How Bilberry Pickers Use Estonian Forests: Implications for Sustaining a Non-Timber Value

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Abstract

Behaviour of people, who consume non-timber forest goods, is an understudied link between sustainable forestry and cultural tradition. We explored relationships between natural bilberry (*Vaccinium myrtillus*) supply and its consumption in Estonia. Based on 53 semi-structured interviews with regular berry-pickers, we modelled their picking site preferences at the landscape scale. The analysis confirmed that those people use clearly delineated picking areas, which constitute a subset of bilberry-rich habitats and are perceived as relatively private information, shared with few people (notably along family lines). Clear-cutting was a major disturbance (60% of respondents had the experience of site loss), while bilberry spread in regenerating forests or after drainage was hardly noticed. Berry-pickers preferred public forests, but had no preference for protected areas. These patterns distinguish spatial modelling of continuous-cover forestry and gap-felling systems in public forests as a basic approach for sustaining national bilberry-gathering tradition.

Keywords: common resource, conifer forest, ecosystem good, multiple-use forestry, rural livelihood, bilberry, non-timber-forest-product

Introduction

Sustainable forest management implies maintaining and enhancing multiple socioeconomic benefits over a long-time frame. Non-timber forest products (NTFP) are any biotic substances, materials or commodities extracted without logging trees (Belcher 2003); they offer both provisioning services and cultural values for a wide range of people (Short Gianotti and Hurley 2016). The economic importance of NTFP is pronounced in underemployed regions and for persons with low income and initial capital (Kangas 2001, Barszcz 2006), thus potentially acting as a safety-net against poverty (Paumgarten 2005). The cultural and recreational values of NTFP are a wider and often socially sensitive issue; e.g. in the Czech Republic these directly affect >80% of the population (Sisak et al. 2016). Although socio-economic development generally decreases the diversity of NTFP gathered (Kalle and Sõukand 2016, Serrasolses et al. 2016), some products, like Nordic berries, have remained popular both in terms of the amounts collected and people involved also in developed countries (Pouta 2006, Maaseutuvirasto 2017).

For reducing timber-harvesting caused damages to NTFP, there has been growing interest in how to involve local people through participatory mapping of forest values or weighing area management scenarios (Hytönen et al. 2002, Carvalho-Ribeiro et al. 2010, Carlsson et al. 2015). However, real-world application of such approaches remains rare and the potential of the participatory approach is unclear (Booth and Halseth 2011). We propose that the gathering behaviour of people offers some important practical insights needed for such applications. One issue is how people use the landscape: their movement patterns in relation to resource availability and depletion, which can be described using optimal foraging models (Venkataraman et al. 2017) and Lévy walks strategies (Raichlen et al. 2014). For such analyses, biological background data are required about the species providing NTFP and the yields, which can be elaborated into predictive models, for instance yield functions in relation to forest type and age (Diaz-Balteiro and Romero 2008, Miina et al. 2010). Another issue is how cultural processes – accumulation and social transmission of knowledge – support the gathering tradition and understanding of the local environment (Reyes-García et al. 2016). These two issues combine when recreational values are added, for example, through individual preferences for certain forest environments (Gundersen and Frivold 2008) or popularity of certain sites (Schägner et al. 2017).

Wild berries and other fruits are among the last wild-collected items to disappear from the diet of modern human societies (Łuczaj and Szymański 2007). In forested

countries, for example in Sweden and Finland, only a small part of the total berry yield available is gathered by humans; this share depends on ecological, social, and economic circumstances, like organised trade, industry and unemployment rate (Sandström et al. 2011, Turtiainen et al. 2011) and, regionally, on population density in relation to accessible forest (Turtiainen et al. 2011, Sisak et al. 2016). Berry-pickers' forest type preferences have been seldom studied but presumably depend both on yield and recreational values (Lindhagen and Hörnsten 2000). From a cultural perspective, family traditions appear as major bodies of knowledge, both about how to use wild berries for food, and where to find them (Kalle and Sõukand 2016).

In the current paper, we focus on bilberry picking in Estonia. Bilberry (*Vaccinium myrtillus*) stands out among other European forest berries because of its nutrient and health-beneficial properties, which has brought about a good reputation, higher price and a global market (Zoratti et al. 2016). In Estonia, wild berries are gathered both for commercial purposes, for self-consumption, and as a leisure activity; they have been also exported at least since the 19th century (Bardone and Pungas-Kohv 2017). In the 1990s, American blueberries were introduced to the Estonian agri- and horticulturists (Starast et al. 2009), but the wild bilberry has maintained its importance, also in the exports, at least until recent years (Rim 2016). According to one estimate, 30%–50% of annual yield is being collected (Paal 1999).

We expand the knowledge on the forest management sensitivity of the bilberry (Reinikainen et al. 2000, Hedwall et al. 2013, Lõhmus and Remm 2017) to a question of how bilberry pickers behaviourally address the resulting spatial and temporal variation in berry supply. By means of interviews and GIS analyses, we answered three questions as follows: (i) what makes a good bilberry-site – how do pickers' subjective habitat preferences combine with the ecological range of bilberry? (ii) how do the berry-pickers perceive and respond to forest management (which presumably causes both picking-site losses and gains) in the field; (iii) to what extent can berry-pickers adjust their behaviour to changing forest landscape – how do they obtain information on sites and changes, and does conservatism to certain sites restrict such adaptability? We interpret these results for a planning framework that could sustain NTFP in the forest landscape, with a critical focus on the participation process.

Material and Methods

Study region

The study was carried out in mainland Estonia, which is a lowland country in the non-oceanic section of the European hemiboreal vegetation zone. The mean air temperature is 15 °C in July and –5 °C in January and the average precipitation is 680 mm yr^{-1}. Estonia's forest lands (51% of land cover) are allocated among three main management regimes: 75% are production forests (mostly managed using clear-cutting), 12% are strictly protected for biodiversity, and 13% are jointly managed for timber and various environmental values (Estonian Environmental Agency 2017). Most bilberry-rich forests grow on Podzols as well as on nutrient-poor paludified and peat soils (Lõhmus 1984, Lõhmus and Remm 2017); silviculture modifies this distribution mostly through a negative impact of clear-cutting (particularly on Podzols) and a positive impact of artificial drainage on nutrient-poor peatlands (Lõhmus and Remm 2017). During the last 25 years, the forest area that is clear-cut annually has increased more than 10-fold (Estonian Environmental Agency 2016), which has increased fragmentation of forest stands despite an extensive area of forest land (Forest Europe 2015).

Data collection

Data were derived from 53 semi-structured interviews conducted face-to-face, by telephone, Skype or e-mail with the consent of the participants. The sample (Table 1) was restricted to Estonian-speaking regular bilberry-pickers (at least 10 years of experience in most cases), and the main geographical region of inquiry was southern Estonia (Figure 1). We used availability sam-

Table 1. Characteristics of the sample of respondents, with a comparison of two motivation groups (gathering only for self-consumption or also for selling)

	Self-consumption	Selling	Statistic	*p* value
Percent of males (sample size)	18 (28)	31 (26)	*Fisher exact test*	0.3
Age (mean; SD)	51; 14	54; 13	$t_{N52} = 2.1$	0.043
Monthly income (euros, mean; SD)[a]	566; 386	430; 256	$t_{N46} = 3.1$	0.003[b]
Percent of rural residence (sample size)	79 (28)	88 (26)	*Fisher exact test*	0.5
Rake usage (sample size)	50 (28)	80 (25)	*Fisher exact test*	0.043
Distance to gathering site (median; quartiles)[c]	9; 3.5–22	5.8; 2.6–11	MWU $Z_{N46} = 1.6$	0.1
Typical annual yield (kg, median; quartiles)	8; 6–15	78; 37–210	MWU $Z_{N46} = 3.2$	0.001 [b]

[a] from other sources than NTFP gathering
[b] Significant difference after Bonferroni correction
[c] For each person the mean of all sites was used

pling (Newing et al. 2010) – searching for the participants in virtual and real places where berry-pickers gather: at market-places, wholesale buyers, local shops, relevant Facebook groups and networks provided by other participants. There are no studies available on the Estonian population of regular bilberry-pickers, but our main question (behaviour of individuals in relation to their environment) did not critically require random sampling within the population.

The interviews were performed from August to October 2017. Answering every question was not required; therefore, sample sizes vary depending on the question. The interview contained four sets of questions; an average oral interview took 30 minutes (see Appendix). The first set (general customs) involved questions about the motivation for berry-gathering, travelling means and picking techniques. The second set of questions specified the amounts and factors of annual harvests and economic profit. In the third set (behaviour in the landscape), the participants were asked to show their favourite sites on the map (zoomable to 1:10 000 scale) or, in case of persons less comfortable with maps, to describe explicitly how they reach their sites. In addition, we recorded the places that the respondent had abandoned or found newly emerged, and asked about the reasons. This set also included questions on site searching (information sources; actions after abandoning a site). The interview ended with formal questions about the respondent's age and income amount. Confidentiality was maintained throughout and the data were depersonalized before analyses.

In the study year 2017, the feedback from gatherers indicated a modest bilberry yield (see Results; no official monitoring available). The likely factors reducing the yield were frost nights, uncommonly cold and dry weather in May during the flowering of bilberry, and the preceding warm winter (Nestby et al. 2011, Estonian Weather Service 2017).

Data analysis

We performed three sets of analyses. First, we used conventional tests to compare two respondent groups: those gathering only for self-consumption and those who at least in some years also gathered for selling. In addition to sample description, this comparison addressed questions of activity range (travelling distance to gathering sites).

Secondly, we performed landscape analyses based on circular areas around the starting place of each picker, with a radius equal to the distance to his/her most distant gathering site (Figure 1). In those reference circles, we omitted areas >1 km from a drivable road based on typical gathering sites (see Results; calculated using 50 random points per gathering site). We used official GIS

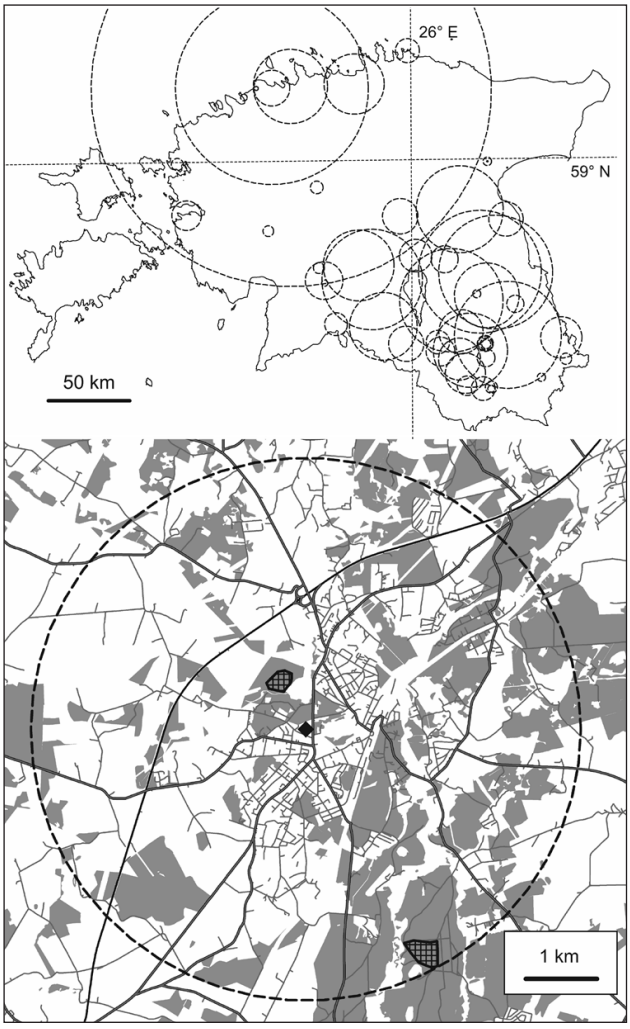

Figure 1. The principle of delineating a reference circle based on starting place (home; rhomb) and two gathering sites (checkered) on the background of forests and roads. Below: location of the reference circles analysed in this study in Estonia

data provided by the Land Board and the Environmental Agency (Estonian base map; National Forest Register; Nature Register). These analyses included those 47 pickers who agreed to show us their gathering sites.

(i) We described the pickers' habitat preferences in relation to the ecological range of bilberry based on forest types. Technically, we determined the preference (y) of j-th picker for forest site type i (*sensu* Lõhmus 1984) as the standardised difference of the type's areal proportion in the reference circle (r_{ij}) and in gathering sites (g_{ij}): $y_{ij} = (g_{ij} - r_{ij})/r_{ij}$. We tested whether those preferences differ from zero (single sample Wilcoxon tests). For each person, we left out those site types not represented in the reference circles and thus also in gathering sites. Then, using Wilcoxon matched pairs test, we asked whether the pickers' preferences vary among bil-

berry rich forests. For that, we compared the y-values between two site types that have similarly high mean bilberry cover (Lõhmus 1984, Lõhmus and Remm 2017) but contrasting environment: *Vaccinium myrtillus* site types on mineral and drained peat soils.

(ii) To test whether berry-pickers have land tenure preferences (x_j), we subtracted the proportion of state forests in their gathering sites from the proportion in reference circle and divided them into two groups: preference for state forests ($x > 0$) and for private forests ($x < 0$). We tested for difference from parity using two-tailed G-test of goodness of fit.

(iii) We also calculated revised preference (x_j) to establish whether the tenure preference grouping was affected by larger relative area of preferred site types (*Vaccinium vitis-idaea*, *Oxalis-Vaccinium vitis-idea, Vaccinium myrtillus*, mesotrophic and oligotrophic bog; see Results) in state (s_j) than in private (p_j) lands in the reference circles: $x_j = x_j - (s_j - p_j)$.

(iv) Analogously to (ii), but applying one-tailed G-test, we tested for pickers' preference for protected areas. The reference circles containing only one tenure or protection type were excluded from the analysis.

(v) We explored the minimal age of the good bilberry sites using forest data from the gathering sites of the 14 pickers who delineated their gathering sites at the accuracy of forest stands.

(vi) We investigated whether the gathering sites that respondents had abandoned due to forest management in the last ten years lacked any formal protection.

Thirdly, through qualitative data analysis, we categorized the causes of site abandonment, emergence of bilberry in new areas, and skipping gathering in some years.

Results

In addition to bilberries, all 53 respondents gathered also other berries and mushrooms. Half (26) of them had sold, at least in some years, a part of their bilberry yield; five more persons considered berry picking as an economic alternative should their current income disappear. The pickers selling bilberries had lower incomes and gathered larger yields (Table 1). Yearly earnings from selling bilberries ranged from 50 to 1500 euros, but that was reported to vary greatly among years and be combined with earnings from other NTFP.

The median area of gathering sites (N = 136; up to nine sites shown by one person) was 25 ha. The travel distances to the sites followed a distance-decay distribution and the sites >5 km away were not accessed by foot and bicycle (Figure 2). Only three of 47 respondents accessed sites >1 km from the closest drivable road. Forty-two respondents specified how they had found

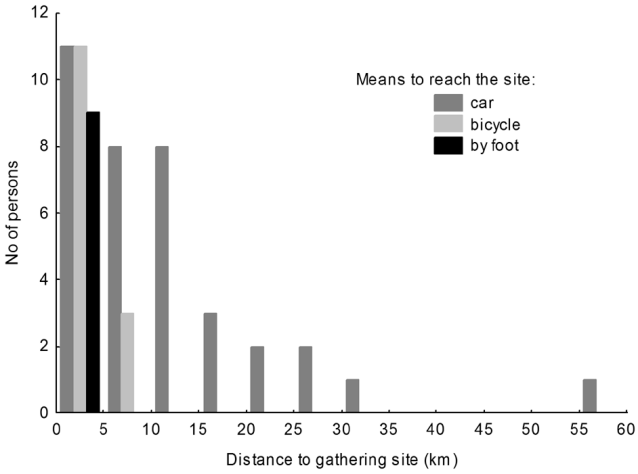

Figure 2. Distribution of median distances (shortest-line) of gathering sites from the starting place (home) of the berry pickers. Those eleven persons who reported several means for reaching the sites are represented repeatedly

their sites: 74% had found at least one site themselves, 45% had used community knowledge (friends and acquaintances) and 38% family knowledge.

The bilberry pickers preferred the following site types (median $y > 0$; in the first three $p < 0.05$): *Vaccinium vitis-idaea* boreal, *Oxalis-Vaccinium vitis-idea* boreal, oligotrophic and mesotrophic bog and *Vaccinium myrtillus* boreal forests (Figure 3). *Vaccinium myrtillus* boreal forest (on mineral soil) was significantly preferred over its analogue on drained peat ($y = 0.1$ and $y = -0.8$ respectively; Mann-Whitney U-test: $Z_{44} = 2.8$, $p = 0.005$). Those preferences did not closely follow optimal habitats of the plant: among boreal forests, the site types most preferred for picking were drier than the bilberry optimum in *Vaccinium myrtillus* type; in wetlands, natural bog forests were preferred more than drained peatlands (Figure 3). The pickers preferred state forests, even after accounting for the distribution of the preferred site types (exact binomial two-tailed test: $p < 0.001$, $N = 47$), but they did not prefer protected forests ($p = 0.9$, $N = 46$). Only three persons picked bilberries in their own forest.

Ninety-five percent of the picking area was >45 years-old forest (assessed based on 1977 random points in the sites of 14 respondents who delineated the sites at stand-level accuracy). The yield in 2017 was evaluated as poor by 52% of 50 respondents, moderate by 10%, good by 14% and "good in certain places" by 24%. Eight respondents specified "certain places": these were always paludified or mire areas, and two respondents proposed that the plants had escaped spring frosts in those low-laying areas thanks to later flowering.

Over two thirds of the respondents had abandoned a gathering site during the past ten years (Figure 4), usually because timber harvesting had damaged the site (sun shock, scarification, and tractor movements being mentioned as

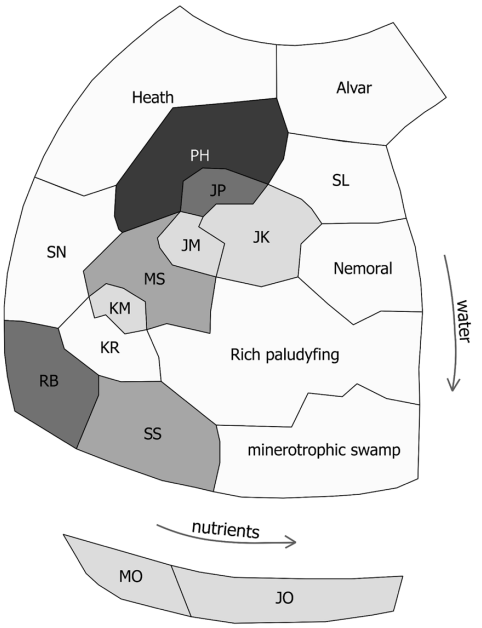

Figure 3. Site type preferences (areal proportion in picking sites compared to surroundings; darker grey indicates higher preference) of bilberry pickers on the ordination schema of Estonian forest site types (simplified from Lõhmus 1984). PH – *Vaccinium vitis-idaea* boreal, JP – *Oxalis-Vaccinium vitis-idea* boreal, JM – *Oxalis-Vaccinium myrtillus* boreal, MS – *Vaccinium myrtillus* boreal, KM – *Polytrichum-Vaccinium myrtillus* boreal, SL – *Hepatica* boreo-nemoral, JK – *Oxalis* boreo-nemoral, SN – *Vaccinium uliginosum* poor paludified, KR – *Polytrichum* poor paludified, RB – Oligotrophic bog, SS – Mesotrophic bog, MO – *Vaccinium myrtillus* drained peatland, JO – *Oxalis* drained peatland. For uniformly unpreferred site type groups only the group name is shown

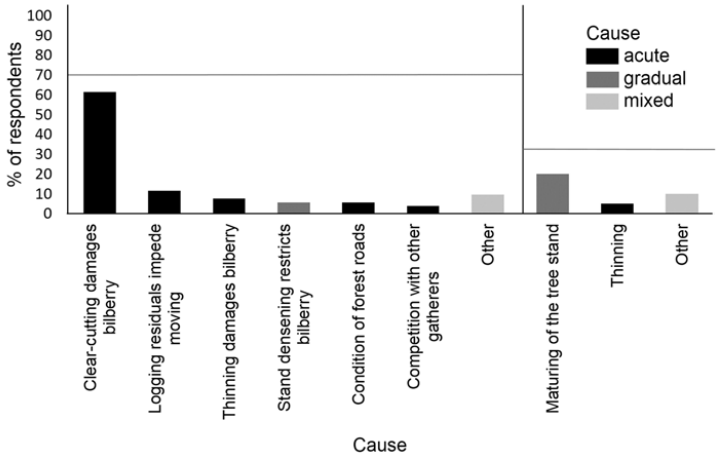

Figure 4. Perceived causes of bilberry dynamics among respondents who had experienced losses and gains of sites suitable for bilberry picking. Horizontal lines mark total share of respondents who had abandoned sites (left from the dashed line, total number of respondents = 52) and of those that had noticed bilberry emergence at new sites (on the right, total number of respondents = 40). Proportions are not additive as some respondents mentioned several factors. The category 'other' includes three different reasons for losses and also three for gains

plausible mechanisms). In production forests, 42% of 66 sites listed were wholly or in a large part abandoned for that reason; no harvesting-caused abandonment took place in the 28 protected sites. After such abandonment, the respondents had not skipped the season but either searched for new places (typically farther away) or stayed on the rest of their sites. For skipping a season, the main reasons were a lack of berries (attributed to weather conditions) and a lack of time; clear-cutting was mentioned only once. Competition with other pickers rarely caused site replacement (Figure 4) and no picker considered it a problem.

A minority of respondents had noticed bilberry emergence in new areas, mostly along with stand aging (Figure 4). The plant's spread after drainage and a favourable effect of thinning in drained bog-margin forests were each mentioned once. Taken together, the pickers' observations on gains and losses converged into two main implications for bilberry-friendly timber harvesting: (1) reduce ground scarification and damage by harvesting machinery, i.e., harvest on frozen ground or using chainsaws and light forwarders, (2) replace clear-cutting with partial cutting (one respondent reported picking under a 15-m wide power-line; two respondents mentioned good yield at clear-cut verges).

Discussion

This study documented a persisting culture of NTFP gathering in a developed country, where regular berry-pickers used mostly well accessible, long-term picking sites in public forests. Importantly, the Estonian pickers treated their knowledge of the sites (location, access, phenology etc.) as intellectual property and shared it with few people only (notably along family lines). In such society, the production forestry that degrades wild berry populations can not only reduce the related income of the people but also conflict with an important source of their cultural identity and diversity. These findings imply a necessity to maintain wild bilberry supply through special planning procedures that would retain the personal connections with particular sites.

Spatial approaches to multi-objective forest planning have been commonly based on voting or bidding techniques (Kangas et al. 2006), but the documented private nature of the berry-pickers' knowledge does not favour such open participatory approach. Instead, we

suggest that the planning could start from spatial modelling of good bilberry sites, using forest type and accessibility preferences established from a representative sample of berry pickers. Simple population density near forests may not be sufficient for such a model, because berries are often gathered far from the place of residence (e.g., near summer cottages) and berry-picking is relatively more frequent among rural residents. Thus, the priority areas are forest rich regions with dispersed villages, farms and summer cottages (see also Pouta et al. 2006), and forests close to cities.

Another critical piece of information in Estonia was the pickers' preference for state forests. The reason for that is unclear, as the right for everyone to pick berries applies both in state-owned and private forests. Nevertheless, such preference specifies both the focus and the approach, since most Estonian state forests are managed by a single company, the State Forest Management Centre, which holds the Forest Stewardship Council and organic food certificates. Importantly, there seems to be a gap of knowledge in how to promote the effectiveness of certification schemes for sustaining NTFP. In high-income, densely populated regions, trading platforms can be developed where beneficiaries contract with landowners for their continued provisioning of NTFP (Ansink and Bouma 2015). However, this is not yet a viable option in Estonia where berry-picking remains most important for low-income people.

Our analysis of forest types confirmed the hypothesis that berry-pickers restrict their selection of bilberry-rich sites based on additional criteria (Lõhmus and Remm 2017). Three interesting patterns were revealed. First, ecologically distinct optimal site types (on dry-moist mineral soil vs. natural mire forests; Figure 3) enabled experienced pickers to switch between those environments depending on the yield in the particular year. Similar spatio-temporal adaptability has been described among Finnish pickers (Salo 1984). Secondly, the preference for dry boreal forest suggests that movement ease and landscape aesthetics are important factors, especially for recreational gatherers (Cai et al. 2011). And thirdly, despite that draining generally increases bilberry cover (Lõhmus and Remm 2017), the respondents preferred natural bog forests over drained peatlands and only one respondent mentioned a positive drainage impact. Explanations to that pattern include that drainage increases the average cover but may not create really berry-rich patches (see also Turtiainen et al. 2007). Such high-yield places, comparable to mineral soil forests (Turtiainen et al. 2005, Turtiainen et al. 2007), can instead be found in certain undrained sites, e.g. at bog verges and mire patches in moraine-uplands. It is also possible that the division between natural and drained forests in the Estonian typology (Lõhmus 1984) does not reflect well the fact that the bilberry-favouring effect of drainage is limited to early phases of post-drainage succession or relatively weak impact (Sarasto 1961). Such increased-yield sites may be partly categorized as 'natural' bog forests, while many 'drained' forests have already dense woody vegetation and eutrophicated soil that inhibit bilberry growth.

The interviews revealed that berry-pickers often lose picking sites due to clear-cutting – events that can lead to landscape level decrease of bilberry in the long term (Hedwall et al. 2013). Due to sampling only active gatherers, we do not know the share of people who might have stopped gathering at all. Some of the respondents, however, told that they gather less nowadays or do not gather for selling anymore because of clear-cuttings. Importantly, the respondents reflected on strong site-attachment and that searching for new sites is time-consuming and increases travelling distances from home. These effects imply that bilberry-pickers cannot closely track bilberry regeneration on dynamic landscapes, and thus they may experience supply reduction even if total berry abundance does not decline. Such processes remain to be studied explicitly. We also acknowledge that not all timber harvesting is detrimental for bilberry yield; for example, the respondents noticed good yields near edges or small openings, which may be related to more abundant pollinators there (Nousiainen 1983). Group selection cutting (ca. 20 × 20 m cutovers) may ensure both regeneration of the pine (Zdors and Donis 2017) and better condition of bilberry than in clear-cuts (Vanha-Majamaa et al. 2017); such areas would be probably acceptable also aesthetically (Lindhagen 1996). In contrast to clear-cutting, neither competition with other pickers nor the widespread rake usage appeared to pose problems (see also Manninen and Peltola 2013).

The fact that berry-pickers did not prefer protected areas, although bilberry abundance is stable in intact forests (Lõhmus and Remm 2017), refers to an unused potential of multi-purpose reserves. For example, regional management plans of Estonian state forests include calculations of timber incomes lost due to forest protection but no assessment of the values gained. Specifically, effectiveness of microreserves for the Capercaillie (*Tetrao urogallus*) has recently been questioned in Estonia (Oja et al. 2018); however, an overall assessment might change when considering that these habitats are often rich in bilberry and well accessible for humans. In these and other protected areas, informing wider public about berry-picking opportunities could help them to find stable sites. This would mitigate the problem that people know their picking sites based on the past value (i.e. family or community information or own experience) but they cannot account for the future.

Conclusions

The gathering behaviour of people provides important insights into how NTFP should be managed in sustainable forestry. In Estonia, it highlights the importance of a stable network of berry-picking sites, which could be achieved through better spatial planning of set-asides and continuous-cover forestry as well as information sharing about the access to the sites. The spatial prioritisation of sites can be modelled based on the preferences of a sample of berry-pickers in the target region.

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Appendix

Interview guide

Study on the preferences and observations of bilberry pickers
Conservation Biology Research Group, University of Tartu
Translated from Estonian

Neither geographical nor personal data will be imparted; the data are used in order to make generalizations to answer the study question. Your answers will be resorted anonymously in data analysis and citations. By answering the following questions, you will give a permission to use this information for the research. All questions are voluntary – if you prefer not to answer a particular question, skip it. Please write your answers right next to the questions. If you need more instruction or you prefer an oral interview, please call [phone number], find me by my name on Skype or share your own contacts.

Respondent: Interviewer: Date:

First part

- What motivates you to gather bilberries?
- Do you gather other forest products? What products?
- Do you gather bilberries by hand or use a rake?
- Where is your place of residence (countryside or town)?
- How do you head to the gathering site (by foot, bicycle, car, public transport)?
- How do you move in the gathering site – how long distances do you move in the forest? Do you switch gathering sites within one day?
- For how many years have you been gathering bilberries?

Second part

- How much bilberries (kilograms or litres) do you usually gather annually (in the past 10 years)? How much of that for selling?
- How much did you gather in this year? How much of that for selling?
- How much do you earn from bilberries (euros per year)? Please describe, how much time the process takes.
- How much time it takes to gather 1 kilogram of bilberries?
- Would you consider gathering bilberries as an economical alternative in a situation where you lost your current main income?
- Have you skipped gathering any years in the last decade? Why?
- How do you describe the yield of this year?
- What factors have you noticed to influence the yield?

Third part

- Where are your favourite gathering sites? Please show, or mark on the internet map [*link with detailed instructions*]. For each site:
  - o When was your most recent visit?
  - o Please show the place from where you start moving to gathering areas on the map (home, country cottage etc.)
  - o Did you find the site by yourself or obtained the information from someone else (family, community, friend)?
  - o In case you would prefer not to show your sites or home, the distance between starting place and gathering site would also be valuable information.
- Have you had to abandon any gathering sites (fully or partly) in last 10 years? Why? What have you done then?
- Have you noticed bilberry appearance in new areas? What do you think might be the reason?

Formal questions

- Age
- Monthly income (net)
- Marital status (single/(common-law) marriage/parent/grandparent)

Are you willing to answer to the possible additional questions?
Additional remarks