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# The Experience of Awe in Nature and its Implications for Sustainability

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# **The Experience of Awe in Nature and its Implications for Sustainability**

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Submitted in partial fulfilment of the requirements for

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## **Abstract**

Awe is a complex emotion and a relatively new field of psychological study. Previous studies have looked at the benefits of spending time in nature including spurring environmental action, and how awe is felt in nature. In this study, I investigate the connection between these two ideas by addressing the questions of how Awe is experienced in the Northern Rivers region of Australia, and whether small and big moments of awe motivate people to take environmental action and connect them to their community and the natural world. For this study, I conducted 15 interviews, collected 51 surveys, and personally explored and journaled about awe (37.5 hours of exploration; 8.75 hours of journaling). Awe in nature was a near universal experience for participants in both dramatic moments and more accessible “day-to-day” moments. Awe appears to be a potential motivator for environmental action by promoting wellbeing and resilience that allows for sustained engagement and increasing a sense of connection to community and nature. While future studies are needed to confirm these results, this initial research suggests that awe has positive effects on people that, at a minimum, allow for positive engagement in environmental action, and may motivate participation as well.

## **Keywords:**

Awe, nature, eco-psychology, environmental action, sustainability

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# **1. Introduction**

## **1.1 Introduction and Rationale**

About eight years ago, I got involved in the climate movement in Portland, Oregon through a school club. I learned how to testify in front of the city council, joined protests, made a video about the dangers of a proposed pipeline, started my own youth organisation to act as a voice to the city, and even spearheaded the planning of a major Climate Strike march in my city. At first, I was inspired and motivated by a burning passion and sense of the importance of my work. But as I sat through meeting after meeting, listened to the repeated refrain of public officials telling me my voice is important, but still doing nothing, and watching dirty companies get away with more destruction, I became completely burnt out. My approach to activism wasn't sustainable.

In the years since, I have turned to the natural world that inspired me to fight in the first place for relief and renewal. Nature, and the feeling of wonder and awe that I feel when I am present outside makes me feel safe. Whether it's watching a bird catch the wind and glide through the air, a particularly beautiful flower that has just bloomed, or simply the power of a wave hitting the shore, appreciating the beauty and immense power of the natural world has restored my energy, and my conviction in the importance of fighting for the environment. Awe in nature has provided a way for me to maintain my commitment to the environment and to living a sustainable life. For the purposes of this paper, I define sustainability as living in a way that prioritises the wellbeing and longevity of one's community of both humans and the local ecosystems. In this study I will explore whether the experience of awe influences sustainability by improving wellbeing and strengthening connections to community.

## **1.2 Awe**

What is awe? Though an emotion that almost all experience, awe can be difficult to characterise. It can be both frightening and wonderful, existential, and inspiring. Dacher Keltner (2023) describes it as a feeling of wonder in the face of "vastness". This feeling can be quite overwhelming as it expands beyond our existing frames of reference or understanding, resulting in a sense of mystery and the unknown (p. 8). Albert Einstein (1931) described this sentiment as follows:

The most beautiful thing we can experience is the mysterious. It is the source of all true art and science. He to whom this emotion is a stranger, who can no longer pause to wonder and stand rapt in awe, is as good as dead: his eyes are closed. (p. 4)

Though awe can be experienced in many situations, from receiving a small act of kindness to listening to a moving piece of music, this research focuses on awe experienced in nature.

### **1.3 Awe in Nature**

Monroy and Keltner (2023, p. 312) found that people who spend time in nature in their day-to-day lives experience more awe. Awe in nature can be felt in both extraordinary moments and in the more day-to-day moments of life. Baird (2020) describes simply seeing the sunrise and sunset as ways to incorporate awe into your day “The sun’s rise and the sun’s retreat bookend our days with awe” (p. 18). Sturm et al. (2022) found participants who were encouraged to look for awe during a short walk experienced significantly more awe than participants whose only instruction was to go for a walk. Participants in the awe walk category had more thoughts of wonder and felt more like they were part of something bigger while on the walk (para. 49).

Many of the same concepts that are associated with awe, like connection to a greater system, an ineffable quality, and a sense of transcendence are also associated with spiritual experiences (Naor & Mayseless, 2019, p.116). In their study investigating spirituality as a tool for Nature Based Therapy (NBT), researchers found “twelve of the 26 participants explicitly used the term *spirituality* to describe the unique quality in NBT attributed to its profound effect, and others used terms such as *mystery*, *magic*, or *transpersonal*” (p.122). From these descriptions of the healing effects of nature, it is clear that spirituality and awe experiences in nature are deeply connected.

### **1.4 Awe’s Effect on Mental Wellbeing**

There is mounting evidence to suggest that experiencing awe in nature can have positive effects on mental and physical health. Time outdoors can also reduce the risk for numerous diseases, including respiratory disease, diabetes, and cardiovascular disease (Keltner, 2023, p.128). Keltner (2023) goes as far as to state, “in fact, it is hard to imagine a single thing you can do that is better for your body and mind than finding awe outdoors” (p.128). Monroy and Keltner (2023) suggest that awe can affect mental health positively through “elevated vagal tone, reduced



sympathetic activation, increased oxytocin, and reduced inflammation” (p. 310). The reduced sense of self caused by awe also has positive effects on mental health because an inflated ego is associated with conditions like anxiety, depression, and some social problems (p. 311). Another study suggests that being active outdoors can have positive effects on self-esteem and mood. These effects were particularly significant when exercise was done near a body of water (Barton & Pretty, 2010, p. 3950).

Researchers have also found awe to be a powerful tool in increasing feelings of social connection. The feeling of awe can inspire a sense of being part of something bigger, and therefore more connected socially (Sturm, et al., 2022, para. 44). Keltner (2023) explains how awe “heightens our awareness of being part of a community, of feeling embraced and supported by others” (p.118). Therefore, awe might have the ability to encourage people towards a more communal way of thinking required for a sustainable future.

### **1.5 Awe and Sense of Self and Ecological Self**

Experiences of vastness, mystery, and the unknown can also increase one’s perception of belonging to a community through a sense of being quite small, or even insignificant, among such a big, mysterious power. As a result, feeling awe can impact one’s sense of self and ego as individuals, causing them to realise they are a tiny part of a larger system (Keltner, 2023, pp. 34-35). Keltner (2023) argues:

Wild awe returns us to a big idea: that we are part of something much larger than the self, one member of many species in an interdependent, collaborating natural world. These benefits of wild awe will help us meet the climate crises of today should our flight from reason not destroy this most pervasive wonder of life. (2023, p.138)

There is even existing evidence that awe encourages positive environmental behaviours and individuals who feel more awe have more ecologically-sound behaviour. This is in part due to their willingness to sacrifice for the environment (Zhao et al., 2018, p. 9). Rogers and Bragg (2012) further found that several participants “attributed nature as being one of their motivations for sustainability and environmental action” (p.312).

A person can also have an “ecological self”, a phrase first used in the field of Deep Ecology, that influences how they view themselves in relation to nature and thus how they interact with it (Bragg, 1996, p. 93). Like awe, one’s experience of “ecological self” is deeply

personal and subjective. This self recognises a connection to others, making it inherently sustainable. Bragg (1996) writes, “An ecological construal of the self involves a belief in the fundamental connectedness of human beings with the rest of the natural world” (p. 100). Thus awe and nature can change the relationship of an individual with both their community and the natural world.

## **1.6 Environmentalism in the Northern Rivers Region**

The Northern Rivers is made up of seven local government areas including the Ballina Shire, Byron Shire, Clarence Valley, Kyogle, Lismore, Richmond Valley, and Tweed Shire Councils. This area, and Byron Shire and Lismore in particular, has a rich history of environmental action, alternative living, and connection to nature and it has even been said to have “protest and activism in its DNA” (Lowe, 2021, para. 6).

In the 1960s and 1970s, the town of Byron Bay saw a wave of surfers and hippies coming to the area in search of a “nature-based lifestyle”. The alternative mindset has encouraged more progressive views on environmental issues and conservation, even among traditionally more conservative community members (Wray, Laing, & Voigt, 2010, p.160). Tattray (2002) describes how “Byron Shire serves as a cultural laboratory for an emerging worldview and a new way of doing business and government that reflects a new ecological paradigm” (p. 131). This alternative way of thinking suggests the presence of many residents interested in sustainability and environmental action. Byron Bay was also the first town to establish a farmers market in the region (Burns, Cullen, & Briggs, 2018, p. 169). A study focused on consumers’ motivation for shopping at the farmers market in Byron Bay, revealed that many individuals were motivated by environmental concerns (p. 178).

In 2012, community members and activists launched a very successful campaign against coal seam gas (CSG) in Bentley, NSW near Lismore and Byron Bay (Lowe, 2021, para. 3). In an article in the local paper, Lowe (2021) reflects on the campaign, writing, “the gasfield-free movement of 2012 was all about looking after your neighbour” (para. 10). This community-focused, non-violent campaign, had huge success in the area with 87% of residents in Lismore voting “no” in a poll about support for CSG exploration in the area (Luke, Lloyd, Boyd & den Exter, 2021, para 1). Many surrounding towns in the Lismore and Byron Shire councils followed suit in voting against CSG exploration and erected signs stating their opposition at the entrance

to each town (“Byron Council to erect”, 2013, para. 2). This campaign represents a strong community presence in the area, as well as overwhelming support for climate action initiatives.

In 2022, Lismore and the surrounding area was hit with devastating floods, with water levels increasing up to 11 metres (Gilmore, 2022, para. 10), which may also influence residents' current acknowledgement of the climate crisis and engagement in action.

## **1.7 Study Questions**

I believe the greatest way we can make change is to engage more people in the environmental movement and empower people to make change. Awe has given me that strength and motivation to continue fighting, and so I am prompted to wonder if these experiences could have the same effect on other people.

Recognizing that awe can be experienced in everyday moments like observing the way the sun glints off a tree or looking up at the stars, I am particularly interested in investigating the following questions in this study:

- What is the experience of awe and what elicits these experiences?
- How do feelings of awe in these seemingly small accessible experiences, as well as in more dramatic big-wow moments, motivate people? And ultimately,
- Does the subjective experience of awe create a stronger connection with nature and connection to community and does this sense of connection motivate people to protect the natural world?

At a time when we need to take strong actions to transition to more sustainable ways of living, any new avenue for motivating people to action is worth exploring.

## **2. Methods and Ethics**

I conducted my research using three methods: a written survey, oral interviews, and personal exploration of and journaling about awe.

### **2.1 Outreach**

I reached most of the participants for both the survey and interviews through purposive sampling of organisations and companies that promote outdoor engagement, environmental action, or sustainable practices. Of the 29 organisations I reached by email (Appendix A), I made sustained contact with 11. Byron Bird Buddies, Byron Bay Surf Life Saving Club, Brunswick Valley Landcare and Northern Rivers Guardians sent the survey to their newsletter or email list and Mullumbimby Community Garden and Mullum Cares distributed the survey on their Facebook pages using an infographic (Appendix B) and information I provided to them. I also joined several local community or environmentally-focused Facebook groups and posted the survey on these sites. I distributed posters with a link to the survey in local establishments and on reader boards in both Lennox Head and Byron Bay. I located additional interview participants through snowball sampling from initial interview participants and identified a few interview and survey participants through direct contact during my visits to the Lennox and Mullumbimby Community Gardens.

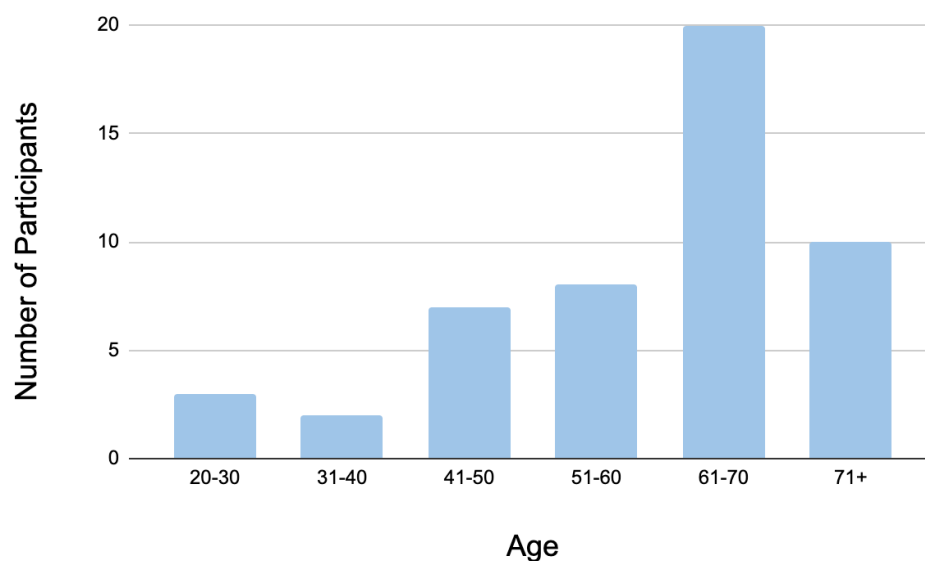
### **2.2 Ethics and Informed Consent**

Interview participants were provided with, and signed, an informed consent form (Appendix C) detailing my research, and I provided them the opportunity to choose to remain anonymous. I will also be sharing my project findings with participants who indicated interest in seeing the final report. One person under the age of 18 filled out my survey, but because of the ethical implications, I did not include their survey response in my analysis. No other ethical problems arose during the research.

### **2.3 Survey**

The survey had 23 questions covering a range of topics including basic demographic information, experiences of awe in nature in dramatic moments and smaller daily moments,

engagement in environmental action, and connection between awe and environmental action (Appendix D). One of the final survey questions asked participants if they would be willing to participate in a short follow-up interview. I distributed the survey online as a Google form and all data were gathered into a spreadsheet automatically created by Google. On one occasion, a participant filled out a paper version of the survey and I manually entered their responses into the Google form. I received 51 usable responses (after excluding an underage participant). Because I don't have information about the number of people on the various email lists or the reach of the Facebook pages for each organisation, I was unable to calculate the survey response rate but I would estimate it at less than 2%. Respondents varied in age (Table 1) and home location. Three participants were from Ballina Shire, 28 from Byron Shire, seven from Tweed Shire, five from the Lismore area, and six from somewhere else.



**Figure 1.** Age distribution of survey respondents.

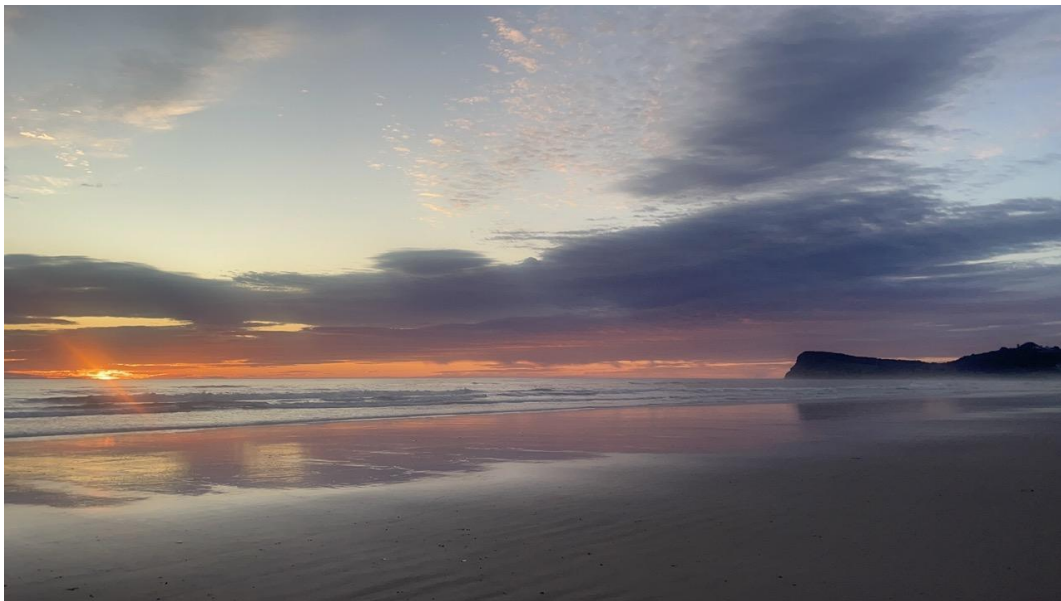
## 2.4 Interview

I conducted interviews between 8 and 20 November, 2023 (n = 15, 13 female: 2 male). Interview participants were from Ballina Shire and Byron Shire and were either involved in environmental action or sustainable practices. I found three participants through email outreach to organisations, eight through the survey question about an interview, one through another interview participant, and three through direct contact at the community gardens. The interviews

were semi-formal, allowing some variation from the established list of questions that covered relationship to nature, experiences of awe, experiences of awe in “day-to-day” life, engagement in environmental action, and connection between awe and environmental action (Appendix E). I recorded every interview with the verbal consent of each participant. After each session I transcribed the interview by listening to the recording, taking notes, and writing relevant direct quotes.

## 2.5 Personal Exploration

In addition to the surveys and interviews, I personally explored awe through outdoor experiences based out of Lennox Head. My most common approach was watching the sunrise on the beach (Figure 2) and swimming in the ocean and Lake Ainsworth. I also visited Nightcap National Park and Border Ranges National Park. During these outings, I made a conscious effort to be present in the moment, and to think about what I had learned from my interviews and from the survey. When I felt awe, I journaled about the feeling and my thoughts after the experience. I spent 37.5 hours seeking awe and wrote 11 entries over 8.25 hours of journaling.



**Figure 2.** A scene from one of my many awe-seeking sunrise outings, Seven Miles Beach, Lennox Head, NSW.

## **2.6 Analysis**

To analyse the data, I read through my interview notes and survey responses and identified key themes. I then selected quotes and responses that represented those themes. I repeated the same process for my own journaling about awe, reading through and selecting passages that align with the themes identified.

## **2.7 Limitations**

It is important to acknowledge that there were several limitations to my research. My ability to do in-person outreach was impacted by the constraints of the bus-schedule and routes. This limited the number of responses to surveys and my ability to meet with more people for interviews. A larger sample size would allow for more generalisable results.

The semi-formal style I chose to use in my interviews may have resulted in some inconsistencies in the questions I asked and the information gained across interviews. While this provided a more comfortable and relaxed interview experience for participants, it also allowed for the potential of interviewer bias as I sometimes deviated from the prepared questions and therefore may have asked leading questions.

In addition to the small sample size, I was dependent on opportunistic responses to my survey and interview requests. As a result, the demographics of respondents was skewed. For example, of my interview and survey participants, nearly 87% (13/15) of my interviews were with women. Of the survey responses, more than half (58.8%, 30/51; Figure 1) were over the age of 60. As many of the participants are likely retired, they may have more time for environmental and sustainable actions.

Finally, I intentionally sought out participants who are involved in environmental action or sustainable practices in their life. While this was efficient for finding connections between awe and environmental action, it is likely that these individuals are motivated to take part in the movement by a variety of factors.

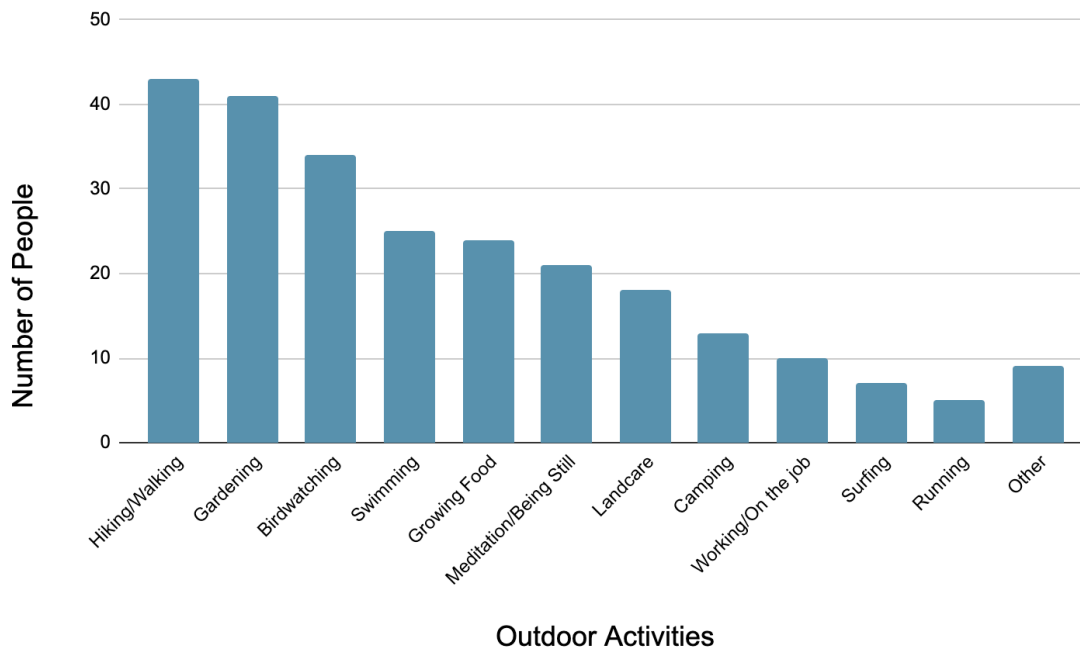
### **3. Results and Discussion**

Throughout my exploration of awe in nature and involvement in environmental action through surveys, interviews, and personal exploration, I identified interesting themes and overlap across participants. This information is organised under the following themes: experience of awe, feeling of awe, causes of awe, and awe as motivation for environmental action. A summary of survey results is available in Appendix F.

#### **3.1 Participants' Engagement with Nature and Environmental Action**

My survey results indicated that participants spend time and are active in nature regularly. Well over half of the participants (62.7%; 32/51) spend more than eight hours a week in natural spaces, while 21.6% (11) spend between four and eight hours. Only 4% (2/1) of participants spend less than two hours or no time at all in nature per week. They engage in the natural world in a number of ways (Figure 3). Several of the people I interviewed mentioned spending time in their gardens, going for beach walks, and birdwatching as a way they like to be outside. The survey respondents were also fairly involved in environmental action and sustainable behaviours. 68.6% (35/51) indicated they are involved in environmental or sustainability groups and all participants indicated they make at least some effort to practise sustainability in their lives, with 62.7% (32) making a strong effort. This information is consistent with the idea that the Northern Rivers Region is unique both in its environmental engagement (Lowe, 2021, para.6) and pursuit of a “nature-based lifestyle” (Wray, et al., 2010, p.160).

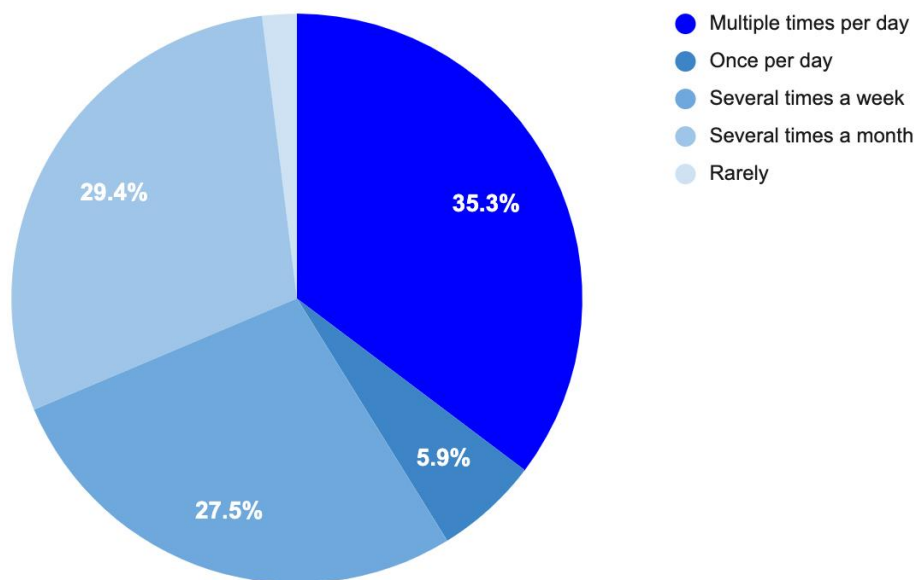




**Figure 3.** Number of survey respondents who indicated they engage in each identified outdoor activity.

### 3.2 Experience of awe

The experience of awe was universal and relatively consistent. When asked if they experience awe in nature, 100% of survey respondents and interview participants answered yes. Nearly all survey respondents (48 out of 51) further noted that they experience awe in “day-to-day” moments in addition to having had more “dramatic” experiences of awe. Respondents were more variable in how often they reported experiencing awe (Figure 4). Most participants reported experiencing awe in nature either multiple times daily, several times a week, or several times a month, suggesting a wide variety of predispositions to awe in nature. One anonymous interviewee explained how she is a very sensitive person, and thus is able to access the feeling of awe quite frequently, while some people she knows have trouble tapping into that experience. Respondents also varied in their views of whether spirituality affected their relationship with nature. Over a third (39.2%) said that religion, spirituality and/or philosophy does not affect their relationship with nature, while 51% said it did, with 9.8% entering an answer that was not easily characterised as yes or no. This suggests that, while religion and spirituality play a role for many people, this kind of connection is not necessary in order to experience awe.



**Figure 4.** Response to the survey question “How often do you experience awe in nature?”.

### 3.3 Feelings of awe

Across my three research methods, I identified five main ways of describing how awe in nature was felt: love, connection and respect, joy, discomfort, and an altered sense of self. Below I provide examples of how these concepts were described. In addition, I have included samples of my own writings when they aligned with these concepts. My personal reflections are presented in italics as block quotes.

#### *Love*

Especially in the interviews, I often heard people explicitly link the feeling of awe to the feeling of love. Jo, who worked in the social justice field for years, said “Awe is like falling in love” (Faith, 2023, pers.comm.). She further explained, “you go through all the little emotional languages that keep that love and respect alive” while experiencing awe. Anne, the chair of Zero Emissions Byron, described awe as “intense love... it’s a form of love” (Stuart, 2023, pers.comm.). Mello, another interview participant described it as the way one can connect to love, and derive meaning from experiences (Edwards, 2023, pers.comm.).

#### *Connection and Respect*

Many people I spoke with described a sense of trust and respect for nature during moments of awe that allows them to feel a deep connection. For Jo, gardening using permaculture techniques fosters this mutual connection because she gives to the land and can directly see how it responds. “I’m working nature, and nature is responding to how permaculture has taught me to work with nature. And here is this moment of awe”. When experiencing awe, she feels especially close with other animals. “I become unified, I become one with all creatures. We have extended a ritual of trust”. Jo suggested that one of the ways people need to live with the natural world is to create a safe place where animals are able to trust humans as well (Faith, 2023, pers.comm.). Another interviewee, Deborah, who gardens with children at Byron schools, echoed this sentiment when describing what gardening means to her. “It’s about creating a much bigger space for every living thing to be welcomed in” (Jorgensen, 2023, pers.comm.). Awe may be able to provide a greater respect that fosters a connection between people and ecosystems, a critical component of sustainability.

*Today I was standing in the waves as a light sprinkle hit my skin. Suddenly I felt the water start to pull against my legs and I felt like the water was changing. The water around me turned a sort of reddish colour and I realised a rip tide was forming. I felt so connected to the water in that moment as I read its behaviour and I wondered what it would be like to be even more connected. I was struck by an interesting thought. We, as humans, have a certain ability to tell when the weather shifts, and a storm is coming when we’re on land. We can see the clouds darken, and feel the wind pick up. Sometimes I even think I can smell the rain before it starts. I was struck by a sort of awe at our ability to do that, but also at the thought of how much more in tune with nature indigenous people, or even people who just live off of the land a little more, are. It’s so amazing that one can essentially understand the language of the earth. Feelings of awe for me bring sort of an urge to be able to speak that language better. For a little moment in time I feel like I can, and I want to feel that more often. (Journal Entry, 10 November 2023)*

**Joy**

Joy was also frequently mentioned when describing the feelings associated with awe. Sarah, secretary for the Ballina Environment Society, described awe as “pure, real joy” (King, 2023, pers.comm.) while another interviewee who asked to remain anonymous went so far as to say “this feeling of awe is like the oxygen of your spirit that makes your heart beat. It’s this mixture of happiness, joy, excitement, but also amazement that’s all mixed in this one word”. Deborah described her experiences as “absolute exquisite wondrous joy” (Jorgensen, 2023, pers.comm.). Another survey respondents alluded to the sentiment of happiness and joy as well with words like “joy and ecstasy”.

*It was raining when I went to the lake today. I lowered my head into the water, so my eyes were level with the surface of the water. To my delight I noticed how the raindrops seemed to fall into the water and bounce back up. I spun around in the water trying to dance along with the droplets as they skipped and hopped about. I was filled with an overwhelming warmth and joy as I watched this playful wonder. (Journal Entry, 20 November 2023)*

### ***Discomfort***

Though awe was predominantly seen as a positive experience, discomfort was also mentioned as a way of experiencing awe. One anonymous interviewee summed up the value of this effect of awe:

There are experiences that you can have in nature that are really uncomfortable and unpleasant. But you come away from them having refuelled at a different level, because you’ve survived... it’s ok to have those experiences of discomfort and I think they offer just as much as those beautiful experiences you have as well.

Jo also mentioned the dichotomy between the joyful feeling of awe and feeling uncomfortable:

I have learnt how to be a bird. Escalating my resilience and my determination for the planet, to work for everything in abundance that we give it. That is awe -- that you go beyond your own natural comfort zone to learn more. It’s not always just pure joy. (Faith, 2023, pers.comm.)

Awe can also be uncomfortable because being in nature will inevitably bring one face to face with environmental degradation. When feeling awe, Deborah is sometimes overcome with “deep

deep despair” (Jorgensen, 2023, pers.comm.). Discomfort from feelings of awe is not a finding I expected to encounter in my research. However, when I opened my mind to those moments as well, I quickly found that I was able to experience one.

*One of my interviewees the other day reminded me that awe can be felt in fearful moments as well. I remembered this as I swam out beyond the wave break today. I turned to face the horizon and saw the beginning of a wave start to rise out of the deep blue water. The admiration I had felt for the ocean moments prior turned to fear as I realised that I was right in the break zone and would not have time to get out of the way. I held my breath as I heard the sound of the wave turn to a roar and crash over my head. Soon I was spinning through the water, completely lost between up and down and everything in between. I knew the moment I came up for air, I would be terrified, thrashing against the water, and hoping desperately that there would be time for me to swim inshore before another wave descended on me. But for the moment, I was simply at the mercy of the water. It's a strange sort of feeling, not knowing if you will ever resurface, but surrendering to the complete lack of control. To exist completely at the mercy of the water, the wave, its energy. Though this moment was not filled with astonishment at the beauty of a dramatic landscape or the wonder of an interaction with an animal, it was a moment full of awe. A moment dense with emotion, complete presence, and a deep sense of trust that the ocean would return me to the shore safe and sound. (Journal Entry, 23 November 2023)*

### ***Sense of self***

Many of the people I interviewed mentioned a change in their sense of self when experiencing awe. They described feeling small or insignificant but in a way that was more comforting than uncomfortable. Bron described awe as “something bigger than me” (Elliott, 2023, pers.comm.). Deborah described the comfort of feeling small through awe as “transcendent... I become much less important. I’m one living entity in this massive thing. It makes me feel a lot less necessary. The thing I’m looking at is absolutely as important as I am” (Jorgensen, 2023, pers.comm.). Mello, a dedicated gardener at the Mullumbimby Community Garden, stressed the importance of detaching from one’s ego based on his spiritual relationship

with nature. “The less that I as a personality am there, the more I can receive the divine blessing” (Edwards, 2023, pers.comm.). An anonymous participant spoke about awe’s ability to separate ourselves from our self-focused tendencies:

I think nature has a brilliant way of perspective. It makes everything seem much less important and takes you out of your internal self and puts you firmly in a kind of physical, present place. We spend a lot of time thinking about ourselves. And by going into outdoor spaces and into nature you can [get out of your internal self].

For Sarah, this moment of feeling small comes from acknowledging the bigger system that we are a part of and she derives comfort from the knowledge that her personal problems are just part of something much greater than her. “Looking up at the night sky and realising we’re this insignificant little planet in a vast universe, and it’s sort of a feeling of being small and insignificant. But that’s not a scary feeling, it’s a sort of freeing feeling” (King, 2023, pers.comm.). One anonymous survey participant wrote that it “makes me feel both insignificant and magnificent as ‘I am the same stuff as the stars!’”

Finding a sense of smallness, yet connectedness to broader systems is a finding I expected based on prior research on awe. Reducing one’s sense of self seems to increase a sentiment of equality with other ecosystems and could serve as a motivator for taking better care of the natural environment.

*I used to think looking out over a vast expanse was the way to feel awe. And it certainly is one way. But as I stood looking out over Minyon Falls and the valley below, I thought about the power of tuning into my immediate surroundings. Looking out at the view, I felt small in the presence of the thousands of trees as far as the eye could see. But I also feel insignificant when I look into the eyes of a magpie and try, even just for a moment, to understand the life that it is living. (Journal Entry, 23 November 2023)*

## **Beauty**

Beauty was another recurring word I heard across many of my interviews and the survey responses. Beauty seems to cause the feeling of awe-struck surprise and stops people in their tracks. Anne described it as a feeling of “breathlessness in the face of the inexplicable beauty” (Stuart, 2023, pers.comm.) while Tony said, “It’s almost like an astonished wonderment. Just a

jaw dropping surprise of beauty” (Edwards, 2023, pers.comm). This feeling can also be all-consuming as you experience awe in the face of beauty. A few survey participants mentioned being “overcome by the beauty of sunrise or sunset” and “overwhelmed by both peace and beauty”. For some, like an anonymous interview participant I spoke with, that kind of experience of beauty is a crucial part of life. “We need beauty in order to move through life. You need beauty, otherwise it’s just too difficult”.

### **3.4 Causes of Awe**

Through my research, I’ve gathered that awe can be inspired or caused by many different things, big and small, depending on the person who is feeling it. However, there were several specific causes - both particular sites and ways of being in nature - that seem to be particularly awe inspiring for those with whom I spoke: animals, the ocean, the sky, and being present.

#### ***Animals***

One such source of awe was animals. Throughout my interviews I heard several statements like Graham’s “I just can’t get over animals” (G. Bond, 2023, pers.comm.). When describing an instance of awe in nature, more than half (57.4%, 27/47) of survey participants mention animals in some way. Animals were even more prevalent in responses to the question about awe in daily moments with 62.8% (27/43) responses referencing animals. For Jo, small moments like seeing a koala joey swinging in the branches with a paw out to feel the wind is a miraculous experience (Faith, 2023, pers.comm.). She also shared an impactful story about the power of connecting with animals as she had a profound experience with a water dragon after suffering a devastating family loss:

I knew there was visceral contact with this great dragon. He drew the pain out of my body, of grief. I was there a good two and a half hours in [feeling] – first of all grief – [and also] massive healing with this creature. Staring in locked trance with him. (Faith, 2023, pers.comm.)

One survey participant told a similarly impactful story of a time that a bird offered emotional solace:

I also had an experience recently where I was sitting with my friend next to a waterfall, talking about life, and I began to express my fear about something big coming up in my

life, and I was getting emotional. Upon starting to cry, one of my favourite birds, a Black-faced Monarch, flew into the tree above me. I was immediately gratified, and my attention shifted, and I began to laugh at how suddenly a bird can change my mood! I felt held - it was as if this bird were saying: the beauty of nature will always be here as a refuge for you, as a source of joy, so don't be scared.

Jo, Sam, and Bron all spoke to the act of communicating with animals and how this can be an awe experience in itself because many people brush by these moments and miss them. Sam shared, “Animals really communicate with you. There’s a presence, you know you’re communicating. Well it’s instinct isn’t it? And I think being intuitive to being quiet...I think that’s something which is harder for people to find sometimes: that quietness” (Collyer, 2023, pers.comm.). Along with that sense of connection with an animal comes a deep sense of respect and mutual understanding. Upon reflecting on venomous snakes in her garden Bron said:

We've just been lucky to meet each other in a safe way. And for them to stop and for me to stop, and we look at each other and we have respect for each other. And then we leave each other alone. And I give gratitude for that. (Elliott, 2023, pers.comm.)

Among discussions of awe prompted by animals, mentions of birds were particularly prevalent. 74% (20/27) of the descriptions of daily awe moments that mentioned animals, described birds specifically, though this could be impacted by the fact that at least a third of survey respondents are members of the Byron Bird Buddies, a birdwatching and monitoring organisation. Wonder and awe from birds mentioned in the survey ranged from simply waking up to birdsong to amazement at their ability to complete complex migrations. For Sam, birds are incredibly symbolic. She stated “the spirit of the bird holds the soul” (Collyer, 2023, pers.comm.).

A sense of connection with animals aligns with what I expected to encounter in my research based on Keltner’s description of the “benefits of wild awe” that are essential to combatting the climate crisis. Keltner (2023) explains, “during experiences of wild awe, we may sense that we share a form of consciousness with other species” (p. 137). This could have great implications for the ability to make experiences of awe more accessible and more frequent for people because birds are widespread and relatively easy to interact with. One anonymous interviewee illustrated this accessibility while explaining her passion for birds. “They exist



everywhere. You can be subconsciously interacting with them through sight and song. They kind of are a really good conduit to getting people connected again”.

### ***The ocean***

The ocean and spending time by the sea was another source of awe for some participants. Several of the people I interviewed shared a strong connection with the water. Lyn explained “the sea and I have a symbiotic relationship” (Walker, 2023, pers.comm.). Another participant described returning home to the ocean after being away. “It was like as soon as my feet hit the sand of the beach I go to regularly, I felt this energy pass through me and this connection and this enormous relief of being back somewhere that felt important and meaningful, that brings me joy.” I was struck by the strength of the ways both people I interviewed and those who responded to the survey spoke about the ocean. For one survey respondent the ocean allows for a religious experience. “The sound of the ocean, the feeling of the sea, the touch of the breeze on my skin all feel like a direct experience of God.” I too have had a similar experience when feeling awe in the ocean.

*It’s hard to put into words the way the water felt in that moment. I felt like I was in an embrace. Like I was being held. I’ve grown up around the ocean, and I am very aware of the power and danger it holds. But at that moment, I had never felt safer - like all I had to do was be present with the beauty of the water and it would take care of me. Perhaps I was just being naive or delusional. But does that matter, I wonder? That feeling of trust and gratitude for something so much bigger than yourself is exactly what I imagine people feel towards their god. (Journal Entry, 26 November 2023)*

### ***The sky***

The sky is another source of awe for people, perhaps because of its vastness. While looking up at the sky, Jenny shared her wonder. “It’s so vast and goes on for infinity” (J. Bond, 2023, pers.comm.). Graham simply pointed to the sky and said “I could spend the whole day looking at the sky... just the blueness of the sky” (G. Bond, 2023, pers.comm.). He still recalls the impact a very blue sky in Melbourne had on him and referred back to it often throughout our interview. For Lyn, the sky is a source of comfort and is important for her wellbeing. “I love

open space. I have to be able to see the sky or I get quite claustrophobic” (Walker, 2023, pers.comm.).

Sunrise and sunset were mentioned as prompting experiences of awe in “day-to-day” moments. One survey respondent described awe as “sunset rays that feel like they are reaching through me”. My own exploration of awe has been centred around watching the sunrise in the morning. Like birds, sunrise and sunset are very accessible and can be widely available regardless of location in the world, and thus could be important for increasing experiences of awe.

*Sunrises and sunsets are so interesting. They are somehow so fleeting, while simultaneously being one of the most constant things in my life. The sun will set tonight, and the sun will come up tomorrow. This I know to be true. Maybe that is why they are so universally acknowledged to be beautiful; We know that it could so easily be missed so they have to be appreciated in the moment, but they also represent so much. The passing of time, new beginnings, endings, all the key parts of life really. (Journal Entry, 1 November 2023)*

As I alluded to in a previous section, several survey and interview participants feel the night sky reminds them of how small they are and the wonder of the universe.

*I’ve seen a lot of beautiful night skies in my life, but the stars at Clarence River certainly blew my mind. The sky was vast, but the dark outline of the canyon walls on either side of us reminded me of our narrow, and seemingly insignificant, role in the universe. It’s funny how acknowledging the vastness of existence can actually make me feel cosy, held, and more secure. Somehow more sure of my meaning while bringing that very concept into question. When I look at stars, I feel a little afraid to look away. Like I might miss a message. Shooting stars! Yet another example of a fleeting moment that fills me with wonder and contentment. (Journal Entry, 16 November 2023)*

### ***Being present***

There were several recurring ideas of what kinds of sites and experiences can bring about the emotion of awe to participants in my research. However, there was also a lot of agreement among participants about how one can increase their chances of feeling awe. Being present and aware was at the centre of being open to more awe. Several participants spoke about the tendency in western culture to rush through life and to generally lack awareness of one's surroundings. Anne described this clearly, simply stating "you miss it because you're so involved in your own obsessions" (Stuart, 2023, pers.comm.). Bron and Tony both spoke to the way that being open and aware helps facilitate their experiences of awe. Bron told me, "when you're being, that's when you're going to have the most awe and wonderment experiences, I think" (Elliott, 2023, pers.comm.). When reflecting on a particular moment of awe, Tony attributed the experience to his presence. "I think it was my own state, peering into nature. Purposely listening, watching, feeling, smelling, touching...just wanting to connect, wanting to observe and learn" (Edwards, 2023, pers.comm.).

There is often a great focus on getting people more exposed to nature (Baird, 2020, p. 30). But it may be possible to increase experiences of awe by adjusting simply the way people engage with nature. Bron explained, "most people go to nature for experience. But some of them, they bucket list it, rather than feel it... they haven't given themselves the space and permission to go slowly and gently with it" (Elliott, 2023, pers.comm.).

Being present in my surroundings and really aware of even the little things around me was something I explored throughout my own awe-seeking. I found that, because I was looking for the beauty in my surroundings, I felt awe from a much broader range of things than when I limited myself to being open to only the things that previously made me feel that way.

*The water this morning was miraculous. I was on the beach, watching the sunrise, when I saw a school of fish jump out of a wave in unison. There were probably 20-30 of them and together they created a spherical shape and they literally seemed to glitter as the morning sun hit their skin. It was such a fleeting moment, and immediately made me think about what some of the people I've interviewed have been referring to when they say you need to be open to these experiences. As I kept walking along the beach I saw a few more individual fish jump out of the water. At one point I started running on the sand and I approached a group of terns. They raised their wings and took off towards me in unison.*

*At the last moment they turned towards the water and their bodies turned to silhouettes as they seemed to disappear into the rising golden orb. I felt overcome by joy at the feeling of freedom seeing them fly. I found a little place to sit on the rocks and I just stared at the ocean. For a long time. The waves had me mesmerised today as I searched for fish, dolphins, and birds. But I also felt completely content to not see anything “special” because just the beauty of the water filled my soul. (Journal Entry, 13 November 2023)*

\* \* \*

*There’s something about raindrops falling and running down my face that brings me into the here and now. I can’t be anywhere else but here. The natural world comes into direct contact with us and we have to notice. Being surrounded by water, no matter in what form, always makes me feel small. (Journal Entry, 2 November 2023)*

### **3.5 Motivation for Environmental Action**

Every survey participant indicated that awe influences their motivation to want to take environmental action. Of survey participants, 68.6% (35/51) said awe was a strong motivator for their involvement in environmental action and an additional 25.5% (13/51) indicated it was between slightly and strongly motivating. My research suggested several reasons awe can encourage environmental action including: being available in daily moments, positively impacting wellbeing and providing energy, and fostering a sense of respect and connection to the natural world and other people.

#### ***“Dramatic” awe and “Day-to-day” awe***

While almost all survey and interview participants agreed that awe can be felt during small moments throughout one's day, I heard differing thoughts on whether the amount of motivation offered by these two kinds of moments were equal. Among survey participants, 66.7% (34/51) said that small moments of awe motivate them to the same extent and 29.4% (15/51) were unsure. One woman who I interviewed described these two types of awe as “all beautiful, and they’re all important”. Deborah expressed similar sentiments about dramatic awe and awe in daily life when she said she feels awe “like 100 times a day... it just makes me completely stop what I’m doing and it just makes my heart so full of love. Nothing else matters,

it's just an absolute precious joyful moment" (Jorgensen, 2023, pers.comm.). Sam, like Baird (2020, p. 18) views sunrises and sunsets as an example of the power of a smaller awe experience. When speaking about the sunrise she said, "that definitely holds the energy in there. Like you don't have to go far to just sort of get in touch with it" (Collyer, 2023, pers.comm.). On the other hand, Tony thought awe in daily moments is not as powerful, but still holds value in its ability to remind people of the feeling on a regular basis (Edwards, 2023, pers.comm.).

*Rainbows feel extra special. Much like a sunrise or a sunset, perhaps even more so, they are fleeting. So I always feel an immense amount of gratitude to have witnessed one. There's something striking about how unique they are too. Nothing else in nature is so wildly colourful and chaotic, yet so orderly at the same time. Maybe fleeting moments are the key to awe experiences for me. Those moments that I could have easily missed but was lucky enough to witness. (Journal Entry, 16 November 2023)*

### ***Wellbeing and Resilience***

Both the survey responses and my interview participants strongly suggest a link between awe in nature and mental wellbeing. All of the survey respondents indicated that it positively affects their mental health to some extent and 76% said it strongly affects it. Several interview participants suggested that they make an intentional effort to get outside on a daily basis to recover after a long day of work or to help them stay present. Awe in nature can also have healing capabilities in more extreme cases. After years working for social justice, Jo found herself suffering from burnout and Chronic Fatigue Syndrome. She searched for solutions, and eventually joined others in her community in finding healing at the ocean:

The sea was the most incredible experience in restoring our nervous system. We had to have a daily ritual, it was like drinking water. To have to go straight to the sea, and just immerse your body, you didn't have to do anything remarkable, just immerse your body.... It is awe that keeps me alive. (Faith, 2023, pers.comm.)

This significant benefit from being near water is consistent with the research done on the extra benefits of exercising outdoors when near a body of water (Barton & Pretty, 2023, p. 3950).

Awe can also act as an antidote to the despair that many people feel in light of the environmental crisis. One anonymous participant shared, "awe keeps me hopeful. On the

flipside, you can get despairing. So I guess the awe and those experiences keep that refuelled and resilience and all those things.” Another participant echoed this saying “it fuels my motivation, and my perseverance”. Awe may seem to be energising in the moment, but it may have a positive effect on wellbeing after the experience has passed. Sam talked about tapping into the memory of awe experiences to provide energy. One participant described her daily commute to work where she soaks in the beauty of Wollumbin, a local mountain, and she uses the energy from that beauty to get her through her day sitting inside. The idea of awe in nature as an energiser was plentiful in the survey responses with ideas like “because nature is what keeps us refreshed [and] centred”.

### ***Respect and Connection with Nature and People***

Finally, awe in nature can motivate environmental action because it fosters a strong connection with, and subsequent respect for, the natural environment and the people around you. An anonymous interview participant said, “it’s a profound love and respect for the natural environment and the animals that depend upon it, depend upon us not destroying anymore than we already have”. Creating a strong connection makes the issue personal, and therefore much harder to ignore. Tony shared how awe inspires his action. “I think it does enhance my feelings toward environmental issues because I can gain so much through it personally and therefore I feel that everyone else can also potentially gain a lot from it” (Edwards, 2023, pers.comm.).

For several people I spoke with, connecting with and preserving nature for future generations to feel awe was very important. An anonymous interviewee describes herself as “a custodian for the next generation” and Sarah believes that it is everyone’s responsibility to do their part for the environment:

I think it’s our duty, as custodians. We know the damage that humanity has done, and we’ve got the technology, we’ve got the knowledge, we can do other things. I think it’s just the duty of every person on the planet -- especially the wealthy north -- we should be doing everything we can to fix it because we broke it. (King, 2023, pers.comm.)

Many survey responses also spoke to the idea of connection to both nature and people. One person wrote, “it gives me a profound love and respect for our natural environment and native animals. It generates a deep sense of care”. Another wrote, “I think we want to look after things we care about, and awe brings out a sense of wanting to protect things so we don’t lose them”.

Another spoke to both the connection and stewardship for future generations. ““we're a small part of something intricate, interconnected and amazing. I want to protect those experiences for my nieces and nephews”. This too is in line with Keltner’s (2023) findings that awe can make people feel part of a community (p. 18).

#### **4. Conclusion**

It is clear that people experience awe in many moments, both dramatic and throughout the day. It is often felt as a sense of great beauty, joy, connection, respect, or even discomfort and can change the way one feels about themselves and their place in the world. My research suggests that people are heavily impacted by awe in nature through its effect on their mental health and the sense of being connected to community and the natural world. While connection and respect for the natural world can be motivators for sustainable living, and wellbeing can increase resilience and sustain involvement in any activity, it is challenging to draw a direct connection between awe and motivation for environmental action from my research.

Awe in nature has been a constant source of inspiration and energy in my life and has become even more so after hearing about the moments in which others experience awe and how it affects them. Spending time seeking out awe and being present and open to it, has increased my appreciation for the small moments of awe in my day and made me feel more deeply connected to my surroundings. While I do feel empowered to take action, I can not definitively conclude whether that is a direct result of my experiences of awe in nature, or a culmination of other influences in my life.

The population I surveyed and interviewed was from a pool of people already involved in outdoor activities, and environmental action and/or sustainable practices, so it was not surprising that they found awe in nature. Residents in this part of Australia, and Australians in general, seem to have a strong connection to the outdoors. Future research that replicates this study in another country could provide more clarity on whether awe is in fact working effectively as a motivation for environmental action for cultures and people with a different relationship to the natural world. Importantly, additional research that addresses awe in nature in more urban, and less environmentally-minded settings than the Northern Rivers region would also be relevant for getting more people involved in environmental action given that much of the world's population lives in cities.

As we continue to face rapidly increasing climate chaos and environmental destruction, it is crucial that we cultivate greater respect for the natural world and adopt more sustainable ways of living. Moments of awe in nature are accessible and readily available for those that are open to them. And those moments just may be the thing to help people realise what it is we need to protect.



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## **Appendix A:**

### **Outreach List**

#### **Organisations Emailed**

Australian Seabird and Turtle Rescue  
Ballina Environment Society  
Balloon Aloft  
Brunswick Valley Landcare  
Byron Bay Coastal Walks  
Byron Bay Eco Tours  
Byron Bay Stingrays  
Byron Bay Surf Life Saving Club  
Byron Bird Buddies  
Byron Environment Centre  
Community-Owned Renewable Energy  
Mullumbimby (COREM)  
Go Seakayak Byron Bay  
Healthy Minds Club  
Holding Hands Under Ground  
Lennox Community Gardens  
Lennox Head Alstonville Surf Life Saving Club  
Lennox Head Landcare  
Lennox Longboarders Club  
Lets Go Surfing  
Mullumbimby Community Garden

Mullum Cares  
Northern Rivers Guardians  
Plan C  
Rainforest Information Center  
The Farm Byron Bay  
Tuckombil Landcare  
Wetland Care Australia  
Zero Emissions Byron  
Northern Rivers Guardians

#### **Facebook Groups Joined**

Australian Wetland Appreciation Group  
Ballina Community Notice Board  
Brunswick Heads Community Page  
Byron and Beyond Community Group  
Byron Bay Community Group  
Byron Bay Resilience and Sustainability  
Byron Bay Surf Community  
Byron Shire Community, Culture, and Events  
Lennox Head Community Group  
Save Wallum - Brunswick Heads Group

**Appendix B:**

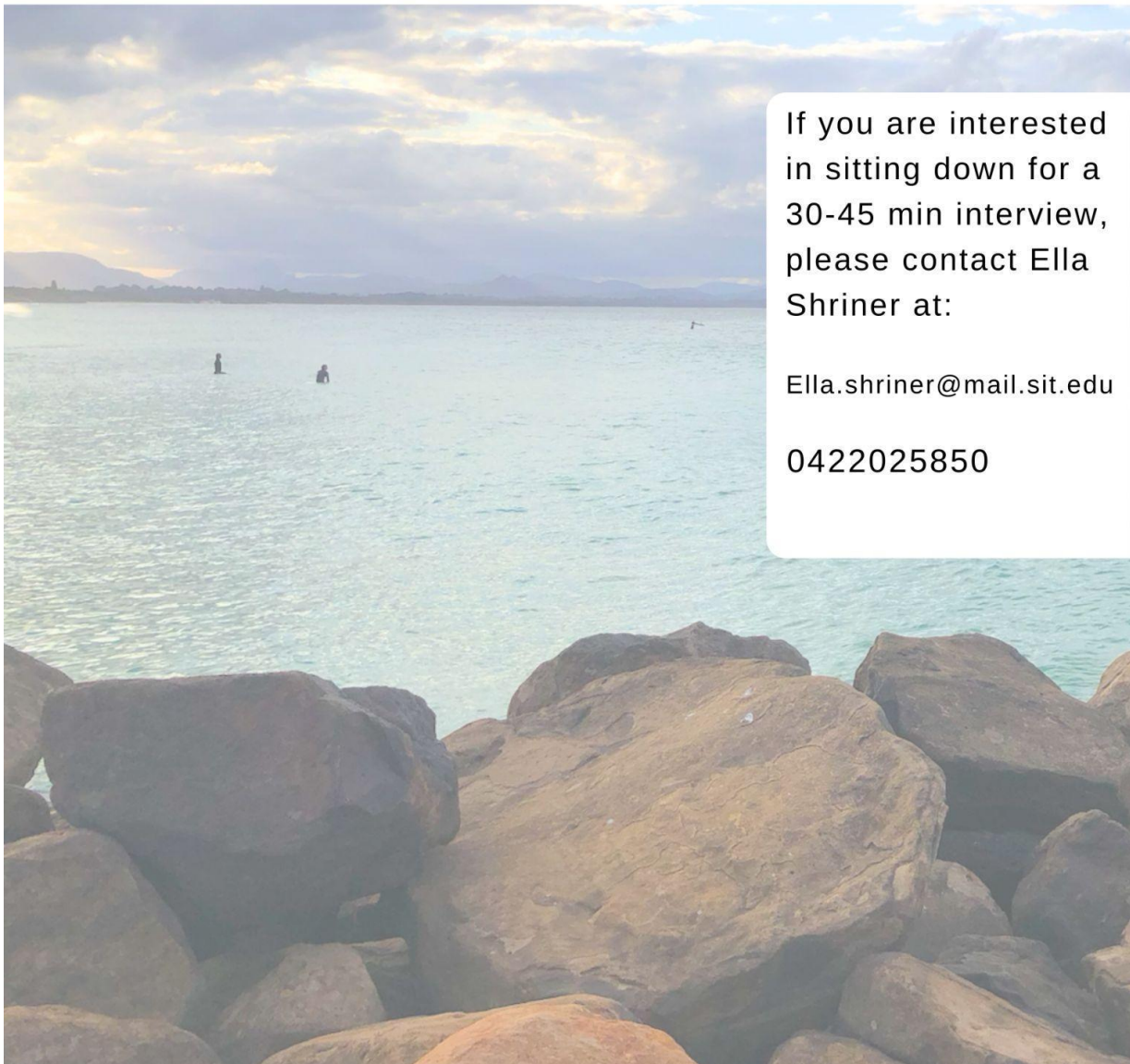
**Outreach Infographic**

**PARTICIPANTS NEEDED**

Student research project  
investigating experiences of awe  
in nature

Looking for people of all  
backgrounds and identities

To fill out a short  
survey, scan the QR  
code below.



If you are interested  
in sitting down for a  
30-45 min interview,  
please contact Ella  
Shriner at:

[Ella.shriner@mail.sit.edu](mailto:Ella.shriner@mail.sit.edu)

0422025850

## **Appendix C:**

### **Informed Consent Form**

#### **Researcher**

Ella Shriner

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#### **Research Study Title**

Experiences of Awe as a Motivator for Environmental Action

#### **Introduction and Description of Study**

This study is being conducted as a culminating research project for an undergraduate study abroad semester with the School for International Travel (SIT) called Australia: Sustainability and Environmental Action. Your participation in the study will consist of a singular interview lasting about 30-50 minutes. Interview question topics will include your engagement with nature, emotions related to that connection, and your involvement in the environmental movement. The information gained from this interview will be incorporated into a written report that will be submitted and included in the program library and may possibly be published on the internet. It will also potentially be used for my own personal future research at Carleton College in the United States.

#### **Purpose of the Study**

The purpose of this study is to help answer the following research question

- How can the subjective experience of awe be used to create a stronger connection with nature and motivation to protect the natural world?

#### **Risks**

Risk to participants in the study are extremely low. You may encounter questions about Climate Change that cause discomfort or eco-anxiety. If you would like additional support or resources, the NSW mental health care line is 0800011511.

#### **Benefits**

Participants will be able to reflect on the positive impact nature has on their life but participation in this study may also not benefit you directly. However, the knowledge that we obtain from your participation, and the participation of other volunteers, may help us to better understand ways to engage people in the environmental movement.

#### **Confidentiality**

You have the option of either remaining anonymous or of having your contribution to the study acknowledged. Your contribution will be kept anonymous unless you specifically request to be

named by checking the box below. If you choose to remain anonymous, the information in the study records will be kept strictly confidential and will be available only to myself. No reference will be made in oral or written reports which could link you to the study.

**I give permission for my name to be used in the written report**

☐ Yes, my name may be used

☐ No, I wish to remain anonymous

**PARTICIPATION**

Your participation in this study is voluntary; you may decline to participate. If you decide to participate, you may withdraw from the study at any time. You may also decline to answer any specific question. If you withdraw from the study at any time the information already obtained from you will be destroyed.

**Sign below if you agree to participate in this research study.**

Subject's signature \_\_\_\_\_ Date \_\_\_\_\_

Researcher's signature \_\_\_\_\_ Date \_\_\_\_\_

**Would you like to receive a copy of the final report?**

☐ Yes, please send it to me!

Email address (not for use in the study): \_\_\_\_\_ **Interview Guide**

## **Appendix D:**

### **Survey Guide**

## **Awe in Nature**

**Description:** Thank you for completing this survey! It will provide valuable information for my university research on experiences of awe in nature and how these experiences can affect, motivate and sustain environmental action. Participating in this survey may help you to reflect on the positive impact nature has on your life and will help further the study of how to best engage people in the environmental movement! The survey should take around 10-15 minutes.

If you have any questions, don't hesitate to email me at [ella.shriner@mail.sit.edu](mailto:ella.shriner@mail.sit.edu)

### **Connection to Nature**

1. On average, how much time do you spend in natural spaces per week (including urban green areas)?  
(Circle one)

- Almost no time at all
- Less than 2 hours
- 2-4 hours
- 4-8 hours
- More than 8 hours

2. What type of outdoor activities do you engage in regularly? (Circle all that apply)

- Meditation / Being Still / Sitting
- Hiking / Walking
- Running
- Surfing
- Swimming
- Birdwatching
- Gardening
- Growing food
- Camping
- Working / On the Job
- Landcare / Bush Regeneration / Restoration / Tree planting
- Other (please specify): \_\_\_\_\_

3. Do your religious, spiritual or philosophical beliefs influence your relationship with nature? Yes/No

4. If so, please explain



### **Awe in Nature**

5. Have you ever experienced a sense of awe or wonder while in nature? Yes/No

If you answered no, please skip to question 12

6. Can you describe an experience of awe in nature that you've had?
7. How often do you feel awe in nature? (Select one)

Multiple times per day  
Once per day  
Several times per week  
Several times a month  
Rarely

8. Do you intentionally seek out moments of awe in nature? Yes/No
9. Do you experience awe in nature in your "day-to-day" life? Yes/No
10. If yes, please describe an instance.

11. Do experiences of awe in nature affect your mental wellbeing? (Circle one)

1 - Not at all  
2 -  
3 - Slightly / To some extent  
4 -  
5 - Strongly

### **Environmental Action**

12. Are you actively involved in any environmental/sustainability groups or projects? Yes/No
13. If yes, please describe your involvement and/or the name of the group or project
14. Do you make an effort to practise sustainability in your life?

1 - Not at all  
2 -  
3 - Slightly / To some extent  
4 -  
5 - Strongly / Consistently

15. To what extent do experiences of awe in nature motivate you to want to take environmental action?

- 1 - Not at all
- 2 -
- 3 - Slightly / To some extent
- 4 -
- 5 - Strongly

16. If you feel that it does, why do you think awe motivates you?

17. If yes, do you feel that “day-to-day” experiences of awe motivate you to the same extent as “dramatic” moments of awe? Yes/No/Maybe

### **Final Questions**

18. Would you be interested in talking more about this subject in a 30 minute interview? Yes/No/Maybe

19. If yes or maybe, please include your email or phone number and name (Your name and contact information will not be included in the survey results!)

20. How old are you?

21. Where are you from (Circle one)

- Byron Shire
- Lennox Head
- Ballina
- Other (please specify): \_\_\_\_\_

22. What is your occupation?

23. How did you hear about this survey?

**THANK YOU!**

## **Appendix E:**

### **Interview Guide**

#### **Relationship with nature and effects of nature**

What does nature mean to you?

How would you describe your relationship with nature?

What emotions or feelings do you associate with being in nature? How does being in a natural setting affect your mood and wellbeing?

In your daily life, how do you incorporate nature into your routines or practices, if at all?

Are there cultural, religious, spiritual, or philosophical beliefs that influence your connection with nature?

Are there specific places in nature that are particularly special to you?

Have you ever had an awe-inspiring experience in nature?

**Follow up:** could you describe that experience?

**Follow up:** what did you feel in that moment? What emotions do you associate with the experience of awe?

**Follow up:** how would you define awe?

**Follow up:** what types of sights or experiences in nature make you feel awe?

**Follow up:** Have you ever experienced a feeling of awe in a natural setting in a group. How did that experience differ from a solitary experience of awe?

**Follow up:** Do you experience awe in nature in your “day-to-day” life?

Follow up: Can you describe an instance when this happened?

Does Awe affect your feelings about environmental issues?

#### **Involvement in environmental action/sustainability and motivation**

Are there particular environmental groups, projects or causes that you actively support or participate in?

**Follow up:** If so, what drew you to these groups or causes?

If not, what, if anything, would it take for you to get involved?

Do you intentionally incorporate sustainable practices into your life?

**Follow up:** What are they?

What motivates you to try to be sustainable/be engaged in the environmental movement (if applicable?)

**Follow up:** What personal values or beliefs underlie your commitment to environmental action (and/or) sustainability? How do these values guide your decisions and actions?

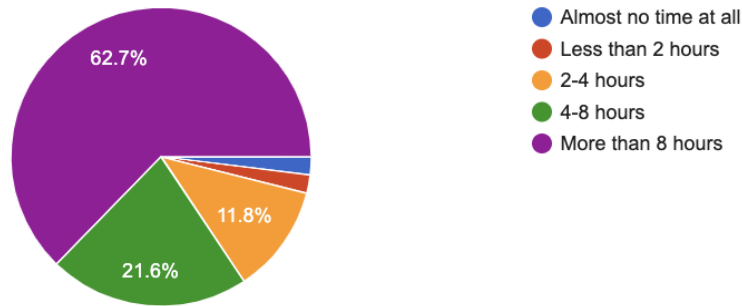
**Follow up:** How, if at all, does your relationship with nature affect your motivation to adopt sustainable practices or engage in environmental activism?

**Follow up:** How do experiences of awe affect your motivation to adopt these practices?

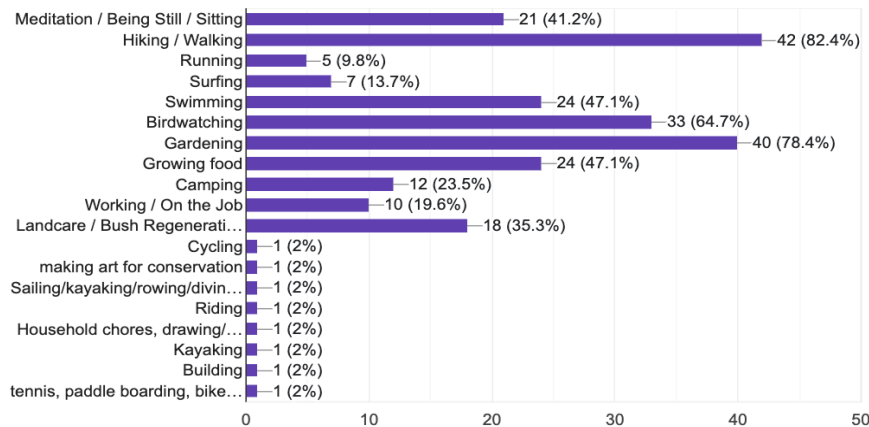
## Appendix F:

### Summary of Survey Responses

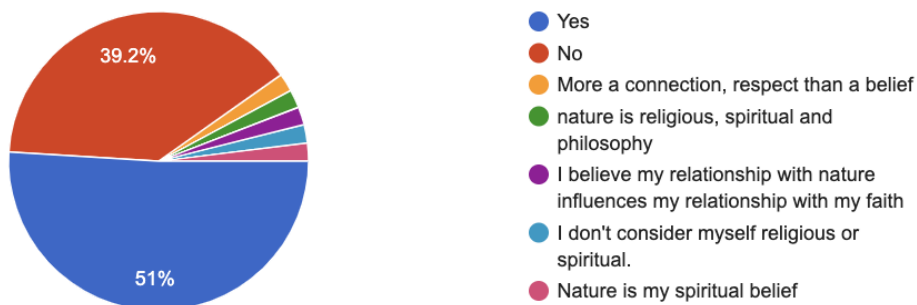
On average, how much time do you spend in natural spaces per week (including urban green areas)?  
51 responses



What type of outdoor activities do you engage in regularly?



Do your religious, spiritual or philosophical beliefs influence your relationship with nature?



If so, please explain

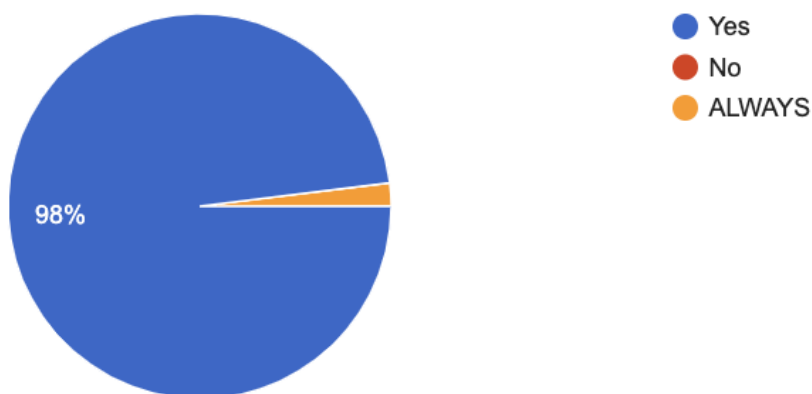
1. I do not believe "it" is all about accident or self generation - there is a creator I stand in awe of what I can experience and give thanks
2. I am stardust, as is everything I see/smell/hear/taste/touch around me. The land and sea country I live in deserves my respect and being present in nature, being quiet in nature, doing bush regen or ocean and beach clean-ups are some of the ways in which I show my respect and re-establish my connection with that-which-is. It also eases my angst, which frees me
3. Wicca - connection to natural cycles and that we are part of nature
4. I see God in His Creation
5. Nature shapes my spiritual and philosophical beliefs as much as these beliefs shape my experience of the natural world. To me, Nature is a Higher Power, a creative force, a body of consciousness that delivers reminders, metaphors and experiences that help me make sense of my circumstances, inform my thinking, make better choices. Time in nature helps me get in contact with my priorities and my emotions, reminding me that I am part of something much bigger than my own ego. Time in nature helps me think more clearly. Time in nature offers respite from neurotic thinking, self-obsession, etc. Time in nature helps me get in contact with my role as a changemaker/activist in a troubled world, offering inspiration and empowerment. My love for nature guides my heart, which guides my mind. It is up to me to keep these channels clear so that I can live in alignment with greater meaning. Sorry if that doesn't make any sense - a bit of a word-vomit! Thanks for the opportunity. xx Henry Coleman
6. Connecting deeply with nature is part of my spiritual practise, provides meaning and joy in my life.
7. I have no religious beliefs but I believe that everything on the beautiful planet we live on has as much right to survive as we do and that means their habitats should be protected from human abuse.
8. As humans we NEED nature. Nature has energy and we should embrace it. It's a dual relationship.
9. Being in nature reminds me to be present
10. More a connection, respect than a belief
11. Environmental beliefs.
12. I just love nature in itself, without any spiritual, religious or philosophical beliefs or influences.
13. Connection to nature is at the centre of my spiritual beliefs
14. I find nature a source of inspiration and wisdom. Helps me comprehend how all things exist interdependently and are interconnected. We as humans exist as a part of nature and that it is essential ecological process and life support systems be maintained. Genetic diversity needs to be preserved and our use of species and ecosystems needs to be sustainable.
15. I transcend all 'ideologies' and see a wider relationship to self, others and planet.
16. Nature is my religion
17. Yes nature encourage me to make space & how willing I am to be open to energetics and mind to be receptivity throughout my life .
18. Among the principles guiding the Baha'i- approach to conservation and sustainable development, the following are of particular importance. Nature reflects the qualities and attributes of God (generosity, beauty, awe, love, etc and should, therefore, be greatly respected and cherished; All things are interconnected and flourish according to the law of reciprocity; and the oneness of humanity is the fundamental spiritual and social truth shaping our age. Baha'i- Scriptures also describe nature as an emanation of God's will. Hence, the need to show deep respect to

all things in nature. Responsible stewardship of the natural world logically extends to the humane treatment of animals.

19. I see nature as a creation of God that we are responsible for taking care of.
20. I believe that nature reciprocates respect.
21. My overall philosophy of life includes respect for the natural world and the belief that we should do all we can to be good stewards of it for coming generations.
22. Nature is the 'big thing'. It's what's amazing, inspiring, awesome, incredible and is what soothes. Humans in general just can't accept something is bigger than themselves so they created other distractions and beliefs
23. I am into preventing species extinction, global warming and environmental destruction and believe in the preciousness and amazingness of the biosphere and that we humans are but teeny insignificant specks (albeit destructive ones) in the universe and in time
24. my buddist practice has enabled me to see that everything in nature is perfect as it is without me having to change anything
25. Philosophical. Result of disappointment in lack of general respect by local council staff, school children and others. It doesn't seem to be important to many people.
26. calms the soul
27. God's creation the skies that speak of him

## Awe in Nature

Have you ever experienced a sense of awe or wonder while in nature?



Can you describe an experience of awe in nature that you've had?

1. The oneness of all creation. Divinity infused in all creation. Feeling completely connected to the immensity of the ocean and experiencing joy and ecstasy. The experience of trees communicating wisdom. Uluru emitting an ancient wise language. Feeling like I'm connecting to a bird flying and feeling like I'm flying too.

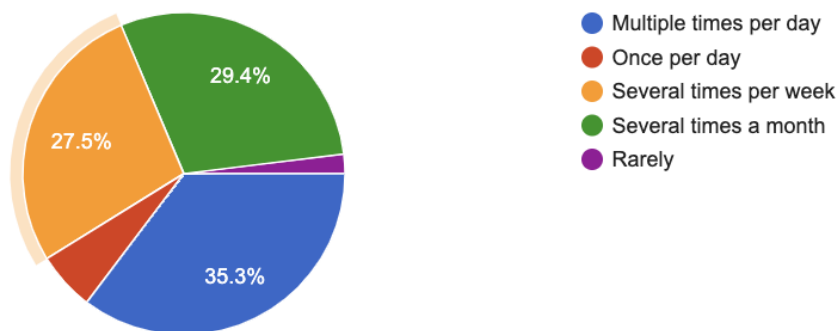
2. Many times in some beautiful places. Sometimes at home, other times looking at an amazing view (usually somewhere high)
3. How beautiful, complex and connected it all is - it is
4. When seeing a bird exhibit some behaviour
5. many and varied as i study wildlife in my career as 'artist for conservation' at [www.stevemorvell.com](http://www.stevemorvell.com)
6. When a manta ray stopped and stared at me staring at her one time when I was diving. Every time I hear whalesong or watch mothers and calves drifting with the currents... Every sunrise and sunset. When i hear the song of the butcher bird. When i inhale the scent of flowers. When light from the planets shimmers across the water on dark nights at anchor: and so many more!
7. Eating lunch outside in Townsville and a large Bush Python came down the tree. Star gazing and a massive meteorite lit up the sky
8. Deep seated gratitude and love
9. Most recently, I felt enlivened and physically happier upon seeing the abundant flowering of one of my favourite trees - *Angophora costata* (Sydney Red Gum). I'm not sure why seeing these flowering trees gives me such joy, but I am glad. I also had an experience recently where I was sitting with my friend next to a waterfall, talking about life, and I began to express my fear about something big coming up in my life, and I was getting emotional. Upon starting to cry, one of my favourite birds, a Black-faced Monarch, flew into the tree above me. I was immediately gratified, and my attention shifted, and I began to laugh at how suddenly a bird can change my mood! I felt held - it was as if this bird were saying: the beauty of nature will always be here as a refuge for you, as a source of joy, so don't be scared. Another experience of awe, a few months ago, took place at the top of an outcrop in a national park, far from populated areas. I was the only person in the whole national park. I ate a psilocybin mushroom, and sat atop the outcrop, watching the mist and rain come and go like veils around me. Sections of the landscape would become visible and then hidden again. The colours were changing quite dramatically and the patterns in the landscape became visible. This experience offered a great sense of awe.
10. The ability to make beautiful things and have the wow factor, also we as humans still do understand or know how this generated
11. The magnificence of our rainforest creek in flood ... the ROAR .. and the height of the water raging through the forest at night.
12. Watching a grasshopper shed its exoskeleton. What emerged was much bigger than the exoskeleton left behind.
13. I live in the country surrounded by wild animals and I am constantly experiencing awe and wonder when I see animals living in their natural environment undisturbed by humans. An instance of this was when I was in my home orchard and around 500 topknot pigeons (*Lopholaimus antarcticus*) flew in 8 or 9 separate groups into the tall eucalyptus trees around me. They all arrived within the space of 5 minutes.
14. Feeling peaceful and makes me forget lots of society's problems.
15. Watching a whale munch a school of sardines amongst a pack of sharks
16. Often the absolute beauty, complexity and intuitive behaviour of so many species..and symbiosis
17. Happiness
18. Everyday living near the Grampians.  
Sunrise on the beach.
19. SEEING A WATERFALL, SEEING A STORM, SEEING THE SURF, SEEING THE CLOUDS



20. Just a feeling of curiosity in watching birds/wildlife and their habits, appreciating the beauty and serenity of natural surroundings. I enjoy seeing tiny details in animals and plants to taking in wider water scenes, landscapes, amazing geology or the day and night sky.
21. Dolphins shadowing my surfboard, looking at me while I surfed the wave
22. As a keen birdwatcher/knowledge gather I was first awed by the migration of shorebirds from one end of the earth to the other. I am also awed by how birds manage to exist at all in nature and all the adaptations that evolved so that their existence is sustained by nature on a daily bases.
23. Too many to mention! Mouth open, staring in disbelief The Great Barrier Reef - snorkeling - Ningaloo Reef - Swimming with turtles The Red Centre - Shock of green budgerigas Melbourne - Deep blue sky
24. I have had several "peak experiences" of becoming intensely mindful/focussed upon elements in nature eg, a hover fly. I regularly feel awe at natural events eg full moonrise, sunsets, cloud formations, whale and dolphin sightings. Climbing trees to emerge amongst blossom & the cornucopia of insects.
25. Overwhelmed by both peace and beauty
26. Beauty and some anxiety about loss of bushland
27. I have experience of awe in nature multiple times every day. A wasp digging a hole in the sand, a bee in a flower a number of different bee species in one bush, a different bird visitor in my garden etc etc etc
28. When ill with a damaged nervous system I spent a lot of time in the Sea. One day I felt a huge urge to piss. It was as if my body did not want to stop. I wanted to be a fish, I did not want to go to the land. Eventually, after approx. two hours, I did and felt so well. My body was cured and my energy returned after three years of awful fatigue. The sea took me back to a very primitive state. The whole experience was a sense of awe. Nature just took over and I was a sick pebble being healed by these forces.
29. Many times I can be immersed in a sense of oneness .. it's beauty and the pure magic of creation
30. I drive everyday to Mullumbimby and the road is lined up with Mount Chincogan in the foreground. I am everyday in awe with the view, and then behind it, Mount Warning stands out, sometimes surrounded by layers of morning fog... it never ceases to amaze me. I am surprised and joyous that this feeling comes to me everyday. The colours perhaps trigger this. Walking to the lighthouse and turning around a corner to discover for the 100th time a glimpse of nature/sea/sky so perfect!
31. Last weekend I went snorkelling and was amazed by so many beautiful fish and corals, colourful and intricate life we are so often unaware of on land.
32. To me, nature is inherently beautiful and I experience awe when I see natural places. I don't feel this way in human-made places.
33. Being in the rainforest is awe inspiring just the feeling of the moisture, nature, Bird and other critters . An incredible feeling of being part of it
34. Awe at our unique animals here in Australia like koalas, kangaroos and their care for families and platypus.
35. Walking on a deserted beach early in the morning with a Brahminy kite circling overhead.
36. Every experience is awe. From how seeds grow, to patterns in nature, to deep ecology, to seasonal changes, to how fauna and flora connect. I just try to enable as I can and get out of the way and have a sensory and feeling experience within it all.
37. Watching a whale breach with a baby, feeling rocks at Uluru, seeing a bandi bandi snake dance, observing a sea eagle fish
38. Geez...every day and all the time. I am a wildlife rescuer and carer and am often in awe of the adaptations and quirks of various critters - especially birds. Smell of eucs flowering during the night. Sight of magnificent

- Powerful Owl hunting at night. Being surrounded by 100s of flying foxes coming in to drink at a dam when I was trying to release an Owlet Nightjar at dusk. Sight of birds flying to freedom after being rehabilitated from injuries.
39. the awe was an experience of stillness
  40. Floating above a singing humpback whale and feeling the vibration of its song through my chest cavity and organs
  41. Finding a tiny sugar glider in a nest box in my local park
  42. Watching a wedge tailed eagle land and eat in the middle of a grass paddock.
  43. When light / orb shapes appeared over a stream of water and mist massive mountainous snow covered ridges
  44. A whale beside my kayak
  45. the magnificence of a tree
  46. A feeling of being overcome by the beauty of sunrise or sunset

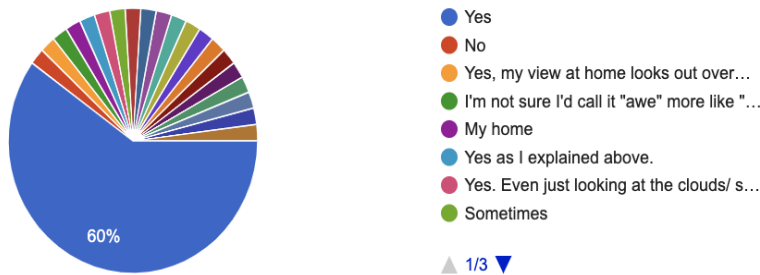
How often do you feel awe in nature?



Do you intentionally seek out moments of awe in nature?



Do you experience awe in nature in your "day-to-day" life?



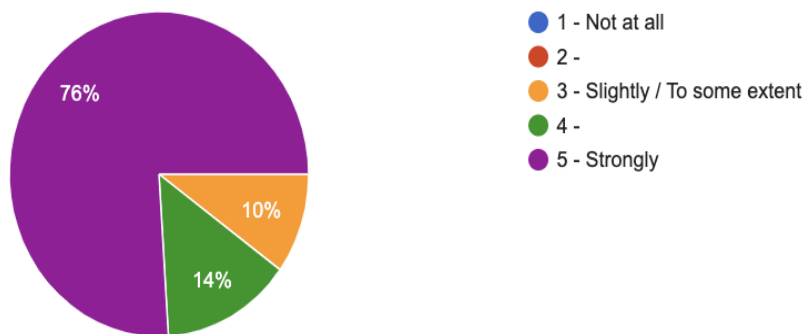
If yes, please describe an instance.

1. The sound of the ocean, the feeling of the sea, the touch of the breeze on my skin all feeling like a direct experience of God.
2. As above. But often when I see birds/animals up close
3. I live in bushland; everything ting I see and hear and feel just astounds me - at every scale.
4. Because I am outside observing so much. Listening and looking. Nature is full of awe!
5. too many to describe after 42 years a a fulltime nature artist working only from my own field experience
6. As above. Even in the city there are birds flitting around and plants growing towards the light, or water running back to the sea, or clouds and sky...
7. Dragonflies always blow me away, moonrise, a breeze, butterflies, the smell of mulch or leaves
8. Marvel at God's incredible artistic skills in creating what He has
9. The first two experiences I described above would be applicable answers here. They took place on "normal" days, in the sense I had not gone on a multi-day trip to seek them out. The flowers are everywhere at the moment. Similarly, a sighting of a rare animal, or sitting and listening to a beautiful call of a bird, offers awe on a day-to-day basis. The level to which I can experience this awe and be overtaken by awe depends on my receptivity to it, which depends on how still my mind is, and to what extent I am preoccupied by stresses or distractions. I'd like to stress this point vis-a-vis the next question - 'do experiences of awe in nature affect your mental wellbeing': Yes, but it's a chicken-or-the-egg scenario. My capacity for awe is largely determined by my mental state. In other words, awe and mental wellbeing are mutually co-arising. One doesn't produce the other in a linear way - rather, they produce each other.
10. Just how things grow and change
11. Hearing bird chatter first thing when I wake up, no need for an alarm clock
12. The radiance of pearlescent rainbow colours inside a limpet shell I found on the beach.
13. Working in my garden. Precious moments like seeing a butterfly come out of its chrysalis and slowly spread its wings.
14. Some years our property becomes a target for Sulphur-crested Cockatoos. We have a large tree by our house and large rainforest and gum trees slightly further away which have been filled with cockatoos calling loudly and swinging upside down from branches and generally just seeming to have fun. Their raucous company can last over two hours but as with most wildlife, they are fun to watch.

15. Being in the beach alone, watching the sea while I see dolphins surfing waves
16. Sunrise two days ago
17. Being in areas that are not urbanised
18. Particularly discovering a bower bird bower, complete with blue pegs, biros, false tobacco flowers. etc.
19. Finding birds and native orchids
20. Everyday living on a bush block.
21. THUNDER AND LIGHTNING STORM LAST NIGHT LIGHTING UP THE TREES
22. When on a horse trek in the Rocky mountains near Banff, seeing how heavy snowfall can transform a green forest to incredible black and white beauty overnight.
23. I am excited to see the Needle-tailed Swift knowing they travel all the way from their breeding grounds in Siberia and rarely landing. Using the winds they sleep, feed and mate on the wing. They arrive over our area ahead of the summer storms feeding on the insect blown by the winds an indication of the changing seasons. They then go back to their homes in Siberia to nest in tall conifers. How awesome is that!
24. Sitting on our back patio looking at the trees and plants in the garden - new growth, new colours, birds (I miss 'our' kookaburra though...) + animals
25. Awakening to birdsong
26. In the garden and finding @ beautiful insect or flower
27. Wild birds at their birdbath and feeder
28. Please see previous similar question
29. I like to sit and observe people shopping, I sit on a bus stop seat. Sometimes I feel like I am a person in an old painting. eg. Brugal's "The wedding". I read and study bodies and faces and the way folk age. I am amazed by body language.
30. Sunset rays that feel like they are reaching through me... a bird a lizard that pops into my view through the window
31. Looking at the blue sky between the green leaves of the palm trees creates in me a sense of awe when I open up the curtains in the morning.
32. I'm an ecologist and often stop to look at things, like a new spider I saw on my walk to work. I'm easily distracted by birds, bugs, flowers.... etc
33. I have actively made choices in my life in order to experience awe in nature in day-to-day life. Where I live and what I do for work, I often see native vegetation and birds.
34. I live on a community that backs onto the Nightcap NP I'm surrounded by it
35. Just on my rural property seeing a koala or other wildlife going about their day.
36. A simple example is watching the birds in our garden swoop in to feed on the flowering trees or warn each other of the presence of a python or just sit and sing. I wouldn't describe the sensation as awe, but it's a moment of awareness of the natural world that always enhances our daily life.
37. Walking in my garden, seeing fungi after the rains, frogs, Christmas beetle holes in the soil and the beetles population exploding, snake skins left on timber, each year different visitors as the biodiversity gets more complex
38. as above...being a wildlife rescuer and carer I have many experiences involving close contact with wildlife and nature..often on my own in the middle of the bush. I live close to the bush so I interact with nature every day.
39. At work last week and observing a recently built osprey nest

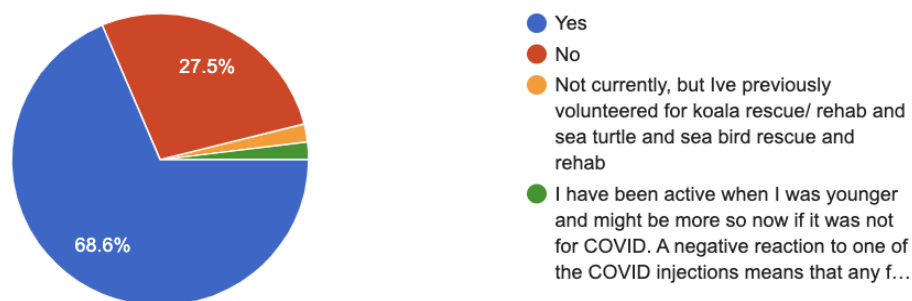
40. Gardening walking watching birds animals Tree gazing out the windows Walks and swims in rivers and beaches
41. Black cockatoos calling, magpies singing and seeing spoonbills
42. just looking out the window and seeing a beautiful day
43. Sitting in the garden and a bird comes to rest on my boot!

Do experiences of awe in nature affect your mental wellbeing? (Circle one)

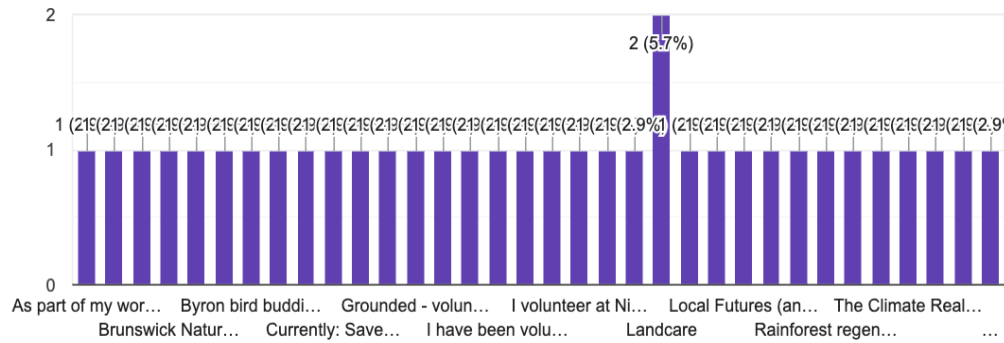


## Environmental Action

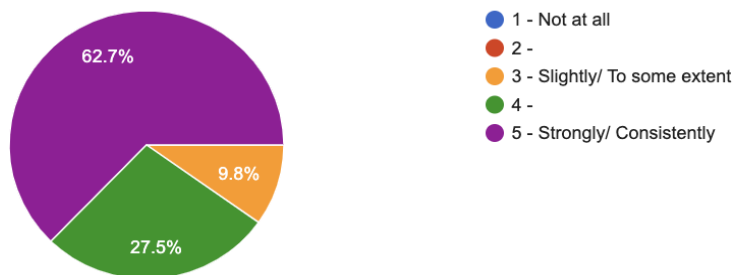
Are you actively involved in any environmental/sustainability groups or projects?



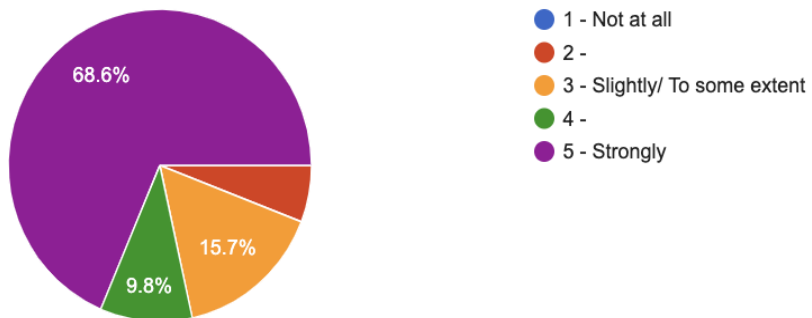
If yes, please describe your involvement and/or the name of the group or project



Do you make an effort to practise sustainability in your life?



To what extent do experiences of awe in nature motivate you to want to take environmental action?



If you feel that it does, why do you think awe motivates you?

1. It gives me a profound love and respect for our natural environment and native animals. It generates a deep sense of care.
2. If we appreciate the natural world we have a greater sense of our own place in the ecosystem

3. I feel a responsibility to appreciate to share, to not damage to acknowledge I don't know what I am doing - but the worst thing you can do is to do nothing - the best i can do is the best I can do, but do it lightly so "nature can work me in?
4. As Joseph Campbell so succinctly said 'In the presence of the sublime there are no words!'
5. Awe inspires me to protect that which inspires awe in me
6. We're a small part of something intricate, interconnected and amazing. I want to protect those experiences for my nieces and nephews. I also believe we remain part of it after we die
7. What else is going to ?
8. Awe (and beauty) offers me a direct experience of the importance of flourishing ecosystems. Flourishing ecosystems therefore have inherent value. It is therefore profoundly meaningful to take action to support flourishing ecosystems.
9. Sadly habitat destruction is ever where around me as well as wildlife hit by cars
10. It inspires me to keep going if I sometimes feel it's not worth it; it energises me; makes me feel both insignificant and magnificent as "I am the same stuff as the stars!"; can't bear the thought of this beauty being destroyed by the ignorance and greed of humanity under the control of extractivism, consumerist capitalism and the industrial growth society
11. I am not sure I am comfortable describing everything in the terms of awe. Being environmentally aware comes more from a respect for nature and natural environments.
12. I should be more involved because we are having lots of environmental issues and as humans we are ruining the planet for our sons
13. Really it is more respect and the awareness of the interdependency of all living beings, the connectivity rather than awe
14. We are gradually destroying our world
15. I need to feel awe to enhance environmental activities.
16. Beauty of nature makes you want to preserve it
17. ANXIETY ABOUT LOSS OF THE NATURAL BEAUTY
18. I can see threats to wildlife and their habitats that I love and I wish to help protect them.
19. It provides an emotional connection to nature that results in a desire to protect it
20. We cannot keep destroying habitat, polluting our water ways and the atmosphere - the life force which is the I creatures/plants to exist. I am motive to try and make a difference enen though small.
21. Reminds me of our connectedness; gives me such reward for my involvements in nature
22. Shows what we must do to protect our environment
23. Impossible not to care
24. It reinforces how interconnected all living things are- how important ALL living things - not just humans
25. All the time. In Sydney I have found a spot where I see orange and purple sun sets.
26. Feel inspired to connect and protect
27. Because I want to keep that feeling alive everyday
28. I think we want to look after things we care about, and awe brings out a sense of wanting to protect things so we don't lose them.
29. I don't want natural places to be lost or degraded. I want to see wild places restored so that there are more opportunities to experience awe.

30. Wanting to protect the last of the special places
31. Because humans are doing too much harm and I want nature to bounce back. It needs protection from human harm.
32. The sensation of awe is not as motivating to me as is my sense of ethical principles around environmental protection.
33. I love what I call 'wonderment experiences '. Nature delivers those effortlessly but I know the complexity that sits underneath it all happening. It's why humans struggle I reckon and are destroying it because the complexity is something they know they can't control and it frustrates them.
34. Without the planet we are nothing. Without nature there is nothing.
35. Keeps me motivated in my job for more than 25 years
36. Emotion needs opportunities to manifest itself
37. Because nature is what keeps us refreshed centred and it's importance in our mental health and so beautiful in all its different states we need it to survive
38. because I want to protect that which produces the awe
39. It's a positive force that propels a positive response

If yes, do you feel that “day-to-day” experiences of awe motivate you to the same extent as “dramatic” moments of awe?

