Yllästunturi National Park how important to you is or was ...?
(please, respond to each alternative)
(5 = very important, 4 = fairly important 3 = neither, 2 = of little importance, 1 = not important at all)

	very important 5 4 3 2 1	not at all important
experiencing the nature	O O O O O	
scenery	O O O O O	
being on my own	O O O O O	
mental well-being	O O O O O	
getting away from noise and pollution	O O O O O	
relaxation	O O O O O	
meeting new people	O O O O O	
being together with own group	O O O O O	
pleasant old memories	O O O O O	
getting to know the area	O O O O O	
learning about the nature	O O O O O	
improving skills	O O O O O	
exercising	O O O O O	
exiting experiences	O O O O O	
learning about local cultural heritage	O O O O O	

9a. What did you do or will you do in Pallas-Yllästunturi National Park during this visit?
(please, select all which apply)
1 □ walking
2 □ nordic walking
3 □ jogging
4 □ hiking
5 □ observing nature
6 □ picnic
9 □ bird watching
10 □ picking wild berries
11 □ picking mushrooms
12 □ studying plants
13 □ education
14 □ visiting visitor centre
15 □ nature photographing
18 □ scout outing
19 □ orienteering
20 □ overnight camping outdoors
22 □ cross-country skiing
24 □ downhill skiing
27 □ snowshoeing
34 □ hiking (staying overnight in nature)
86 □ guided tour
88 □ getting to know cultural heritage
122 □ getting to know geology
999 □ other, please specify? _____

9b. Which of the alternatives you selected was or is the most important to you during this visit? number → [___]

10a. What do you think about the quality of the services, facilities and environment that you used during this visit in the Pallas-Yllästunturi National Park?
Please respond to all alternatives you used during this visit. If you did not use the service or facility, please tick the alternative "did not use".
(5 = very good, 4 = fairly good, 3 = neither, 2 = fairly poor, 1 = very poor)

	very good 5 4 3 2 1 very poor	did not use
parking places	O O O O O	O
road network	O O O O O	O
information boards on the routes	O O O O O	O
trail network	O O O O O	O
signposts at the trails	O O O O O	O
campfire sites and lean-in-shelters	O O O O O	O
firewood at cabins and campfire places	O O O O O	O
public toilets	O O O O O	O
waste disposal (management and instructions)	O O O O O	O
paying attention to special needs (accessibility of routes, safety, signposts/information boards etc.)	O O O O O	O
leaflets and guide books	O O O O O	O
services of the national park in social media	O O O O O	O
services of Kellokas Visitor Centre	O O O O O	O
services of Pallas Visitor Centre	O O O O O	O
services of Tunturi-Lappi Visitor Centre	O O O O O	O
availability of information beforehand	O O O O O	O
services provided by enterprises (for example cafes and organized activities)	O O O O O	O
safety of the routes and structures	O O O O O	O
general safety	O O O O O	O
general tidiness	O O O O O	O
variability of the landscape	O O O O O	O
other, what?	O O O O O	O

10b. How satisfied are you with the quantity of services and facilities in Pallas-Yllästunturi National Park as a whole?
(5= very satisfied, 4=neither satisfied, 3=neither, 2=rather unsatisfied, 1=very unsatisfied)
very satisfied O O O O O very unsatisfied
5 4 3 2 1

11. Did this visit to Pallas-Yllästunturi National Park meet your expectations with regard to the following?
(5 = very well, 4 = fairly well, 3 = neither, 2 = fairly poorly, 1 = very poorly)

	very well 5 4 3 2 1 very poorly
natural environment	O O O O O
opportunities for outdoor activities	O O O O O
routes and facilities	O O O O O

12. On this trip, is Pallas-Yllästunturi National Park...
O your trip's only or the most important destination?
O one among other intended destinations? Other destinations are:
O a non-planned destination along your route? Main destination(s) is/are: _____

13. Have you spent / Will you spend money on various activities in Pallas-Yllästunturi National Park or its vicinity while on this trip (see map 2)?
O yes (→ please, answer the following questions)
O no (→ please, move on to question 14)

Please tick the box that indicates whether you are estimating
O your personal expenses and your share of your group's joint expenses OR
O the total expenses of your family or group.
O the visit is arranged by travel agency or other tour operator, the price of trip is _____ €

→Please also indicate your other costs in National park and surroundings below
Indicate below (points A–G) your total expenses for this trip in Pallas-Yllästunturi National Park and its vicinity.
Write 0 (zero) in the column if you have not spent any money on the activity in question.

A) fuel or other purchases from the service station	_____ €
B) costs for local transportation (e.g. local bus or taxi trips)	_____ €
C) food and other retail shopping	_____ €
D) café and restaurant purchases	_____ €
E) accommodation	_____ €
F) organised programme and recreational services (e.g. guided tours, entry fees and exhibitions)	_____ €
G) other expenses (e.g. equipment hire)	_____ €

14. How many times have you visited Pallas-Yllästunturi National Park before this trip?
(please, answer all that apply)
This is my first visit □ → move on to question 15
During past five years _____ times
When was your first visit? In _____ (year)
When was your last visit? In _____ (year)

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15. Did any of the following disturb you this time during your visit in the Pallas-Yllästunturi National Park?
(please respond to each alternative)
(5 = not at all, 4 = fairly little, 3 = neither, 2 = fairly much, 1 = very much)

	not at all 5 4 3 2 1 very much
erosion of the ground	O O O O O
littering	O O O O O
amount of visitors	O O O O O
behaviour of other visitors	O O O O O
something else, please specify	O O O O O

16. How did this visit to Pallas-Yllästunturi National Park influence the state of your health and well-being in the following sectors?
(Please answer each point and choose the alternative, which describes your feelings the best.)
5 = totally agree, 4 = somewhat agree, 3 = no opinion, 2 = somewhat disagree, 1 = totally disagree

	totally agree 5 4 3 2 1 totally disagree
Increased social welfare (e.g. strengthened social relations, improved working capacity, enjoyed going things alone or together)	O O O O O
Increased mental welfare (e.g. satisfaction with life, improved mood, recovery from mental stress, learned something new)	O O O O O
Increased physical welfare (e.g. enjoyed sensing the nature, maintained the fitness, learned new skills, physical well-being)	O O O O O

17. What kind of monetary value would you give to the influence of visit in Pallas-Yllästunturi National Park?
You can compare with the value of commercial welfare services and products (gym 5 €, visit to spa for 2,5 hours 20 €, massage for one hour 50 €, treat in spa with different kinds of cures 200 €), cultural services (cinema 12 €, concert 100 €) or travelling costs (holiday at one's own country 500 €, holiday abroad 3000 €).
_____ €

THANK YOU FOR ANSWERING THIS QUESTIONNAIRE!
If there is anything else you would like to tell us, please use the space below.

18. Country of residence?
(If you permanently live in Finland, please specify in which town)
_____

19. Gender?
O male O female

20. Year of birth?
[_____]

21. Education? (please indicate your highest level of education)
O vocational training
O college-level degree
O university bachelor's degree
O university master's degree
O no vocational/professional qualification

22. How long did you travel or intend to travel by following means of your own power during this visit to Pallas-Yllästunturi National Park?
(please, answer all which apply)
□ hiking _____ km
□ cycling _____ km
□ skiing _____ km
□ snowshoeing _____ km
□ other, please specify? _____

23. Which routes you have used / are going to use in the Pallas-Yllästunturi National Park? (see map 1)
(please, circle all which apply)
1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48 49 50
51 52 53 54 55 56 57 58 59 60
61 62 63 64 65 66 67 68 69 70
71 72 73 74 75 76 77 78 79 80
81 82 83 84 85 86 87 88 89 90
91 92 93 94 95 96 97 98 99 100
101 102 103 104 105 106 107 108 109 110

1

2

3

4

Figure S1. The survey form for the 2016 visitor survey in Pallas-Yllästunturi National Park conducted by Metsähallitus – Parks & Wildlife Finland.

Visitor Survey 2016

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QUESTIONS ABOUT SOCIAL MEDIA USAGE (IN ENGLISH)

B1. Are you a member of any social media platform?

○ yes   ○ no (→ you can skip the rest)

B2. Which social media platforms do you use? (select more than one alternative if applicable)

❑ Facebook
❑ Instagram
❑ Twitter
❑ Flickr
❑ other(s), which? _____

B3. Have you shared / Do you intend to share your experiences during this trip on social media?

○ yes   ○ no

B4. Which social media platform would you use for posts from the national park? (select more than one alternative if applicable)

❑ Facebook
❑ Instagram
❑ Twitter
❑ Flickr
❑ other(s), which? _____

B5. Which social media platform would you be most likely to using? (select one alternative)

○ Facebook
○ Instagram
○ Twitter
○ Flickr
○ muu, mikä_____

B6. How often do you share something in social media? (choose the most appropriate alternative)

○ many times a day
○ once every 1-2 days
○ 1-2 times a week
○ more seldom

B7. Do you usually mark the location of your post?
(choose the most appropriate alternative)

○ with coordinates (GPS or similar)
○ with place names
○ with hashtags
○ I don't share
○ I don't know

B8. How do you usually share your posts?
(choose the most appropriate alternative)

○ with friends (limited group) only
○ to everyone, I have a public account
○ it depends on the post /media
○ I don't know

B9. What do you mainly post about in national parks? (select more alternatives if applicable)

❑ weather or seasonality
❑ landscapes
❑ plants or vegetation
❑ animals
❑ landmarks
❑ built environment
❑ own activities (e.g. hiking/skiing)
❑ selfies
❑ other(s), what?_____

B10. What makes you post about your experiences while in nature? (select more than one alternative if applicable)

❑ I liked or enjoyed something
❑ I didn't like something
❑ It was something funny
❑ I expected others to like it
❑ It was easy to spot or take a picture of
❑ It was something well known (land mark, charismatic species)
❑ It was something really rare or exceptional
❑ I wanted to share a feeling
❑ other(s), what?_____

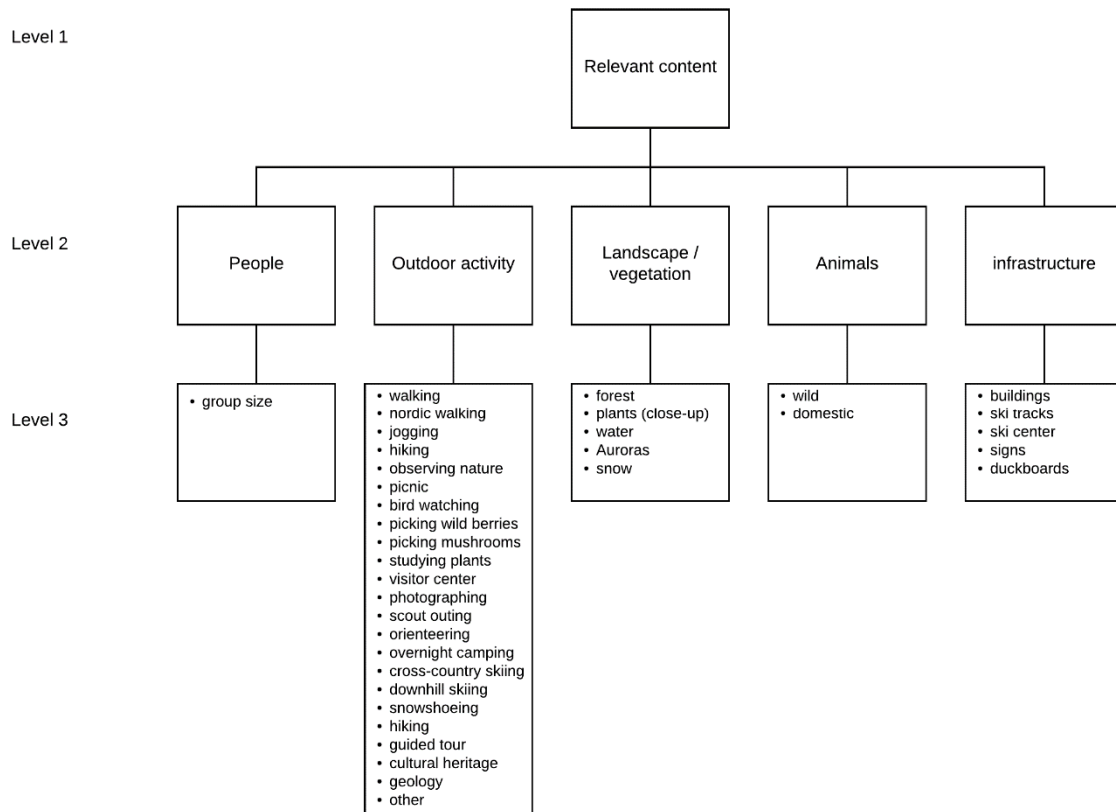**Figure S2.** Questions about social media usage in the visitor survey 2016.

Figure S3. The classification scheme used to classify the pictures from the national park. One picture could be assigned to more than one category at each level.
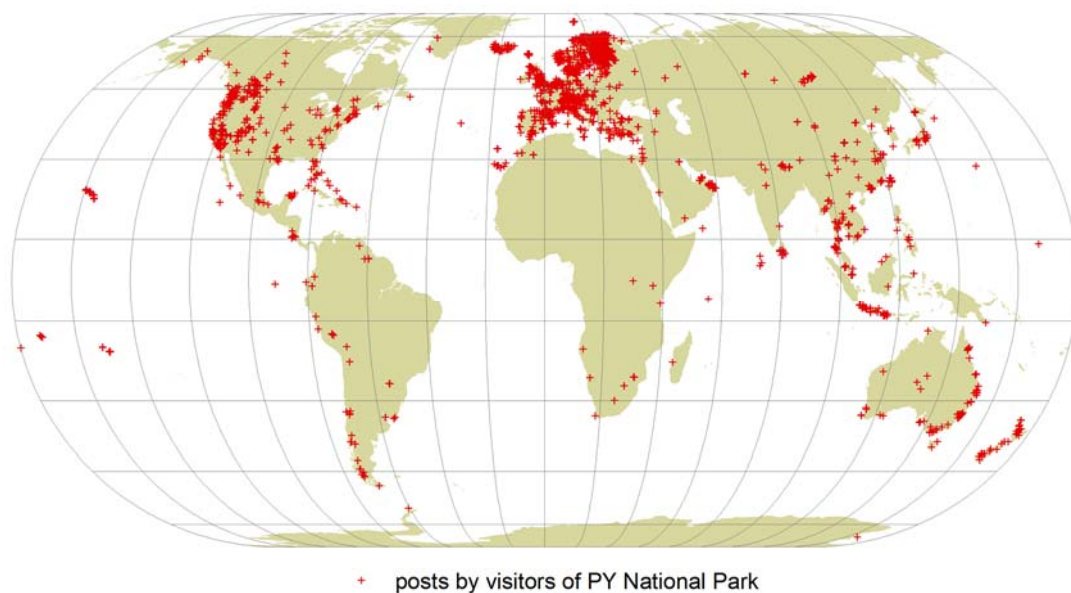

Figure S4. Geographical distribution of all pictures posted by the Instagram users who have posted from PY national park.