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How Emerging Adults Perceive Elements of Nature as Resources for Wellbeing: A Qualitative Photo-Elicitation Study

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Abstract: Research that examines lived experience and how emerging adults seek to create wellbeing in their daily lives through nature is limited. This paper addresses this gap by providing unique insights into how emerging adults perceive and experience nature as a beneficial resource for their wellbeing. Data were collected using photo-elicitation interviews, where 18 emerging adults took photographs that represented their views on and experiences of wellbeing, and during the follow-up interviews discussed the meaning of their photographs. Without a priori mention, 14 participants identified contact with various elements of nature as important resources in supporting their wellbeing. It is the results of these 14 interviews that are discussed in this paper with a focus on (i) the elements of nature which these emerging adults identify as important resources for their wellbeing, (ii) experiences and the perceived pathways between these elements of nature and wellbeing. Thematic analysis revealed four distinct perceived pathways connecting nature to wellbeing, including symbiotic nurturing, building social glue, maintaining a positive outlook, and centreing yourself. Four elements of nature facilitated these pathways: domesticated fauna, domesticated flora, wild fauna and wild surrounding nature. The findings help build understanding of how emerging adults perceive elements of nature as resources for wellbeing and can inform the development of nature-oriented interventions.

Keywords: nature; emerging adults; well-being; photo-elicitation; pathways



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1. Introduction

This qualitative photo-elicitation study explores how emerging adults perceive various elements of nature as supportive resources for their wellbeing. The study of emerging adulthood (18–29 years) is recognised as important to the field of public health and health promotion as young people experience various wellbeing challenges during this prolonged transitional stage of life that can have paramount impacts for the remainder of an individual's life and long-term health [1,2]. Emerging adulthood is characterised as the most fast-paced, unstable period of the lifespan with frequent lifestyle changes including changing partners, employment, and living arrangements, which have been linked to increased stress and pressure on emerging adult coping resources [3,4]. Furthermore, emerging adults can be particularly susceptible to social changes, such as the rise of individualism and the expansion of the consumer culture, which have been linked to dissatisfaction with material wealth and, more importantly, identity [5]. Not coincidentally, global statistics identify this age group as most vulnerable to mental and behavioural challenges that translate into a significant fatal and non-fatal disease burden. For example, suicide is the second leading cause of death among 15–29-year-olds globally and mental and substance-use disorders peak in this age group [6,7]. Similar trends have been documented in Australia [8] where the current study took place.

Wellbeing is a nuanced and multifaceted concept, which stems from multiple aspects of life and thus, is difficult to define [9]. However, traditionally, most definitions are driven by descriptions and dimensions of wellbeing that often result in a relatively static assessment and understanding of wellbeing, limiting the ability to understand the fluid and dynamic nature of the concept [10]. More recently, the concept of relational wellbeing has emerged, which regards wellbeing as an active and dynamic concept, constituted through the interaction between individual, social, and environmental processes at a particular time and place, making it a particularly useful construct to consider when examining the role of nature in wellbeing [11,12]. Grounded in the interpretivist tradition of social science, relational wellbeing approaches people as subjects (rather than objects) who are formed within a specific social and cultural context, with the aim to understand the ways they see the world and what wellbeing means to them in as close to their own terms as possible [12].

A growing body of research (e.g., see <https://www.childrenandnature.org/resource-hub/resources/> (accessed on 25 August 2022)) indicates the positive impact of nature on health and wellbeing [13–16]. Within urban environments, the presence of green and blue spaces has been shown to be positively associated with better perceived general health, enhanced physical activity, and lower risk of obesity [17–19]. Such spaces are also associated with less risk of depressive symptoms, stress and anxiety, and lower manifestation of negative emotions [14,20–22]. Beyond alleviating symptoms of mental ill-health, contact and connectedness with nature is also associated with enhanced wellbeing and happiness [23–25]. Human-animal interactions, a common component of nature experiences, have also been acknowledged as beneficial for health and wellbeing [26,27]. However, increasingly urban lifestyles of modern industrialized countries mean that people find fewer opportunities to interact with animals and nature [28]. Having a companion animal or interacting with more domesticated urban nature such as gardens can offer a proxy to nature in such settings. Companion animal guardianship is associated with reduced feelings of loneliness, increased survival rates from certain diseases and improved quality of life, whereas encounters with wildlife can induce a deep sense of wellbeing, leading to transcendental experiences and psychological health benefits [27,29–31].

Research on nature and emerging adult wellbeing is growing. Quantitative and experimental studies in Canada using university student samples have linked outdoor nature experiences to higher subjective vitality and positive affect [32,33]. Other studies have documented the relationship between the use of campus green spaces, perceived greenness and restorativeness with higher quality of life among undergraduate students [34,35]. A study in the United States (US) showed that students visited campus green spaces as a way to alleviate stress, perceiving the spaces to provide a sense of “being away”, despite the green spaces being just a short distance from the main busy areas of campus [36]. Similarly, a Canadian study of university students showed that nature spaces were perceived to be beneficial for mental health if they were separate from the everyday campus life setting and associated stressors [37].

A United Kingdom (UK) study found that 16–21-year-olds sought forest and woodland areas to be alone when coping with stressful situations, with the importance of such spaces increasing as social attachment to family declined during transition to adulthood, although this relationship was shaped by participants’ past childhood nature experiences [38]. This study also found that some youth find nature scary, indicating that the perceived role of nature to wellbeing may not be a universal to all. However, a Norwegian study found that vulnerable youth (17–29-year-olds) participating in Green Care activities, such as working with animals and agricultural tasks, experienced comfort and a positive sense of self, which assisted in recovery [39].

When it comes to companion animal guardianship, in the US a larger percentage of students (18.8%) reported keeping a companion animal for coping compared to community members (13.4%) [40]. As the authors indicated, the importance placed on companion animals to fulfil the need for social support could be linked to the fact that most students were in a transitional stage, somewhat separated from family and school friends, and had

not yet formed social support networks in their college setting. This resonates with research from the US and Canada where positive associations have been found between companion animal experiences and psychosocial adjustment in emerging adulthood [41,42].

In summary, this growing body of work shows a complex relationship between various elements of nature and emerging adult wellbeing and suggests that nature may be a promising resource for enhancing the mental health and wellbeing of emerging adults. There have been substantial efforts to identify the pathways between nature exposures and health [43–45]. Air quality, physical activity, stress reduction and social cohesion are some of the most commonly studied pathways [43]. However, much remains unknown about the complex and nuanced relationship between nature and wellbeing. As Hartig [43] pointed out, we have more to learn about ‘for whom, when, how and in which context’ nature offers benefits (p. 222). Further, Young et al. [46] stressed the need for research to explore deeper understandings of the meaning participants attribute to various factors, including unpacking the meanings associated with various elements of nature. The answers to these questions can be elucidated through examining lived experience. However, while research on the role of nature in shaping human, including emerging adult, wellbeing is mounting, qualitative research that examines lived experience is rather limited. This prevents a more nuanced in-depth understanding of this relationship as well as undermines the active role young people have in making their own worlds and wellbeing in their daily lives.

Therefore, this study attempts to address this gap. Using a participant-driven photo-elicitation interviewing technique this study aims to complement the existing literature by exploring how emerging adults interpret, experience, and seek to create wellbeing in their daily lives through nature and the perceived pathways between nature experiences and wellbeing. Giving young people control in the research process supports a youth-centred approach that values youth perspectives and attempts to centre them in understanding the phenomena of interest [47,48]. Participatory research that draws on the experiences, perspectives, and understandings of participants can aid the discovery of self-identified salutogenic resources, that researchers from their outsider positions may overlook, discount and even devalue, and can help to understand complex intersections between nature and wellbeing [46].

Current Study

Photo-elicitation interviews (PEI) were completed with 18 emerging adults in South East Queensland, Australia, where participants provided the photographs that represent their views on wellbeing. Without any a priori mention of nature, of these 18 interviews, 14 (78%) participants brought photos of nature to discuss the role that elements of nature play in supporting their wellbeing. From the 135 photographs that these 14 participants brought into the interviews, 44 (33%), on average three per participant, related to nature. It is the results of these 14 interviews that are discussed in this paper. The remaining four participants presented other non-nature-related resources supporting their wellbeing, therefore, excluded from this paper. The findings from the broader study including all 18 interviews are reported elsewhere [47]. It is important to note that this study is exploratory and explicitly avoided leading participants in any direction. The responses about nature were unprompted and participants themselves chose to talk about it. That said, given the high rate of participants expressing elements of nature as resources supporting wellbeing, this paper focuses on the perspectives and experiences of wellbeing of emerging adults through elements of nature. Consequently, this paper aims to provide insights on: (i) the elements of nature which participants identified as important resources for their wellbeing; and (ii) their experiences and the explanations of the pathways between the elements of nature and their wellbeing.

2. Materials and Methods

2.1. Design and Data Collection Procedure

Researchers highlight the value and the need for more qualitative research to capture the richness and complexities of emerging adult lives as well as the use of participant-driven participatory approaches to contextualise wellbeing within lay understandings and experiences [46,49]. This exploratory study used a photo-elicitation interviewing (PEI) method where photographs taken by participants provided the basis for discussion during the interviews [50]. By using such a participant-driven approach, we aimed to obtain an in-depth understanding of the phenomena of interest from the participant's perspective and experiences of wellbeing. Among other benefits, PEI can foster exploration through "adding sight to sound (through the use of photographs)" [51] (p. 1) which expands sensory awareness and increases the reflexive process which can lead to deeper, extended, more elaborate responses and yield new and richer insights into participants' lives that might not be available from verbal-only methods [52]. Asking participants to take photographs also offered insights into the context in which emerging adults organised their understandings and connected them to their world. Visual data collection methods can also facilitate a sense of familiarity and comfort during the interview process [52]. For example, having pictures present can help build rapport between participant and researcher and lessen the strain of extended direct questioning, direct eye contact does not need to be maintained as participant and researcher can instead both look at photographs as a neutral third-party [52]. Further, with the popularity of social media that includes the taking and sharing of pictures, such as Instagram, Snapchat or Facebook, many young people are familiar with capturing and sharing moments of their lives. This technique meant participants could exercise control over taking photographs and how to discuss them during the interview in a manner representative of their own experiences and perspectives on wellbeing.

Data Collection Involved Three Main Steps

- (1) Orientation session: meetings with each participant to discuss the research, provide a digital camera and prompt cards about key photo-assignment points including ethical considerations and guiding photo-assignment questions: (i) *What does wellbeing mean to you?* and (ii) *What contributes to your sense of wellbeing?*
- (2) Photo-assignment: included participants taking an unlimited number of photos to represent views and experiences of wellbeing within a two-to-three-week timeframe, selection and submission of up to 10 photographs they felt were most important to represent their views. The timeframe selected for the assignment and the 10-photo limit, introduced to make the interviews and data analysis manageable, were in line with PEI practices described in the literature.
- (3) A photo-elicitation interview: discussing the meaning of the captured items/moments for participant wellbeing. A broad question, *'Can you tell me the story behind each photograph and how it represents your views on your wellbeing?'* was used to guide the interviews.

To minimise influence on participants, when explaining the photo-assignment task, the researcher provided only broad instructions, refraining from providing specific examples of what participants could photograph. Nature was not mentioned at any time. Likewise, participants were not offered any formal definition of wellbeing and were advised that the focus was on their own views and experiences with no right or wrong answers. Participants were recruited via a larger survey about wellbeing and health-related lifestyle behaviours (the findings reported elsewhere [53]) where they had the opportunity to express interest in participating in PEI on their conceptions and experiences of wellbeing. Recruitment materials did not mention nature, and nor did the survey instrument include any questions about nature. Of 1155 participants who completed the survey, 338 expressed interest to participate in PEI; prospective participants were then randomly selected and contacted to confirm their interest and arrange the PEI completion. Further details on participant recruitment are presented in Supplementary Material S1.

During the orientation session, the researcher obtained participant consent to participate in this study in writing. Each participant was fully informed about the purpose of the study, their rights as participants, anonymity, and confidentiality of the information, and offered the opportunity to ask questions before signing the consent form. Next, before the interview, each participant signed a standard agreement acknowledging researchers' rights to retain, use, and publish their selected pictures. At no point were participant names attached to interview data. Participants were given a non-identifying code that enabled the researcher to link information, for example, between specific pictures and interview transcripts. All the study data were stored in a secure room, accessible only to research staff and the computerized information was stored password protected.

2.2. Participant Characteristics, Study Setting and Data Analysis

The study sample comprised twelve females and two males aged between 19 to 26 years (mean age: 22.4 years). The majority of participants were full-time university students ($n = 12$), with one participant studying full-time at Technical and Further Education (TAFE) and one not currently studying. Eight participants reported being single, three were unemployed, two worked full-time, and nine part-time/casual.

This study was conducted in South East Queensland, Australia where outdoor culture is prominent given the relatively easy access to beaches, national parks, green spaces, and various outdoor activities, such as hiking and surfing. The climate is sub-tropical with warm temperatures even during winter months. The majority of participants currently resided in the major city of Brisbane (approximate population of 2.3 million people).

To link the narratives to the photographs, photographs were numbered and referred to during the interviews. The interviews were audio-recorded, and transcribed verbatim for data analysis (170 pages, single spaced). The photographs were used to seed discussion rather than treated as data per se. In this study, nature refers to nonhuman features and processes that people ordinarily can perceive including all the "living nature" of flora and fauna together with water, air, geological processes, and landscapes [41]. We extended this conceptualisation of nature to include domesticated flora and fauna, given the important role these may play in urban environments. This rather broad conceptualisation of nature was applied to extract the data on nature from the interviews.

Thematic analysis was then performed on the narratives with the visual data aiding the analysis. The following steps were followed in the analysis by the first author: (1) Familiarisation with the data (this involved reading the transcripts repeatedly and taking notes on initial ideas); (2) Initial coding (this involved identification of instances where the interviewees mentioned the role of nature); (3) Collation of initial codes into tentative themes (the clustering of codes that were similar under preliminary headings/themes); (4) Revision of the themes (review and firming of themes including subordinate codes, including discussions with co-authors); (5) Naming, defining, and confirmation of the themes (hereafter, termed pathways) [54]. Coding, theme development, and interpretation of the quotes were debated with co-authors with differences in views discussed until consensus was reached. To enhance rigour and reliability of the analysis, peer debriefing and researcher reflexivity (the first author documented research processes in a journal) were used. While data was drawn from all 14 interviews, consistent with qualitative data analysis practices, the focus was not on how many participants identified the topic, but the relevance of the data to explain lived experience [55].

3. Results

Analysis of the data revealed various elements of nature being experienced by participants. Nature varied from domesticated forms of nature (e.g., interactions with household animals or gardening) to more natural or wild forms of nature (e.g., interactions with wildlife or spending time in more natural landscapes). As such, the following classifications of elements of nature were derived: (1) domesticated fauna, including experiences with companion and other domestic animals (e.g., farm); (2) domesticated flora, including

experiences with indoor plants and urban gardens and parks; (3) wild fauna, including experiences with wildlife, both land and marine animals, and finally; (4) wild surrounding nature, including more natural environments, such as rainforests, mountains, beaches, creeks, and, in more general terms, climate. These four elements of nature were actively sought to varying degrees, and for varying purposes, by different participants, who perceived these elements as a resource for wellbeing.

Additionally, four distinct pathways from the elements of nature to the perceived wellbeing benefits were identified. We classified these pathways as symbiotic nurturing, building social glue, maintaining a positive outlook, and centreing yourself (Table 1). These pathways emerged from participants' narratives of how they perceived and experienced wellbeing through interactions with nature. Each of these pathways is discussed in the following sections. Additional participant quotes are provided in Supplementary Material Table S1.

Table 1. Description of nature–wellbeing pathways as perceived by participants.

Pathway	Description	Example
Symbiotic nurturing	The experience of taking care of biological organisms with a sense of reciprocity	Experiences such as caring for plants and companion animals which tend to occur through interactions with domesticated elements of nature.
Building social glue	The experience of strengthened social bonds	Experiences of bonding with family and likeminded friends which occur through shared time in wild and domesticated elements of surrounding nature.
Maintaining a positive outlook	The experience of nourished positive outlook	Experiences of nourished positive outlook through mood boost, optimism and encouraged focus on the positives which relate to all elements of nature.
Centreing yourself	The experience of restoring the balance between oneself and the external world where the external needs and worries become peripheral	Experiences of centreing, such as solitude and being in the zone were facilitated by wild and domesticated elements of surrounding nature which provided space and activities for dissociation from the outside world and daily concerns.

3.1. Symbiotic Nurturing

Over half of participants spoke about how their role as a care-giver for plants or animals supported a sense of purpose and wellbeing. This led us to identify the pathway of symbiotic nurturing as the inherent human need to care for a biological entity with a sense of reciprocity. Nature experiences, such as taking care of companion animals (dogs and cats) or attending to plants, enabled participants to experience the role of care-giver or nurturer. In participants' words, this experience provided them with a “good purpose” (15-F-20) (Participant number, sex (M—male; F—female), age) and feeling of being needed that was perceived to support their sense of wellbeing.

Symbiotic nurturing implies that participants perceived their relationship with companion animals and plants as a give-and-take relationship. Three participants spoke about satisfaction from nurturing and seeing plants grow over time (Figure 1). Interestingly, one participant linked this experience to the reality of not yet having children, common during the emerging adulthood life stage. As highlighted in the following comment, caring for plants may help satisfy the innate need to nurture, which is critical to supporting wellbeing: “Neither me nor my girlfriend want children. We’ve made the decision now. It’s not in our 10 and 20 year plan. But even a plant gives that ability to nurture something from a tiny little seed.” (8-M-25). Companion animals, particularly cats, were perceived as supportive through providing regular non-judgmental companionship, comforting and being “a friendly face” when needed (10-F-22). Interactions with companion animals provided a sense of companionship when alone and eased feelings of loneliness (Figure 2): “I normally play video games solo, so it’s just ... it’s nice to have somebody there ... just like another person in a room and ... to occasionally just ... snuggle slightly.” (16-F-19).



Figure 1. Symbiotic nurturing: Indoor plant to show nurturing of plants.



Figure 2. Symbiotic nurturing: Cat on laptop to show companionship.

3.2. Building Social Glue

Participants identified nature spaces as a setting conducive to bonding with family and friends. Building social glue with families or friends was often attached to engagement in outdoor activities or “*the stuff we do together*”, such as hiking, mountain climbing, or simply “*hanging out*” on the beach (Figures 3 and 4), which tended to take place mostly in *wild surrounding nature*. Finding and bonding with likeminded friends through these activities was viewed as favorable to wellbeing as it supported a healthier lifestyle (hiking vs. going out drinking or engaging in sedentary behaviours such as watching Netflix).



Figure 3. Building social glue: Girls jumping off cliff to show friends bonding in nature.



Figure 4. Building social glue: beach as a space to hang out with friends and family.

Interestingly, one participant pointed out that time outdoors strengthened social bonds, “*time together, kind of getting to know each other*” while simultaneously requiring disconnection from other contacts—“*it’s just about leaving phones at home.*” Cell phones, through their link to social media, were viewed as a barrier to creating wellbeing through nature as they hampered immersion in the experience impeding connecting with other people. This sense of conflict between social media and authentic nature experiences was expressed by Participant 12 (12-F-22): “*I have to get the perfect picture to show to everyone . . . I have to get the perfect caption [for social media] . . . and so then you’re not really living in the moment...*”.

3.3. Maintaining a Positive Outlook

Most participants ($n = 12$) spoke about how interactions with elements of nature nourished their positive outlook thereby supporting optimism and a focus on the positives. Within this pathway, two underlying mechanisms were evident: *catalyst of positivity* and *gateway to happy memories and home*. These mechanisms encouraged participants to possess a more positive outlook on life, which was important to their wellbeing.

Catalyst of positivity refers to participants' interpretations of nature as being able to put them in a good mood and facilitate feelings of gratitude. This mechanism was linked to all four elements of nature, including an explicit link to wild surrounding nature in the form of climate with one participant describing: "I am so lucky . . . and counting the things that you have, even whether it's something as simple as the ability to walk, the ability to live in a sunshiny climate where there are mountains to climb." (12-F-22, Figure 5). Interaction with domesticated animals had the ability to make participants laugh, which made them feel more exuberant and happier: "I just think pets just do something amazing for you mentally . . . he [dog] puts a smile on my face all the time. He's hilarious." (10-F-22). Catalyst of positivity appeared to be more prominent from interactions with dogs, while cats were viewed more as comforting companions, which shows that different companion animals may help meet heterogeneous wellbeing needs. One participant, who wanted a pet but was unable to have one, spoke about how she visited a friend's family that has various animals, and in this way, still received wellbeing benefits. This is worth noting, given that in this population, living arrangements that are conducive to pet ownership may not be common.



Figure 5. Maintaining a positive outlook: Sunny climate suggests nature promotes positivity.

Interactions with wildlife were identified as a catalyst of positivity, although less frequently mentioned compared to domesticated animals. Seeing wildlife made participants feel happy and positive: "If you see one [kangaroo] on the side of the roadway and across the road, I smile. I live in [living location] so we've got koalas, kangaroos, possums, like, all in my backyard, so just sort of a happy place." (18-F-26, Figure 6).

The mechanism of gateway to happy memories and home relates to participants' interpretations of nature as being able to trigger positive past memories and evoke a sense of familiarity and thus promote positive outlook (Figures 4, 7 and 8). Participants affiliated with nature more and visited certain places in nature and/or engaged in activities because this was something they did when they were younger: "it [beach] just brings up memories of my childhood" (6-F-19). Connecting to home and past self, reminiscing and

reliving those happy memories offered positive reassurance and ultimately heightened wellbeing. Gateway to happy memories and home was also connected to nature's calming and relaxing effects on participants: *"Beach. I love the beach. It reminds me of home. Home is—I don't know. It's relaxing . . . anywhere along the coastline is just like home... it's my home away from home."* (17-F-24).



Figure 6. Maintaining a positive outlook: Kangaroos show how seeing wild animals make participants feel happy and positive.



Figure 7. Maintaining a positive outlook: A swing and a pond in nature to show positive memories of home along with sense of familiarity.



Figure 8. Maintaining a positive outlook: A stream in a forest to show a place that is reminiscent of family time.

3.4. Centreing Yourself

Many participants spoke about the importance of moments of dissociation from the outside world, daily concerns and challenges associated with living in an uncertain, fast-paced society and constant need to be “switched on”. This helped participants to centre themselves and carry on. The centreing yourself pathway relates to the process of restoring the balance between oneself and the external world where all the external worries become peripheral. By providing refuge from modern urban society, nature can facilitate centreing experiences by allowing participants to reconnect with the core self and experience life inside out.

In addition, nature appeared to bring participants to the present and retain them there for a little while. Overall, centreing experiences helped participants to reconnect with their self, recuperate and stay positive about life, and negate the pressures of being an emerging adult. The analysis resulted in two mechanisms that relate to this pathway: *being in the zone* and *episodes of solitude*.

Being in the zone refers to experience of being so immersed in an activity or environment that one disconnects from the rest of the world and becomes fully present in the moment: “I remember just . . . getting up and again it’s kind of those nothing else really matters in that moment [Talking about water skiing].” (12-F-22). Predominantly wild surrounding nature provided unique settings that helped participants to get in the zone, either in combination with other activities, such as listening to music, jumping off a cliff, or simply watching nature in action (Figures 3 and 4). Many participants stated that these experiences allowed them to “not think about anything else”.

“ . . . I don’t know how to explain it, because when you’re at the beach it’s like you just don’t think of anything else. You kind of get into just seeing the waves move in and out, just moving—the sand moving along and how the sand changes colour when it gets wet...”. (6-F-19)

Within *domesticated flora*, a few participants described experiences of looking after indoor and/or outdoor plants as therapeutic—“*meditative peace*”, as one male participant described tending to indoor plants.

The second mechanism of episodes of solitude in the centreing yourself pathway, contrasts with the social glue pathway with participants highlighting the importance of solitary time in nature (Figure 9): “When I go to the beach or whatever, you’re on your own and it’s nice.” (17-F-24). This time alone was desirable and beneficial to wellbeing. It allowed

participants to centre themselves: *“And I think it just helped me be calm. It helped me centre myself and then continue.”* (15-F-20).



Figure 9. Centring yourself: A secluded path to show solitary time in nature.

Nature offered space for episodes of solitude as well as a refuge from the pressures of modern society. This reduced the negative sensory stimulation further strengthening their distancing, ‘me-time-out’ experience, *“the ultimate happy place is under the water . . . It’s absolute dead silence.”* [Talking about scuba-diving] (18-F-26), often accompanied by sense of freedom:

“It was a bit of freedom . . . I think everyone needs a piece of time in their lives or a break where they can just be themselves completely and just not care.” (15-F-20)

When you’re outdoors and, you’re not worrying about all this . . . society crap. You don’t have to worry about having a job or how you’re doing at school or anything. You’re away from technology. You’re away from everything that is just—I don’t know, it’s just I feel like being in society is . . . it’s obligatory. You don’t have a choice there. However, it brings you down. And part of wellbeing for me is getting away from that.” (7-M-20)

Furthermore, participants explicitly talked about how this dissociation process and episodes of solitude provided opportunities to retreat to themselves, reflect and resulted in a new perspective:

“ . . . being able to sit and think is vastly underrated . . . introspection is something that I have at times struggled with . . . I don’t see how things should apply to me or I don’t see how, my actions might be actually . . . colouring the way I behave. So having a spot where I can just sit and think and not have sound, because we always have sound around us, all the time now . . . It was a paradigm shift. It was, becoming aware that there’s an entirely new spectrum of colour that you didn’t even know about. It was different because you didn’t even know that there was a different way to be.” (7-M-20)

4. Discussion

The results of this exploratory photo-elicitation study concerning the wellbeing of emerging adults revealed four elements of nature as important resources: (i) domesticated fauna; (ii) wild fauna; (iii) domesticated flora; and (iv) wild surrounding nature. Consequently, we identified four distinct pathways from elements of nature to wellbeing, including symbiotic nurturing, building social glue, maintaining a positive outlook, and

centring yourself. In two of these pathways, we presented distinct mechanisms of operation. Within the centring yourself pathway, operated the mechanisms of being in the zone and episodes of solitude and within the positive outlook pathway, the mechanisms of catalyst of positivity and gateway to happy memories and home.

To gain deeper insights into these findings it is paramount to contextualise them within the open design of this research. First, the spontaneous introduction of nature experiences by the participants highlights the importance of elements of nature as resources for wellbeing. Previous research on nature and wellbeing has tended to explicitly target participant views on nature and aspects of health and wellbeing e.g., [37,38,40]. To the best of our knowledge, only one study on health through leisure had nature emerge as a health resource in participant responses (millennial students in South Australia) without a priori mention [46]. In the present study, the spontaneous identification of nature as central to an individual's wellbeing, may well be linked to the growing societal awareness of how environmental crises such as climate change now threaten our long-term wellbeing. Further, some of the impacts on current mental health and wellbeing have been documented, for example, through the emergence of mental health concerns like eco-anxiety [56] particularly among youth.

Our study design enabled depiction of the active role young people have in making their own worlds and wellbeing in their daily lives. The findings build understanding of how some emerging adults perceive elements of nature as resources for their wellbeing. These insights address a gap in our understanding of experiences and perceived nature-wellbeing pathways in this population and may inform the development of initiatives to promote wellbeing among emerging adults. Through elaborating further on the identified pathways and mechanisms below, we aim to provide further insight and potential leads for future research and practice.

The symbiotic nurturing pathway related to wellbeing by providing participants with a sense of purpose, satisfying the innate need to nurture and providing social support through non-judgmental companionship. This finding is consistent with research linking companion animal guardianship among emerging adults with better psychosocial adjustment and functioning (e.g., higher levels of empathy, self-esteem, lower levels of loneliness and social anxiety) [41,42]. Staats et al. [40] speculated that the importance emerging adults place on companion animals to fulfil the need for companionship could be linked to the transitional nature of emerging adulthood and work-in-progress formation of social support networks. Our findings support initiatives, such as university animal companion schemes, which bring therapy dogs or pets to campuses for stress reduction and improvement of emotional wellbeing among students and staff, e.g., [57]. The inherent transition challenges of emerging adults can be addressed by providing symbiotic nurturing opportunities beyond pet guardianship in the home setting, for instance, through volunteering at animal shelters or programs such as Care Farming or temporary animal foster carer volunteering [39,58,59].

In addition to providing supportive human-nature relationships, our findings highlight that the symbiotic nurturing pathway supported the roles of sense of purpose and the need to nurture. Numerous studies have shown positive associations between feeling a sense of purpose and positive psychological wellbeing [60,61]. Furthermore, caring for others (by choice) has been linked to happiness [62,63]. Based on our findings, the importance of fulfilling the need to nurture through nature, may be linked to the challenge of delayed achievement of traditional adulthood milestones, namely, becoming a parent. This need to nurture could potentially be harnessed to engage young people more deeply in efforts to protect our environment through various initiatives including lifestyle changes.

Companion animals were most prominent in the symbiotic nurturing pathway, yet domestic flora, gardening and indoor plants, was also mentioned. When it comes to fulfilling the need to nurture, caring for plants can be an accessible option. Gardening is growing in popularity among emerging adults. Research in the US revealed that five million out of six million Americans who took up gardening in 2016 were aged 18–34 years [64].

Gardening or indoor plants may be a viable strategy to foster nurturing experiences and thus improve emerging adult wellbeing. Further research could explore variations of traditional and existing practices, such as bonsai nurturing, conservation volunteering or community gardening as strategies for increased wellbeing of emerging adults [65–68]. Such programs could also contribute to social glue, which arose as a second pathway to wellbeing through nature for emerging adults.

Building social glue brings people together to bond, contributing to social cohesion. Social cohesion, defined as “shared norms and values, the existence of positive and friendly relationships, and feelings of being accepted and belonging” has been discussed in literature as a key pathway between nature exposure and health outcomes [43] (p. 217). The building social glue pathway was prominent in our study, with participants describing how nature experiences helped them bond with family and likeminded friends through facilitating social interactions. Past research has documented salutary associations between social relationships and health and wellbeing, including the link to healthier lifestyles, e.g., [69,70]. Our results indicate that building social glue in natural settings helps mitigate risky behaviour and support healthy lifestyle choices. From a public health perspective, this is an important finding. It is not uncommon for health promotion efforts to be viewed in a negative light by the public for taking away the “pleasures” of life (e.g., drinking with friends), without offering healthier alternatives that are attractive. This is particularly true for young people, who are establishing social networks, amongst which peer pressure is a strong contributor to behavioural choices. For example, Järvinen and Gundelach [71] found that among young people, non-drinking in a culture where alcohol consumption is widely accepted, such as is the case with this study setting, was perceived as harmful to wellbeing because it meant exclusion from friendship groups and parties. The social glue pathway may be facilitated among emerging adults via community gardening, outdoor group activities, and volunteering with local conservation groups.

Maintaining a positive outlook is a third pathway identified in this study. The findings show that all four elements of nature were perceived as catalysts of positivity for emerging adults, which was then perceived to improve wellbeing. This aligns with research that documents the link between nature experiences with increased positive affect, lower anxiety and depressive symptoms [14,20–22]. The mechanism of gateway to happy memories and home relates to triggering positive past memories, evoking a sense of familiarity and thus promoting a positive outlook. This was prevalent with this study sample where Australians of this generation tend to have high levels of childhood nature experiences. This is consistent with previous findings [37]. While living away from the parental home, our participants indicated that visiting similar places and/or engaging in certain activities in nature can be a paramount resource for wellbeing. Previous research has shown nostalgia [72] and self-continuity [73,74] to be positive resources for wellbeing.

Attention Restoration Theory (ART) specifies the prerequisite of an environment to facilitate the feeling of being away (from routine environment), extent (sufficient scope to engage one’s mind), fascination (ability to generate awe), and compatibility (meet the preferences and goals of a person) as crucial for restoration of directed attention [75]. Some of these characteristics were observed in our participant experiences and relate to the maintaining a positive outlook and centreing yourself pathways. For example, a sense of familiarity evoked by memories can be linked to compatibility of the environment.

The centreing yourself pathway helped participants to reconnect to core self and negate the pressures of being an emerging adult, to remain well and positive about life. Being in the zone and episodes of solitude in natural settings offered a healthy dissociation (being away mentally and physically), which can be beneficial to wellbeing. Experiences of being in the zone, such as watching nature in action, can be linked to fascination, or soft versus directed attention as suggested in ART [75]. Being in the zone also occurred through engagement in activities that allowed participants to forget about everything else. Curtin [30] linked interacting with wild nature, where all thought and action are concentrated on the present, to the flow experience, which has similar characteristics as

the being in the zone mechanism. Csikszentmihalyi [76] (p. 4) described flow as “the state in which people are so involved in an activity that nothing else seems to matter”. Nature can offer an appropriate setting for being in the zone experiences through activities such as spotting wildlife or witnessing nature in action, hiking, and rock climbing [77,78]. Pitt [67] described how community gardening can be experienced as flow and argued that community gardens can be deliberately shaped to facilitate flow experiences. Urban environments could seek to provide nature experiences that may assist emerging adults with achieving being in the zone.

Centring experiences also include episodes of solitude, which can facilitate reflection, creativity, novel thoughts and organising of internal and external concerns [79,80]. As such, solitude in nature can help emerging adults gain a new understanding of themselves and their priorities and increase self-attunement. Better self-knowledge is particularly important during the stage of life where important decisions about identity are made, such as career choices. Career choices that are identity based and are attuned to an individual have been linked to higher wellbeing during emerging adulthood [81]. It is important that emerging adults are provided with the opportunity to experience episodes of solitude in nature.

This study is subject to several limitations. The study’s geographical location and setting, even though urban, offers relatively accessible nature and weather conducive to outdoor activity, and thus vibrant outdoors culture. Therefore, the results cannot be generalised to other locations or settings where access to nature is more limited. Further, the sample consisted of predominantly female university students despite efforts to diversify the sample. While no differences were noted in male and female participant narratives, a larger sample of males may generate additional information. Due to various challenges related to recruitment of non-university students in research, the gaps in literature on this population still exists. While potential self-selection bias associated with voluntary participation needs to be acknowledged, recruitment materials did not mention nature, and responses about nature were unprompted. Future research could examine how objective resources such as nature become part of emerging adults’ subjective resource arsenal, and what are the triggers that activate these resources. In addition, research could be undertaken to examine how the desire to be more closely connected to nature could be harnessed to promote environmentally friendly solutions and decisions at local to global levels.

5. Conclusions

Through identifying pathways to wellbeing benefits and associated elements of nature, this study’s findings help build understanding of how emerging adults perceive elements of nature as resources to their sense of wellbeing. Such an understanding can assist in development of initiatives that aim to promote mental health and wellbeing among this group. The spontaneous emergence of nature in participant narratives about wellbeing suggest its high potential as a means to improve this population’s general wellbeing through combined health promotion and urban planning efforts. These findings are timely, given the increasing amount and frequency of life challenges among emerging adults. Our findings add to the growing evidence base on the positive associations between nature experiences and wellbeing and provide support for nature-based interventions to promote mental health and wellbeing among emerging adults.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/youth2030027/s1>, Table S1. Additional participant quotes for each pathway and mechanism. S1: Participant recruitment [82].

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