

A narrative literature review exploring the extent outdoor adventure education (OAE) programmes can influence pro-environmental behaviour.

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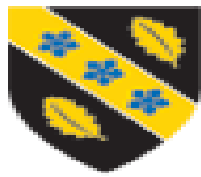
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DECLARATION

I certify that the whole of this work is the result of my individual effort, and that all sources have been acknowledged.

Signed Patrick Shapland (Student)

Date 17/05/2025

DECLARATION

I am satisfied that this work is the result of the student's effort.

Signed (Lecturer)

Date

Table of Contents

Aims and Objectives	3
Introduction.....	3
Method	6
Findings and Discussion.....	8
Gaps and Limitations	16
Practical Implications	17
Future Research	18
Conclusion	19
Reference List.....	22

A narrative literature review exploring the extent outdoor adventure education (OAE) programmes can influence pro-environmental behaviour.

Aims and Objectives

The aim is to assess whether structured and experiential learning in outdoor adventure education programmes within such environments influence pro-environmental behaviour that consciously protect and sustain protected landscapes withing the natural world.

Objectives are:

- 1) To examine the existing body of research to determine to what extent outdoor adventure education (OAE) programmes influence pro-environmental behaviour.
- 2) to identify from the literature the extent to which human behaviour can be altered through outdoor educational activity, with specific focus on how environmental and landscape damage within national parks can be mitigated.
- 3) To draw conclusions as to what impact an increased prevalence of Outdoor Adventure Education programmes might have on these protected landscapes.

Introduction

This review will explore how Outdoor Adventure Education programmes can lead to greater pro-environmental behaviour, especially in protected areas like national parks within the UK where visitor pressure and environmental damage are more closely monitored (Finneran, Hewlett and Clarke, 2024). Outdoor Adventure Education programmes have become an important tool in encouraging people to care more for the environment (Finneran, Hewlett and Clarke, 2024, p. 281). National parks in the UK are not areas set aside just for recreation; they are also places where people can learn about nature by spending time in it.

Pro-environmental behaviour refers to choices and actions people make that help protect the environment (Rhead, Elliot and Upham, 2015). Outdoor Adventure Education programmes are usually focussed on the skills required to undertake an activity, but they can increasingly be designed to give individuals the skills to develop an understanding of how human behaviour

affects nature, with the goal of getting people to act more responsibly (Esfandiar et al., 2020). This includes things like reducing litter, staying on marked paths, or supporting conservation efforts.

There is growing evidence that nature-based learning, especially when delivered through outdoor activities and experiences, can help people connect more deeply with nature and change their behaviour in a positive way (Pomfret et al., 2025). One idea that has influenced this is *Friluftsliv*, a Nordic approach promoting time in nature for personal development and reflection (Sjödin, Quennerstedt and Öhman, 2024). Outdoor Adventure Education providers, working within protected landscapes such as national parks, like the Lake District, Snowdonia, and Pembrokeshire Coast, could incorporate more information about pro-environmental behaviour into their programmes. Many providers offer trips, guided walks, and youth awards like the DofE, as ways of engaging young people in environmental education (Pomfret et al., 2025). Collins (2004) showed that experiences like these can lead to positive changes in behaviour and found that for effective change in environmental behaviour to happen there needed to be active participation in a process that is based on collective action. Programmes that focus on regular engagement with nature, rather than one-off events, also tend to have a stronger impact. Pomfret et al. (2025) showed that people who regularly take part in outdoor activities build a stronger connection with nature and are more likely to act in ways that protect it.

Changing someone's behaviour is not easy, and Outdoor Adventure Education programmes need to be based on more than just giving people skills. Behavioural models like Ajzen's Theory of Planned Behaviour (1985) help explain how attitudes, social pressure, and confidence in your ability to make a difference (known as perceived behavioural control) all play a role in whether people change what they do (Conner, 2020). Well-structured and delivered Outdoor Adventure Education programmes can support behavioural changes.

Pro-environmental behaviour refers to choices and actions people make that help protect the environment (Rhead, Elliot and Upham, 2015). Since its inception pro-environmental behaviour has evolved, with Tian and Liu (2022) providing the most succinct definition of pro-environmental behaviour as behaviour that "consciously protects the environment and improves its sustainability" (P.2.)

Outdoor Adventure Education programmes have many benefits and learning opportunities and the nature of the national parks makes them an excellent location to develop these processes (Hazell and Clarke, 2024). Conducting Outdoor Adventure Education programmes that utilise a non-transformational learning strategy have been shown to have little effect on the participant while they are participating in Outdoor Adventure Education programmes making a traditional strategy of teaching not suitable for the benefits of outdoor learning (Syed-Abdullah, 2024). Utilising more transformational strategies that support the environment can have a significant benefit on the participant appreciation for the natural environment helping to grow pro-environmental behaviours into their life (D'Amato and Krasny, 2011). Hazell and Clarke (2024) posited that schools should incorporate more trips to national parks to intentionally remove the participants from their normal life, especially if they are from an inner-city school (Hazell and Clarke, 2024).

Outdoor Adventure Education programmes, as defined by Fang, Hassan, and LePage (2023), are structured learning that takes place in natural environments, incorporating both living (biotic) and non-living (abiotic) elements, and ideally free from human-made disturbances. It emphasizes experiential learning, promoting ecological awareness, personal growth, and practical skills, while positively influencing psychological wellbeing and fostering deeper connections between participants and nature (Fang et al., 2023;).

Within the UK protected landscapes such as National Parks have required specific management with thought to how Outdoor Adventure Education programmes operate within them. Butler (2018) explains that the formation of national parks in England and Wales in 1949 was because the country did not want areas to be lost. He continues to explain that the rapidly growing population and the increased post war population growth, led to concerns about land usage and conservation. In 1949 the National Parks and Access to the Countryside Act formed the legislation for the first ten national parks to be formed. With the limited space of the UK the national parks remained owned either by private citizens or conservation groups, which is different from much of the rest of the world where national parks are owned by the state or country (Cox and Natali, 2024). However, the laws and regulations within a national park are very strict to mitigate the damages caused by commercial use and farming (DfE and Natural England, 2023). Since the 1950s a further five parks have been added and there are proposals for a further three to be designated in the future.

Method

The method adopted for this study is to allow an investigation into the ways Outdoor Adventure Education programmes can influence pro-environmental behaviour. To address this question a narrative literature review was selected as the most appropriate research design. This study employs a mixed methodology, combining interpretivism and deductive reasoning, within a narrative literature review framework. Given the ecological and geographical diversity of the protected environments which Outdoor Adventure Education organisations operate within, collecting primary data within these specific areas, although interesting, would fall outside the scope of a narrative review. A literature-based review enables the ability to analyse a variety of pre-existing qualitative and quantitative data sources that explores the influence Outdoor Adventure Education programmes has had on the users of protected landscapes such as a national park and an exploration of pro-environmental behaviour as it relates to Outdoor Adventure Education programmes (Green, Johnson and Adams, 2006, p. 103).

Unlike systematic reviews that are bound by rigid inclusion criteria, a narrative approach allows flexibility to synthesise findings across diverse studies, enabling critical interpretation and thematic development (Green, Johnson and Adams, 2006, p. 104). A mixed methodology is one which integrates both quantitative research, for example environmental impact metrics, and qualitative research that can include visitor experiences and stakeholder perspectives (Buckler, 2016, p. 163). This was chosen to allow for a holistic view of the research carried out on how Outdoor Adventure Education programmes has impacted participants behaviour, accommodating both statistical evidence and contextual understanding. Relying exclusively on quantitative data would ignore nuanced socio-environmental dynamics, while purely qualitative analysis could overlook measurable trends. Mixed methods bridge this gap, supporting a richer interpretation of secondary data. (Buckler, 2016, p. 165)

Interpretivism prioritises understanding the meaning and context behind human actions, making it suitable for examining how outdoor users of the protected landscapes such as national parks perceive environmental impact and explore how and where they gained their education on the topic (Buckler, 2016). As environmental sustainability is deeply linked to

human interactions, this philosophy enables an exploration of subjective experiences within national park settings due to the way people behave when they are within a landscape which needs to be protected.

Interpretivism supports the understanding of individual personal history and experience (Buckler, 2016, p. 147) which is central to education and behavioural change. This perspective helps explore how and why Outdoor Adventure Education programmes might foster environmental responsibility, by interpreting personal and social values conveyed through nature-based learning.

A deductive approach begins with general theories and tests them against existing data. In this research established environmental and recreational theories (e.g. Limits of Acceptable Change) are used to inform the analytical framework. Deduction enables evaluating whether these theories are reflected in current UK literature. Deductive reasoning is more appropriate for this study, rather than inductive, as this study is not primary empirical research; the objective is not to generate new theories, but to test and assess existing ones through secondary data. Deduction also ensures alignment with environmental psychology and education theories (Buckler, 2016, p. 152). It allows for evaluation of research into educational initiatives, programme outcomes, and participant behaviour within real-world settings, without requiring new data collection or the process of collecting new data in protected areas.

The reliance on secondary data does mean that this researcher is limited in their conclusions to the data available to them. It removes the ability to ask follow-up questions or explore emerging themes as they arise. Additionally, the use of a narrative review may introduce selection or confirmation bias, as the inclusion of studies is influenced by the researcher's judgment. Finally, behavioural change is a multifaceted phenomenon influenced by a range of external and contextual factors, many of which may not be fully captured or accounted for in the reviewed studies (Levin, 2005, p. 45).

Sources for this review were identified using academic databases including academic books and journals, Google Scholar, ScienceDirect, and Taylor & Francis Online. A range of search terms was used to locate relevant literature, including Outdoor Adventure Education programmes and UK national parks, pro-environmental behaviour, Friluftsliv and

environmental education, as well as behavioural change, nature-based learning, and United Kingdom.

Studies were included if they met the following criteria: they were published from the year 2000 onwards unless fundamental; they focused on UK-based contexts, particularly those within national parks; they explored the relationship between Outdoor Adventure Education and pro-environmental behaviour; and they presented empirical findings, whether qualitative, quantitative, or mixed methods.

Studies were excluded if they were conducted outside of the UK unless they were discussing Friluftsliv, or if they addressed environmental behaviour without a connection to Outdoor Adventure Education practices, or if they were written in a language other than English. Additionally, grey literature lacking sufficient academic rigour and peer review was not included in the final review but may have been referred to if they existed in the literature reviewed. Also included were documents from government legislation, policy, and National Governing Bodies.

Findings and Discussion

Outdoor Adventure Education programmes have become an important tool in encouraging people to care more for the environment, especially in national parks across the UK. The fifteen national parks found within the UK are not just for recreation they are also places where people can learn about nature by spending time within them. This review looks at how Outdoor Adventure Education programmes can be further utilised to develop pro-environmental behaviour, especially in protected areas like national parks where visitor pressure and environmental damage are becoming more noticeable (Prince, 2017).

Pro-environmental behaviour refers to choices and actions people make that help protect the environment (Rhead, Elliot and Upham, 2015). Education programmes in national parks are designed to increase understanding of how human behaviour affects nature, with the goal of getting people to act more responsibly. This includes things like reducing litter, staying on marked paths, or supporting conservation efforts (Thomas and Sharp, 2013).

There is growing evidence that nature-based learning, especially when delivered through outdoor activities and experiences, can help people connect more deeply with nature and change their behaviour in a positive way (Pomfret et al., 2025). One idea that has influenced this is Friluftsliv, a Nordic approach to outdoor life that promotes time in nature for personal development and reflection, which is starting to influence outdoor learning (Sjödin, Quennerstedt and Öhman, 2024).

Outdoor Adventure Education programme providers who operate within protected landscapes such as national parks are including in their training information about pro-environmental behaviour during their outdoor activities as suggested by their NGBs in their training packages (BMC, 2025). These programmes aim to increase awareness of environmental issues and give people the tools to make more sustainable choices. Outdoor Adventure Education providers are, within their programmes, offering a range of activities that include school trips, guided walks, and the Duke of Edinburgh Award, this type of activity has become popular a method of engaging young people in environmental education and developing pro-environmental behaviours (The Duke of Edinburgh's Award, 2025).

Research shows that experiences like these can lead to positive changes in behaviour. For example, Collins (2004) found that for effective change in environmental behaviour to happen there needed to be active participation in a process that is based on collective action. Programmes that focus on regular engagement with nature, rather than one-off events, also tend to have a stronger impact. Pomfret et al. (2025) showed that people who regularly take part in outdoor activities build a stronger connection with nature and are more likely to act in ways that protect it. This emotional bond with nature is now seen as a key driver for long-term behaviour change.

Changing someone's behaviour is not easy, and Outdoor Adventure Education programmes needs to be based on more than just giving people skills and facts. Behavioural models like Ajzen's Theory of Planned Behaviour help explain how attitudes, social pressure, and confidence in one's ability to make a difference (known as perceived behavioural control) all play a role in whether people change their behaviour (Conner, 2020). Therefore, for an Outdoor Adventure Education programmes operator to bring about pro-environmental behavioural change there must be a conscious and concerted effort built into their programme, which is underpinned with learning theory. Good Outdoor Adventure Education

programmes can shift people's attitudes by making them care more about nature, it can show them that other people care too (social norms), and it can help them believe that small actions matter (Sharpley and Pearce, 2007). Programmes that include storytelling, hands-on experiences, and time for reflection are especially effective at achieving this. The idea of *Friluftsliv* also plays into this by encouraging slower, more meaningful engagement with natural places. This kind of experience has been shown to build environmental identity; the feeling that caring for nature is part of who you are (McCullough et al., 2018, p. 7). This identity is one of the strongest predictors of whether people go on to act in environmentally friendly ways, even after leaving the park.

Outdoor Adventure Education organisations utilise protected landscapes to operate within. However, many national parks, like the Pembrokeshire Coast National Park Authority, offer more passive forms of outdoor education running guided walks, interpretation sessions, and conservation volunteering, which are designed to increase awareness of environmental issues within protected landscapes and promote pro-environmental behaviours (Pembrokeshire Coast National Park Authority, 2024). A key part of these programmes is giving visitors the chance to be actively involved. Research by Pomfret et al. (2025) shows that when people take part in hands-on experiences like restoring a path or learning how to reduce erosion, they are more likely to develop a sense of personal responsibility. These activities do not just build knowledge; they help people feel like they are making a real difference.

Post-COVID trends have also shown a rise in people valuing time in nature. The Office for National Statistics (2021) found that more people in the UK have reported stronger connections to natural spaces since lockdowns, and this emotional connection can be harnessed to strengthen environmental attitudes. The more often someone visits a national park and has positive experiences, the more likely they are to build habits that reflect environmentally friendly values. The Recreation Opportunity Spectrum (ROS) and Limits of Acceptable Change (LAC) frameworks are already used to manage visitor impact but combining them with educational messaging has the potential to improve behaviour even further (Finneran, Hewlett and Clarke, 2024, p. 273). For example, teaching visitors the reasons behind why certain areas are zoned for low-impact use can help increase compliance and reduce conflict.

There is growing evidence that nature-based learning, particularly when delivered through outdoor experiences, can foster a deeper connection with nature and promote lasting behavioural change (Pomfret et al., 2025). *Friluftsliv*, a Nordic philosophy that encourages spending time in nature for personal growth, wellbeing, and reflection (Sjödin, Quennerstedt and Öhman, 2024) underpins many Outdoor Adventure Education programme initiatives in attempting to work within protected areas such as national parks, where providers are increasingly embedding messages about pro-environmental behaviour into their programmes (Lund, 2022). These providers often offer guided walks, school trips, and youth initiatives such as the Duke of Edinburgh's Award, which are used as platforms to engage young people in environmental education. Collins (2004) found that such experiences can positively influence behaviour, especially when they involve active participation and collective action. Moreover, research suggests that long-term or repeated engagement with nature has a more significant impact than one-off events. For example, Pomfret et al. (2025) showed that individuals who regularly take part in outdoor activities are more likely to form strong emotional connections with the natural world and adopt behaviours that help protect it.

High-quality Outdoor Adventure Education programmes can incorporate Ajzen's Theory of Planned Behaviour to develop a framework for understanding how attitudes, perceived social norms, and an individual's perceived behavioural control change their behaviour (Conner, 2020) by encouraging positive attitudes, promoting shared values, and building confidence in one's ability to make environmentally responsible choices.

Pro-environmental behaviour refers to the decisions and actions individuals take that contribute to environmental protection (Rhead, Elliot and Upham, 2015). More recently, Tian and Liu (2022) have refined this definition, describing it as behaviour that "consciously protects the environment and improves its sustainability". This evolving understanding highlights the importance of intentional, values-based education in fostering meaningful and lasting change. Building upon this, Kurisu (2015) categorizes pro-environmental behaviours into purpose-oriented and impact-oriented actions, emphasizing that both intentionality and measurable outcomes are vital. This dual perspective aids in designing Outdoor Adventure Education programmes programs that not only inspire but also lead to tangible environmental benefits. The Going for Green initiative in Merthyr Tydfil, Wales, although not based in a protected landscape offers an insight into an alternate way to manage behaviour within an

area and could be enhanced with making connections with Outdoor Adventure Education organisations. Collins (2004) illustrated the importance of community engagement and local context in promoting sustainable lifestyles. The programme demonstrated that when individuals are actively involved in environmental initiatives that resonate with their community values, there is a higher likelihood of enduring behavioural change. This model can be adopted by Outdoor Adventure Education organisations as a viable way they could operate within a protected landscape such as a national park with local inhabitants.

The Living Environmental Education published by Wei-Ta Fang, Arba'at Hassan, Ben A. LePage (2023) explain Outdoor Adventure Education programmes as structured learning that occurs in natural environments, focusing on both biotic (living) and abiotic (non-living) components, ideally in settings free from human-made disturbances. It integrates experiential learning with direct interaction in nature, aiming to promote ecological awareness, personal growth, and practical skills (Fang, Hassan, and LePage, 2023). Utilising natural environments for Outdoor Adventure Education programmes facilitate the participants to use multiple senses to overcome or learn. It has been observed that Outdoor Adventure Education programmes have a positive effect on the psychological needs of a participant to effectively learn, providing the ideal space to challenge the participants and facilitate their success with the problem. Carrying out nature based Outdoor Adventure Education programmes also develops interpersonal relationships between the participant and the natural environment (Yildiz, 2022).

The UK has several conservation classifications each having different restrictions and constraints. The focus of this paper is on the national parks. Within that area are found Sites of Special Scientific Interest (SSSI), Areas of Outstanding Natural Beauty (AONB) now called National Landscapes, local wildlife and geological sites and marine conservation zones. Each of these have a specific level of protection under British law and nationally they can be areas found both inside and outside of national parks (DfE and Natural England, 2023).

These protected landscapes often fall with the National Parks in England and Wales. They were formed in 1949 because of fear of losing areas of natural beauty (Butler, 2018). The rapidly growing population in the UK at the end of the 19th century and the increased post war population growth in the first half of the 20th Century led to concerns about land usage and conservation, in 1949 the national parks and Access to the Countryside act formed national

parks (Butler, 2018). With the small size of the UK and the relatively large population much of the UK the national parks are still owned either by private citizens or conservation groups, this is different from much of the rest of the world where national parks are owned by the state or country (Butler, 2018). However, regulations and acceptable planning and industrial use within a national park are very strict in attempts to mitigate the damages caused by their commercial use and the effects of farming (DfE and Natural England, 2023). Within all national parks there is a specific National Park authority who work within the region, local stakeholders, and the local planning authority to ensure the usage inside the park are sustainable.

UK national parks provide excellent opportunities to facilitate Outdoor Adventure Education programmes though adventures active, but different parks are more suited for specific activities. A common theme though out the national parks are walking, hiking, climbing, water sports and caving (Pomfret, Frost and Frost, 2024). Along with agricultural and commensal use. Different parks have within them different environmental priorities, in the Lake District National Park it is areas of upland fells, whereas the Pembrokeshire Coastal National Park has within its area Marine Conservation Zones (MCZ). These were formed in the UK in 2009 through the Marine and Coastal Access Act. This act was designed to ensure that through negotiation with stakeholders' marine areas were protected and it laid out the specific requirements to be preserved and what the rules and regulations are (De Santo, 2016).

Outdoor Adventure Education organisations who operate within specific protected areas should therefore tailor their pro-environmental behaviour offering to the specifics of the area.

When considering pro-environmental behaviour, it is important to explore the reasons why people are utilising the national parks and how their behaviour can be encouraged through Outdoor Adventure Education programmes. Hewitt et al. (2024) explore the reasons why more people have been travelling from major cities into open countryside since the COVID 19 pandemic. They are also using newspaper articles as evidence to support their claims of the additional strain on National Park Authorities resulting from the demands to cope with increasing and extensive footfall, and multiple incidences of environmental and social detrimental impacts in National parks. In the Guardian newspaper on 1st January 2021 Helen Pidd reports that the Peak District National Park Authority is spending on average £38,000 per

year collecting litter: this expenditure was expected to double post-COVID (Pidd, H. 2021). They also state that the BBC report that in Snowdonia the numbers of visitors tackling the highest mountain in Wales, had risen by 40% compared to those in 2018 (BBC News, 2020). Coronavirus: 'unprecedented' crowds in Wales despite warnings. BBC News (BBC News, 2020) This surge in usage of the National parks means that there is a need for users to be educated in pro-environmental behaviour to reduce the impact on these regions (Flint and Hartley, 2021).

The growing popularity of adventure tourism, particularly within the UK (Winter et al., 2019) has led to greater engagement with a new and not always properly prepared type of adventure tourist. There has been an increase of rescues where people have not the skills or equipment. Also, the infrastructure for the increases in quantities of people have caused damage to the environment, blocked roads, increased litter, and rubbish and not recognising the impact they have on these environments (Office for National statistics, 2021). It is therefore important that Outdoor Adventure Education considers ways it can promote pro-environmental behaviours beyond their courses, possibly through an online presence or through working with popular clothing and equipment companies.

Pirchio et al., (2021) found that through utilizing Outdoor Adventure Education programmes participants are more likely to for a connectiveness with nature and form psycho-physical wellbeing and Pro-social behaviour. This is in keeping with the broader literature they also found that associating with nature developed pro-environmental attitudes and behaviour, agreeing with previous findings regarding the role of connectedness to nature for the development of ecological attitudes and behaviours (Pirchio et al., 2021). Otto and Pensini, (2017) also found a correlation between time spend in Outdoor Adventure Education programmes and environmental knowable and pro-environmental behaviour "The effect of connectedness to nature on ecological behaviour was considerably stronger ($\beta = .83$; $p < .001$) than the effect of environmental knowledge on ecological behaviour ($\beta = .13$; $p = .035$)" (Otto and Pensini, 2017). This shows evidence for the interconnectedness between Outdoor Adventure Education programmes and pro-environmental behaviour. Their research emphasises that direct experiences with nature can lead to positive emotional reactions and a better understanding of environmental issues and that connecting with nature is crucial for

fostering pro-environmental behaviour, and it advocates for the integration of Outdoor Adventure Education programmes to enhance environmental awareness in students.

Outdoor Adventure Education programmes have been increasingly recognised as a key strategy for fostering pro-environmental behaviour, primarily by enhancing individuals' physical connection to environmental knowledge. Braun and Dierkes (2021) found that immersive nature-based learning experiences can increase students' cognitive engagement with environmental issues. Their study showed that these experiences led to measurable improvements in environmental attitudes and behavioural intentions. Although they emphasised the importance of feeling connected to nature is a stronger predictor of Pro-Environmental Behaviour than knowledge acquisition alone, they also pointed out that the results can vary depending on the background and previous experiences of the participants. This suggests that Outdoor Adventure Education programmes are most effective when it moves beyond factual learning to include emotional and experiential elements, but that the previous experiences of the participants must also be taken into consideration when working with specific groups. The physical presence in nature allows learners to form meaningful connections that develop environmental values and motivate responsible behaviour. This aligns with broader environmental education frameworks, such as experiential learning theory, which suggest that emotional involvement and active participation are essential for lasting behavioural change.

The implementation of widespread use of Outdoor Adventure Education programmes in a controllable and standardised way can only be achieved through the education system to ensure all have exposure to it. If schools are to be used as the way of building Outdoor Adventure Education programmes experiences into the culture it must be done through legislation and established within the curriculum. The new Curriculum for Wales, implemented in 2022, is evolving the curriculum to better utilise Outdoor Adventure Education programmes, it focuses on using play pedagogy in primary school and developing how using Outdoor Adventure Education programmes and develop pro-environmental behaviour over time (Wainwright et al., 2020). The Duke of Edinburgh's Award, founded by Prince Philip in 1956, empowers young people aged 14–24 to develop skills, confidence, and resilience through volunteering, physical activity, skill-building, and expeditions. Now active in over 130 countries, it continues to inspire youth to contribute positively to their communities

(The Duke of Edinburgh's Award, 2025). This program focuses on using Outdoor Adventure Education programmes to develop resilience, perseverance, and critical thinking skill that the participants can use though out their life. This process also encourages pro-environmental behaviour though the golden rules that they promote for all participants to follow (RAW Adventures Mountain Activities Ltd, 2025).

Experiential learning is a key approach in progressive education, where knowledge is constructed through active engagement and reflection. This aligns with play-based pedagogies that prioritise child-led exploration over rigid instruction (O'Neill et al., 2024). Learning through play supports developmental needs by allowing learners to construct meaning at their own pace, often resulting in diverse educational outcomes within the same setting. This kind of pedagogical freedom makes standardisation nearly impossible, as no two learners are progressing in identical ways. Transformational learning theory expands on this by focusing on shifts in a learner's perspective through critical reflection, often applied in higher education where personal growth and civic responsibility are valued outcomes (Cooley, Burns and Cumming, 2015). Transactional education balances content delivery with learner interaction, creating space for negotiation and shared meaning-making (Brymer and Gray, 2006). Which can provide a framework for promoting pro-environmental behaviours within Outdoor Adventure Education organisations working with all ages. In early years settings, this is seen where educators facilitate but do not dominate learning, instead scaffolding activities around children's interests and developmental stages. In physical education, transactional and transformational strategies are used to build not just skill, but motivation and personal agency through guided experience and feedback (Cooley, Burns and Cumming, 2015). These types of education challenge traditional, top-down teaching models by placing the learner at the centre. Whether in early childhood or adult learning, these pedagogies show that education is not one-size-fits-all, but a dynamic, context-driven process and can be integrated into the way Outdoor Adventure Education programmes promote pro-environmental behaviours through their activities (Gilbertson et al., 2023).

Gaps and Limitations

Even though pro-environmental behaviour is subjective in nature, it can produce measurable outcomes. However, there have been very few studies aimed at standardising how Outdoor Adventure Education programmes promote such behaviour. While many studies have

identified a correlation between Outdoor Adventure Education programmes and increased pro-environmental behaviour, none that this researcher could find have clearly determined which specific educational methods are most effective. A common theme found in the literature reviewed is that time spent in nature fosters an appreciation for the environment. While this may be valid, it does not allow for deeper critical development, nor does it account for the significant role facilitators play in shaping understanding and appreciation.

The growing popularity of Outdoor Adventure Education programmes, recreation, and pro-environmental behaviour since the COVID-19 pandemic means that much of the earlier research, while still relevant in principle, no longer reflects the current reality (Ewert and Davidson, 2021). The cultural and behavioural shifts brought about by the pandemic have significantly altered how protected areas such as national parks are used and perceived, making pre-pandemic findings less representative of today's general population (Office for National Statistics, 2021).

As interest in Outdoor Adventure Education programmes continues to grow, so does the number of schools, outdoor organisations, and independent recreational users engage in these activities. This increasing diversity makes it difficult to collect consistent quantitative or qualitative data. For researchers, assessing the effectiveness or relevance of past findings—especially those conducted before COVID-19—becomes increasingly challenging due to the sheer number of different facilitators and user groups now involved.

Practical Implications

The current body of knowledge highlights a growing recognition of Outdoor Adventure Education programmes as a critical tool for fostering pro-environmental behaviour, with notable implications for theory, practice, and policy. Theoretically, this supports the view that experiential learning and place-based education are instrumental in shaping environmental attitudes, particularly when individuals are emotionally and physically engaged with natural environments. This understanding challenges more passive, information-based environmental education models and instead emphasises immersive, value-driven experiences.

In practice, there is within the Outdoor Adventure Education programmes and adventure tourism industry an increasing awareness of the need to instil environmental responsibility. However, the integration of structured pro-environmental training remains inconsistent.

Governing bodies such as the Mountain Training Association, Paddle UK, and other National Governing Bodies (NGBs) are keen to embed sustainability and Leave No Trace principles into their instructor qualifications. Embedding environmental stewardship within training programmes would ensure that outdoor leaders not only model sustainable behaviours but actively teach and reinforce them.

Passive forms of Outdoor Adventure Education programmes that some organisations who operate within protected landscape, such as National Park Authorities can include visitor centres, informal interactions with staff, signage around the parks. Although not a form of Outdoor Adventure Education, organisations who operate within protected landscape setting also have an opportunity to promote pro-environmental behaviour through a more passive form of education in the outdoors. This form of passive outdoor education will require significant adaptation to the role of national parks authorities, and need to include processes, activities, and infrastructure, with staff members promoting learning opportunities as well as facilitating conservation efforts.

From a policy perspective, these findings suggest a need for stronger regulatory requirements within the UK. As visitor pressure grows, particularly in protected areas, incorporating Outdoor Adventure Education programmes into conservation strategies can enhance environmental outcomes by influencing behaviour at scale through education, rather than relying solely on enforcement or infrastructure.

Future Research

Future research should prioritise the development of standardised metrics to evaluate the effectiveness of Outdoor Adventure Education programmes in promoting pro-environmental behaviour. While many studies highlight a positive correlation between outdoor learning and environmental responsibility, there remains no unified method to measure or compare outcomes across different programmes, locations, or user groups. Establishing a clear framework of indicators potentially co-designed with governing bodies such as Mountain Training, British Canoeing, and the Duke of Edinburgh's Award would allow for more reliable assessments and enhance the credibility of findings. Research should also explore the design and implementation of a universal model of pro-environmental behaviour, which could be

embedded into instructor training and educational curricula, ensuring consistency in messaging and behavioural expectations across the sector.

In addition, given the increase in visitor numbers and the diversity of park users post-COVID, future studies should investigate how digital technologies—such as mobile apps, geolocation tracking, or interactive surveys—could be used to capture user feedback and behaviour in real-time. This would help address the growing challenge of monitoring impact at scale. Research should also examine how different participant backgrounds, prior experiences, and motivations influence the success of Outdoor Adventure Education programmes in shaping environmental attitudes, helping to tailor interventions more effectively. Finally, studies should explore how to maintain quality and coherence in Outdoor Adventure Education programmes delivery across the increasing number of independent providers, schools, and organisations. This could involve comparative research across different UK national parks to identify best practices that support long-term behavioural change and ecological stewardship.

Conclusion

This narrative literature review set out to explore the extent to which Outdoor Adventure Education programmes can influence pro-environmental behaviour within unique and varied protected environments such as the United Kingdom's fifteen national parks. The primary aim was to assess whether structured and experiential learning in outdoor adventure education programmes within such environments influence pro-environmental behaviour that consciously protect and sustain protected landscapes withing the natural world. The evidence reviewed strongly supports the argument that Outdoor Adventure Education programmes, when effectively designed and delivered, have significant potential to foster lasting pro-environmental attitudes and behaviours. However, this influence is not automatic and requires intentional, theory-informed practice to be truly effective.

Throughout the review, it became clear that Outdoor Adventure Education programmes do far more than just deliver knowledge about the environment. Instead, they shape attitudes, nurture emotional connections to nature, and develop a sense of environmental responsibility. Key concepts such as Friluftsliv, experiential learning, and the Theory of Planned Behaviour were repeatedly cited as central frameworks explaining how nature-based experiences translate into lasting behavioural change. These findings highlight that the depth

and quality of the learning experience rather than the duration or factual content alone are the most influential elements in fostering pro-environmental behaviour.

One of the most compelling themes that emerged was the role of repeated and emotionally engaging contact with nature. Studies by Pomfret et al. (2025) and Collins (2004) provided compelling evidence that sustained, hands-on interaction with the environment leads to a stronger emotional bond with nature, which in turn encourages long-term pro-environmental behaviours. These findings are especially important in the context of protected environments such as national parks, where visitors often return for multiple experiences. Outdoor Adventure Education programmes that include guided walks, conservation tasks, reflective activities, and community-based projects are more likely to instil meaningful and durable behavioural change.

Furthermore, this review revealed that behaviour change is a complex process influenced not only by environmental knowledge but also by social norms, perceived behavioural control, and personal identity. Ajzen's Theory of Planned Behaviour offered a valuable lens for understanding how Outdoor Adventure Education programmes can shift behaviour by influencing attitudes, normalising sustainable practices, and building a sense of personal agency. When Outdoor Adventure Education programmes include structured reflection, storytelling, and peer support, they are better able to embed these psychological components.

The review also identified several limitations and gaps in the current body of research. Firstly, while there is a consensus that Outdoor Adventure Education programmes can promote pro-environmental behaviour, there is no standardised metric for measuring its effectiveness. This makes it difficult to compare findings across studies or assess which approaches are most impactful. Secondly, the COVID-19 pandemic has altered patterns of park use, with increased visitor numbers and changing motivations that are not fully reflected in pre-pandemic literature. This means that some earlier findings may no longer be fully generalisable to current contexts. Thirdly, the increasing number of schools, outdoor companies, and informal providers operating within protected environments such as national parks makes it harder to track, evaluate, and ensure consistency across different Outdoor Adventure Education programme experiences.

In light of these challenges, several future research directions have been proposed. These include the development of a standardised framework for measuring pro-environmental behaviour outcomes, greater collaboration with national governing bodies to integrate sustainability into training, and the use of digital technologies to gather real-time data from participants of Outdoor Adventure Education programmes. It is also essential to explore how different socio-demographic backgrounds influence the effectiveness of Outdoor Adventure Education programmes in shaping environmental behaviour.

From a practical and policy perspective, this review suggests that Outdoor Adventure Education programmes are well-placed to become key drivers of environmental behaviour change. However, this will require more than just offering access to natural spaces. Local government authorities, Outdoor Adventure Education programmes providers, and policy makers must work together to embed environmental education into every aspect of activities within protected environments. Additionally, governing bodies such as Mountain Training and Paddle UK must ensure that sustainability principles are deeply embedded in instructor training. This will enable outdoor leaders to serve not just as activity facilitators but also as role models and educators for pro-environmental behaviour.

In conclusion, the relationship between Outdoor Adventure Education programmes and pro-environmental behaviour is well-supported in theory and increasingly evident in practice. Outdoor Adventure Education programmes offer a unique opportunity to engage individuals emotionally, physically, and cognitively with the natural world. When delivered with intentionality these behavioural changes will extend beyond these adventure programmes. The review supports the view that immersive, values-based, and reflective learning experiences are an effective means of developing environmental responsibility. As the pressure on protected landscapes increases, Outdoor Adventure Education programmes must become central to the strategy in the UK's broader effort to promote sustainable, pro-environmental behaviour.

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