



Desert Bloom
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Tools and Approaches for Engaging Volunteers in PeakED Activities

Practical Guidance Report:
Engaging Volunteers in Protecting Natural and Cultural Heritage in Mountain Areas – Inspired by the PeakED Project



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Executive Summary

Mountain landscapes hold exceptional ecological, cultural, and social value. They are home to unique biodiversity, traditional livelihoods, historical land-use systems, sacred spaces, and rich cultural identities. Yet these landscapes are increasingly threatened by climate change, unsustainable tourism, land degradation, biodiversity loss, and the erosion of traditional knowledge.

Volunteers play a critical role in protecting and restoring mountain ecosystems and safeguarding the cultural heritage embedded within them. Effective volunteer engagement in mountain areas requires more than organizing occasional activities—it demands a strategic, inclusive, and meaningful framework that connects people to place, knowledge, and community.

This report explores practical tools and effective approaches for engaging volunteers in protecting natural and cultural heritage in mountain regions. Drawing on community-based conservation practice, environmental education methodologies, youth engagement strategies, and volunteer management principles, it presents actionable recommendations for organizations, municipalities, protected area managers, civil society actors, and youth groups.

The report emphasizes that successful volunteer engagement combines practical conservation action, learning, reflection, community participation, leadership development, and recognition. When thoughtfully designed, volunteering becomes not only a mechanism for environmental restoration, but also a powerful pathway for civic participation, cultural preservation, and long-term stewardship.

This publication was inspired by learning, reflection, and field activities implemented through the PeakED Project, which highlighted the importance of mountain ecosystems as spaces for environmental education, youth engagement, and community-based innovation.

1. Introduction

Mountain ecosystems represent some of the most fragile yet culturally rich landscapes globally. They host unique biodiversity, provide essential ecosystem services, and sustain traditional livelihoods. However, these areas face increasing pressures from climate change, unsustainable tourism, land-use change, biodiversity loss, and the gradual disappearance of traditional ecological practices.

Engaging volunteers in environmental activities has emerged as a powerful strategy to address these challenges while strengthening community stewardship and increasing environmental awareness.

Environmental volunteering is widely recognized as making important contributions to conservation and environmental stewardship, while also promoting long-term pro-environmental behavior and offering physical and mental wellbeing benefits (Kragh et al., 2016; Molsher & Townsend, 2016). Recent research has highlighted the broader social benefits of environmental volunteering, including increased social interaction, improved wellbeing, knowledge development, and practical skills acquisition (Miller et al., 2002; Molsher & Townsend, 2016; O'Brien et al., 2010; Pillemer et al., 2009).

There is also increasing evidence that younger generations are highly interested in environmental volunteering, especially when opportunities are active, meaningful, skill-based, flexible, and linked to real-world environmental challenges.

Given that global conservation efforts increasingly rely on voluntary participation and community stewardship, there is a growing need to design volunteer engagement models that are inclusive, place-based, and relevant to contemporary environmental realities (Winch et al., 2021).

This report was inspired by activities implemented under the PeakED Project, particularly the Regional PeakED Youth Camp and Dibe'en Forest Reserve Living Lab Activity.

The project PeakED – Environmental Involvement and Education for Young Entrepreneurs and Volunteers promotes innovative environmental education, youth empowerment, climate resilience, and Living Labs learning approaches across Europe and the Middle East.

Through outdoor learning, stakeholder engagement, mountain-based workshops, and community-centered environmental activities, PeakED created space for reflection on how volunteers—particularly young people—can become active contributors to the protection of mountain ecosystems and cultural heritage. The lessons emerging from these experiences strongly informed this report.

Methodology

This report was developed using a combined qualitative and practice-based methodology integrating desk research, field experience, and stakeholder perspectives.

Desk Review

A focused desk review was undertaken to examine literature related to:

- environmental volunteering;
- conservation participation;
- volunteer motivation and retention;
- place attachment;
- environmental education;
- community-based conservation;
- youth participation;
- mountain heritage stewardship.

Academic articles, policy papers, volunteer engagement frameworks, and environmental education resources were reviewed to identify effective practices and emerging approaches.

Practice-Based Learning and Field Experience

The report is informed by practical experience in environmental education, youth engagement, volunteer coordination, mountain-based learning, and community participation activities implemented through environmental and cultural heritage projects.

Particular inspiration came from field-based learning processes developed through the PeakED project, including workshops, Living Lab activities, ecological interpretation, mountain exploration, and dialogue with communities and young participants. The Living Labs provided collaborative spaces where participants, local stakeholders, and project partners co-created knowledge, explored local environmental and cultural challenges, tested solutions, and reflected on sustainable development practices in real-world contexts. These participatory experiences strengthened the integration of experiential learning, community engagement, and place-based education throughout the project.

Stakeholder Consultation and Community Perspectives

The report also reflects informal consultation and exchange with:

- youth volunteers;

- environmental educators;
- local residents;
- community leaders;
- civil society actors;
- project partners;
- environmental practitioners;
- heritage stakeholders.

These perspectives helped ground the report in practical realities while ensuring sensitivity to local environmental and cultural contexts.

2. Environmental Volunteerism – Literature Review

Environmental volunteering has become an increasingly important strategy in nature conservation globally. Environmental volunteers play a crucial role in supporting public and non-profit organizations in achieving their environmental conservation objectives. Through their contributions, these organizations can carry out essential conservation activities more effectively. In return, volunteers gain a range of personal benefits, including opportunities for personal growth, the development of social connections with like-minded individuals, and enhanced physical and mental well-being (Ding & Schuett, 2020; Okun et al., 2017; Teixeira et al., 2023).

Environmental volunteerism is particularly prevalent among younger individuals, who often have greater energy and availability to participate, whereas older adults are more likely to be motivated by health-related benefits when engaging in such activities (Hsiao et al., 2020). In some cases, participation in environmental volunteering is also influenced by employer expectations, as organizations encourage employees to support Corporate Social Responsibility (CSR) initiatives as part of broader corporate commitments (Man & Rameli, 2019).

Winch et al. (2021) analyzed 1,032 papers on environmental volunteering and identified several core factors affecting volunteer recruitment and retention.

Key findings include:

- **Tailoring to Motivation:** This was identified as the strongest factor influencing engagement. Volunteers join for different reasons, including:
 - contributing to community wellbeing;
 - environmental concern;
 - learning;
 - social connection;
 - personal development;
 - career experience.

- **Promoting Through Relevant Interests:** Engagement increases when volunteering opportunities connect to existing interests such as:
 - hiking;
 - biodiversity;
 - farming;
 - cultural heritage;
 - photography;
 - outdoor recreation.
- **Perceived Benefits:** Volunteers consistently report benefits including:
 - enjoyment;
 - wellbeing;
 - life satisfaction;
 - physical activity;
 - environmental learning;
 - confidence building;
 - employability skills.
- **Removing Barriers:** Participation improves when organizations address barriers such as:
 - limited time;
 - access and transport;
 - physical accessibility;
 - lack of confidence;
 - insufficient information.

Place Attachment and Stewardship

Research also shows that repeated meaningful experiences in nature contribute to emotional connection to place, which in turn predicts stronger environmental stewardship behavior. This is particularly relevant in mountain regions, where natural and cultural identity are deeply connected.

3. Key Tools for Engaging Volunteers

3.1 Participatory Learning and Experiential Activities

Hands-on engagement is one of the strongest tools for volunteer motivation and retention.

- **Examples include:**
 - trail restoration and maintenance;
 - habitat restoration;
 - reforestation;
 - invasive species removal;
 - terrace restoration;
 - traditional irrigation system rehabilitation.

- **Why it works:** Active participation transforms volunteers from observers into contributors and strengthens ownership over conservation outcomes.

3.2 Environmental Education and Interpretation

Combining action with learning deepens engagement.

- **Tools include:**
 - guided ecological walks;
 - biodiversity workshops;
 - cultural interpretation sessions;
 - local storytelling;
 - traditional knowledge sharing.
- **Best practice** combines scientific knowledge with local ecological and cultural knowledge.

3.3 Place-Based Engagement Strategies

Strong volunteer engagement depends on emotional connection to place.

- **Approaches include:**
 - repeated visits;
 - site stewardship assignments;
 - reflection exercises;
 - storytelling;
 - multi-day immersion activities.

3.4 Community Co-Creation and Stakeholder Involvement

Effective volunteer engagement depends on local ownership.

- **Methods include:**
 - co-design workshops;
 - community meetings;
 - inclusion of elders;
 - volunteer–community exchange activities;
 - participatory planning.

3.5 Youth Engagement and Leadership Development

Youth are essential long-term actors in environmental change.

- **Approaches include:**
 - youth-led initiatives;
 - mentoring;
 - environmental leadership workshops;

- peer-to-peer learning;
- eco-entrepreneurship activities.

3.6 Digital Tools and Communication Platforms

Technology can strengthen outreach and participation.

- **Examples include:**
 - volunteer management platforms;
 - biodiversity monitoring apps;
 - online learning platforms;
 - GIS (Geographic Information System) mapping tools;
 - social media storytelling campaigns.

3.7 Recognition and Incentive Systems

Recognition strengthens motivation and retention.

- **Tools include:**
 - certificates;
 - public recognition;
 - appreciation events;
 - volunteer milestones;
 - skills development opportunities;
 - mentoring roles.

4. Effective Engagement Approaches

Integrated Volunteering Models

Successful programs combine:

- fieldwork;
- environmental learning;
- reflection;
- social connection.

Example Framework:

- **Morning:** Restoration activity
- **Afternoon:** Educational session
- **Evening:** Reflection and storytelling

Long-Term Engagement vs One-Off Activities

While one-off events raise awareness, long-term programs generate deeper impact.

- **Recommended approaches:**

- seasonal volunteering programs;
- volunteer cohorts;
- recurring engagement opportunities;
- alumni networks.

Creating Meaningful and Restorative Experiences

The quality of volunteer experience matters. Mountain volunteering becomes more impactful when participants experience:

- beauty of landscape;
- social connection;
- purpose;
- reflection;
- celebration;
- hospitality.

Linking Natural and Cultural Heritage

Mountain conservation should integrate both dimensions.

- **Examples:**

- restoring terraces while documenting farming traditions;
- conserving springs while recording oral histories;
- maintaining heritage trails while interpreting local history.

Reflection and Behavioural Change

Reflection transforms participation into learning and long-term action.

- **Useful tools include:**

- group dialogue;
- journaling;
- storytelling;
- evaluation surveys;
- creative reflection activities.

5. CASE STUDY: The Dibeen Forest Reserve Living Lab

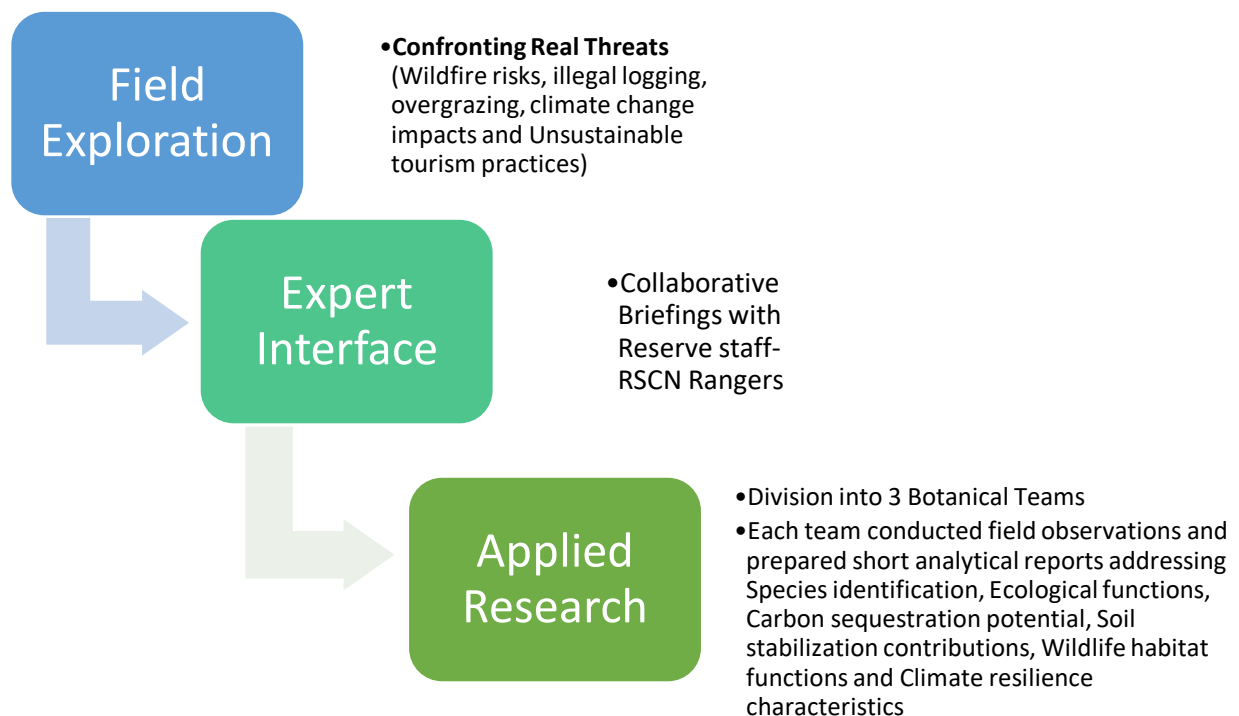
An Operational Model of Environmental Education & Youth Engagement

5.1 Context & Objectives

As part of the PeakED project, Desert Bloom established a localized Living Lab within the Dibeen Forest Reserve (Jerash Governorate, Jordan) on April 18, 2026. Dibeen represents one of the most ecologically vulnerable pine-oak habitats in the Middle East. Characterized by Aleppo Pines (*Pinus halepensis*) growing in remarkably low-rainfall conditions (~400mm annually), the reserve provides habitat for 17+ endangered species, including the Persian squirrel.

The Living Lab shifted learning away from traditional classrooms, transforming the mountain reserve into an open-air classroom for over 24 youth workers, eco-entrepreneurs, and civic stakeholders.

THE DIBEEN LIVING LAB METHODOLOGY



5.2 Field Sub-Team Research Mandates & Findings

Sub-Team & Focus	Target Species	Key Findings
Team 1: Semi-Arid Canopy Pioneers	Aleppo Pine (<i>Pinus halepensis</i>), Greek Strawberry Tree (<i>Arbutus andrachne</i>), Palestinian Pistachio (<i>Pistacia palaestina</i>).	Documented how deep root networks preserve fragile mountain slopes from erosion while providing a vital early-season food supply for local pollinators.
Team 2: Keystone Mediterranean Hardwoods	Evergreen Oak (<i>Quercus calliprinos</i>), Deciduous Oak (<i>Quercus ithaburensis</i>), Carob (<i>Ceratonia siliqua</i>).	Mapped how dense oak canopies create critical micro-habitats that lower local ground temperatures, driving nutrient cycling via leaf-litter decomposition.
Team 3: Edge-Ecosystem & Connectivity Guardians	Deciduous Oak variants (<i>Quercus spp.</i>), Hawthorn (<i>Crataegus azarolus</i>).	Analyzed the role of boundary vegetation in providing ecological buffer zones and migratory corridors for birds along forest edges.

5.3 Quantifiable Impacts & Evaluation Metrics

Post-activity evaluation data gathered from the participants demonstrated high program efficacy:

- **94%** reported measured increases in baseline technical knowledge regarding forest eco-services.
- **91%** certified that immersive field learning was significantly more effective than traditional indoor formats.
- **89%** committed to ongoing, long-term environmental volunteer projects.

Participant Testimonies

“Participating in the PeakedED Living Lab completely changed my perspective on forests and biodiversity. Seeing the ecosystem firsthand made the environmental challenges feel real and urgent.” — Mohammad Nour, University Student Participant

“The activity created a valuable bridge between youth initiatives and environmental institutions. It showed how collaboration can lead to stronger and more sustainable conservation efforts.” — Rafah Doa, Youth Worker and Environmental Advocate

“As a social enterprise representative, I found the discussions around eco-tourism and sustainable livelihoods extremely inspiring. The Living Lab highlighted how environmental protection can also support local economic development.” — Mohammad Alfar, Social Enterprise Representative

6. Recommendations

Organizations working in mountain conservation and volunteer engagement are encouraged to:

- combine practical action with environmental education;
- integrate cultural and natural heritage protection;
- prioritize youth leadership;
- involve local communities throughout all phases;
- design long-term engagement pathways;
- use digital tools to support communication and coordination;
- recognize volunteer contributions meaningfully;
- collect feedback regularly and adapt programs accordingly;
- promote inclusive and accessible participation;
- strengthen partnerships between civil society, local communities, educational institutions, and public authorities.

7. Conclusion

Volunteers are essential actors in the protection of mountain ecosystems and cultural landscapes. When volunteer engagement is meaningful, participatory, and connected to place, it creates benefits far beyond conservation outcomes. It strengthens environmental stewardship, community resilience, cultural continuity, youth leadership, and long-term connection between people and landscapes.

Mountain regions offer powerful spaces for this engagement. Their ecological richness and cultural depth make them ideal environments for experiential learning, reflection, and collective environmental action.

The experience of the PeakED project clearly demonstrated that mountain-based learning and volunteer engagement can serve as powerful tools for environmental education, community empowerment, and sustainable development.

By investing in thoughtful volunteer engagement strategies, organizations can support both healthier mountain ecosystems and stronger communities—while inspiring future generations to become active caretakers of natural and cultural heritage.

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