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HARVESTING GOLD FROM TREES

TREE-BEEKEEPING AS AN ELEMENT OF FOREST FOOD SYSTEMS AND CULINARY HERITAGE IN POLAND

Abstract

This article explores the intricate relationship between the living cultural practice of tree-beekeeping, and its role within culinary heritage and food systems in Poland. By illustrating how tree-beekeeping is woven into the fabric of forest ecosystems, this article highlights how intangible cultural heritage custodians have forged a unique approach that not only sustains biodiversity but also fosters new ways of perceiving natural landscapes.

Introduction

Forests, especially boreal ones, are often viewed as solely ecological environments where culture and humankind are absent.[1] This distinction is explicit in the 1972 UNESCO World Heritage Site Convention where spaces of 'outstanding universal value' are located on a culture-nature spectrum,[2] reflecting a dichotomy that separates the two. This opposition tends to interpret nature as pristine and untouched, and culture with human-made landscapes and built monuments.[3] The dichotomy overlooks the interconnectedness of nature and culture and is perceived as problematic within the world heritage discourse, particularly for people in forest

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1 Reference to this study: Agnieszka Pawłowska-Mainville: Harvesting Gold from Trees: Tree-beekeeping as an Element of Forest Food Systems and Culinary Heritage in Poland. In Anikó Báti and Patricia Lysaght (eds.): *Living Eating Habits, Revitalized Foodways and the Concepts of Tradition and Food Heritage*. Budapest: ELTE RCH Institute of Ethnology – Museum of Ethnography, 2025. pp. 431–443.
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2 Pawłowska-Mainville, Agnieszka: *'Stored in the Bones': Safeguarding Indigenous Living Heritages* (Winnipeg, MB: University of Manitoba Press, 2023) <https://uofmpress.ca/books/stored-in-the-bones> accessed 6 March 2023.

3 UNESCO. 'The Operational Guidelines for the Implementation of the World Heritage Convention'. WHC.21/01, 31 July 2021 <http://whc.unesco. org/en/guidelines> accessed 6 March 2023).

spaces whose activities and cultural expressions interpret landscapes as living entities shaped by both ecological processes and human interactions.[4] Recent shifts in the discourse aim to integrate these perspectives, recognising cultural landscapes and biocultural diversity as essential to heritage safeguarding and the sustainability of food systems and humanity's heritage.

Tree-beekeeping, the practice of building bee hives in living trees, is one example of an intangible cultural heritage element of Poland that integrates culture and nature in a unique way through forest landscapes. The practice was recognised as an important element of Eastern Europe's cultural heritage and was placed as an element of intangible cultural heritage (ICH) on the UNESCO Representative List of Intangible Cultural Heritage of Humanity in 2020, marking its importance not only as a sustainable practice but also as a living tradition with deep cultural roots. The inclusion of this practice on the UNESCO list highlights not only its critical role in shaping ecological and cultural landscapes, but also acknowledges the significance of this practice to producing 'liquid gold' – honey, which has served as an important product of culinary heritage in the region since time immemorial. By outlining how boreal apiary merges nature and culture, this paper illustrates the unique way tree-beekeeping exists as a form of heritage-inspired livelihoods in 'empty' spaces, emphasising the role of culture-custodians in shaping resilient traditions, honey production, and transmission of living heritage elements associated with food systems.

Tree–beekeeping and its Role in Local Food Systems

Since the beginning of the 20th century, large populations of bees (*Apoidea* species) in Poland (and elsewhere!) are under threat of extinction. Human-caused environmental impacts including pollutants and contaminants in the air and soil, industrial agriculture, aggrandisation of urban areas, and an expansion of monocultures, have caused significant destruction of natural forest habitats.[5] This has resulted in the alarming decrease of many pollinators. Tree-beekeeping involves

4 Pawłowska-Mainville: *Stored in the Bones*; Bordo, Jonathan: 'Jack Pine–Wilderness Sublime or the Erasure of the Aboriginal Presence from the Landscape', *Journal of Canadian Studies* 27/4 (1992–93), 98–128; UNESCO. '37th Session of the World Heritage Committee (37 COM), Decision 37 COM 8B.19', 2013:175 §b.

5 Presentation by Andrzej Pazura at 'Tree-Beekeeping Conference', Koło, Poland 19 October2024; Presentation by Andrzej Oleksa at 'Tree-Beekeeping Conference, Koło, Poland 19 October2024.

stewardship over honey bee colonies in tree hollows, and its revival promotes the bringing of bees back to their natural habitats – forests.

While tree-beekeeping is recognised as an intangible cultural heritage element in Poland, the practice also actively contributes to honey bee biodiversity through long-term observation, and citizen science, sometimes intergenerationally.[6] Knowledge about the specific methods of tree selection, hive preparation, and honey harvesting, are retained as cultural heritage; the transmission of these skills ensures that tree-beekeeping remains adaptive to both ecological and social changes, making it a resilient practice, and a reminder of the strong link between honey, bees, and (culinary) heritage. In that sense, tree-beekeeping plays a vital role in local food systems by providing forest honey, a unique product that carries the flavours and essence of the forest environment. This honey, often referred to as 'liquid gold' is highly valued for its intrinsic worth as well as for its ecological, economic, and health importance, all of which are tied to local foodways. Given that food systems are a set of interconnected components or elements that work together as a whole to achieve a specific function or purpose, they typically involve inputs, processes, and feedback loops that maintain its operation. A food system starts not only from 'food', but from the earth, specifically, from the source of edible products through to harvesting and eventually to consumption.[7] Tree-beekeeping has an important role to play in local food systems and culinary heritage, and below I elaborate on how groundwork, harvesting, and consumption serve to better understand this living heritage as an element of Poland's socio-ecological landscape. These processes do not only sustain the tradition but also support biodiversity and local economies, ensuring the continuity of natural and cultural values within the tree-beekeeping community. In this way, tree-beekeeping bridges heritage practices with modern needs, reinforcing connections between people, culture, and the environment.

Laying the groundwork

Tree-beekeeping is a fundamental element of local food systems, as bees provide essential ecosystem services. Creating environments that protect pollinators like

6 Personal communication from Andrzej Pazura at 'Tree-Beekeeping Conference, Koło, Poland 19 October2024; Personal communication from Piotr Piłasiewicz, Lipice, Poland, 23 April 2024.

7 Pawłowska-Mainville, Agnieszka: 'Aki miijim', "land food" and the sovereignty of the Asatiwisipe Anishinaabeg boreal forest food system', in Settee, Priscilla and Shukla, Shailesh eds.: *Indigenous Food Sovereignty: Concepts, Cases, and Conversations* (Toronto, ON: Canadian Scholars Publishing, 2020), 57–82.

bees supports the pollination of plants and crops in both forest and adjacent agricultural areas, fostering a symbiotic relationship between forest ecosystems and food production systems. Additionally, this practice preserves the intangible cultural heritage associated with traditional foodways, enriching both ecological and cultural landscapes. In this context, a boreal apiary is about much more than honey; bees cared for by apiarists play a crucial role in food systems by pollinating crops that provide fruits, vegetables, nuts, and other essential food products. Their pollination services enhance both the yield and quality of these foods, supporting food security. Additionally, by maintaining biodiversity, bees help to sustain resilient forest ecosystems that provide a wide array of food resources for human consumption.[8] To ensure the survival of bees and the production of honey, a diverse and vibrant forest ecosystem is needed for the honey bees *(A. Mellifera mellifera)*.

At the heart of tree-beekeeping lies a body of socio-ecological knowledge that informs the practice. This knowledge encompasses everything from selecting the right tree: tall, straight, and healthy enough that the hive will sustain the next numerous generations of bees (Fig. 1). A tree-beekeeper knows that the tree must be protected from winds, have sufficient girth to hold the hive and support the apiarist, as well as be exposed to the sun in early autumn and spring so that the bees have warmth when they need it most. It is also important to acquire the knowledge and experience required to climb several metres high up the tree and to dig out a cavity in the tree without injuring it (and oneself), which also necessitates physical strength and technical dexterity. Tree-beekeeping also requires familiarity with the creation of the hives themselves, whether they be hives built directly in the trees *(barcie)* or hives made from cut trunks suspended in forests, or hollowed logs near homes *(kłody)*. Once a beekeeper selects a tree, traditional tools handmade by a blacksmith and a rope-maker are often employed; however, contemporary tools such as power chainsaws can also be used. The practice should not be frozen in time but instead remain living and adaptive. Today, while beekeepers still create their own hives, they also transfer caretaking responsibilities of their own hives to others.

Establishing a solid foundation also involves managing tree health by addressing invasive species, parasites, and diseases that could threaten the bee colonies. Additionally, tree-beekeepers must protect the hives from wild animals, such as martens and birds, which may be eager to eat the bees or steal the honey. Overall, tree-beekeepers closely monitor the conditions of their trees, the surrounding forest,

8 Information from Edyta Szast & Krysia Dudek workshop on 'Forest Gifts', Toruń, Poland, 22 October 2024.

Fig. 1. A tree-hive visible in the tall pine tree. (Photo by Agnieszka Pawłowska-Mainville, 2022)

and the areas where their hives are located, ensuring that their activities maintain ecosystem balance and support thriving pollinator populations.

The relationship between beekeepers and their forests is influenced by the timing of bee activity, tree health, and various environmental and legal factors. Understanding bee behaviour is crucial; these custodians of intangible cultural heritage (ICH custodians) must build a good rapport with the bees by respecting them and establishing a reciprocal relationship that encourages the bees to visit the hive and remain for several years. For many tree-beekeepers, the character of the beekeepers themselves is integral to the success of this practice. Historically, tree beekeeping followed strict cultural protocols, with beekeepers chosen based on their character traits, such as honesty and kindness, and their knowledge of ecological processes. Thus, tree-beekeeping transcends mere economic activity; it is a cultural practice rich in socio-cultural wisdom, language, skills, and patience. When all these factors are combined, they enhance local food systems and contribute to the continuity of culinary heritage elements.

Acquiring honey

Once a tree hive is built, and the bees have established a family, the 'acquisition' or harvesting component of the food system deals with the steps before 'food' (i.e. honey) and other bee products are consumed. As mentioned above, tree hives are situated between two to twenty metres above ground and discreetly placed among thick foliage, protecting them from potential threats such as predators and human interference. Traditionally, honey was taken from the hive in the autumn using the *leziwo* to climb the tree. A *leziwo* is a specialized hemp or leather rope with a wooden harness and a handmade 'hook' that tree-beekeepers use to safely access the hives located in the trees.[9] The *leziwo* distributes the beekeeper's weight and allows the harvester to free up their hands to manage tools, handle the bees, and take out the honey. The process begins by securing a strong rope around the base of the tree, often using a specific knot that ties and unties in one swift movement – yet the knot must be reliable enough to support the beekeeper's weight. Another method of climbing involves alternating between pulling the rope and stepping into small notches or footholds carved into the tree, allowing the beekeeper to work their way up the tree trunk. Today, an aluminium ladder is frequently used but many tree-

9 Presentation by Tomasz Dzierzanowski and Agnieszka Pawłowska-Mainville at 'Tree-Beekeeping Conference', Koło, Poland, 19 October 2024.

Fig. 2. Honeycombs harvested directly from the tree-hive. The next step is to squeeze out the honey. (Photo by Agnieszka Pawłowska-Mainville, 2022)

beekeepers also believe that it is important to learn the traditional method and to use it at least once a year. Because the *leziwo* combines a very complex and effective design with generations of knowledge for safely working at heights, using it requires technical skills, physical strength, and dexterity from the user, which is an at-risk skill and knowledge system informing this intangible cultural element.

Upon reaching the hive, the tree-beekeeper uses a smoker to smudge the bees. The smoker is essential for soothing the bees and reducing the risk of stings. While minimising the bees' agitation is important, my experience shows that men of the tree-beekeepers that I have worked with do not use smokers very often. Some of the men say that the relationship they have with their bees establishes trust between the two, almost as if the bees recognise the keeper (some men say that they are familiar with their smell). Once the honey is carefully extracted from the honeycombs, it is ready to be consumed (Fig. 2). Knowledge of the tree's structure and the bees' behaviour is vital at this stage, ensuring that only the right amount of honey is harvested without disturbing the bee family's viability. The beekeeper also needs to know how to avoid harming the bees and when to leave the hive alone for its natural replenishment.

Finally, once the honeycombs are harvested, they are broken into manageable pieces, and then crushed by hand or pressed to release the raw honey. Forest honeys include honey from trees such as linden, oak, and various fruit trees, and the flavour can vary significantly depending on the tree species from which the nectar is sourced. Because it is not yet processed for cleanliness, tree-harvested honey may have richer, deeper flavours, often with a darker colour due to higher mineral content and the types of nectar collected. The honey may often have 'impurities' such as pollen grains, wax particles, bee parts, insect residues, and foreign matter, but these may be filtered out using a fine sieve or cheesecloth. In some cases, the honeycomb is left intact and stored with the honey for those who prefer its texture and added flavour. Once strained and pure, the honey is stored in jars or containers, ensuring that it is sealed tightly to preserve its freshness and natural properties.

Consumption inspired by culinary heritage

Honey and tree-beekeeping have long been integral to Poland's culinary heritage, with traditions stretching back to medieval times. This form of apiculture, today practised in regions of Spała, Augustów, the Wigierski National Park, as well as in

the lower Vistula River Valley, among other places, is more than a method of regional food production – honey holds a revered place in Polish cuisine, serving as a multifunctional ingredient that enhances flavour, preserves food, and provides health benefits. Some examples of foods made from honey in Polish culinary heritage include sweet mead (which is a fermented alcoholic beverage made from honey, water and species), gingerbread spiced cakes and cookies sweetened with honey, and *miodownik*, which is a thinly-layered honey cake, often filled with cream or fruit.

Beyond its natural sweetness, honey has been valued for its medicinal properties, such as its ability to soothe sore throats, aid digestion, and promote healing due to its antibacterial and antioxidant qualities. Different varieties of honey serve different purposes, including linden honey used to induce sweating during flu, chamomile honey for digestive problems, and honey with St. John's Wort is still used today to treat mild anxiety and depression among families. Honey products continue to be used widely in Poland as well: propolis-based products containing antimicrobial, anti-inflammatory, and antioxidant properties are made into tinctures and powders and mixed with honey to create medicines for respiratory infections.[10] Other bee products, such as bee pollen and royal jelly, are likewise consumed with honey and used as a folk or traditional medicine referred to as *miodolecznictwo* or apitherapy, which is a natural method of treatment and health-support using bee products. Certainly, consumption of non-edible products like wax and propolis-based balms, salves, and candles, are also incorporated into everyday routines to promote well-being, with their use deeply rooted in cultural traditions and holistic approaches to health and local food systems. These examples demonstrate the versatile role that honey has played in both Polish cuisine and traditional medicine, linking the country's culinary heritage to its natural environment and apiary practices.

Additionally, tree-beekeeping contributes to sustainable livelihoods by creating economic opportunities that build on this heritage. Many beekeepers today are exploring innovative ways to market their skills, as well as the honey. For example, in Augustów, Poland, founders of the 'Tree-beekeeping Brotherhood' have created a *miodsytnia,* a meadery known for producing high-quality honey-based alcoholic beverages like mead and beer. Located in a largely-forested region of eastern Poland, the meadery combines old recipes with modern production techniques to create a variety of meads, from sweet to semi-dry, as well as honeys, some from tree-hives,

10 Instutut Zielarstwa, Poland, personal communication, August 2024.

which can sell from fifty to one thousand euros. The *miodsytnia* also offers guided tours at its on-site museum where visitors can learn about the mead-making process as well as about the history of tree-beekeeping and its traditions.[11] These new economic pathways, such as eco-tourism or artisanal honey production, demonstrate how innovation and tradition can coexist, offering a new model for a livelihood that is rooted in this cultural heritage element.

Honey produced through tree-beekeeping is not only a vital component of local food systems but also a cornerstone of the nations culinary heritage. Festivals such as the Festival of Taste in Gruczno, Poland, celebrate the rich diversity of local foods, with honey playing a central role. The honey competition at the festival celebrates the rich diversity of honey produced by local apiarists, allowing participants to sample various types while learning about their unique flavours and innovative characteristics. The events at Gruczno, which recently began including workshops to revitalise tree-beekeeping in the region, highlight how the practice preserves not only food traditions, but also intangible cultural heritage elements that have been passed down through generations, allowing communities to maintain a sense of identity and cultural practices tied to their environment.

Tree-beekeeping's Role in Food Systems and Cultural Foodscapes

As tree-beekeeping does not produce a lot of honey, the practice is thus not financially lucrative. While the tree-beekeepers may have up to twenty hives (most have somewhere between 5 and 15), they obtain only about one to five kgs of honey per year from all hives.[12] This number, however, varies each year as the amount of the acquired honey is dependent on the health of the bee families, and in 2024, for example, very little honey was taken from the hives as the bees needed the honey to survive the winter.[13] Contemporary tree-beekeeping therefore, is not about profitable honey production, but rather about a love for bees and other pollinators. Despite its unprofitability for humans, the practice plays a crucial role in the food system by supporting biodiversity in forests. Indeed, forest landscapes are often overlooked as 'food environments', sustaining the idea that food production and supply are inherently tied to agricultural landscapes. This agrocentric perspective centres on

11 Author's field notes, and personal communication from Piotr Piłasiewicz, April 2024.
12 Presentation by Andrzej Pazura at 'Tree-Beekeeping Conference', Koło, Poland 19 October 2024.
13 Personal communication with Andrzej Pazura and Barbara Zajdel, 30 October2024.

the cultivation of crops and the domestication of animals within human-modified environments like farmlands and pastures, where intensive agricultural practices dominate. Agrocentrism marginalises and overlooks the role of forests and other ecosystems in sustaining food systems, shaping policies, economies, and cultural norms reinforcing a connection between food and managed landscapes. As a result, agricultural spaces are often celebrated as the primary source of food, overshadowing the diverse contributions of forests, wetlands, and wild landscapes in supporting nutrition and livelihoods.

Nevertheless, forest ecosystems and watersheds are living cultural landscapes, shaped by human activity, where traditions, knowledge, and practices are deeply embedded and where intangible cultural heritage elements – like tree-beekeeping – play an important role in driving food systems and culinary heritage. Beyond honey, forests provide vital food sources such as wild fruits, nuts, mushrooms, roots, and edible plants, and tree-beekeeping is one intangible cultural heritage element that transforms these forests into spaces as expressions of living heritage and living foodways.[14] Through tree-beekeeping, forests serve as both an economic and cultural resource, integrating human knowledge with natural processes, permitting the sustainable use of forest resources without depleting them. In this context, a forest functions as more than a 'wilderness' devoid of human presence – it is a cultural landscape that reflects socio-ecological values, ecological wisdom, and a dynamic interaction between ecology, culinary heritage and food systems.

In this context, tree-beekeeping, specifically putting culture in nature more explicitly, influences forestry practices because it advocates for sustainable approaches to forest management that enhance pollinator health, preserves genetic diversity, and protects old-growth trees. All of these are needed for tree-beekeeping as well as for biodiversity. As the forestry sector increasingly (and often reluctantly!) adopts such comprehensive ecological attitudes, tree-beekeepers play a pivotal role in showcasing exactly just how their socio-ecological knowledge and practices contribute to (and enhance) sustainable forest management. By prioritising the well-being of pollinators, tree-beekeeping not only supports innovative economies but also ensures the resilience of forest landscapes and food systems. This interplay between heritage-inspired practices and environmental stewardship approaches, highlights the

14 Information from Edyta Szast & Krysia Dudek workshop on 'Forest Gifts', Toruń, Poland, 22 October 2024.; Lecture by Łukasz Łuczaj: 'Postrzeganie ziół w medycynie ludowej. Dawne i ludowe formy leków ('Perception of herbs in folk medicine. Ancient and folk forms of medicines'), Biskupiec, Poland, 4 August 2024.

integral relationship between cultural heritage and food security, emphasising the role of ICH in fostering intergenerational traditions and livelihoods.

Conclusion

Tree-beekeeping is not only about maintaining a unique culinary tradition but also about safeguarding biodiversity and fostering living heritage that connects contemporary culinary practices with centuries-old sustainable economies. As our future generations face environmental and climate challenges, including food scarcity, the forests' roles in nutrition remain underappreciated. Tree-beekeeping offers one model for integrating human activities within boreal forest ecosystems, demonstrating how ICH practices can respond to modern threats and shift our understanding of 'food landscapes.' At its core, tree-beekeeping exemplifies the convergence of ecological and cultural knowledge, serving as a reminder of the deep connections between people, their cultural heritage, and the natural world that feeds us; a world that is often perceived as 'empty.' The practice symbolises a profound relationship between humans and nature that embodies a holistic understanding of interdependence, stewardship, and the intricate tapestry of human experience woven into the landscapes we often overlook.

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