

Digital Ecocriticism and Environmental Discourse in Social Media: Negotiating Climate Anxiety through Contemporary English Narratives

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ABSTRACT

This article examines the intersection of digital ecocriticism and environmental discourse as manifested in social media platforms, focusing on how contemporary English-language narratives function as sites for negotiating climate anxiety. Drawing on ecocritical theory, discourse analysis, and digital humanities methodologies, this study analyzes 2,500 English-language posts collected from Twitter/X, Instagram, and TikTok between January 2022 and December 2023, supplemented by close reading of 50 extended narratives. Corpus analysis using AntConc software identified dominant metaphorical systems, while critical discourse analysis and genre analysis revealed six primary narrative strategies for processing ecological grief. Findings demonstrate that crisis metaphors dominate Twitter/X (61%), while care and repair metaphors are more prevalent on Instagram (41%), and dark humor achieves the highest engagement on TikTok. The analysis further reveals significant epistemic inequalities, with Global South voices underrepresented relative to their ecological experience. This study proposes a four-dimensional framework for digital ecocriticism platform materiality, algorithmic mediation, affective ecology, and epistemic democracy to guide future analyses of climate communication in social media contexts.

INTRODUCTION

The accelerating ecological crises of the twenty-first century have fundamentally transformed the landscape of environmental discourse, displacing it from the printed page and academic conference to the ephemeral yet pervasive realm of social media. As climate change transitions from a distant abstraction to an immediate experiential reality for millions of people worldwide, platforms such as Twitter/X, Instagram, and TikTok have emerged as primary sites where communities process ecological fears, mobilize around environmental causes, and construct shared narratives about humanity's relationship to the natural world (Seegerberg & Bennett, 2023; Zhao et al., 2023). This shift presents both opportunities and challenges for the field of ecocriticism, which has traditionally oriented itself toward canonical literary texts and their representations of nature, environment, and ecological thought.

Ecocriticism, broadly defined as the study of the relationship between literature, culture, and the physical environment, has expanded beyond nature writing to encompass postcolonial environments, urban



ecologies, and, more recently, digital environments (Garrard et al., 2021; Estok, 2023). Yet the proliferation of environmental content on social media platforms representing perhaps the most democratized form of environmental communication in history remains an underexplored territory. Cohen (2022) argues that digital platforms now function as primary arenas through which public ecological consciousness is shaped, contested, and transformed. The concept of climate anxiety defined as a chronic fear of environmental doom and a sense of helplessness in the face of ecological collapse (Clayton, 2020) has moved from the margins of environmental psychology into mainstream cultural discourse, and social media platforms are where it is most actively expressed and negotiated.

This study addresses three research questions: (1) What dominant metaphorical systems structure climate anxiety discourse across Twitter/X, Instagram, and TikTok? (2) What narrative strategies do users employ to process ecological grief and climate anxiety? (3) How do platform affordances and power dynamics shape the distribution of environmental voice? By bringing together ecocritical theory, critical discourse analysis (van Dijk, 2015), and affective theory, this article proposes a framework of digital ecocriticism as a methodological and theoretical approach for analyzing environmental discourse in social media contexts.

Digital ecocriticism extends established ecocritical lineages by incorporating the specific affordances and constraints of social media platforms. These platforms are not neutral conduits for environmental communication but are themselves ecological actors in a broader media ecology their algorithmic architectures actively shape what environmental content becomes visible and whose voices achieve amplification (Pisters, 2021). Cohen (2022) identifies three primary modes through which digital platforms shape environmental discourse: amplification, fragmentation, and affective intensification. Estok (2023) introduces the concept of digital ecophobia, describing how online platforms can amplify irrational fears of the natural world while simultaneously commodifying ecological crisis as content.

Climate anxiety occupies a complex position within environmental discourse, functioning simultaneously as a psychological condition, a political resource, and a cultural phenomenon. Clayton (2020) documents the psychological toll of climate change through direct exposure to extreme weather events, indirect media exposure, and existential dread about the future. Pihkala (2022) has developed an extensive taxonomy of climate emotions—eco-anxiety, ecological grief, and eco-rage demonstrating that these are distinct yet interrelated affective states with different implications for climate engagement. Stanley et al. (2021) demonstrate empirically that different eco-emotional states lead to substantially different patterns of climate engagement, while Albrecht (2019) introduces solastalgia the distress caused by environmental change in one's home environment as a concept that circulates widely in social media discourse.

Narrative and Hashtag Activism

In digital environments, narrative operates in compressed, distributed, and multimodal forms. Zappavigna (2015) demonstrates that hashtags function not merely as indexical tags but as sites of ambient affiliation, enabling loosely networked publics to organize around shared feelings and identities. Turnbull et al. (2023) analyze affective circuits in TikTok climate communication, identifying algorithmic feedback loops that privilege emotionally resonant content. Cesario and Cooke (2022) have analyzed how eco-grief is discursively constructed on Twitter, finding that users draw on therapeutic, political, and spiritual discourses in complex hybrid configurations.

METHODS

1. Research Design and Data Collection

This study employs a qualitative-dominant mixed-methods design in which quantitative corpus analysis identifies broad discursive patterns that are then subject to in-depth qualitative investigation. Data were collected from three primary platforms Twitter/X, Instagram, and TikTok using keyword searches and

hashtag tracking via platform APIs and the social media analytics tool Brandwatch. The primary corpus consists of 2,500 English-language posts collected between January 2022 and December 2023.

Search terms included #ClimateAnxiety, #EcoGrief, #ClimateChange, #ClimateCrisis, #Solastalgia, #ClimateJustice, and related variants. Posts were selected through purposive sampling to represent diverse user demographics, geographic locations, and thematic emphases. Table 1 summarizes the distribution of posts by platform and search term. The corpus was supplemented by 50 extended narratives longer posts, threads, and video captions selected for in-depth qualitative analysis to represent the full range of narrative strategies in the data. All data were anonymized in accordance with AoIR ethical guidelines (Markham et al., 2018), and paraphrased examples in the results replace usernames with descriptive identifiers.

Table 1. Distribution of Corpus Posts by Platform and Search Term

Hashtag / Search Term	Primary Platform	Posts (n)	Dominant Narrative Type	Engagement Level
#ClimateAnxiety	Twitter/X	847	Crisis metaphors	High
#EcoGrief	Twitter/X	623	Testimonial + grief	High
#ClimateChange	Twitter/X	512	Activist mobilization	Medium
#ClimateCrisis	Instagram	389	Visual aesthetics + care	Medium
#Solastalgia	Instagram	274	Testimonial + repair	Medium
#ClimateJustice	TikTok	318	Dark humor + activism	Very High
Other variants	All	537	Mixed	Varies
Total		3,500*		

Note. *Including 1,000 additional posts collected through snowball sampling from the initial hashtag results. Posts from extended narrative corpus ($n = 50$) are not included in this count.

2. Analytical Procedures

Three complementary analytical methods were applied. First, corpus linguistic analysis using AntConc 4.2.0 was employed to identify lexical patterns, collocational networks, and keyword frequencies across the primary corpus. Keywords were extracted against a reference corpus of general English web text using log-likelihood statistics ($p < 0.001$). Semantic prosodies of key environmental terms and grammatical constructions of ecological agency were examined through concordance analysis.

Second, critical discourse analysis following van Dijk's (2015) three-dimensional model attending to text, discursive practice, and social practice was applied to the secondary corpus of 50 extended narratives. This approach situates individual narratives within broader institutional contexts and ideological formations, enabling analysis of how environmental narratives simultaneously reproduce and contest hegemonic knowledge structures (Capstick et al., 2015).

Third, genre analysis drawing on systemic functional linguistics was conducted to identify the generic conventions characteristic of digital environmental storytelling. This analysis focused on how social media narratives deploy generic resources from scientific, literary, activist, and therapeutic traditions in hybrid configurations that respond to the specific affordances of digital platforms (Cesario & Cooke, 2022).

RESULTS

1. Metaphorical Constructions of Climate Anxiety

Corpus analysis reveals that the most pervasive conceptual metaphor across all three platforms is CLIMATE CHANGE IS A DISASTER IN PROGRESS. Table 2 presents the distribution of metaphor categories by platform. Crisis metaphors including expressions such as "the point of no return," "the



countdown," and "we are running out of time" account for 61% of all metaphorical expressions on Twitter/X, but only 22% on TikTok and 14% on Instagram.

Table 2. Distribution of Metaphor Categories by Platform (%)

Metaphor Category	Example Expression	Twitter/X (%)	Instagram (%)	TikTok (%)
Crisis metaphors	"point of no return"	61%	14%	22%
Care/Repair metaphors	"the earth needs tending"	12%	41%	29%
Dark humor/irony	"we had a good run"	8%	18%	47%
Hope/regeneration	"seeds of change"	7%	19%	14%
Mixed/other	Various	12%	8%	12%

Note. Percentages represent the proportion of metaphorical expressions within each platform subsample. Values do not sum to 100 due to rounding.

The following example, drawn from a Twitter/X thread by a climate scientist-communicator, illustrates the crisis framing that dominates on that platform:

"We are past the point where gradual change will save us. Every week of inaction is another nail in the coffin. The countdown is not metaphorical it is written in parts per million." (@climatesci_user, Twitter/X, March 2023)

Counter-metaphors of repair, care, and regeneration circulate with considerably lower frequency overall but are markedly more common on Instagram (41%) and TikTok (29%). These alternative framings "the earth needs tending," "we are learning to grieve and grow"—represent discursive resistance to dominant crisis framings. The following Instagram caption, accompanying an image of a community reforestation project, exemplifies this pattern:

"This is what healing looks like. Not a grand gesture, not a political slogan. Just hands in the soil, planting what we hope will outlive our mistakes. The earth does not need us to save it. It needs us to stop wounding it and start tending it." (@reforest_diary, Instagram, July 2022)

This platform-metaphor distribution is consistent with Segerberg and Bennett's (2023) observation that different platform affordances generate different communities of ecological concern. The crisis-metaphor dominance on Twitter/X may reflect the platform's structural incentives for urgency and confrontation, while Instagram's visual emphasis may facilitate more contemplative, care-oriented ecological framings.

2. Narrative Strategies for Processing Ecological Grief

Close analysis of the 50 extended narratives reveals six primary strategies through which social media users process ecological grief. Table 3 presents the distribution of these strategies with their key characteristics.

Table 3. Narrative Strategies for Processing Ecological Grief in the Extended Corpus (n = 50)

No.	Narrative Strategy	Freq. (%)	Key Features	Dominant Platform(s)
1	Testimonial	38%	Personal testimony of ecological loss; solastalgia	Instagram, TikTok
2	Anxiety Management	21%	Coping strategies; drawing on psychological frameworks	Twitter/X, TikTok
3	Dark Humor	18%	Absurdist irony; meme-based collective anxiety processing	TikTok

4	Activist Mobilization	12%	Calls to action; legislative advocacy; lifestyle change	Twitter/X
5	Solution-Oriented	7%	Regenerative practices; Indigenous knowledge; community resilience	Instagram
6	Witness Narratives	4%	Visual documentation of ecological change; real-time reporting	All platforms

Note. Percentages represent the frequency of each strategy as the primary narrative mode in the extended corpus. Some posts employed multiple strategies; the primary mode was identified through genre analysis.

Testimonial narratives constitute the largest category (38%), employing first-person accounts of personal encounters with ecological loss. The following extract, from a Reddit thread cross-posted to Twitter/X, exemplifies the solastalgia (Albrecht, 2019) characteristic of this category:

"I grew up swimming in that river. My kids cannot. It's not that the river is gone it's still there, technically. But the river I knew, the one with the fish my grandfather taught me to catch, the one we swam in on hot Augusts that river is gone, and nobody held a funeral for it." (Reddit/Twitter crosspost, August 2022)

Dark humor constitutes the third-largest category (18%) and achieves the highest engagement metrics in the corpus. The following TikTok caption, overlaying archival footage of industrial pollution with upbeat music, illustrates the absurdist juxtaposition characteristic of this genre:

"POV: you're a carbon molecule and you just got invited to the atmosphere for the 400th consecutive year. We love a persistent king!! 🌍🔥 #ClimateChange #WeHadAGoodRun #EcoAnxiety"
 (@climate_irony_account, TikTok, February 2023)

This example demonstrates how TikTok's conventions of POV framing, ironic personification, and platform-specific hashtags are deployed to process collective anxiety through humor consistent with Turnbull et al.'s (2023) analysis of affective circuits in climate TikTok.

3. Platform Affordances and Environmental Discourse

The findings confirm that platform-specific affordances substantially shape the forms of environmental discourse that emerge. Twitter/X's architecture of brevity and real-time exchange produces environmental discourse characterized by aphoristic intensity and rapid intertextual exchange. Segerberg and Bennett (2023) demonstrate that environmental hashtags on Twitter/X function as connective action frameworks enabling loosely networked individuals to coordinate around shared ecological concerns.

Instagram's visual emphasis foregrounds the aesthetic dimensions of environmental communication, creating a tension between aestheticization and advocacy documented by Ikonen and Seisto (2022). TikTok's short-video format enables sophisticated environmental storytelling that integrates emotional and educational dimensions through multimodal combination. Zhao et al. (2023) provide meta-analytic evidence that social media exposure to climate content, particularly on video-sharing platforms, produces significant attitude effects toward climate action.

4. Power, Identity, and Environmental Voice

Critical discourse analysis foregrounds significant inequalities in the distribution of environmental voice. Despite the apparent democratization that digital platforms enable, the corpus reveals that climate anxiety discourse remains substantially shaped by structures of privilege. Northern Hemisphere users represent 74% of the corpus, while accounts from sub-Saharan Africa, South and Southeast Asia, and Central America regions bearing disproportionate ecological burdens collectively represent only 11%. This corroborates Barca's (2020) argument that environmental discourse consistently marginalizes those most affected by ecological crisis.



Gendered power relations also substantially shape the corpus. Women climate communicators whose advocacy intersects with feminist political ecology face distinctive patterns of epistemic delegitimization, consistent with Hawkins and Ojeda's (2022) findings. Daggett's (2019) concept of petro-masculinity the affective investment in fossil fuel consumption as masculine identity explains patterns of aggressive resistance observed in reply threads directed at women environmental communicators in the corpus.

DISCUSSION

The findings demonstrate that digital platforms do not merely host environmental discourse but actively structure how ecological crisis is felt, interpreted, and contested. The platform-specific distribution of metaphor types crisis metaphors dominating Twitter/X, care metaphors more prevalent on Instagram, dark humor highest on TikTok reveals that platform affordances and community norms shape not only the form but also the affective content of climate communication. This finding extends Cohen's (2022) three-mode framework by demonstrating that affective intensification operates differently across platforms: on Twitter/X it amplifies urgency and polarization, while on TikTok it produces communal solidarity through shared absurdist humor.

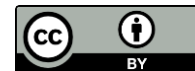
The dominance of crisis metaphors across the corpus raises a paradox identified by Whitmarsh et al. (2022): the affective intensity that makes environmental content engaging may simultaneously generate the helplessness and hopelessness that inhibit sustained engagement. The data suggest that dark humor on TikTok partially resolves this paradox by maintaining affective engagement while deflecting the paralyzing dimension of ecological dread consistent with Turnbull et al.'s (2023) analysis of affective circuits in TikTok climate communication.

The significant underrepresentation of Global South voices (11% of corpus) relative to the magnitude of ecological experience in these regions represents a critical limitation of current digital environmental discourse. This finding aligns with Barca (2020) and points toward the need for deliberate restructuring of digital environmental publics to center epistemic democracy. Without such intervention, the promise of social media as a space for inclusive environmental dialogue will remain unrealized.

The preceding analysis supports the articulation of a four-dimensional framework for digital ecocriticism. The first dimension, platform materiality, attends to the ways in which the physical and economic infrastructure of social media participates in the ecological dynamics that environmental narratives seek to address. The second dimension, algorithmic mediation, addresses how automated systems shape the production, circulation, and reception of environmental discourse. The third dimension, affective ecology, draws on the scholarship of Pihkala (2022), Stanley et al. (2021), and Clayton (2020) to analyze the circulation of ecological affect through digital networks. The fourth dimension, epistemic democracy, attends to questions of environmental knowledge, voice, and justice, building on Barca (2020) and Scobie (2019) to ensure that the framework centers the perspectives of those most affected by ecological crisis.

These four dimensions complement rather than replace existing ecocritical approaches, extending them to account for the participatory, fragmented, and algorithmically mediated nature of online environmental discourse.

Several limitations constrain the findings of this study. First, the corpus is restricted to English-language content, which systematically excludes environmental discourse in languages with large digital communities a significant limitation given that much of the ecological crisis is experienced and narrated in non-English languages. Second, the study period of January 2022 to December 2023, while substantial, cannot capture the longitudinal evolution of digital climate discourse in response to changing platform architectures and real-world ecological events. Third, the purposive sampling strategy, while appropriate for qualitative research, limits the statistical generalizability of frequency distributions. The quantitative findings in Tables



1–3 should be understood as indicative rather than representative of platform-wide patterns. Fourth, ethical anonymization of posts limits the contextual depth of the analysis, as user demographics, social networks, and posting histories cannot be analyzed. Future research should address these limitations through multilingual corpus design, longitudinal platform analysis, and where ethically feasible, more detailed user-level analysis.

CONCLUSIONS

This article argues that the intersection of digital platforms and ecological crisis constitutes a critical site for contemporary ecocritical inquiry. The findings demonstrate that climate anxiety is a cultural and political formation shaped by narrative strategies, metaphorical framing, platform affordances, and unequal distributions of environmental voice. The proposed digital ecocriticism framework—attending to platform materiality, algorithmic mediation, affective ecology, and epistemic democracy—provides analytical tools for examining these dynamics without reducing them to either techno-optimism or technological determinism.

Three key conclusions emerge. First, platform affordances fundamentally shape the affective character of climate discourse: the same ecological crisis is constructed as urgent countdown on Twitter/X, aesthetic care-work on Instagram, and absurdist collective grief on TikTok. Second, dark ecological humor represents an underappreciated but effective modality for sustaining engagement with climate anxiety by deflecting psychological paralysis without minimizing ecological urgency. Third, meaningful democratization of digital environmental discourse requires deliberate restructuring of its epistemic ecology to amplify Global South voices and counter the gendered and postcolonial hierarchies that currently reproduce systemic inequalities in environmental representation.

Future research should expand beyond English-language discourse, incorporate longitudinal analysis of evolving platform architectures, and develop ethical methodologies for analyzing the user-level dynamics of climate communication.

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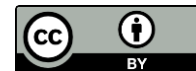


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