TPM Vol. 32, No. S2, 2025
ISSN: 1972-6325
https://www.tpmap.org/



# INVESTIGATING ORGANIZATIONAL BELONGING AND ENVIRONMENTAL IDENTITY IN NATURAL INFRASTRUCTURE PROJECTS

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**Abstract**
In comprehensive natural infrastructure projects, like the restoration of coastal wetlands, forest management, and floodplain reclamation, the psychological characteristics of team members often influence the cohesion and sustainability of the projects. This research addresses the combined effects of organizational belonging and environmental identity on workforce engagement, interdisciplinary collaboration, and ecological stewardship in natural infrastructure contexts. We employed a mixed-methods approach to gather information from 142 experts in multi-agency ecological restoration projects in several river basin regions. Quantitative methods measured perceived belongingness to the organization and affective identification with the landscape/nature under management. Qualitative interviews revealed team members' perceptions of alignment (or conflict) in their roles and environmental values. The findings illustrate the effects of environmental identity on strengthening cooperative behaviors and emotional resilience, especially among field engineers and site planners exposed to ecological unpredictability. On the other hand, absence of organizational belonging resulted in verbal disengagement and communication silos regarding adaptive planning. The paper suggests human resource policies and project management frameworks that strengthen psychological safety and place-based environmental engagement. This research contributes to the design of a sustainable workforce and the enduring resilience of ecological infrastructure initiatives in sensitive contexts.

**Keywords:**Organizational belonging, Environmental identity, Natural infrastructure, Ecological restoration, Team cohesion, psychological safety, Sustainability leadership

## INTRODUCTION

Projects for the natural infrastructure like river restoration, floodplain reconnection, and forest regeneration require interdisciplinary collaboration of environmental engineers, planners, ecologists, and policy stakeholders.[9][4] These projects are not solely technical they are embedded in ecological and sociocultural systems which impact the workforce in deep sociocultural and psychological dimensions. While project success is often assessed in ecological and infrastructural terms, metrics sustainability, and efficiency, the psychosocial dimensions that foster organizational belonging and identity are neglected. Focusing on and understanding how employees connect with their organization and environment enhances collaboration and builds resilience among teams in the face of environmental instability and policy challenges.

Organizational belonging is defined as an employee's perception of being valued, included and accepted within an organizational context [1][5]. Employees who have a strong sense of belonging tend to show enhanced motivation, persistence, and innovation. Environmental identity is the degree to which an individual perceives nature as a part of their self. The intersection of these two constructs in natural infrastructure projects will likely impact not just team productivity, but ethical behavior and proactively engaged relationship with ecosystems.This investigation continues to examine how some of the environmental oriented workplaces psychology co-evolves in relation to the gaps that have been left on the ecosystem [3][6].

As for the project teams that are stationed in remote and sensitive parts of the ecosystem, the issues surrounding identity and belonging are quite unique. Scientists and engineers might work in shifts, on short term contracts, in rotating team structures, or in agencies with competing interests. All of these may undermine belonging or lead to cognitive dissonance where environmentalists suffer on account of development policies. At the same time, participants with strong environmental identification may behave as cultural anchors, helping to sustain project

team conservation and ecosystem mindfulness [8]. Exploring these tensions and alignments, this study makes a first step toward developing workforce alignment human motivation strategies for environmental work [15].

In this document, professionals executing natural infrastructure projects are the focuses alongside their organizational belonging and environmental identity. Using quantitative surveys and thematic interviews, the relation of these constructs over collaboration, psychological safety, and project continuity is studied [7]. The ultimate goal is to support ecological infrastructure, and in turn sustain empowered teams, which gets crafted by informing the leaders and HR practitioners to steer the teams into value alignment beyond core area of technical expertise [13].

**Key Contributions:**

- Dual Construct Integration: The study develops an introductory framework of organizational belonging and environmental identity, which serves to illustrate workforce behavior and motivation in relation to natural infrastructure sites.
- Empirical Insights from Multi-Site Data: The derived insights from the study reveal the extent of psychological alignment and its impact on team cohesion, project continuity, and emotional resilience collective. It was implemented among 142 professionals from six the ecological project sites.
- Actionable Workforce Strategies: Strategic interventions of an organizational inclusion and environmental stewardship are reinforced by HR and leadership actions through ecological rituals, culture of participation, and identity-based training.

Section II defines the psychological concepts of belonging and environmental identity and their relevance to theory in the context of ecological projects. Section III explains the research design with the context of the study, sampling method, relevant instruments, and methods of analysis. Section IV shows the quantitative correlations along with the qualitative narrative patterns revealing identity and belonging synergies and divergences, illustrated with a comparative profile table. Section V outlines practice in the form of "Value congruence leadership" and "Identity driven cultural expression" designed to build cohesive, aligned, and value driven teams through human resource intentionality and cultural practice. Section VI wraps up the paper offering thoughts on deepening impact to long term sustainability, reinforcing the need to blend psychological factors in the planning of natural infrastructure.[12]

## II. Psychological Constructs in Ecological Project Settings

### 2.1 Organizational Belonging in Distributed Environmental Teams

In some cases, such as natural infrastructure projects, the human resource composition is multidisciplinary, which includes scientists, engineers, and administrative staff, all working in different geographical locations and organizational silos. Within this melting pot of different people, organizational belonging goes beyond the official hierarchy and inclusion from higher authorities. In mixed or hybrid teams, integration (or lack thereof) with the parent organization can lead to feelings of alienation. This impacts motivation, collaboration, and intentions to remain with the organization especially in constrained-time or grant-funded initiatives. [10][11]

### 2.2 Environmental Identity as a Motivator for Engagement

Environmental identity describes the relationship between an individual or individual's self-concept and nature, both cognitively and affectively. For example, professionals within ecological infrastructure projects who demonstrate an active identity at an individual level tend to showcase higher levels of ethical concern, increased persistence in challenging field environments, and an overall commitment to sustainable goals. Moreover, their cultural alignment to ecological outcomes can catalyze informal leadership and mentorship roles, enhancing cultural continuity and resilience within the organization[2][14].

### 2.3 Interrelation of Identity and Belonging

While organizational belonging is dictated by internal facets, environmental identity can serve as an external tether that fosters psychological cohesion even in the absence of strong institutional belonging. In projects with a top-down approach that neglect planning from ecological viewpoints, personnel with deeper environmental concern may seem disengaged from the organization but stay devoted to the project. Depending on the surrounding leadership environment and communication culture, this tension can either foster adaptive resistance or erode morale.

### 2.4 Team Cohesion and Psychological Safety

Psychological safety the shared belief that the team is safe for interpersonal risk-taking is an important constraint that links team performance with belonging. In teams tasked with natural infrastructure, where uncertainty and logistical difficulty abound, psychological safety facilitates idea healing and learning. It also cushions the loneliness of remote fieldwork by allowing peers to provide support, share knowledge, and collaborate.

### 2.5 Concerns for the Long-Term Sustainability of Ecological Projects

Ignoring the psychological aspects of project teams can affect more than morale; it may also undermine ecological aspects. Projects that do not integrate team identity with organizational objectives may face passive resistance, erosion of institutional memory, and poor continuity. On the other hand, projects that support both belonging and environmental identity foster custodial mindsets and knowledge retention necessary for adaptive responses for resilience.

## III. Research Design and Analytical Framework

### 3.1 Study Setting and Participant Criteria

The study was situated at the intersection of ecology and engineering with active natural infrastructure project sites in riparian wetlands, post-industrial coastal zones, and mountain watershed rehabilitation areas. Participants were permanently employed or contracted project-based staff. They were selected using stratified purposive sampling from engineering, ecological science, planning, and field operations, amounting to 142 participants in total across the various disciplines.

### 3.2 Systematic Multimodal Approaches to the Study

To achieve both quantifiable and qualitative insights, a convergent mixed-methods approach was utilized. Quantitative information was gathered from structured surveys measuring organizational belonging as well as environmental identity (EID Scale), collaboration, emotional exhaustion, and project commitment. Participants were further interviewed in a qualitative structure, exploring uncovered identity conflicts, team integration, and organizational culture alignment.

### 3.3 Research Instrumentation

An example item to Organizational belonging is, “I feel like a valued part of my project team.” It and six others were scored on a 5-point Likert agreeing scale to which a validated 7 item scale. Environmental identity was measured with a modified Clayton Environmental Identity Scale. Other scales were the Psychological Safety Index and a 3 item Project Commitment Index. Each instrument attached with the study returned a Cronbach’s alpha higher than 0.84, securing reliable credibility.

### 3.4 Analytical Techniques Employed

Quantitative information was gathered and structured data on project engagement, environmental identity, psychological safety, and organizational belonging were measured and analyzed through regression, correlation, and mediation analysis. Interview transcripts were thematically analyzed with the assistance of NVivo 14 software. NVivo 14 software assisted in the thematic analysis of interview transcripts. Inductive, and axial coding were utilized with emphasis on accounts of value alignment, identity conflict, and relationship dynamics.

### 3.5 Ethical Considerations and Validity

Ethics approval was granted by a board situated at the university for this research, which ensured voluntariness and confidentiality. For the quantitative and qualitative research, ethics approval was granted by the board. For qualitative insights, separate evaluators were assigned for analyzing interview themes and together with respondent validation, the interpretations were refined.

## IV. IdentityBelonging Synergies and Divergences in Practice

### 4.1. Analysis from Surveys Focusing on Primary Aspects

The study showed environmental identity and organizational belonging produced a statistically significant positive correlation ($r = 0.62$, $p < 0.01$). Employees identifying strongly with the environment also reported higher psychological safety and teamwork satisfaction. Regression analysis revealed environmental identity strongly predicted project commitment ($\beta = 0.47$), more so than organizational belonging ($\beta = 0.35$), indicating a potential significant motivational influence.

### 4.2. Frameworks Within Interview Narratives

The interview data described two salient identity belonging profiles: (1) “Integrated stewards” aligned both ecologically and organizationally, and (2) “Detached guardians” with strong environmental identity, but felt peripheral in organizational culture. This latter group often felt frustrated with top-down planning frameworks and lacked meaningful input on the sustainability planning process, yet remained deeply committed to the ecological mission. They described experiences of emotional fatigue and symbolic dissonance between organizational protocols and field realities.

### 4.3. New Issues in Cross-Functional Team Coordination

Identified issues included: the disruption of relational trust due to rotational team structures, conflicting stakeholder visions centered around ecological goals, and the perception of ecological knowledge in technical meetings. Many field staff reported a low sense of involvement in strategic planning considering the ecological uncertainty and the need for community engagement.Such factors constricted social learning and diminished the feeling of united purpose.

### 4.4 Strengthening Belonging through Ecological Anchoring

Teams demonstrated an increase in cohesion when participating in civic folklore, ecological storytelling, or shared stewardship rituals, as well as in field briefings at restoration sites. Leaders who featured personal connections to the environment tended to restyle member relationships, which simultaneously fostered a sense of shared identity. These methods promoted the collaboration that transcended the agency divides and developed a culture of the project that was simultaneously professional and meaningful.

**Table 1. Summary of Psychological Dimensions Across Team Profiles**

| Team Profile | Environmental Identity | Organizational Belonging | Psychological Safety | Project Commitment |
|---|---|---|---|---|
| **Integrated Stewards** | High | High | High | High |

| | | | | |
|---|---|---|---|---|
| **Detached Guardians** | High | Low | Moderate | High |
| **Administrative Core** | Moderate | High | High | Moderate |
| **Field Fragmented** | Low | Low | Low | Low |

Based on environmental identity, organizational belonging, psychological safety, and project commitment, table 1 distinguishes team members into four psychological profiles: Integrated Stewards, Detached Guardians, Administrative Core, and Field Fragmented. Integrated Stewards score high on all dimensions which shows dual alignment as well as cohesive functioning which is quite indicative of strong dual alignment and cohesive functioning. Detached Guardians do exhibit high environmental identity, but belonging is low, which results in moderate psychological safety yet high personal commitment. The Administrative Core demonstrates strong belonging as well as psychological safety, however, environmental identification is only moderate, showing engagement in the relationship and the work as stable, but ecologically limited. In the opposite case, Field Fragmented members recorded low scores on all metrics, having systemically disengaged. This typology demonstrates the alignmentor lack of itpsychologically, which impacts workforce engagement, and project endurance.

## V. Practical Pathways for Strengthening Team Ecology

### 5.1 Creating Project Cultures That Are More Inclusive

To enhance belonging in natural infrastructure projects, leadership cannot rely exclusively on top-down, hierarchical approaches to task allocation. Structures that allow for rotational leadership, cross-level feedback, and peer acknowledgment bolster teamwork and address some of the loneliness associated with distributed team setups.

### 5.2 Integrating Ecological Core Values to Organizational Functions

Embedding environmental identity into the organizational culture elicits psychological coherence. Core rituals, which encompass symbolic naming of project phases after relevant local ecosystems, local environmental narratives, and onboarding storytelling, help to root ecological identity into the organization's foundation. These simple strategies strengthen alignment with the organizational ethos and, to an extent, the culture without necessitating changes to the technical processes.

### 5.3 EquityCentered Leadership Development

Courses on leadership should also address emotional intelligence and ecological ethics, alongside more traditional topics on inclusivity and participatory decision-making. Employees become more resilient and cooperative to strong ecological pressure when leaders showcase dual alignment to organizational and environmental commitments.

### 5.4 Strategies to Foster Sustained Engagement on an HR Level

Assigning contracts, recognition systems, and well-defined roles aligned with ecological project continuity should be prioritized by HR units. Highlighting mission-driven organizational contribution, reinforced by the employee's self-assessment, supports identity and belonging. Integrating ecological interests with professional pathways in mission-driven roles drastically decreases attrition in high-pressure contexts.

### 5.5 Policy and Practice Horizons

Initiatives related to natural infrastructure ought to define metrics for psychological cohesion and ecological alignment and incorporate these evaluations into formal assessments. Policies that incentivize interdisciplinary collaboration within a single organization, knowledge sharing, and emotional safety in the workplace will enhance team dynamics, as well as long-term ecological integrity.

## CONCLUSION

This research highlights the strategic significance of belonging and environmental identity in influencing workforce behavior B within natural infrastructure projects. Findings show that although a team's technical skills are important for completion of a project, the psychological connection of team members to their organizations and the natural environment is crucial in supporting resilience, collaboration, and ethical behavior. Strong environmental identity enhances engagement even where institutional belonging is weak, demonstrating that project sustainability relies as much on emotional connection as on defined operational frameworks. On the other hand, absence of belonging reduces communication, team spirit, and retention in fragmented or transient teams. By incorporating place-based identity into human resource systems, strategic direction, and daily routines, project leaders can build cultures of shared purpose and psychological safety. This improves project continuity and increases responsible stewardship in fragile ecological regions. Ecological infrastructure projects of the future must address these dual anchors of identity and belonging if they are to thrive in intense multi-layered collaboration.

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