
This is the **accepted version** of the journal article:

Volinia, Penelope; Mattalia, Giulia; Pieroni, Andrea. «Foraging Educators as Vectors of Environmental Knowledge in Europe». *Journal of Ethnobiology*, Vol. 44, Issue 3 (September 2024) p. 234-246. DOI 10.1177/02780771241261225

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Foraging educators as vectors of environmental knowledge in Europe

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Widely accessible education on edible wild plants is increasingly in demand as more people search for ways to explore wild culinary uses. Despite this growing trend of nature exploration, few scholars have investigated the contribution of this new mode of engagement to human-nature connection and pro-environmental attitudes. Therefore, this research aims to explore the societal role of such foraging educators. Through convenience and snowball sampling, we recruited 31 foraging educators across Europe. Through semi-structured interviews, we inquired about their sources of knowledge, modalities of transmission and their roles as educators. The interviews revealed individuals who convey ethnobotanical knowledge to improve human-nature connection through experiences within nature. The educators gained their knowledge through written sources, vertical and horizontal sharing. Finally, foraging educators consider themselves social bridges of ecological knowledge, bringing scientific ethnobotanical information to a varied audience in an experiential way. Foraging stimulates the sharing of ecological knowledge, and it could be seen as a broader agroecological practice, enhancing the benefits of nature's contribution to people. There is great potential for emerging environmental education platforms and, correspondingly, for rethinking the food system.

Keywords: ethnobotany; environmental education; human-nature connection; local ecological knowledge; wild edible plants

Introduction

Foraging has been a major contributor to household food security for millennia. Over 12,000 years ago agriculture gradually emerged in the Fertile Crescent resulting in a shift from foraging to farming. However, some wild foods, especially weeds and wild plants growing in anthropogenic environments, not only continued to be consumed (Mabey, 1972) but became more crucial in daily diets and domestic medicines (Stepp & Moerman, 2001).

In the European context, the major socio-economic changes of the last century following WWII led to a rapid decrease in the reliance on wild foods (Benton & Bailey, 2019). Indeed, industrialisation and increased urbanisation resulted in a decrease in the knowledge of wild food foraging and transformation (Łuczaj et al., 2021). In some contexts, foraging even became a taboo practice that disadvantaged inhabitants chose to adopt because of their lack of economic resources (Mattalia et al., 2020). The abandonment of the foraging of wild foods led to the erosion of the local ecological knowledge related to them. Nevertheless, over the last decades, we have observed increased interest in foraging as a recreational activity, including walks and workshops, and the publication of popular books and apps for plant identification and recipes (Łuczaj et al., 2021). All these occurrences are inspiring a movement to recover traditional plant knowledge.

Indeed, the transmission of ecological knowledge can prevent or slow down such biocultural erosion. Van den Boog et al. (2017) categorised the dynamics of local ecological knowledge transmission between generations in three ways: vertical (e.g., from parents to children), horizontal (among people of the same generation, e.g., friends, and neighbours) and oblique (between people of different generations not belonging to the same family, e.g., elderly individuals of the village). In recent times, oral transmission between generations has been flanked by other typologies of transmission such as written or other media sources (e.g., video), mixing the layers of knowledge in space and time (Mattalia et al., 2020). Vertically transmitted ecological knowledge is now blended with exogenous scholarly knowledge from books and new knowledge derived from mass media (Łuczaj et al., 2021).

Wild food workshops, foraging walks, popular literature, and social media are playing an increasingly important role in the transmission of local ethnobotanical knowledge (LEK). Education on the use of edible wild plants is increasingly in demand (Bramley, 2021; Horton, 2023), while (urban) citizens are searching for ways to explore nature and its primal tastes. Despite this growing trend of nature exploration, few scholars have investigated the contribution of this new role, and the literature is almost non-existent. Studies specifically addressing ethnobotanical educators have not been conducted, possibly due to the recent emergence of this phenomenon. Indeed, more research on cultural transmission has focused on the dynamics of how LEK is transmitted (Mattalia et al., 2020; Mattalia et al., 2021; McMillen, 2012). Finally, Łuczaj et al. (2021) pointed out that in Europe there is homogeneity in the origin of sources forming a “new tradition” that is partly based on European traditions but modified by influences from other countries and cultures, both in terms of the choice of species and processing techniques. An increased amount of people is

starting to share ethnobotanical knowledge, through various strategies including social media including Youtube, Instagram, and Facebook. For instance, Valeria Mosca is an Italian forager followed by over 72000 people on Instagram where she shares her research and foraging activities. Similarly, in the UK, “Foraged by Fern” has a large online community (>110k) interested in foraging of wild plants and fungi. However, they offer mainly in-site foraging courses and consultancy. While these emerging “social” figures have not been yet studied, Grivins (2021) attempted a classification of foragers from a sociological perspective, employing two theoretical dimensions: motivation and knowledge. These variables were used to identify four subgroups of foragers: rooted, lifestyle, subsistence, and commercial foragers, based on his research on foragers in Latvia. In another research, Jong & Varley (2017) wrote about foraging workshops as tools for sustainable tourism. Other scholars have been specifically interested in urban foraging and the positive effects that it can have, such as improved public physical and psychological health, a sense of place, increased ecological knowledge, stronger connections with nature, food, income or cash saving, and a source of pride (Shackleton et al., 2017; Plieninger et al, 2015; McLain et al., 2014; Poe et al., 2014).

However, the relevance of foraging in contemporary environmental platforms seems to be growing for a variety of reasons: a) foraging citizens can develop a greater appreciation for the natural world and the resources it provides, gaining a deeper understanding of the interconnectedness of ecosystems and the importance of preserving biodiversity (Poe et al, 2014); b) foraging can promote sustainable practices and reduce waste. Citizens can reduce their reliance on industrial agriculture and processed foods, which can have negative environmental impacts such as deforestation, water pollution and greenhouse gas emissions (Aziz et al, 2022); and c) foraging can provide opportunities for cultural and historical learning, and communities could gain a deeper understanding of the connections between food, culture, and the environment (Lee, 2012).

Therefore, the main objective of this study was to explore the societal role of such forager educators with public outreach in Europe and specifically:

- (1) to characterise foraging educators,
- (2) to describe the modalities of knowledge acquisition and transmission, and
- (3) to define their role as educators.

Materials and Methods

Data collection

Thirty-one semi-structured interviews with foraging educators were conducted between September and December 2022 (see Appendix for demographics). Twenty-one of these were conducted in Italian and ten in English. All the interviews were carried out via (Zoom) calls, apart from one in-person interview, because of the geographical distance of all the interviewees.

We selected foraging practitioners who have public outreach and regularly organize public events. These individuals were selected through convenient sampling, and then snowball sampling was applied by asking the interviewees for references. We first reached out to foragers and people that we knew through their Instagram accounts on foraging, their work or mutual friends. Interviews lasted around 50 minutes. As the conversations unfolded the informants were invited to freely digress into open narratives, creating a dialogue that kept them engaged and made them interested in the research itself. We documented their sources of knowledge and how they transmit their knowledge during in-person events (*Where does your knowledge in ethnobotany come from? Who did you learn from? What kind of information do you convey to attendees during the events? Where are your events organised?*). Lastly, we assessed their emic view of their work as intermediate vectors of knowledge by asking the question: “*Why is sharing ethnobotanical knowledge necessary and important?*”.

Data Analysis

We transcribed the interviews with the help of an automatic transcription service and the Microsoft 365 Word transcribe tool, double-checking all the interviews. We organised the gathered information in an Excel sheet, translating it into English for easier comparison. The data were organised into columns: interview code, mode of contact, nationality (Italian or non-Italian), job, types of events, sources of knowledge, duration of the events, where the events are organised, type of information shared, relevance of their activity, reasons for the transmission strategy

We recorded seven sources of knowledge among the foragers interviewed: vertical transmission (parents/grandparents), books, horizontal knowledge (colleagues/peers/friends), in-person and online courses, experimentation, old tradition, and social media. We divided the different sources that participants mentioned to equal a sum of 1. For example, if an informant used 4 sources, each would be assigned 0.25. We proceeded to ask what type of forager they were, based on the definition they gave themselves; and what type of events they conducted.

Finally, per each interviewee, we checked their content and followers on three popular social media websites (Instagram, Facebook and YouTube).

Demographic data on the sample

Out of the 31 interviewees, 11 were male and 20 were female. The average age of the interviewees was 36 years old, with 10 people in their 20s, 10 people in their 30s, 9 people in their 40s and 3 people between the ages of 50 and 62. The minimum age in the group was 25 years, the maximum age was 62 years.

Study Limitations Statement

Our sample was composed of 19 people of Italian nationality and 12 people from other areas of Europe including the Netherlands, France, Switzerland, the UK, Austria and Poland. Although this sample is dominated by Italian participants, some of them have international curricula, with experiences in different European countries, thus they expressed a feeling of belonging to the European foraging community. For instance, among our interviewees five Italians work also in other European countries, and six European foragers work in Italy. This sense of European community may also be due to the average age of the foragers which have grown in an interconnected European society (much more than previous generations). Nevertheless, we acknowledge the cultural differences among and with the various European countries and the uniqueness of every forager curriculum. Finally, we note that our results cannot be easily extrapolated to other cultural contexts and need to be interpreted in the light of a limited and not geographically homogenous sample.

Results

Characteristics of the foraging educators

Of the 31 interviewees, 11 are primarily full-time foragers, six are cooks, five are designers and artists, and three are farmers. The last six informants have complex professional profiles, working in ethnobotanical education, but without common background or modality.

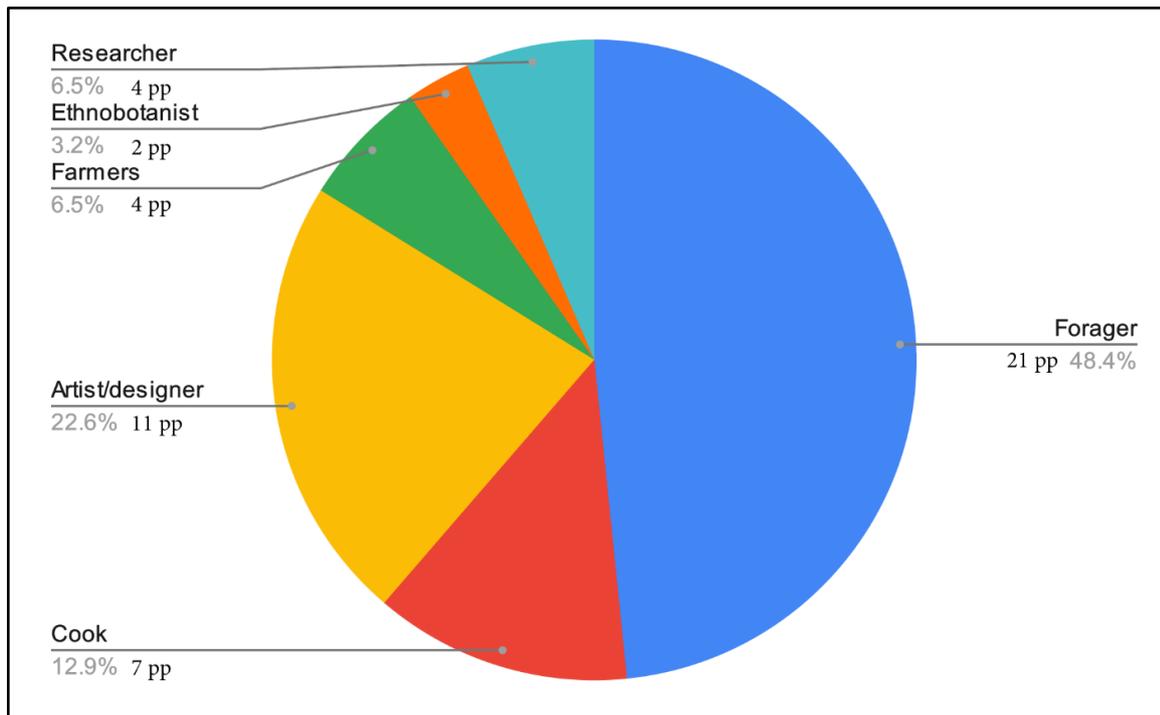


Fig 1: Employment of the interviewees (pp = people).

Eleven interviewees are full-time foragers, meaning that they harvest professionally for commercial use, and they organise and lead walks, events, and workshops where they share LEK.

The six people in the cook group are all trained chefs who hold extensive knowledge of wild edible plants and their culinary uses. Instead of sharing this knowledge through words, they find preparing dishes and practical workshops to be better mediums. These cooks work in the restaurant business, where they bring their knowledge as an added value to their professional role. Moreover, professional full-time foragers often gather wild edible foods for restaurants, as well as give advice and coaching sessions to kitchen staff.

The five designers working with LEK organise workshops, exhibitions, and dinners where they share their knowledge through embodied experiences stimulating socially active environments. For some of them, foraging has been a part of their artistic practice and has contributed to finding new ways of learning and unlearning aspects of nature.

Three interviewees are full-time farmers with a passion for wild plants. They realised that their enthusiasm for foraging was not common knowledge and so they started to organise foraging walks and feasts for residents, and the tourists that come to their areas.

All these people are constantly studying and deepening their knowledge of wild plants for, mainly, culinary uses. As they constantly study to develop their insight into the world of wild

edibles, they are all embracing their work of sharing knowledge. The overall aim of this population is to socially interact with the public to co-create an experience with wild plants and their culinary uses.

Sharing knowledge is at the core of what several interviewees (n=7) do. Sometimes it was related to the importance of personal childhood memories, while other times it was linked to the fact that plant knowledge is being lost. Foragers share culturally specific foraging practices but also teach what other traditions bring from different places . Being a bridge for information between the past and present, between one culture and another. Possibly, the sharing of cultural knowledge must be done in an immersive way. Through walks, workshops, and well-rounded experiences, they favour a modality where embodied knowledge is purposely a significant part.

“... people love the connection, love the knowledge, they love to rediscover. And this hands-on learning is very important because it’s like how we learn in traditional society. A lot of people are unable to learn this knowledge from books” (L.L.).

There is a willingness to share as much as possible, and search, through experimentation, the right channels that are economical and logistically accessible, and not just by the elite. There is a need for translating this information to be understandable and approachable today, to make it as inclusive as possible. Six interviewees warned about the hazard that comes from learning about plants from books, while four foragers mentioned that you learned faster and safer from people.

Sources of knowledge among foraging educators

The sources of knowledge of the educators interviewed included written sources (24.1%), colleagues (17.3%), relatives (parents and grandparents, 16.2%), personal experimentation (14.4%), courses (including walks, 10.8%), oblique transmission (10.4%) and social media (6.8%).

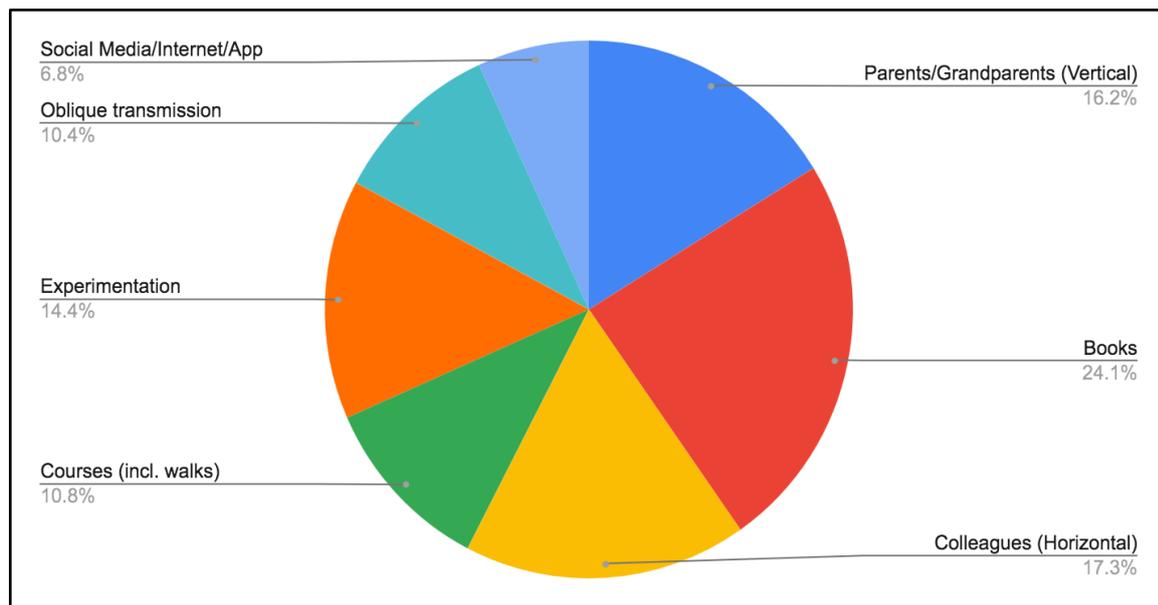


Fig 2: Sources of knowledge.

Written sources: books and articles

The largest source of knowledge mentioned by our interviewees were books (see Appendix), which represented a starting point for delving deeper into the field. Other forms of printed references were mentioned by informants with academic backgrounds, from botanical articles to papers and academic books on botany and ethnobotany. An interviewee underlined how difficult and slow learning from books is, compared to learning from people:

“I learned from books, but learning from them is much slower. Because most books don’t give you the young plant in the picture. And if someone shows you a plant, it’s much easier” (M.B.).

Institutionalised horizontal knowledge transmission: in-person courses

The second most common source of knowledge among our interviewees was horizontal knowledge transmission between colleagues. This means that one of the best sources of information for the interviewees comes from exchanges of knowledge between groups of foragers and through specific courses on the uses of wild plants. Many professional courses were mentioned, from the environmental hiking guide with AIGAE to herbal medicine courses at Istituto Alta Formazione and the Academy of Herbal Arts, both in Rome, to traditional herbal and botanical medicine courses at the Plant Medicine School based in Ireland.

Learning by doing: intuitive learning in foraging (experimentation)

Sixteen interviewees emphasised the importance of going out into nature and exploring, with time and human intuition. Embodied knowledge and inter-social dialogue were key concepts of these conversations. One interviewee reported this process as a rebellion:

“Learning how to learn and unlearning how we have been educated through the dominant culture” (S.R.P.).

Another interviewee expressed that plants were their very first teachers and stressed the importance of spending time outside, walking and observing.

Vertical knowledge acquisition (during childhood)

Vertical knowledge transmission was mentioned by 17 interviewees: for example:

“Foraging at home with my mum was really a habit, something one does, like going shopping. I started very early when I was 4 or 5 years old” (N.P.).

Sometimes, family members help in the current foraging activity of the interviewees. When they referred to learning plant knowledge from grandparents, a female figure was mentioned most of the time. Five other interviewees mentioned having learned from their grandmothers, who showed them medicinal and culinary uses of weeds. Another interviewee recalled the days when her grandmother used to show her what to forage and how to use what she gathered, lighting the spark of her passion. Two interviewees mentioned that these types of skills, connected to mushrooms and plants, were common expertise, linked to the community in which they grew up.

Modalities of knowledge transmission

The typology of events conducted by the foragers educators interviewed includes identification walks (36.1%), cooking sessions (32.8%), ecology classes (17%), and herbalism courses (13.1%) (see Figure 3).

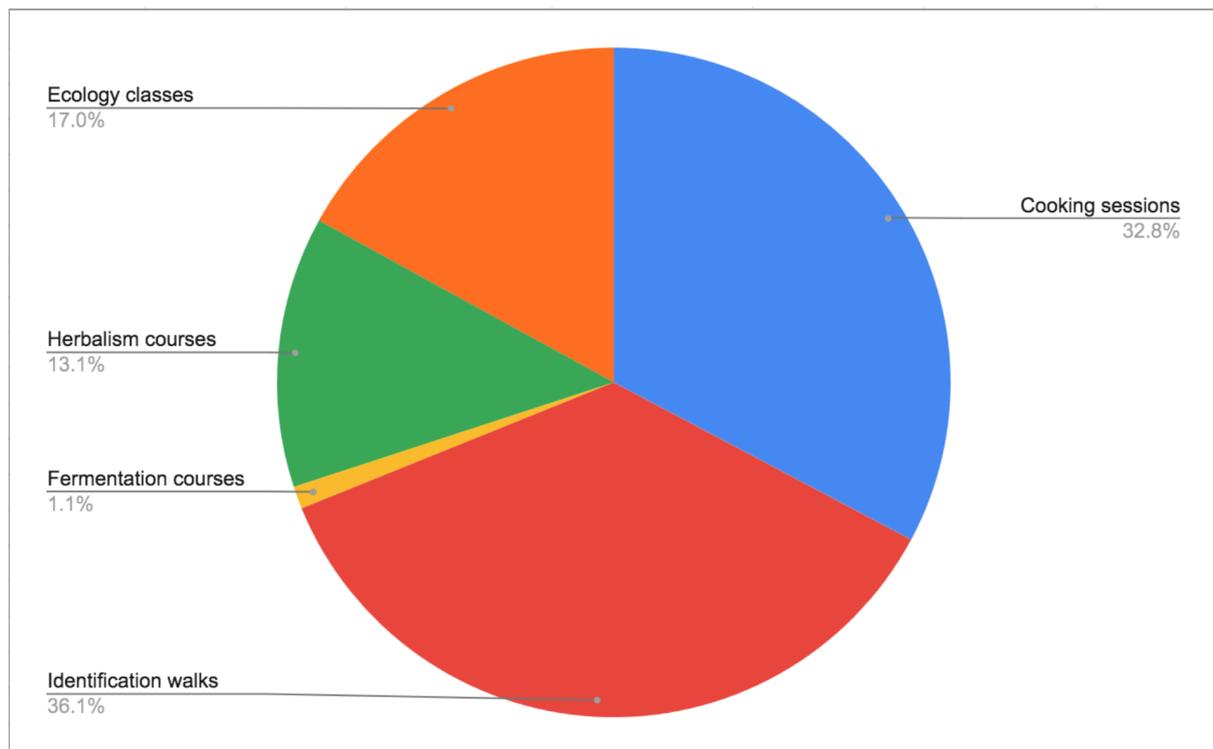


Fig 3: Typology of events conducted by forager educators.

All the interviewed educators organise workshops and lead walks that are half a day or a full day long, meaning from around nine in the morning to five or six in the evening. The aim is to use sunlight to enjoy the time outdoors. Most of the interviewees are present on social media (24 out of 31 are on Instagram, five on Facebook and three on Youtube). On these social networks, they share some of their activities and thought over the social media, yet, only two of our interviewees are followed by more of 10k people, one having almost 23000 followers on Instagram and another being popular on Youtube (almost 85000 followers).

The longer the immersive experience, the better (events for knowledge transmission)

Some interviewees mentioned pop-up events – temporary gatherings, far from the usual working environment of educators – as the main modality of knowledge transmission. Other interviewees aimed to create structured projects, involving ethnobotany and ecology over a longer period, especially for achieving economic sustainability. They also reported that longer projects with institutions and communities have a larger social impact.

[Longer projects are] *“more politically engaged and that responds to the urgency of our times in a way; and I don’t want it to be a holiday. I want it to be part of other contexts, going to school, to cities, edges and so on”* (T.H.).

Most of the time the typologies of events are composed of different arrangements of the following activities: foraging and identification walks, wild product cooking sessions, herbal medicine workshops and ecology talks.

For instance, two designers mentioned the exploration of plants through ice-cream flavours and tasting. During her research on Venetian ecology, one developed three gelatos based on three halophytes in combination with three exotic fruits: mango and salicornia, peaches and inula, and lemon and portulaca. Her research followed the theme of ‘extinction’:

“...I liked the idea of being able to realise my research in ice-cream, which ends, which is eaten [...] it was an experience of one evening and it ended in the consumption” (G.B.).

Her aim was to stimulate the curiosity of the audience towards the environment in which they live. Other educators offer identification walks in nature, and workshops teaching participants what wild products can be used for, either in the kitchen or as medicine. A couple of times informants mentioned events that can be considered more walking conferences about environmental ecology. The main idea was to create a training space for dissemination, for the exchange of knowledge that is within the landscape itself.

The longer and more immersive the events are, the more knowledge is shared in a higher quality modality, and often for participants, it is a bigger investment that gives importance to it. It is common to find two hours of foraging walks on a Saturday afternoon, but some of the interviewees preferred longer weekends of immersive practice.

“When I cook in homes, people call me precisely because I cook wild edible plants, so they often ask me to go foraging with them [...] Many people are interested in exploring the places around their homes and their gardens” (S.T.).

Social learning in foraging: flexible ways of knowledge transmission

All the people that we interviewed offered events that aim to be immersive for the participants, which can be achieved through foraging walks in nature as well as immersive experiences in galleries that try to create an ultra-sensorial encounter with elements from the natural world.

“We don’t have a single formula that we developed once and then we do it all the time. Because we’re creating the experience depending on where we are, each time, we need time for creation, and for getting to know the region, getting to know the actors that are there” (A.L.H.).

The sharing of information comes through talking and primarily showing, encouraging the participants to be curious with their senses: the focus is on taking the time to touch, smell, listen and taste in a guided sensorial experience.

“We cannot emotionally understand nature very well, but we can eat it and then we can understand it” (E.C.).

Three informants revealed that they like to bring books during events to both provide references to participants and share how to cross reference in an effective way. Four other foragers share how to create an herbarium, and this could sometimes even be the closure of the walks. The repetition of naming and checking the characteristics of the plants is useful for fixing the knowledge on paper and in memory.

Two informants revealed that the method of teaching heavily depends on the audience itself. Teaching high school teenagers must be done with more modern tools, perhaps involving cell phone applications, while teaching migrant women may be difficult with words if they do not yet speak the language of the new country in which they live, so instruction must incorporate more practical ways of showing and sharing knowledge.

For three informants, learning needs to happen through actively looking for the herbs in person. During the workshops with children, one informant describes a leaf in detail and then asks the kids to go find it:

“I give the identifying characteristics of a leaf to distinguish it from all the other leaves in a meadow, then they have to go and look for it and if they find it, it means that they understand, and it remains more impressed upon their memory” (A.M.).

One interviewee strongly believes that not only is the place important but also the group of people itself, bringing together different generations and different backgrounds can improve the learning process.

“If you don’t find a way to integrate all the information that arrives experientially, it rarely stays. The more we manage to involve various ages, the more there’s an exchange between people about what has just been discussed and their experiences, the more likely we remember it” (F.C.).

For five informants, another important point is that the more curious the participant is, the more engaging the conversations, questions and overall experience will be.

“After curiosity, you can educate people, but first they have to be curious” (E.C.).

Two interviewees asserted that in a one-time workshop, what will remain with participants is not really facts, but rather *“a starter culture, something that I (the leader) have loads of, which is enthusiasm, energy and a little bit of knowledge” (S.R.P.).*

Foragers with a public outreach as social-ecological educators

The third objective of this research was to define the role of foraging educators as vectors of knowledge.

Emic perception of their roles

The role of foraging educators investigated from an emic perspective resulted in two main themes: (1) difficulties in finding professional recognition, and (2) the purpose of their work.

For one interviewee, the pivotal moment came when she started to share her knowledge on television programmes. Afterwards, her work started to be seen from a different, more positive perspective by those who previously looked at her suspiciously, especially in Ticino (Switzerland): *“non mi davano più della strega” (“they stopped calling me witch”)*. Similarly,

another interviewee faced scepticism during her first years of working as a forager, even though she started through a collaboration with a well-known chef.

It is important to study and research, as much as it is to teach and pass on knowledge, as it is all connected. It is crucial for foragers to bond with other professionals, places, and skills, to share more broadly with a diversity of audiences. One interviewee chose the term *bridge* to define her work.

“I’m a bridge, I don’t have to be a specialist in one field, but rather I’m a gateway, someone who combines an audience that doesn’t have access to some specific knowledge. I can talk with experts. I can create new platforms or meeting places for landscapes and people” (K.L.).

Another interviewee feels that her work is more of a mediator: a bridge between indigenous cultures and the dominant Western system.

“The discipline of ethnobotany and the figure of the ethnobotanist can help to act as a bridge between what is to some extent the dominant system of thinking and other ways of thinking, other sciences, other ways of relating, of understanding plants, animals and the world around us” (F.C.).

Other foragers prefer the term *raccogliatrice* (collector, gatherer) as it can be related to material and immaterial things:

“The term collector can refer to many things, both material and immaterial. I like the idea that the definition of gatherer encompasses the fact that I not only spend a lot of time in the woods materially collecting wild elements, but I also collect stories, traditions, people” (E.P.).

The above-quoted forager feels like a hybrid figure, meaning that she can create and foster collaboration, moreover, knows how to study botany in books and engage with nature in a practical way.

“Being a hybrid allows me to collaborate with different realities and to be able to use different skills based on the place and the people I’m with. I think hybrid individuals like me are very important” (E.P.).

But many foraging educators prefer not to be defined and choose not to use labels. They have the flexibility to enter different spaces and operate in interdisciplinary ways. For instance, some argued that *“personal and professional lives aren't separate because personal curiosities, sooner or later, become professional ones”* (P.K.), and *“whether it’s an artistic practice or just being alive, it doesn't really matter”* (S.B.). For another interviewee, it is crucial to push disciplines beyond their conventional borders.

The second main theme regarding the role of these foraging educators involved the perception of their purpose. The collected data revealed that the crucial element was the importance of passing on knowledge.

Handing down knowledge from various fields plays an important role in transmitting care, as one interviewee specified. This care – towards the land, the environment and nature in all its concrete and metaphysical sides – was mentioned by most interviewees. In the words of one interviewee: *“When we love something, we care for it, and we protect it [...] We no longer know how to care for it [nature] or how to protect it because sometimes it seems so far away”*. Another interviewee added: *“If you have more knowledge, you’ll always protect what you love. So, if I make people curious about it [nature], they’ll always be more careful with it”*. They all work to protect what they truly care about, namely the environment and the land.

The interviewees revealed the need to feel more connected to both nature and them by being immersed in the environment surrounding them. Moreover, interviewees mentioned how pressing it is for Western societies to recover this connection with nature, the landscape and human intuitions that are now lost. This means reclaiming the practice of knowledge sharing, which was once indispensable to families and communities at large. For foraging educators, teaching is not done just for the sake of keeping knowledge alive, even though this is a big part. Rather, it aims to look at the root of things, reveals traditional stories and learn in a social and ecological dimension. For one interviewee, the connection with nature is something that we should not take for granted but should cherish and cultivate.

“I started doing this job for this: trying to remind [...] people how important it is to feel good in nature. [...] I’d like to teach people to respect and be kind to the environment,

[...] to harvest conscientiously, to respect from any point of view. For me it's a mission to restore love and a connection to nature" (S.T.).

The willingness to pass on knowledge comes from the strong belief in taking foraging off its elitist pedestal where high-end restaurants have put it, as one interviewee stated. Many other foragers verbalised the hope that the knowledge of foragers will become common for everyone. From this specific conversation, many trains of thought started, which led the research towards intuitive learning and the concept of relationships and exchange between human and non-human things. In the words of one chef:

"...transmitting the idea that this type of relationship is actually first and foremost an intimate gesture of self-knowledge. A gesture of connection with an inner dimension of oneself and of the landscape" (M.B.).

Likewise, eating, listening to, or observing plants and gaining information from them is fundamental.

"I always feel like I can read so much more information from the behaviour of a plant within its immediate ecosystem, relating it to us, to animals, to the weather, to seasons and to generations" (P.K.).

Discussion

Our results reveal two main findings regarding European foraging educators with a public outreach: a) there is a diversity of personal profiles of foraging educators and their sources of knowledge and b) active experience in the field (learning by doing) is the preferred modality of knowledge acquisition and transmission.

Foraging educators' profiles are varied as their sources of knowledge

The foraging educators have diverse profiles, yet they play an emerging role that is increasingly valued, likely due to the gradual disconnection from traditional, oral vertical knowledge transmission. This has possibly been fostered by the adoption of social media which offered access to a new, faster way of communicating in a global (and not local) network.

In Europe, two articles have addressed the role of foragers, yet both focused more on foraging practitioners rather than foraging educators with a public outreach. The study conducted in the British Isles by Łuczaj et al. (2021) shows a well-connected network of foragers, owing to the presence of the British Association of Foragers. Grivins (2021) classified four types of foragers based on their motivations and knowledge. Motivated by process or product, and framed by traditional knowledge or newly emerging lifestyles, foragers can be grouped as rooted, lifestyle, subsistence and commercial. These categories are in line with our classification of typologies of work: ethnobotanists, artists, and designers, traditional foragers, and cooks.

Looking at our groupings through Grivins' classification, we can categorise foragers into different types based on their motivations and approaches. The rooted forager is driven by the process of foraging and relies on traditional knowledge. This category had only one interviewee, an ethnobotanist who was interested in learning through foraging. Lifestyle foragers, on the other hand, are motivated by the process of foraging but explore newer, non-traditional practices. Many young educators in art and design fell into this category, approaching foraging from a personal perspective, drawing inspiration from art, theatre, and performance. Subsistence foragers are primarily interested in the products of foraging and employ traditional knowledge. This group consisted mainly of older individuals who often organise walks and foraging events for educational purposes. Lastly, commercial foragers, which included most cooks, are motivated by wild products for culinary purposes and constantly seek new approaches, through innovation and the incorporation of foreign traditional uses.

Foraging educators showed a diversity of sources of knowledge. Two points of discussion revolve around the comparison between traditional ways of transmitting local ecological knowledge (LEK) and the inclusion of written and visual sources, and the contrast between the ubiquity of traditional LEK and its contemporary variations.

Firstly, compared to the traditional way of transmitting LEK, which was primarily oral, written and visual sources have gained importance (Łuczaj et al., 2021). In the past, local ecological knowledge was mainly passed down through oral traditions, with knowledge holders sharing their expertise through storytelling, conversations, and direct interactions. However, with advancements in technology and the increasing accessibility of information, written sources such as books, guides and manuals have become significant resources for foraging educators (Łuczaj et al., 2021). These written materials allow for the preservation and

dissemination of knowledge in a more structured and accessible format. Visual sources, including photographs, videos, and illustrations, also play a crucial role in enhancing understanding and providing visual references for plant identification, habitat recognition and foraging techniques.

Secondly, in comparison to traditional LEK, which was often embedded within local communities and widely known and practised, contemporary sources of LEK may not be as ubiquitous. Traditional LEK was deeply rooted in local cultures and communities, shared through generations and practised by a significant portion of the population (Mattalia et al., 2019). However, with changing lifestyles, urbanisation and the influence of globalised culture, the transmission and practice of traditional LEK have become less prevalent (Łuczaj et al., 2012). As a result, foraging educators may now need to actively seek out diverse sources of knowledge beyond their immediate communities. This may include engaging with experts, conducting research, exploring different cultural traditions, and drawing upon a range of written, visual, and experiential resources to enrich their understanding of foraging practices.

In summary, the inclusion of written and visual sources has become important for foraging educators, supplementing the traditional oral transmission of LEK. Furthermore, while traditional LEK was often widespread and deeply ingrained in local communities, contemporary sources of LEK may require foraging educators to search for knowledge from a variety of cultural contexts and sources beyond their immediate communities.

Intuitive learning in foraging education and its social value

The second finding of this study shows that intuitive learning plays a crucial role in building knowledge among foraging educators and their audience. Intuitive learning refers to the ability to suddenly understand something without the need for conscious analytical or logical reasoning (Sabater, 2022). Many interviewees learned through just being immersed in nature and fully acknowledging the presence of plants around them. Indeed, for foraging educators, intuitive learning is at the core of ecological knowledge and personal attachment to the environment. It is in relationships between the living and non-living worlds, with more-than-human agency considered to have an indispensable role. Intuitive learning could then be reconsidered as a dialogue, between the perceiver – human – and the environment. This result is also supported by the limited importance of the social media of our interviewees. In their case, social networks mainly serve to reach/attract the audience for in-person events, rather than to be another segment of their business.

Research on the cultural meaning and function of participating in ecological restoration provides important opportunities for urban residents to develop relationships with nature and to acquire and transmit ecological knowledge (Head & Muir, 2006). Although most of these studies focus on the development of personal relationships with privately owned gardens in urban areas, they yield important insights into the role of human practices in ecosystem sustainability over time.

Grivins (2021) states that a strong human-nature connection encourages people to engage with non-human nature, while *“the loss of closeness to nature will facilitate the loss of knowledge related to wild products”*. Foraging is an act of letting oneself be fully and completely immersed in nature. The reason for gathering wild plants has changed over time, from being something of a necessity to affording connectedness, enjoyment, and pleasure, with socio-economic factors greatly influencing this activity. These approaches that lead to a human-nature connection are explored with intuitive learning, supporting our finding that this type of learning plays a crucial role in building (new) LEK. These studies open the conversation on learning from full involvement with nature, no longer seeing it as something apart from humans.

Participants in foraging education are looking for a sense of ecological belonging to a place. In line with this result, scholars have found that one of the most listed reasons for foraging is that it provides health benefits, such as reducing mental and emotional stress, as well as opportunities for keeping physically fit while learning about and collecting highly nutritional, free food (Grivins, 2021; Hall, 2013). Many foraging educators mentioned their eagerness for belonging, through exploring in an immersive and proactive way.

In Western Europe, foraging has not significantly contributed to food security for decades, but it is enjoyed as a recreational activity (Luczaj et al. 2012), an embodied activity and an environmentally attuned mode of moving and perceiving (Ingold, 2000). Nevertheless, Lumbert (2017) notes that foraging, as with other:

“... activities that involve contact, meaning, compassion, emotion, and beauty are indicators and pathways towards nature connectedness. There is a need to move beyond superficial contact with nature or focussing exclusively on knowledge and identification when fostering a relationship with nature”.

Furthermore, in the scholarly world, there is a growing realisation that a positive, connected relationship with nature leads to pro-environmental attitudes and well-being benefits (McMahan, 2015; Nisbet, 2013; Capaldi et al., 2014). It is a general movement shaping lifestyle

choices, advancing towards a ‘slow’ movement with a desire for simplicity and alternative, slower forms of mobility (Hall, 2013). Recently, localism – a socio-political philosophy and a grassroots movement that emphasises the importance of local communities and local decision-making – has entered the conversation on foraging courses as a phenomenon to actively engage with the landscape (Poe et al., 2014). Localism as a political and cultural shift supports the search for ecological belonging and a sense of *placefulness* among new locals. By acknowledging these findings, we can stress the importance of foraging educators sharing ethnobotanical and ecological knowledge in the Western world.

Foraging enhancing nature’s contribution to people

Twelve interviewees revealed that even though passing on LEK is important to some, stimulating a reconciliation with nature is at the base of their work. Sharing the names of plants and their uses becomes, in this sense, the medium, not the goal, set by these professionals. They know that the names of the herbs they talk about are just channels in which to give voice to the importance of ecosystems and landscapes. What people will take home is a stimulated interest in the environment, and how they felt walking in nature. They will acknowledge that by fully observing what they are immersed in they become more connected to the environment. This is related to creating a deeper ecological sensibility towards nature that is personal and unique, developed through intuitive learning and more-than-human agency. Intuitive learning comes from immersive bodily experiences (Sabater, 2022). Observing is an important practice that we might have lost the habit of doing, especially while in nature, surrounded by plants and green spaces. For instance, the practice of deep listening has recently been mentioned as the expansion of perception allowing to connect to the whole of the environment and beyond (Oliveros, 2005; Aftandilian, 2022). Also, this approach could be adopted by more foraging educators during long walks, exploring the sounds and silence of forests and meadows. Ecological knowledge and ecological sensibility are being taught through foraging walks.

In sum, foraging is an activity that involves physical contact, meaning and compassion and is performed as an agroecological practice. As this research documented, the focus of foraging educators with a public outreach is to transmit knowledge, in particular sharing ecological knowledge and ecological sensibility. Through foraging and searching for wild food and medicine – two material contributions of nature to people – foraging educators aim to stimulate agroecological practices, but they end up provisioning at least three non-material contributions of nature to people: learning and inspiration, physical and psychological

experiences, and supporting identities (Diaz et al., 2018). Long-term pickers often have substantial ecological knowledge, and many gatherers report that they engage in practices aimed at maintaining resource productivity over the long term (Shackleton et al., 2017; McLain et al., 2014). In line with the studies discussed by Poe et al. (2014), interviewed foragers engaging closely with nature develop ecological knowledge and sensibility, owing to relational ecologies of belonging.

This sensibility leads to engaging in agroecological practices as foraging can enhance biodiversity, thus conserving landscape complexity and multi-functionality (Oteros-Rozas et al., 2019).

Specifically, the ontological, epistemic, and experiential dimensions of agroecology produce different subjectivities and understandings of people's sense of living in the natural world. From the opinions of different scholars (Oteros-Rozas et al., 2019; Rahman et al., 2021; Bezner Kerr et al., 2022) on the human and social value of agroecology, it appears that there are many characteristics in common with foraging: improved public physical and psychological health, a perceived sense of place, increased ecological knowledge, stronger connections with nature and a source of pride. However, the gathering of wild food, as an ecological practice, is rarely mentioned in agroecological studies.

Therefore, foraging is a complex agroecological activity conferring a large range of positive meanings, not only in the food system but also in relationships between humans and nature, especially regarding care: *"When we love something, we care for it, and we protect it"* (S.B.).

Conclusions

An increasing number of foraging and ethnobotanical educators with public outreach are appearing in Europe, sharing their ecological knowledge. These individuals derive from different backgrounds and undertake pedagogical duties using very diverse approaches often in diverse cultural settings. However, they are brought together by common intentions such as stimulating interest in the environment, reconnecting people with nature and initiating changes in behaviour for better environmental sustainability. Within this framework, our research aimed to better understand the motivations behind these operators, their methods, their goals, and their emic view on foraging. Based on the results of our work, foraging experiences are at their fullest when intuitive learning is adopted, thus creating a direct pathway towards a human-nature connection. Additionally, participants in foraging activities are more often looking for a kind

of relational ecology of belonging to the place where they live or have recently moved. Also, they seem to be motivated by finding *together* a sense of *placefulness* through foraging. Lastly, foraging appears to stimulate the sharing of local nature knowledge and appreciation. Overall, this practice could be considered as part of a broader social platform, in which agroecological and “commoning” sentiments (Bassignana & Volpato, 2022) are at its core, enhancing the benefits of nature’s contribution to people and its shared enjoyment. Moreover, contemporary European foragers seem to be reshaping the very important idea of a truly peer-to-peer approach in adult education, which represented the start of the Scandinavian and Germanic notion of “Volkshochschulen” and Nikolaj Grundtvig’s (1783-1872) original concept of folk high schools (Hinzen & Meilhammer, 2022; Danish Folk High Schools, n.d.).

These findings call for recognising the important role of foraging educators in the sharing and dissemination of ecological and LEK in Europe and beyond. Furthermore, there is a need for incentivising the communication of such knowledge and practices among younger and older generations. Reconnecting people with nature can play a useful role in addressing many of today’s ecological and social challenges. There is great potential for emerging environmental education platforms and, correspondingly, for rethinking the food system.

From our work, it is apparent that there is a wide gap in the scholarly literature on foraging practices for educational purposes in Europe, and further research is therefore needed. For instance, studies could address how Italian foragers and other professionals disseminate skills and expertise during their workshops and whether these are effectively received by the attendees. Indeed, our research stimulates a call to investigate further how educational efforts are perceived from the participant’s point of view. Additionally, in this research, we did not focus on online ethnobotanical transmission, although, in an increasingly global and digital society, it is a wide focus that needs to be addressed.

A future goal in this field should be to understand how attendees benefit and learn from foraging workshops, and whether, by participating in nature walks, people subsequently begin to change the way they think about and act towards preserving the natural environment, in any form. The sparse literature on the subject is just a starting point for what can be discovered. It would also be interesting to determine whether there is a common set of characteristics among European foragers, or if every cultural setting promotes a different concept or a different way of transmitting and acquiring the ethos, required skills and overall “foraging philosophy”.

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Appendix

Demographic data on the sample

Out of the 31 interviewees, 11 were male and 20 were female. The average age of the interviewees was 36 years old, with 10 people in their 20s, 10 people in their 30s, 9 people in their 40s and 3 people between the ages of 50 and 62. The minimum age in the group was 25 years, the maximum age was 62 years. Nineteen informants were Italian and 12 were from other European countries (Swiss 3; Dutch 3; French 2; Austrian 1; British 1; Polish 2, one of which was living in Italy). Of the 31 people interviewed, 19 were based in Italy while the others were based in the Netherlands (4), Switzerland (3), the UK (2), France (2) and Poland (1).

Nationality	
Italian	19
Other European Countries	12

Based in	
Italy	19
Other European Countries	12

Education	
BA	12
MA	9

PhD	2
Certification	4
Other	4

Books mentioned during the interviews	Language	Year of Publication	Typology
Vianello C., Bozzato M. <i>Erbario Lagunare. Il Leggio.</i>	Italian	2022	Popular
Stefano Mancuso & Alessandra Viola. <i>Il verde brillante.</i> Giunti Editore.	Italian	2015	Popular
Ulysses Paulino Albuquerque, Rômulo Romeu Nóbrega Alves. <i>Introduction to Ethnobiology.</i> Springer.	English	2016	Scientific
Richard Mabey. <i>Weeds - How vagabond plants gatecrashed civilization and changed the way to think about nature.</i> Profile Books Ltd.	English	2010	Popular
Richard Mabey. <i>Food for free.</i> HarperCollins Publishers.	English	1972	Popular
Spohn, Golte-Bechtle & Aichele. <i>Che fiore è questo?</i> Ricca Editore.	Italian (OG German)	2011	Scientific
Riccardo, La Rosa & Pignatti. <i>Flora d'Italia - volume 1.</i> Edagricole.	Italian	2017	Scientific
Maurice Mességué. <i>Mon herbier de santé.</i> Robert Laffont.	French	1993	Popular

Hager, Schönweger & Hönigschmid. <i>La forza delle erbe</i> . Athesia.	Italian (OG German)	2018	Popular
Meret Bissegger. <i>La mia cucina con le piante selvatiche</i> Casagrande.	Italian	2011	Popular
Susigan & Gilmozzi. <i>Cucina delle erbe spontanee</i> . Giunti Editore.	Italian	2018	Popular
Eleonora Matarrese. <i>La cuoca selvatica</i> . Bompiani.	Italian	2018	Popular
Frederik van Oudenhoven, Jamila Haider. <i>With Our Own Hands: A Celebration of Food and Life in the Pamir Mountains of Afghanistan and Tajikistan</i> . LM Publisher.	English	2015	Popular
Monica Wilde, <i>The Wildernees Cure</i> , Simon & Schuster UK.	English	2022	Popular
Roger Phillips, <i>Wild Food: A Complete Guide to Foraging</i> , Pan Books.	English	1983	Popular