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Systematic Review

Outdoor Dance, Somatics, and Sustainability: A Systematic Review of Ecological, Pedagogical, and Socio-Cultural Dimensions and the Proposed Eco-Choreographic Protocol

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Abstract

This systematic review aimed to synthesize empirical and practice-based literature on eco-somatic and environmentally engaged dance in outdoor and nature-integrated spaces, and to develop a conceptual and pedagogical framework for their future application in sustainability education. Following a PICOS-guided protocol, database searches in EBSCOhost, Web of Science, Scopus, and Google Scholar (2010–2026) identified 14 eligible studies. These studies, primarily qualitative, ethnographic, and practice-led, were appraised using the CASP qualitative checklist and analyzed through thematic narrative synthesis. The findings show that eco-somatic and outdoor dance practices support somatic anchoring, emotional regulation, and psychological well-being; reconfigure human–environment relations by recognizing nature as an active co-creator; and foster empathy, democratic participation, and inclusive community building across ages and contexts. Grounded in these empirical findings, the Triadic Model of Regenerative Eco-Somatics and the Eco-Choreographic Protocol, including the Soma-Sustainable Cycle, are proposed as an integrated roadmap for embedding sustainability and UN SDGs into dance pedagogy and community programmes, while highlighting the need for longitudinal and curricular research to consolidate their transformative potential.

Keywords: Sustainable Development Goals (SDGs); embodiment; environmental empathy; community building; social cohesion; psychosocial well-being; improvisation; contemporary dance; regenerative education; dance pedagogy

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1. Introduction

Over the past few decades, the intersection of movement arts, somatic education, and ecological consciousness has given rise to the dynamic field of dance eco-somatics [1,2]. The relationship between dance, nature, and community is not unique to contemporary eco-somatic approaches. Traditional and Indigenous dance practices have long embodied relationships with natural environments and served as means of expressing and transmitting culturally situated knowledge, as documented in studies of Indigenous communities in Australia and Alaska [3,4]. Within contemporary eco-somatic scholarship, particular emphasis is placed on the first-person, lived experience of the moving body—the soma—as an integral, permeable part of the wider living world [2,5,6].

Eco-somatics arose from the critical realization that addressing the planet's degradation requires more than cognitive or policy-based solutions; it necessitates a profound shift in sensory perception and a reawakening of our deeply rooted bodily connection to the earth [1,7]. By turning attention inward to physical sensations and outward to the rhythms of the environment, these practices seek to heal the historical separation between mind, body, and nature [5,6].

Because of this transformative potential, dance eco-somatics is increasingly recognized as a potent catalyst for global sustainability and the realization of the United Nations' Sustainable Development Goals (SDGs) [8,9]. Scholars argue that enduring socio-ecological transformation cannot be achieved without first cultivating "inner sustainability", a somatic grounding that builds psychological resilience, self-awareness, and emotional regulation [6,10]. Dance and embodied practices foster this inner sustainability by translating abstract environmental challenges into lived, emotionally resonant experiences that inspire collective action [7]. Furthermore, participatory eco-somatic methodologies engage communities in non-verbal, equitable collaboration, nurturing the social cohesion, biospheric literacy, and cultural preservation necessary for sustainable development [8,11].

We currently live in the Anthropocene, a geological epoch characterized by the profound and often detrimental impact of human activity on the environment [5], a reality further underlined by the ongoing climate crisis and the rapid extinction of species [12,13]. Considering these ecological crises, developing an ecocentric approach and overcoming the deeply ingrained human–nature dichotomy has become increasingly imperative [5,14]. Eco-somatic practices and contemporary environmental dance offer pioneering tools for this socio-environmental reconnection, as they facilitate an active, reciprocal engagement with the landscape [15,16]. Instead of viewing the human body as separate from or superior to the natural world, these practices use direct, multisensory, and embodied experiences to foster "environmental empathy," cultivating a deeper awareness of our co-dependency and entanglement with the more-than-human world [5,12,17].

In contemporary dance and performative practices, the relationship with space has radically shifted. The natural and urban environments are no longer treated as neutral, passive entities or merely "picturesque backdrops" for human movement [5,17]. Drawing on new materialist approaches, non-human elements such as rivers, rocks, trees, and architectural features are increasingly recognized as active co-creators possessing "agentic materiality," thereby actively shaping the choreographic act [13,17,18]. Simultaneously, moving in outdoor spaces and participating in alternative outdoor festivals developed as a practice of democratic culture; sharing these embodied experiences outdoors fosters strong communal bonds that directly contribute to collective psychosocial well-being [19,20].

Despite the theoretical and artistic flourishing in the field of dance ecology, fundamental research gaps remain in the current literature. First, academic and artistic discourse often focuses almost exclusively on the singular adult artist connecting with the natural environment, risking the reduction in the ecological to an expert outdoors experience accessible only to a few [21]. This professional and age bias is further compounded by the fact that sensory dance education for early childhood (ages 3–7) remains significantly underexplored in artistic interventions and dance studies [22]. By synthesizing the available, albeit limited, evidence across different age groups, this systematic review highlights this demographic disparity and confirms the urgent need for more inclusive research. Second, there is a prevalent indoor/outdoor dichotomy that mistakenly equates ecological dance solely with venturing into wild nature [22]. However, as theorists suggest, we must move beyond this "ecological sentimentality" and recognize that we are always already within ecology [21], a concept profoundly demonstrated by architectural projects and indoor performances that seamlessly integrate natural elements into built environments, transforming stages

and classrooms into living choreographic biotopes [18,19]. Third, while the psychological benefits of music and movement are widely documented, there is a distinct lack of research focusing on the psychological benefits of outdoor artistic communities, with very little consideration given to how the outdoor nature of these gatherings specifically factors into sensations of subjective well-being [20].

Finally, while the theoretical link between dance and ecology is acknowledged, there is a distinct lack of systematic synthesis regarding how these practices can transcend mere artistic expression to function as transdisciplinary pedagogical tools for sustainable development [23]. More specifically, existing research has yet to clarify how the cultivation of "inner sustainability" and community cohesion through embodied movement might contribute to broader sustainability objectives, including the SDGs [6,9–11].

By addressing these interrelated gaps, the present systematic review investigates how eco-somatic and outdoor dance practices can be deeply inclusive, engaging non-professionals, children, and intergenerational groups. Furthermore, this review synthesizes evidence to demonstrate how outdoor and environmentally engaged dance is associated with participatory democracy, community building, and cultural sustainability. Crucially, it extends current discourse by synthesizing the foundational mechanisms of these practices (e.g., environmental empathy, community building) and exploring how they can theoretically align with and support global sustainability agendas, such as the UN's Sustainable Development Goals (SDGs), through the cultivation of personal and collective resilience.

The overarching aim of this systematic review is to investigate the existing body of literature on dance and choreographed embodied practices situated in outdoor natural environments or alternative spaces that integrate elements of nature. The review aims to identify and synthesize the key characteristics and methodologies of these practices and to examine the contributions of embodied choreographic experiences at individual, environmental, and collective levels. In particular, it explores how outdoor and eco-somatic dance practices support profound connections between body, place, and community. Furthermore, this study seeks to elucidate how such practices contribute to human well-being and environmental empathy, acting as vital catalysts for broader socio-ecological change. Building upon this comprehensive synthesis, a crucial additional aim of this paper is to conceptualize and propose a novel theoretical model and a practical protocol. This new framework is specifically designed to facilitate the direct application of eco-somatic principles in dance pedagogy and to provide a structured roadmap for future empirical research.

To address this aim, the following research questions guided the systematic review:

RQ1. What are the key characteristics, methodologies, and approaches of dance and choreographed embodied movement practices conducted in outdoor natural environments or in direct interaction with elements of nature?

RQ2. What individual experiences and outcomes emerge from participation in outdoor dance and choreographed embodied practices, particularly regarding bodily awareness, sensory perception, emotional experience, and human well-being?

RQ3. How do outdoor dance and choreographed embodied movement practices influence participants' relationships with the natural environment, sense of place, and connections with others within collective experiences?

2. Materials and Methods

2.1. Study Design

This systematic review was designed using the PICOS (Population, Phenomenon of Interest, Context, Study Design) framework and conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) (please see the

checklist in the Supplementary Materials) guidelines [24]. The protocol was prospectively registered on PROSPERO (CRD420251274734).

2.2. Inclusion and Exclusion Criteria

Eligibility criteria were defined in line with guidance from PRISMA 2020 and qualitative evidence synthesis frameworks, specifically using the PICOS framework, and were adapted to the conceptual and applied literature of dance practices, treating the "C" element as Context rather than a conventional comparator, an approach successfully established in recent environmental reviews [25]. The inclusion criteria were prespecified to ensure that only conceptually and methodologically relevant studies informing this field were retained in this systematic review. Studies were eligible for inclusion if they met the following criteria (Table 1).

Table 1. Inclusion and exclusion applied during the study selection process according to the PICOS framework.

PICOS Element	Inclusion Criteria	Exclusion Criteria
Population (P)	Studies involving non-clinical populations of all age groups, including preschool and school-age children, adolescents, adults, and intergenerational groups. Participants may include professional dancers/artists, non-professional participants, and broader communities (e.g., festival attendees). Dance Movement Therapy (DMT) methodologies applied in community or transdisciplinary environmental settings.	Studies focusing exclusively on clinical populations, including individuals with diagnosed psychiatric, neurological, or severe physical pathologies. Studies examining dance exclusively as a medical or clinical intervention were excluded. Studies examining Dance Movement Therapy (DMT) were only excluded if applied in strictly clinical/psychiatric populations.
Phenomenon of Interest (I)	Studies examining contemporary dance practices, somatic practices, eco-somatics, movement improvisation, and site-specific performance involving direct physical engagement with natural elements and the agentic materiality of the space.	Studies focusing on traditional sports, physical activity, gymnastics, aerobic fitness, or general movement practices without a clear dance-centred focus were excluded. Studies addressing general arts or physical movement without a choreographic/dance orientation were also excluded.
Context/ Setting (C)	Practices conducted in: (1) outdoor natural or rural environments (e.g., forests, rivers, coasts, mountains); (2) outdoor urban spaces (e.g., parks, public squares, streets) where movement actively interacts with the surrounding environment; or (3) indoor/architectural spaces (e.g., theatres, museums, schools) only when these practices actively challenge the conventional distinction between nature and architecture by deliberately incorporating natural elements and materials (e.g., plants, trees, water, stones, weather phenomena) as integral and agentic components of the choreographic process and as co-creators of the embodied experience.	Studies involving dance practices entirely located in closed conventional studios or theatrical stages where the environment is neutral and natural elements are absent were excluded. Outdoor performances were excluded when the natural or urban landscape was used only as a passive decorative setting ("picturesque backdrop") without essential embodied and agentic interaction between dancers and the materiality of the site. Studies situated in urban environments focusing exclusively on artificial architectural elements (e.g., concrete, bridges, asphalt), without deliberate incorporation of or engagement with natural elements, were excluded.
Outcomes/ Evaluation (O)	Studies exploring or reporting outcomes related to ecological and environmental empathy, sensory education, psychosocial well-being, community development, democratic participation, and cultural or social sustainability.	Studies reporting exclusively neurobiological, biomechanical, or physiological quantitative outcomes (e.g., heart rate measurements, neuromotor control metrics) were excluded. Studies approaching dance from a strictly criminological or medicalized perspective, without connections to environmental empathy, sensory education, or psychosocial well-being, were also excluded.

Table 1. *Cont.*

PICOS Element	Inclusion Criteria	Exclusion Criteria
Study Design (S)	Peer-reviewed empirical studies using qualitative, quantitative, mixed-methods, or practice-based/artistic research methodologies that involve primary data collection (e.g., ethnographic fieldwork, case studies, participant observations, focus groups, interviews, or practical workshops).	Non-empirical articles, theoretical essays without primary data, opinion pieces, editorials, conference papers and non-peer-reviewed gray literature were excluded.

2.3. Search Strategy

A comprehensive and systematic literature search was conducted to identify relevant studies. The search was executed across the following electronic databases: EBSCOhost (specifically including PsycInfo, SPORTDiscus, ERIC, and Arts & Humanities), Web of Science Core Collection, and Scopus. Additionally, Google Scholar was used as a supplementary source for forward and backward citation tracking (snowballing) of key identified articles to ensure literature saturation.

The search strategy was systematically designed in alignment with the PICOS framework. The search terms were grouped into two primary conceptual blocks based on the terminology identified in the scoping phase of the review: the first block targeted the Phenomenon of Interest (encompassing dance, somatic, and site-specific performance practices), and the second block targeted the Context/Setting (capturing outdoor, ecological, urban, and natural environments).

Boolean operators (AND, OR) and truncation symbols (*) were applied to capture all relevant variations of the terms and to maximize the sensitivity of the search. The search was restricted to peer-reviewed articles published between 2010 and 2026. The search strings were specifically adapted to the syntax and requirements of each database, focusing primarily on the Title, Abstract, and Keyword fields.

To ensure a highly sensitive search and avoid missing interdisciplinary literature, search strings were intentionally restricted to the "Phenomenon of Interest" and "Context" domains. "Outcomes" (such as well-being or empathy) were not included as limiting keywords, but were instead evaluated during the full-text screening phase. The exact search strings applied across the respective databases were as follows: (Table 2).

Table 2. Search strategy results across databases.

Database	Search String	Initial Records Retrieved
EBSCOhost (PsycInfo, SPORTDiscus, ERIC, Arts & Humanities)	(dance* OR dancing OR somatic* OR eco-somatic* OR ecosomatic* OR choreograph* OR "movement practice" OR "environmental movement" OR "non-stylised movement" OR "site-specific performance" OR "ecological performance") AND (outdoor* OR nature OR environment* OR ecolog* OR landscape* OR "agentic materiality" OR festival* OR urban)	33
Web of Science	TS = (dance* OR dancing OR somatic* OR eco-somatic* OR ecosomatic* OR choreograph* OR "movement practice" OR "environmental movement" OR "non-stylised movement" OR "site-specific performance" OR "ecological performance") AND TS = (outdoor* OR nature OR environment* OR ecolog* OR landscape* OR "agentic materiality" OR festival* OR urban)	67

Table 2. *Cont.*

Database	Search String	Initial Records Retrieved
SCOPUS	TITLE-ABS-KEY (dance* OR dancing OR somatic* OR eco-somatic* OR ecosomatic* OR choreograph* OR "movement practice" OR "environmental movement" OR "non-stylised movement" OR "site-specific performance" OR "ecological performance") AND TITLE-ABS-KEY(outdoor* OR nature OR environment* OR ecolog* OR landscape* OR "agentic materiality" OR festival* OR urban)	84
Google Scholar	(dance OR somatic OR choreography OR "movement practice" OR "site-specific performance") AND (outdoor OR nature OR ecology OR festival OR urban)	150 screened from the first 15 pages of 1530 results

2.4. Study Selection Process

The study selection process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines [24]. A total of 334 records were identified through database searches. After removing 66 duplicates, 268 records remained for screening. The screening process was conducted by two independent reviewers, with disagreements resolved by a third reviewer. During the title and abstract screening, 217 records were excluded. The remaining 51 reports were sought for full-text retrieval; however, 8 could not be obtained due to institutional access restrictions or unavailability, and 1 was not retrieved as it was only available as a conference abstract.

In total, 42 full-text reports were assessed for eligibility. Following the full-text evaluation, 28 reports were excluded for the following reasons: they did not address the relationship with the natural environment and its impact, focusing instead on other factors such as psychological health (n = 11); they were situated in urban environments and focused exclusively on artificial, man-made architectural elements (e.g., concrete) without any engagement with nature (n = 7); they addressed general arts or physical activity/fitness without a clearly dance-centred focus (n = 6); they approached the natural environment or natural elements theoretically or solely through audiovisual material, lacking direct, embodied engagement (n = 2); they examined clinical Dance Movement Therapy or other strictly therapeutic interventions (n = 2).

Finally, 14 studies were included in the final synthesis. A visual representation of the study selection process is provided in the PRISMA 2020 flow diagram (Figure 1).

2.5. Data Extraction and Quality Assessment

Data extraction was performed independently by two reviewers using a standardized, pre-piloted data extraction form developed specifically for this review in Microsoft Excel. Any discrepancies between the reviewers were resolved through discussion or, when necessary, by consulting a third reviewer to reach a consensus. The extracted data aligned with the PICOS framework [26] and included the following variables: (1) study characteristics (author, year of publication, country of research); (2) methodological design, theoretical frameworks, and data collection methods (e.g., ethnography, practice-led artistic research, new materialism); (3) participant characteristics (e.g., professional dancers, non-professionals, children, intergenerational groups); (4) the specific phenomenon of interest (type of eco-somatic, contemporary, or environmental dance practice); (5) the context, setting, and temporality of the practice (e.g., outdoor natural landscapes, urban public spaces, daily practices, seasonal cycles); and (6) key qualitative findings and out-

comes related to environmental empathy, psychosocial well-being, sensory education, and community building.

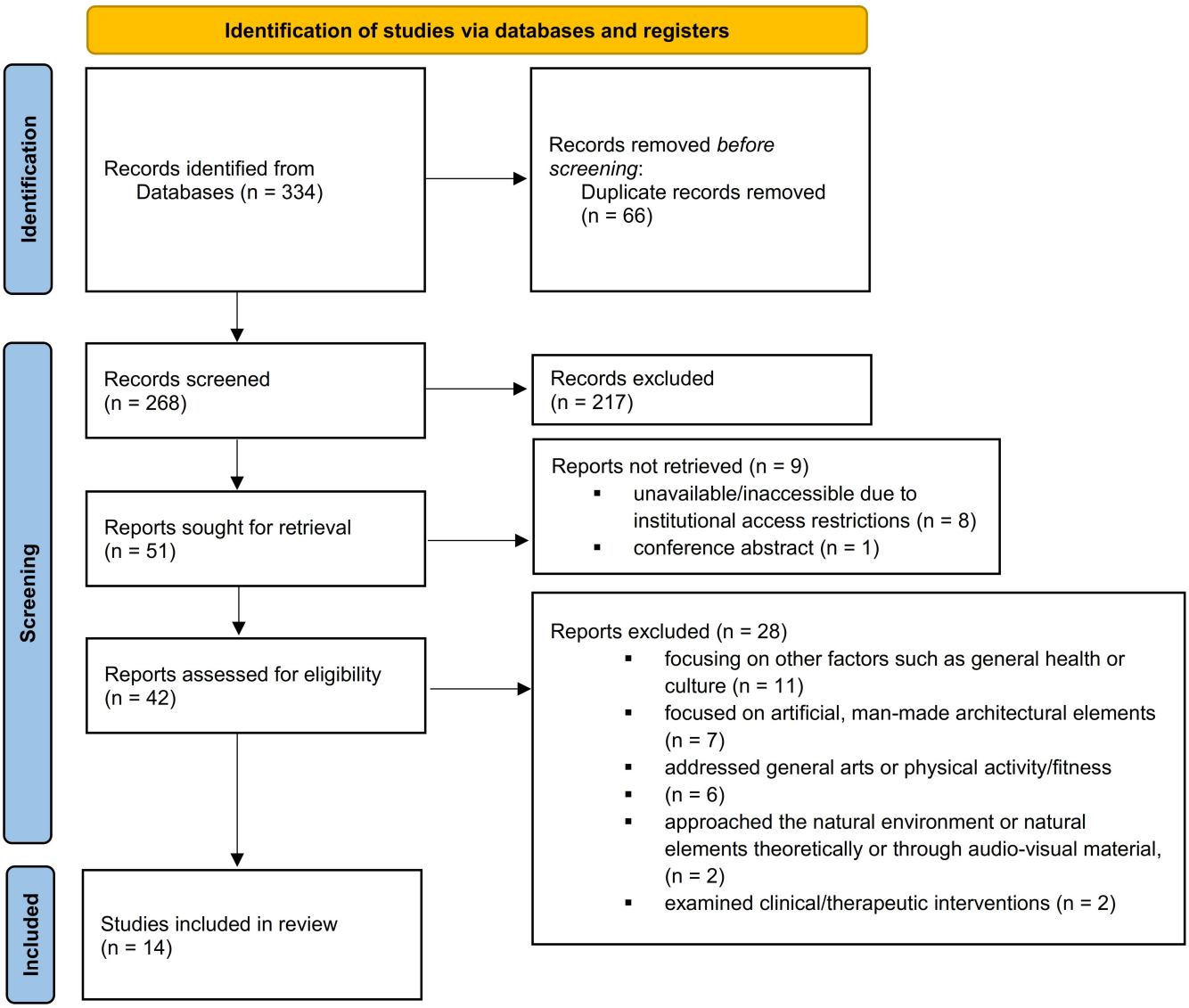

Figure 1. PRISMA 2020 flow chart.

According to the qualitative, ethnographic, and practice-based nature of the included literature, the methodological quality of the studies was evaluated using the Critical Appraisal Skills Programme (CASP) Qualitative Checklist [27]. The appraisal was conducted independently by two reviewers, with disagreements resolved by a third reviewer. The CASP tool comprises 10 questions that assess the validity of the research design, the appropriateness of the recruitment and data collection strategies, ethical considerations, and the value of the research.

For the field of eco-somatics and environmental dance, the CASP checklist includes a specific evaluation of the relationship between the researcher and the participants (reflexivity). This criterion was particularly valuable for this review, as several included studies used practice-led artistic research, autoethnography, and somatic self-reflection, where the boundaries between the researcher, the performer, and the environment are intentionally fluid and intra-active. In accordance with standard practices for qualitative evidence syntheses, studies were not excluded based solely on their quality appraisal scores; rather, the

assessment was used to contextualize the findings, evaluate the robustness of the evidence, and inform the narrative synthesis.

2.6. Data Synthesis

Due to the qualitative, ethnographic, and practice-led nature of the included studies, a statistical meta-analysis was not feasible. Instead, a thematic narrative synthesis approach [28] was conducted to analyze and integrate the findings. The synthesis process involved three iterative steps: (1) systematically reading and familiarizing with the extracted data; (2) identifying recurring concepts and coding them; and (3) grouping these codes into broader, overarching thematic categories. These categories were specifically developed to map onto the research gaps identified in the introduction, exploring how eco-somatic dance practices intersect with human–environment interactions, inclusivity, and spatial performativity. Through this thematic synthesis, the diverse methodological approaches of the included studies, ranging from autoethnography to qualitative interviews and practice-as-research, were effectively integrated to provide a comprehensive and cohesive overview of the phenomenon.

3. Results

3.1. Characteristics of Included Studies

A total of 14 studies met the inclusion criteria and were included in the descriptive mapping and thematic synthesis (Table 3). The reviewed literature presents considerable geographical diversity, with research and artistic dance practices conducted across various locations including the UK, Italy, Germany, Finland, Sweden, Spain, Portugal, South Africa, China, and the USA. Methodologically, the studies rely heavily on qualitative and arts-based paradigms, incorporating practice-led and artistic research, autoethnography, ethnographic observation, qualitative surveys, hermeneutic phenomenology, mixed-methods, and theoretical analysis.

Participant demographics are equally varied across the literature. The studies range from examining the experiences of solo professional artist–researchers engaging deeply with their environments [12,13,17], to independent movement professionals [16], and intergenerational ensembles comprising both professional and non-professional children and adults [21]. Other research focuses on early childhood education settings with children aged 3 to 7 years, alongside their families and educators [22], university students [6], and transdisciplinary researchers and postgraduates [29]. Furthermore, broader community groups are explored, including local residents without prior experience [7], attendees of alternative outdoor festivals [20], and general audiences of environmental dance [2].

The contexts and settings of the eco-somatic choreographed practices encompass a broad spatial continuum. They include wild, coastal, and rocky terrains [16,17], rural rivers [14], various natural biomes [23], and alternative festival campsites [20]. Furthermore, the literature explores urban landscapes and city streets [15], specific performative architectures like theatre venues [21], and educational or cultural settings that intentionally incorporate natural elements, such as university programs [6], forest schools, and museums [22].

Table 3. Characteristics of included studies.

Author & Year	Country & Context	Population & Sample Characteristics	Study Design	Data Collection Methods	Type of Dance/ Somatic Choreographed Intervention	Key Characteristics & Approaches of the Practices	Outcomes: Individual Experiences & Well-Being	Outcomes: Human-Environment Relationship & Sense of Place	Outcomes: Collective Experiences & Community Connections
Adams, [6]	USA Somatic Sustainability university program.	University students (dance and general education).	Qualitative, process-based experiential-pedagogical model.	Reflective journaling, project presentations, group brainstorming.	Somatic sustainability practices (guided movement, Pilates, yoga, GYROKINESIS®).	Internal noticing (felt-sense), non-judgmental, slow/small movements, floorwork, "small shifts & quiet practices".	Embodied resiliency, stress reduction, self-compassion, somatic attunement.	Biospheric literacy, resource awareness, creating Mandalas from nature & trash.	Empathy development shift from individual to collective, co-creation, building resilient communities.
Arlander, [13]	Finland (Harakka Island, Helsinki), Artistic research.	Solo artist/ researcher (the author).	Artistic research, autoethnography, performance for camera.	Video recording (time-lapse), self-reflection, written texts.	Breathing & stillness practice, performing with plants.	Repeated site visits (weekly for a year), sitting/standing focusing on breath, wearing a red scarf, "active receptivity".	Relaxation, meditative experience, healing, spirituality, autonomy, returning to the self.	Bonding with the environment, tuning into plant growth rhythms, shared breathing with flora, highlighting seasonal changes.	No direct collective action (solo practice), aiming to raise viewer awareness of interdependence.
Arlander, [12]	South Africa, Finland, Sweden, Artistic project ("Meetings with Remarkable & Unremarkable Trees").	Solo artist/ researcher, online event participants ("Be-coming Tree").	Artistic research, performance for video, autoethnography.	Video recording, journaling, online participation (Zoom).	Somatic balancing practice, yoga tree pose (*dvipada vrikshasana*).	Daily practice of tree pose next to trees for a set time (21 breaths), physical touch, balancing.	Concentration, balance, calm, psychophysical control, Therapeutic routine.	Emotional bonding with trees, trans-corporeality awareness, recognizing shared life force (Zoe), ecological consciousness.	Empowerment via collective online synchronised performance, global connection with artists.

Table 3. *Cont.*

Author & Year	Country & Context	Population & Sample Characteristics	Study Design	Data Collection Methods	Type of Dance/ Somatic Choreographed Intervention	Key Characteristics & Approaches of the Practices	Outcomes: Individual Experiences & Well-Being	Outcomes: Human-Environment Relationship & Sense of Place	Outcomes: Collective Experiences & Community Connections
Bell & Kapsali, [14]	UK (Wales–Abercych), "Upstream: Practicing Places" workshop.	Workshop participants (the two authors).	Autoethnographic essay, practice-led reflection.	Audio–visual documentation (video), written reflections.	Postmodern dance, contact improvisation, eco-somatic approach.	Drifting, moving in the river while witnessed by a partner, using movement scores.	Joy, physical adaptability to water & stones, redefining the sense of self.	Deconstructing river as a conventional object, Experiencing environment as multiplicity, aligning with nature's processes.	Knowing the "other" via observation and co-presence, co-constitutive relationships.
Bentz et al., [7]	Portugal (Lisbon, Telheiras neighborhood), "Climate Odyssey" project.	15 local residents (11 women, 4 men, ages 22–75), no prior experience.	Transdisciplinary art–science experiment, case study.	Registration/ feedback forms, photovoice, qualitative interviews, follow-up survey.	Devised theatre, dance, storytelling, embodied exercises.	Co-creation, improvisation, nature/animal-inspired movements, metaphors (Odyssey), drum circle.	Sense of personal agency, self-confidence, optimism, overcoming personal obstacles.	Deeper understanding of climate change, reevaluating daily actions, connection to local space and history.	Sense of community & oneness, solidarity, breaking isolation, collective empowerment.
Copteros et al., [29]	South Africa (Eastern Cape), Transdisciplinary water resources management research.	8 researchers and postgraduate students.	Exploratory interpretivist study, hermeneutic phenomenology.	Semi-structured individual interviews, Interpretative Phenomenological Analysis (IPA).	Dance Movement Therapy (DMT—Marion Chace approach).	Culturally adapted practices, shared breathing, moving in a circle, mirroring movements, sharing leadership.	Reflection on insecurities, freedom of expression, healing, freeing thought via the body.	Holistic connection to social-ecological systems, embodied reciprocity with the more-than-human world.	Breaking down power hierarchies, overcoming racial divides, deepening mutual respect, community integration.

Table 3. *Cont.*

Author & Year	Country & Context	Population & Sample Characteristics	Study Design	Data Collection Methods	Type of Dance/ Somatic Choreographed Intervention	Key Characteristics & Approaches of the Practices	Outcomes: Individual Experiences & Well-Being	Outcomes: Human-Environment Relationship & Sense of Place	Outcomes: Collective Experiences & Community Connections
Fabris & Lazzaretti, [22]	Italy (Ostia Antica, Trento, Venice, Brescia), Educational/cultural settings (forest schools, museums, parks).	Children 3–7 years old, educators, pedagogues (7 dance operators, 4 pedagogues).	Qualitative research (mapping), participatory action research.	Focus groups, structured interviews (online/ in-person).	Educational dance (Danza Educativa), Ecosomatic practices (Danza sensibile®, ecodance).	Sensory activation, integrating natural elements (leaves, stones), slowness, storytelling (Kamishibai), ritual circles.	Autonomy, concentration, emotional management, free expression, cognitive and motor development.	Ecological sensitivity, body–flora dialogue, recognizing space as the "third educator".	Socialization, strengthening parent–child bonds, building inclusive educational communities.
Gottlob, [23]	UK (Devon), Master's/Eco-program "Dancing the Biomes" (DTB).	9 participants (artists, dancers, academics, activists).	Exploratory essay, qualitative/ descriptive research.	Personal notebooks (drawings, mappings, diagrams, written reflections).	Movement improvisation (somatic, walking, observing, whole-body).	"Mark-making" (tactile/kinetic drawing on paper/partner's back), dancing in biomes, observing nature, non-verbal communication.	Somatic resolution of binaries, externalizing tacit knowledge, emotional awareness.	Embodying environmental ethics, co-creative relationship with Earth, intersubjectivity with non-humans.	Intersubjective tactile communication, multivocal inclusion, challenging hegemonic power structures.
Hug et al., [15]	Germany (Berlin), Artistic Research Platform "Areal Berlin".	4 dance artists/ researchers (the authors).	Practice-Research reflection, joint article, structured dialogue.	Personal archives, notes, collective dialogue.	Choreographic-somatic approaches, Environmental Somatics (Feldenkrais), Amerta Movement, urban improvisation ("city doing").	Sensory activation, preposition scores, walking and lingering, practice of "offering/ receiving", "neighbouring" in urban space.	Sensory orientation, releasing control/ judgment, playful state.	Eco-consciousness as embeddedness, co-transformation with urban/natural landscapes, accepting the unpredictable.	Ecology of practices, collegial dialogue, Sharing presence in public space.

Table 3. *Cont.*

Author & Year	Country & Context	Population & Sample Characteristics	Study Design	Data Collection Methods	Type of Dance/ Somatic Choreographed Intervention	Key Characteristics & Approaches of the Practices	Outcomes: Individual Experiences & Well-Being	Outcomes: Human-Environment Relationship & Sense of Place	Outcomes: Collective Experiences & Community Connections
Hopfinger, [21]	UK (Glasgow), "Wild Life" project in a theatre venue.	8 performers (professionals, nonprofessionals, children, adults 9–60 years old).	Practice-led research, qualitative critical reflection, case study.	Researcher's personal journal, rehearsal videos.	Devised theatre, movement improvisation, intergenerational performance ecology.	"Interpretation Practice", using "impossible Instructions" without mimicking, interacting with materials (stones, water, matches), director as participant.	Active responsiveness, letting go of absolute control, discovering new movement qualities.	"Wilding performance", human–nonhuman intra-activity, co-creation with vibrant matter (stones, floor).	Intergenerational collaboration, equitable distribution of agency, empathy/mutual responsibility, Dismantling Directorial hierarchies.
Kramer, [17]	UK (Scotland), Spain (Pyrenees), Germany (Berlin), Contemporary outdoor dance practices.	Solo artist/ researcher and workshop participants.	Practice-and/as-research, theoretical exploration (new materialism).	Field notes, rehearsal notes, personal conversations.	Contemporary outdoor dance, somatic practices, Amerta Movement.	Moving in extreme natural environments (cold rivers, sharp rocks), crawling, moving close to ground, receptive awareness, "knowing-not-knowing".	Altered state of presence, physical strength/ adaptability, acute Sensory alertness, relinquishing control.	Encountering "thing-power"/ vital materiality, understanding distributive agency, collaborating with natural elements (rocks, water).	Shared action mostly with non-human Elements (focuses more on human-Matter connection than human communities).

Table 3. *Cont.*

Author & Year	Country & Context	Population & Sample Characteristics	Study Design	Data Collection Methods	Type of Dance/ Somatic Choreographed Intervention	Key Characteristics & Approaches of the Practices	Outcomes: Individual Experiences & Well-Being	Outcomes: Human-Environment Relationship & Sense of Place	Outcomes: Collective Experiences & Community Connections
O'Grady, [20]	UK, Alternative festival Circuit (Alchemy, Bearded Theory, Waveform, etc.).	Participants at alternative festivals.	Ethnographic approach.	Participant observation, interviews, questionnaire surveys.	Outdoor dance (Electronic Dance Music—EDM), rave, free party movement legacy.	Dancing in nature, DiY/self-organization, camping, participating in non-hierarchical, open spaces.	Hedonic and eudaimonic well-being, psychological rejuvenation, physical/ spiritual liberation, self-actualization.	Reconnection with nature, appreciation of the "pastoral myth", harmony with the landscape.	Democratic participation, strong sense of belonging ("secret community"), fluid social networks, radical togetherness, equality.
Poynor et al., [16]	UK (Jurassic Coast, Devon, Dorset), "Walk of Life" training program.	Independent movement/art professionals (dancers, therapists) ages 20 s–60 s.	Practical reflection, au-toethnography, personal case studies.	Movement diaries, written/ visual logs, evaluations.	Non-stylised & Environmental Movement, Amerta Movement influences.	Focus on skeletal structure, Exploring spatial levels (upright to floor), practicing "ordinary eyes", moving "within" the landscape without imposing.	Physical grounding, breaking habits, resilience, Feeling anchored/safe, artistic confidence.	Respect for natural forces (tides, weather), meeting materiality, sense of belonging to earth, avoiding "merging" to maintain embodied encounter.	Non-judgmental witnessing, maintaining embodied self in presence of others, peer group support, shared practice without merging.

Table 3. *Cont.*

Author & Year	Country & Context	Population & Sample Characteristics	Study Design	Data Collection Methods	Type of Dance/ Somatic Choreographed Intervention	Key Characteristics & Approaches of the Practices	Outcomes: Individual Experiences & Well-Being	Outcomes: Human-Environment Relationship & Sense of Place	Outcomes: Collective Experiences & Community Connections
Shao, [2]	China/Global scale, Overview of Environmental Dance.	Dance artists and audiences.	Mixed-methods (qualitative & quantitative), literature review, case studies.	Online surveys (descriptive statistics), content analysis, audience feedback.	Environmental dance (blending traditional Chinese dance with Western avant-garde).	Non-traditional performance spaces (parks, streets, landscapes), natural elements (water, wind, earth) into choreography.	Unique aesthetic experience, deep immersion in performance.	Understanding the interconnect-edness of all living things, exploring ecological aesthetics.	Promoting environmental awareness and sustainability to the general public, ecological education.

3.2. Quality Assessment of Included Studies

The quality assessment of the 14 studies included in the current review was conducted taking into account their specific epistemological and methodological nature. As established by the data extraction, the selected sources are predominantly based on qualitative and artistic/experiential methodologies, rather than clinical models. However, they are not exclusively qualitative, as some studies incorporate mixed-methods and quantitative statistical approaches (such as descriptive statistics and surveys). Specifically, the studies draw data through artistic research, practice-led/practice-as-research approaches, autoethnography, participatory ethnography, and hermeneutic phenomenology, as well as through qualitative mapping (focus groups), mixed-methods surveys, and empirical case studies.

Due to this heterogeneity and the absence of quantitative data (e.g., control groups), the CASP (Critical Appraisal Skills Programme) Qualitative Checklist was selected, an internationally recognized and validated tool specifically designed for the appraisal of qualitative research [30]. This tool allows for the rigorous academic assessment of the studies without undermining the ontology of experiential and artistic research [27].

The methodological quality of each study was evaluated using the 10 criteria of the CASP Qualitative Checklist. The assessment considered the following aspects: clarity of the research aims; appropriateness of the qualitative methodology; suitability of the research design; appropriateness of the sampling or recruitment strategy; rigor of data collection; reflexivity and the relationship between the researcher and the research process/context; consideration of ethical issues; rigor of data analysis; clarity of the findings; and the value and contribution of the research. The results of the quality assessment are presented in detail in Table 4. For each study, the satisfaction of each respective criterion was scored with "Yes" (Y) if the criterion was clearly met, "No" (N) if it was not met, and "Can't Tell" (CT) if there was insufficient information for its assessment.

Table 4. Quality Assessment of Included Studies using the CASP Qualitative Checklist.

Author	Q1 Aims	Q2 Methodology	Q3 Design	Q4 Recruitment	Q5 Data Collection	Q6 Reflexivity	Q7 Ethics	Q8 Data Analysis	Q9 Findings	Q10 Value
Adams, [6]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Arlander, [13]	Y	Y	Y	CT	Y	Y	CT	Y	Y	Y
Arlander, [12]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Bell & Kapsali, [14]	Y	Y	Y	CT	Y	Y	Y	Y	Y	Y
Bentz et al., [7]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Copteros et al., [29]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Fabris & Lazzaretti, [22]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Gottlob, [23]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hug et al., [15]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hopfinger, [21]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Kramer, [17]	Y	Y	Y	Y	Y	Y	CT	Y	Y	Y
O'Grady, [20]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Poynor et al., [16]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Shao, [2]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Y = Yes, N = No, CT = Can't Tell.

The results of the CASP quality assessment demonstrate that the included studies exhibit a high standard of methodological rigor, fulfilling the vast majority of the criteria. Where occasional gaps in reporting were identified (scored as "Can't Tell"—e.g., explicit descriptions of recruitment strategies or formal ethical approvals), these were primarily due to the specific conventions of solo practice-led artistic research rather than fatal methodological flaws. Overall, this high scoring reflects the robust nature of the selected peer-reviewed literature within the niche fields of eco-somatics, qualitative mapping, and transdisciplinary environmental studies. A particularly notable strength across the entire sample is the profound degree of reflexivity (Q6). According to the practice-led, autoethnographic, and phenomenological nature of many of these studies, the artist–researchers and scholars

critically and transparently analyze their own position, vulnerabilities, and biases within the human–nonhuman performance ecologies and social-ecological systems they investigate. Furthermore, the meticulous data collection methods (Q5), ranging from movement diaries, fieldwork notebooks, and audio–visual documentation to structured focus groups, qualitative interviews, and mixed-methods surveys, coupled with rigorous interpretative analyses (Q8), ensure that the findings are both credible and highly valuable (Q10).

3.3. Thematic Synthesis of Findings

The thematic synthesis of the 14 included studies reveals that the impacts of eco-somatic and environmental dance practices extend across multiple dimensions, intertwining the personal, the ecological, and the social. The analysis highlighted three main themes:

Theme A: Individual Experiences, Somatic Attunement, and Well-being.

This theme focuses on how eco-somatic practices influence the internal world, physical awareness, and psychological state of the individual. Immersing oneself in natural or thoughtfully designed environments stimulates the senses and promotes physical grounding. Participants learn to physically adapt to elements like water and stones, acquiring acute sensory alertness and breaking free from habitual movement patterns [6,14,16,17]. For instance, working closely with the floor or exploring various spatial levels facilitates physical grounding, resilience, and artistic confidence. Moreover, many of these practices operate by releasing absolute control and judgment, allowing for a playful or altered state of presence to derive [15,17,21]. This relinquishing of control fosters active responsiveness and the discovery of new movement qualities, while simultaneously strengthening a sense of personal agency, autonomy, and a profound return to the self [7,13,21]. On a psychological and emotional level, slow, mindful movements and internal noticing (felt-sense) function therapeutically, reducing stress, promoting self-compassion, and enabling the somatic resolution of internal binaries [6,23]. Practices such as the two-legged tree pose provide psychophysical control, deep concentration, and a therapeutic routine [12]. Furthermore, in outdoor raves and alternative festivals, participants report intense psychological rejuvenation, physical and spiritual liberation, and both hedonic and eudaimonic well-being [20]. Within transdisciplinary research settings, dance movement therapy principles facilitate freedom of expression and the freeing of thought via the body, aiding in critical reflection upon personal insecurities and trauma [29]. Finally, in early childhood settings, sensory activation and eco-somatic practices support emotional management, concentration, and cognitive-motor development [22].

Theme B: Human–Environment Relationship, Materiality, and Sense of Place.

This theme analyzes the redefinition of the individual's relationship with the environment, effectively transcending the traditional nature-culture binary. Eco-somatic practices enhance the understanding of trans-corporeality, the realization that the human body is inextricably entangled with the more-than-human world [12]. In this context, artists explore the shared life force (Zoe) and common breathing with flora, tuning into plant growth rhythms and highlighting seasonal changes [12,13]. Consequently, the environment is not treated as a passive scenic backdrop, but rather as an active co-creator, demonstrating "distributive agency", "thing-power," and vibrant materiality [16,17,21]. Performers collaborate with natural elements like cold rivers, sharp rocks, and tides, respecting natural forces rather than imposing human will upon them. In educational and cultural settings, this translates to recognizing the natural space as the "third educator" that actively shapes learning through a continuous body–flora dialogue [22]. Through the embodiment of the landscape, participants develop biospheric literacy and a deeper understanding of climate change, reevaluating daily actions and forging emotional bonds with their local space and its history [6,7]. The environment is experienced as a multiplicity, effectively deconstructing

conventional objectifications (such as redefining what a river is conventionally understood to be), which in turn fosters a deeply rooted environmental ethics and ecological consciousness [12,14,23]. Furthermore, environmental dance uses non-traditional spaces globally to promote ecological aesthetics and environmental sustainability awareness to the broader public [2].

Theme C: Collective Experiences, Empathy, and Community Connections.

This theme focuses on the social dimensions of the practices, examining how the body and movement facilitate new forms of coexistence. In contrast to traditional performative and directorial structures, eco-somatic practices often dismantle hierarchies and power dynamics [21,29]. These approaches promote the equitable distribution of agency across intergenerational, transdisciplinary, and community ensembles, actively challenging hegemonic power structures and empowering multivocal inclusion [21,23]. Furthermore, somatic interaction and non-judgmental witnessing serve as crucial tools for understanding the "other" [14]. Through non-verbal, tactile, and intersubjective communication, participants develop empathy, mutual responsibility, and a shared presence in both public and wild spaces [15,21,23]. In this process, co-constitutive relationships occur as participants learn to maintain their embodied selves while sharing space, finding collective support without the need to entirely merge with one another [14,16]. Finally, collective actions, whether in forests, urban public spaces, online synchronized events, or alternative festival campsites, actively break down isolation. They facilitate a shift from the individual to the collective, fostering solidarity, democratic participation, and a strong sense of belonging or a "secret community" [6,7,20]. These practices are instrumental in overcoming racial and social divides, deepening mutual respect, and building resilient, inclusive educational and social communities [6,22,29].

4. Discussion

The findings of this review provide clear answers to the three central research questions, highlighting the multidimensional nature of environmental dance. Regarding the key methodologies and characteristics (RQ1), outdoor eco-somatic practices depart from strict choreography to adopt transdisciplinary, improvisational approaches based on free embodied exploration, effectively deconstructing the traditional human–nature binary. At the individual level (RQ2), participation in these practices facilitates a profound sensory and somatic awakening, enabling individuals to return to themselves, regulate complex emotions, heal trauma, and enhance their psychological well-being and embodied resilience. Simultaneously, regarding the social and ecological dimensions (RQ3), these practices radically transform participants' relationships with their surroundings by deepening their sense of place and recognizing nature as an active, vibrant co-creator. Furthermore, collective movement in these settings actively dismantles social hierarchies, promotes non-verbal empathy, and builds resilient, inclusive communities.

This holistic perspective suggests an important shift in how dance may be understood, moving beyond aesthetic expression or entertainment toward a transdisciplinary and pedagogical practice oriented to transformation. Within the context of eco-somatics and the environment, dance can serve as an experiential bridge between humans and the more-than-human world, helping to translate abstract environmental theories into embodied ecological ethics and biospheric literacy. In relation to community and sustainability, collective movement may foster social cohesion and solidarity, and can draw on indigenous philosophies and related ethical traditions to support the implementation of the Sustainable Development Goals (SDGs) through the cultivation of inner sustainability. The synthesized literature indicates that dance may function as a meaningful practice for communicating

sustainability in embodied ways and for supporting the development of more empathetic and sustainability-oriented citizens.

4.1. The Dancing Body as a Vital Bridge: Self, Earth, and Community

The thematic synthesis shows that eco-somatic and environmental dance practices go significantly beyond mere artistic expression or physical exercise, functioning instead as a profound tool for holistic socio-ecological transformation [2,6,7]. As discussed in Section 1, addressing the planetary crisis requires more than cognitive or policy-based solutions. The synthesized literature is consistent with this perspective, revealing that in response to the sensory disconnection and psychological strain often experienced in contemporary, fast-paced societies, these practices facilitate a deep return to the self [13,23]. By engaging with natural or carefully curated environments through mindful, non-judgmental movement, individuals present a process that alleviates stress, fosters somatic grounding, and cultivates inner resilience and autonomy [6,12,17]. These findings suggest that cultivating inner sustainability may support the development of pro-environmental orientations, with potential implications for broader sustainability objectives.

Furthermore, this embodied engagement catalyzes a critical paradigm shift regarding the human–environment relationship, directly answering the introduction's call to overcome the deeply ingrained human–nature dichotomy of the Anthropocene [14,17]. Rather than viewing nature as a passive scenic backdrop or a resource for human use, the synthesized literature positions the environment as an active, vibrant co-creator with its own distributive agency and "thing-power" [2,13,17]. Through these practices, participants experientially comprehend their trans-corporeal entanglement with the more-than-human world, realizing that the human body shares a vital life force (Zoe) and breath with its surroundings [13,23]. Significantly, by observing these practices across diverse spatial continuums, this review actively challenges the indoor/outdoor dichotomy identified as a research gap. While the majority of the reviewed literature remains situated in explicitly outdoor environments, studies such as Hopfinger [21] and Fabris & Lazzaretti [22] successfully demonstrate that ecological connection can also be cultivated indoors (e.g., in theatres, museums, or educational spaces) through the active integration of natural materials. Thus, it demonstrates that authentic ecological consciousness and biospheric literacy do not exclusively depend on venturing into remote wilderness, but can be cultivated wherever spatial performativity is activated, moving beyond purely cognitive or fear-based understandings of climate change.

On a social level, sharing these embodied experiences, whether in remote woodlands, alternative outdoor festivals, or educational settings, may encourage more participatory and equitable forms of social interaction [20,21,29]. This directly addresses the research gap regarding the bias toward the "singular adult artist," suggesting that eco-somatic methodologies can be highly effective and inclusive in community, intergenerational, and early childhood contexts. Collective movement establishes a non-verbal, tactile communicative code that nurtures profound empathy, mitigates racial and social divides, and builds resilient groups characterized by radical togetherness and democratic participation [15,20,29]. In this way, it fills the gap concerning the psychological benefits of outdoor artistic communities, illustrating how such gatherings specifically factor into collective well-being. The overarching discourse indicates that logic, scientific data, and policy interventions alone are insufficient to address contemporary planetary and societal crises; a fundamental shift in sensory, emotional, and embodied perception is required [6,7]. The moving body emerges as the vital bridge capable of authentically reconnecting the individual with the self, the accommodating earth, and the broader human community, conceptually operating as a practical engine for the UN's Sustainable Development Goals [6,23,29].

4.2. Towards a New Conceptual Framework: The Triadic Model of Regenerative Eco-Somatics

Drawing upon the synthesized literature, this review proposes the Triadic Model of Regenerative Eco-Somatics as an initial conceptual framework for articulating the potential impacts of these practices. While the framework draws on established academic lineages, including eco-psychology [31], social justice paradigms [32], and new materialism thought [33,34], it brings these strands into a preliminary integrated synthesis. Rather than treating environmental dance solely as a site-specific aesthetic genre, the model brings together these theoretical currents into a transdisciplinary, experiential, and pedagogical orientation that may contribute to more regenerative, equitable, and relational forms of learning and practice. In this sense, Regenerative Eco-Somatics may function as a medium for questioning hierarchical power relations [21,29], supporting embodied processes of reflection and recovery, and fostering a deeper sense of trans-corporeal interdependence within the broader biosphere [6,12].

At the core of this framework is the micro-level of "Somatic Anchoring", which directly comes from the empirical findings of Theme A (Individual Experiences and Well-being). Drawing on the reviewed literature's evidence of inner sustainability [6,10] and somatic psychology, it is suggested that engaging the physical body can serve as an important starting point for responding to macro-ecological crises [6,17]. Through mindful, non-judgmental movement and sensory activation, practitioners may cultivate embodied resilience and physical grounding [6,16]. At this foundational level, ecological anxiety may be approached through somatic awareness and mindful, non-judgmental movement, drawing on the grounding and emotional awareness associated with eco-somatic practices [6,29]. For example, a dancer who fears the progressive degradation of a familiar forest where they have frequently practiced may experience physical tension or changes in breathing when confronted with signs of environmental deterioration. Through guided improvisation involving slow, grounded movements and sensory engagement with the surrounding trees, soil, and wind, the dancer could explore these bodily responses while maintaining a meaningful connection with the landscape. Similarly, participants distressed by the erosion or pollution of a cherished coastline might engage in gentle movement improvisation, exploring balance, weight, and rhythm in response to the natural surroundings. Such embodied experiences may provide opportunities to recognize environmental concerns, express difficult emotions, and ease immediate bodily tension, although their specific effects on ecological anxiety require further empirical investigation.

Building upon this internal grounding, the meso-level encompasses "Co-constitutive Kinship", translating the outcomes of Theme C (Collective Experiences, Empathy, and Community) into a pedagogical dimension. This level links individual somatic awareness with socio-ecological ethics, directly reflecting how the reviewed practices encourage community forms that move beyond competitive or hegemonic paradigms toward greater togetherness and more equitable agency [20,21]. Through collective, non-verbal, and tactile movement improvisations, participants may explore more dialogic, participatory, and less hierarchical forms of interaction [21,29], creating conditions for empathetic and relational forms of exchange. Within this sphere, relationships are understood as co-constitutive [14], meaning that individual and collective identities are shaped through shared presence and participatory movement in both natural and urban spaces [15,20,22].

Finally, the macro-level of the model is characterized by "Vibrant Entanglement", which is deeply rooted in the findings of Theme B regarding the human–environment relationship and distributive agency. Grounded in New Materialist philosophy and post-humanist thought, and drawing especially on Alaimo's [33] concept of trans-corporeality and Bennett's [34] notion of "thing-power," this scale extends the framework toward the more-than-human world. It invites a shift in perception from seeing nature as a passive

scenic backdrop to recognizing it as an active and vibrant co-creator [17,21]. Through immersive outdoor practices, human movers may engage with the distributive agency of natural elements, including rocks, rivers, flora, and weather patterns. In this way, the macro-level may translate complex environmental philosophy into a form of biospheric literacy [6], enabling participants to develop a felt sense of shared life with the earth, or Zoe [12].

The proposed Triadic Model of Regenerative Eco-Somatics brings together these diverse outcomes into a cohesive and potentially scalable paradigm. Its novelty lies in suggesting that the integration of the moving body with the environment may be understood not only as an artistic endeavour, but also as a political, pedagogical, and community-oriented practice. By organizing eco-somatic principles across three interrelated levels—individual anchoring, communal kinship, and planetary entanglement—this theoretical model offers a conceptual framework that may support future research and practice oriented toward socio-ecological transformation.

The journey toward global sustainability may begin from within, with the body serving as a foundational site for ecological and social transformation [6,10]. At the proposed micro-level of Somatic Anchoring, dance and movement practices can support inner sustainability by helping individuals process complex emotions, strengthen resilience, and deepen self-awareness in relation to planetary challenges [6,10]. This internal grounding can then extend into the meso-level of Co-constitutive Kinship, where communal dancing may foster social cohesion, relational empathy, and prosocial orientations [10].

Ubuntu is a relational philosophy rooted in African Bantu traditions, emphasizing the idea that human identity is shaped through relationships of mutual recognition, care, and collective responsibility [11]. When applied to dance, this perspective highlights collective participation, social belonging, and the preservation of cultural traditions, extending the significance of dance beyond artistic performance. Through participatory movement informed by Ubuntu, dance may contribute to more equitable and less hierarchical forms of social relation, while also creating conditions for collective action and community stewardship [10,11,29].

Building on these strong communal ties, the proposed macro-level of Vibrant Entanglement situates embodied eco-somatic awareness within the broader sustainability agenda articulated by the United Nations Sustainable Development Goals (SDGs), particularly through arts-based approaches that translate development priorities into lived, affective, and participatory experience [8,11]. Through structured creative learning pathways, performers and audiences alike can explore complex socio-environmental issues bodily and relationally, transforming abstract sustainability discourse into emotionally resonant and socially meaningful experience. When such artistic engagement extends beyond the stage and is supported by ecologically responsible production choices, dance exceeds its function as entertainment and becomes a pedagogical and transdisciplinary practice that fosters sustainability literacy, critical reflection, and cultural transformation toward more regenerative futures.

4.3. Implications for Dance Practice and Pedagogy: Proposing the Eco-Choreographic Protocol

To translate the Triadic Model of Regenerative Eco-Somatics (Figure 2) into educational practice, this review proposes the Eco-Choreographic Protocol as a framework for integrating somatic, ecological, and participatory dimensions into dance pedagogy. Within this framework, Regenerative Dance Pedagogy brings together structured technical instruction, performance-oriented learning, student-centred exploration, and collaborative choreographic processes. For example, a teacher-guided movement sequence emphasizing balance, weight transfer, and movement dynamics may serve as the foundation for subse-

quent improvisational tasks, allowing students to explore how these movement qualities respond to natural elements and environmental characteristics. This integration creates opportunities for technical development, creative expression, and shared decision-making, while encouraging learners to engage actively with ecological themes through embodied experience. In this way, dance studios and nature-integrated learning environments may function as inclusive spaces for exploring socio-ecological issues across the micro (Somatic Anchoring), meso (Co-constitutive Kinship), and macro (Vibrant Entanglement) levels of the proposed model.

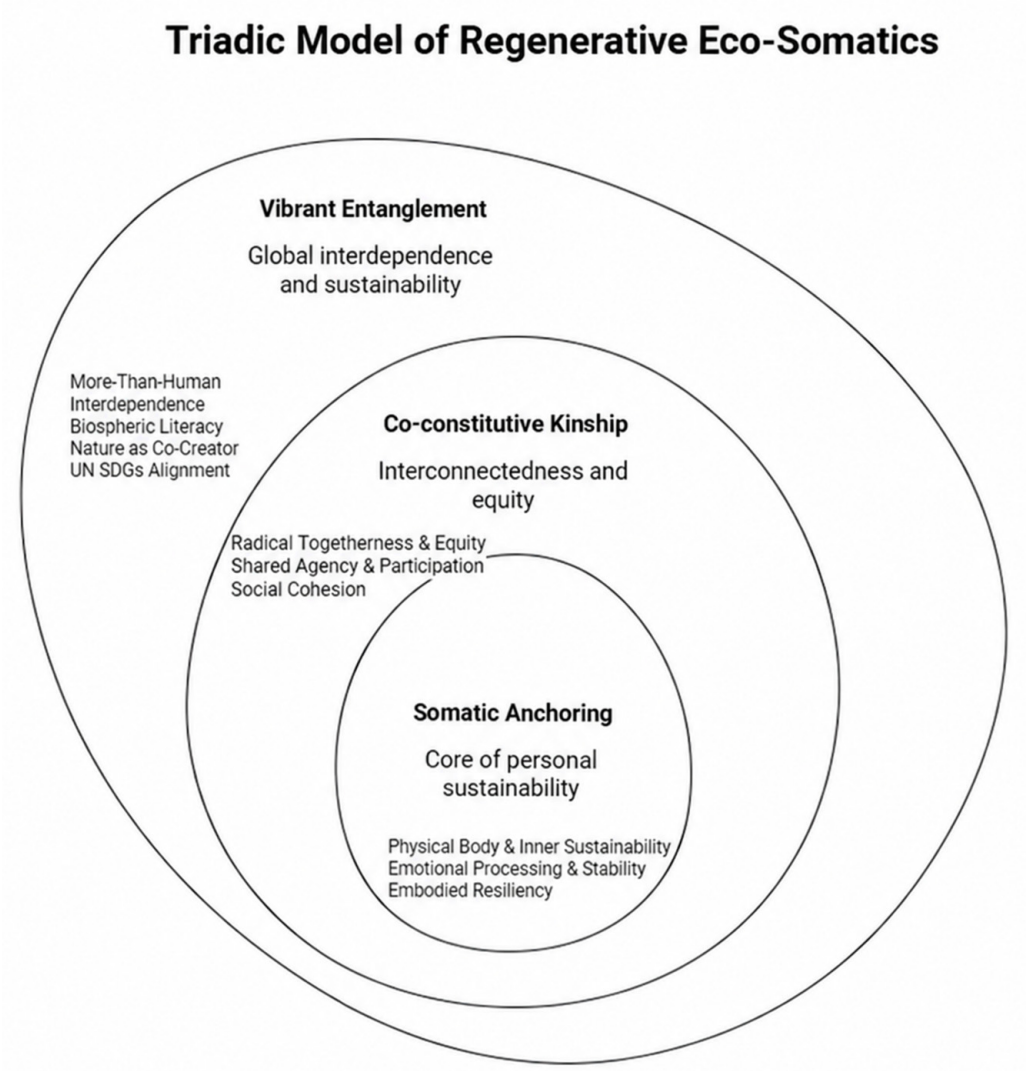

Figure 2. The proposed Triadic Model of Regenerative Eco-Somatics: From Somatic Anchoring to Co-constitutive Kinship and Vibrant Entanglement.

At the core of this framework, a new didactic model is proposed to integrate the United Nations' Sustainable Development Goals (SDGs) into movement practice: the Soma-Sustainable Cycle. While the model's overall structure is original, its four developmental phases systematize the empirical methodologies identified in the reviewed studies (Table 3), while simultaneously drawing on established traditions in embodied cognition, somaesthetics, and experiential learning [17,35,36]. The cycle is organized into four interrelated phases (Figure 3):

(1) Sensory Attunement, which draws on somaesthetic perspectives to ground bodily awareness and attune participants to local environmental and internal rhythms [35],

(2) Kinesthetic Translation, which uses kinesthetic learning to support the embodied reinterpretation of abstract sustainability targets [37,38],
(3) Communal Assembly, which engages democratic community dance practices to encourage collaborative choreographic problem-solving, social equity, and cohesion [21], and
(4) Regenerative Reflection, which adapts experiential learning cycles to support reflection on personal and collective shifts toward pro-environmental orientations [36].

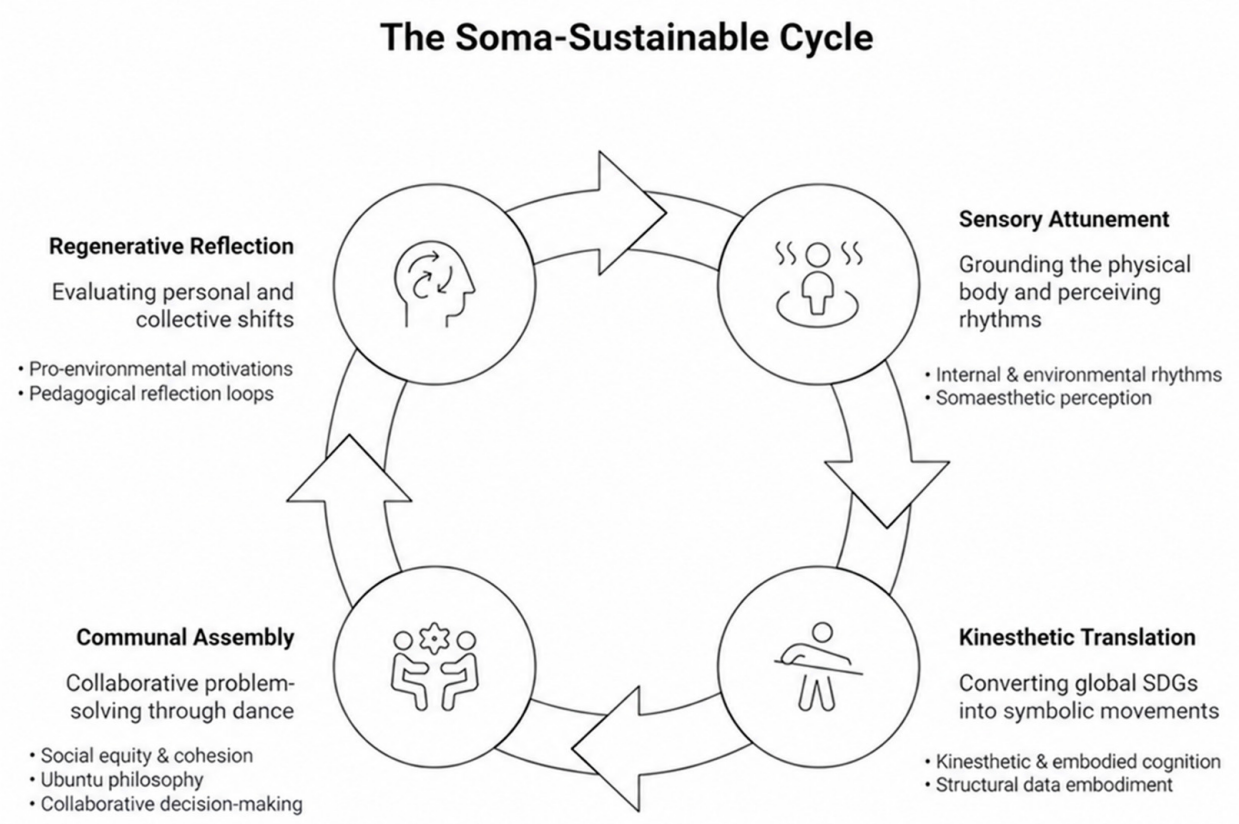

Figure 3. The proposed Soma-Sustainable Cycle: A four-phase didactic protocol for integrating SDGs into Regenerative Dance Pedagogy.

Through the implementation of this synthesized cycle, abstract global challenges such as industrial innovation and environmental protection may be translated into emotionally resonant, multi-sensory experiences, with the potential to deepen learners' biospheric literacy.

Finally, to further extend its regenerative potential, this pedagogical framework moves beyond the traditional studio through the proposed concept of "Symbiotic Eco-Choreography". This approach proposes that movement strategies should be deliberately designed to activate responsive, intra-active processes with urban or natural environments. Rather than treating the outdoors as a passive theatrical backdrop, Symbiotic Eco-Choreography acknowledges the kinetic aliveness and distributed agency of spatial structures and natural elements, such as weather, terrain, and flora, as co-constitutive aspects of the dance, drawing on post-humanist theories of intra-action [39] and material vitality [34]. In combination, Regenerative Dance Pedagogy, the Soma-Sustainable Cycle, and Symbiotic Eco-Choreography offer an integrated framework that may help position dance not only as an aesthetic practice, but also as a possible catalyst for socio-ecological regeneration and cultural sustainability.

4.4. Limitations and Future Directions

Despite the contribution of the present systematic review, certain limitations must be taken into account, including the fact that the field of eco-somatics remains in an early stage of development and is still marked by conceptual heterogeneity and the absence of widely shared definitions, particularly regarding the practical operationalization of sustainability. The integrated framework proposed in this article should therefore be understood as a preliminary conceptual synthesis, introduced here for the first time and offered as a starting point for further elaboration, critical examination, and empirical refinement rather than as a finalized or universally validated model. Additionally, since terms like "SDGs" or "sustainability" were not strictly applied in the systematic search strategy, the direct connection to global sustainability agendas within the proposed Eco-Choreographic Protocol is theoretically inferred from the empirical outcomes (e.g., social cohesion, ecological empathy) rather than directly extracted as measured variables from the included studies. Furthermore, many existing studies are based on short-term interventions or do not include long-term follow-up of participants.

A further consideration relates to the cultural and epistemic scope of this review. Given its focus on peer-reviewed empirical studies, the synthesis may not fully capture the diversity of traditional, Indigenous, and community-based dance practices, including those in which relationships with nature are expressed and sustained through embodied participation, oral traditions, and intergenerational learning. Accordingly, the findings and proposed framework should be understood within the scope of the literature reviewed, while acknowledging the broader cultural knowledge and traditions surrounding dance and nature. Future research could further enrich this perspective through culturally responsive, community-led approaches that respect local knowledge and cultural autonomy.

Future research should also prioritize longitudinal designs to assess whether the embodied ecological awareness and motivations generated through these practices are sustained over time and translated into meaningful pro-environmental behaviors in everyday life. In parallel, further scholarship should deepen post-humanist analyses of intra-action with the more-than-human world and strengthen transdisciplinary collaborations in order to more precisely examine how inner sustainability may contribute to broader socio-ecological transformation. Finally, within dance studies, future work should explore how such eco-somatic frameworks can be systematically integrated into formal dance education and curricula so as to foster environmental ethics and cultural sustainability.

5. Conclusions

This systematic review indicates that dance and somatic practices, when practiced in relation to natural or ecologically attuned environments, may support important shifts in how people experience themselves, one another, and the wider world. The reviewed studies suggest that such embodied encounters can strengthen inner sustainability by fostering emotional regulation, resilience, and a more grounded sense of ecological belonging. Rather than positioning the environment as a neutral backdrop for performance, this body of literature points to a more relational understanding of place, in which human movement becomes part of a dynamic exchange with the living world and may contribute to the development of biospheric awareness. At the interpersonal level, environmentally situated and collectively shared movement practices may also encourage empathy, cooperation, and more equitable forms of social relation.

To connect these insights with educational practice, the present review proposes the Triadic Model of Regenerative Eco-Somatics, together with the Eco-Choreographic Protocol and its central Soma-Sustainable Cycle. These frameworks are introduced here as a preliminary conceptual contribution, developed from the synthesis of the reviewed literature

and offered as a basis for further theoretical refinement and empirical investigation. In this sense, the proposed model should be understood not as a final or fixed framework, but as an initial attempt to organize existing insights into a more coherent pedagogical orientation for future research and practice. The framework may help position the arts as a transdisciplinary means of engaging with the United Nations Sustainable Development Goals (SDGs), while also inviting further study into how embodied ecological awareness might be sustained over time and translated into everyday pro-environmental action.

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Abbreviations

The following abbreviations are used in this manuscript:

SDGs	Sustainable Development Goals
PICOS	Population, Phenomenon of Interest, Context, Study Design
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
CASP	Critical Appraisal Skills Programme
DMT	Dance Movement Therapy
IPA	Interpretative Phenomenological Analysis
DTB	Dancing the Biomes
EDM	Electronic Dance Music

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