Looking Under the Hood: Towards a Better Understanding of Nature Investing

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Abstract

We examine how nature and biodiversity considerations are incorporated into public equity investing, drawing on a bespoke survey and a series of semi-structured interviews with investment professionals. Investors primarily approach nature through a risk-management lens, integrating biodiversity considerations mainly via company risk assessments and private engagement. While respondents broadly agree that nature-related risks are financially material, only operational business risks are currently reflected in equity prices, with most nature-related risks treated as externalities. This persistent gap between economic and market materiality, combined with limited investable opportunities – identified chiefly within listed water companies – and a perceived trade-off between impact and return, point to structural and informational barriers to achieving meaningful nature impact in public equity markets.

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1. Introduction

The themes of nature and biodiversity are rising on the agenda of corporates and financial players, motivated by the increasing urgency and frequency of natural emergencies such as wildfires, pollination decline, and inundations (IPBES 2019)[3]. Despite the recent sense of unease surrounding the role of ESG in finance, some regulators (notably in Europe) are rattling their nature sabres, leading to increases in reporting and monitoring with some financial institutions piloting nature scenarios to accompany their climate scenarios. Yet this is by no means a homogenous or unidirectional trend: while the growing urgency of nature-related risks underscores the need for finance to 'do something', exactly what that 'something' should be remains unclear to many. In this study, we query listed equity investors on whether, how and why they approach nature and biodiversity as well as their views on the associated market pricing of risks and opportunities.

Our analysis draws on nearly 100 "voices" gathered across two rounds of data collection, beginning with a bespoke survey of investment professionals and followed by semi-structured interviews. The survey captures detailed insights into investor approaches, while the interviews provide deeper context on motivations, challenges, and the evolution of practices in integrating nature consideration, together yielding five key insights into this emerging theme.

The financial sector's current ambivalence regarding nature is reflected in the world of asset managers for whom the integration of nature and biodiversity[4] considerations into investment strategies is new territory. We find that most public equity investors integrate nature and biodiversity considerations from a pragmatic financial value perspective to manage downside risk. In other words, biodiversity and natural capital considerations are largely incorporated to protect equity portfolios from potential losses - for example through exposure to operational, regulatory, or reputational risks- rather than to actively pursue opportunities that could drive positive environmental outcomes. This risk-oriented motivation is reflected in the investment strategies investors report using. While equity investors may integrate nature

[3] Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019

[4] Nature and biodiversity are related but separate concepts. Biodiversity is the variability among living organisms of all kinds, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part (United Nations, 2013, Convention on Biological Diversity). Nature is defined as all life on Earth, encompassing natural systems, ecosystems, biodiversity, and ecosystem services that underpin the economy, society, and human well-being (source: NGFS, https://www.ngfs.net/en/ngfs-conceptual-framework-nature-risks). They are often used interchangeably by professionals in the finance industry and as a result we included both terms in the survey.

considerations across multiple strategies, the majority focus on assessment and engagement of nature and biodiversity risks.

The limited depth of integration of nature and biodiversity into markets cannot be attributed simply to data availability issues. While data gaps exist (ranked by most respondents as the number one barrier), market practitioners emphasize that this is only one part of the picture: the challenge is broader and more systemic. Rather, as highlighted in interviews, it reflects a complex set of structural features of financial markets. Several labelled biodiversity funds launched in the late 2010s subsequently experienced persistent underperformance, investor outflows, and, in many cases, fund closures. [5] Interviewees consistently emphasize the enduring challenges related to valuation uncertainty, data measurement gaps and linkage to financial performance, and a constrained investable universe in public equities. Together, these factors limit the scalability and commercial viability of stand-alone biodiversity strategies and help explain why nature considerations are more commonly incorporated defensively within existing risk management frameworks rather than pursued through dedicated investment products.

Surveyed practitioners consider nature-related physical risks to be highly material, meaning they have the potential to affect firm cash flows. However, most of them argue that nature risks —whether physical or transition-related— reman unpriced in equity markets. This reflects the distinction between *economic*, *financial* and *market materiality*. While the first recognises nature's fundamental importance for humanity's wellbeing and the global economic system, the second term captures only those risks that are directly financially relevant to the firm, and the third applies only once risks are reflected in asset prices. This study finds that there is scant evidence of the market materiality of nature and biodiversity risks at present, although sectors which are more directly and immediately dependent on nature are perceived to be more exposed. These are also the sectors in which investors perceive greater opportunities, with water and other provisioning industries standing out as most relevant.

The academic study of the integration of nature into investment processes is in its infancy and we seek to add to this body of evidence by taking the pulse of a segment of the investment industry. This paper makes three core contributions to the emerging literature on nature, biodiversity, and financial markets. First, we provide the first systematic, investor-side

[5]Environmental Finance (*January 2026):* https://www.environmental-finance.com/content/analysis/our-biodiversity-fund-was-pretty-early-says-fidelity.html.
Fidelity: https://www.fidelity.lu/events/corporate-actions/2025-01-13-important-change-closure-fidelity-funds-sustainable-biodiversity-1736761896308

evidence on how nature and biodiversity considerations are incorporated into public equity investment decision-making. While prior studies have examined biodiversity risk from the perspective of asset prices (e.g., Garel et al. 2024; Coqueret et al. 2025), corporate exposure (Gjerde et al. 2026), or expert beliefs across stakeholder groups (Giglio et al. 2026), little is known about how institutional investors themselves interpret, operationalize, and act upon nature-related risks and opportunities. By combining a bespoke survey with in-depth interviews of investment professionals, we open the "black box" of equity investors' internal processes and provide direct evidence on motivations, strategies, and constraints shaping nature integration in practice.

Second, we shed light on the structural limits of public equity markets as vehicles for nature impact. We show that investors' reliance on risk management and engagement—rather than capital allocation toward dedicated nature solutions—is not simply a function of data limitations but reflects deeper and more persistent market features. These include valuation uncertainty surrounding long-term and system-level environmental impacts (Pástor, Stambaugh, and Taylor 2021; Avramov et al. 2022), long and diffuse transmission channels between corporate activities and biodiversity outcomes (Caldecott et al. 2024), and a constrained investable universe in listed markets relative to private or real-asset investments coupled with a trade-off between sustainability impact and financial returns (Flammer, Giroux, and Heal 2023). Our analysis indicates that even investors with advanced sustainability frameworks struggle to deploy scalable, return-compatible nature strategies in public equities. This helps explain why nature considerations are predominantly incorporated defensively rather than through proactive capital allocation, echoing broader findings on the limits of public markets in delivering real-economy sustainability outcomes (Krüger et al. 2020; Edmans 2023).

Lastly, we empirically document a persistent gap between economic materiality and market materiality in the context of nature and biodiversity, as perceived by investment professionals. While investors overwhelmingly perceive nature-related risks as financially material in the sense of affecting firms' long-term cash flows, they simultaneously contend that these risks remain largely unpriced in equity markets. This distinction helps reconcile the growing recognition of biodiversity risk in theory with the limited and uneven evidence of pricing in practice. Our findings indicate that nature-related risks currently reside in a similar "pre-pricing" phase as climate risks did a decade ago, where investor awareness and concern precede systematic valuation and trading (Krüger et al., 2020). By documenting this divergence directly from investors' perspectives, we provide micro-level evidence on why economically

material nature risks may remain disconnected from market prices, despite their acknowledged relevance for long-term firm value. Section 2 outlines the research design underlying the survey and interviews, while Sections 3 and 4 report the five main insights. We conclude in Section 5.

2. Research design

2.1 Survey Development

Given the nascent character of the nature investment theme, very little archival data is currently available, requiring researchers to think beyond traditional empirical approaches. We therefore design a survey to elicit the views of investment professionals. Surveys have become increasingly common in the finance literature, offering valuable insights into areas such as sustainable investment (Edmans et al. 2025; Giglio et al. 2026; Amel-Zadeh and Serafeim 2018), climate finance (Krüger, Sautner, and Starks 2020), and institutional investor activism (McCahery, Sautner, and Starks 2016).

Before launching the survey, we benefited from extensive feedback on its design and content. We presented the draft survey to leading survey researchers and nature-finance specialists at the UN PRI and IIGCC to ensure conceptual clarity and practical relevance. To further validate the instrument, we conducted beta tests with a small group of investment professionals to confirm that the questions were interpreted as intended and that the survey length was appropriate. In one instance, testing occurred "outloud" via an online call, allowing us to observe participants as they completed the survey and to refine question phrasing in real time.

We extracted a target list of approximately 4,000 investment professionals using the Bloomberg Terminal. Given the nascent state of the nature-investing market, we restrict our company search to UN PRI signatories, who can reasonably be expected to demonstrate at least some effort to understand nature-related issues. The survey was open from February to July 2025 and generated 98 responses, corresponding to a response rate of 2.5%. While this is lower than the typical 9% response rate reported for mail-distributed academic surveys in finance and accounting (Amel-Zadeh and Serafeim 2018; Graham and Harvey 2001), it is broadly consistent with specialised or niche surveys. Gjerde et al. (2026), for instance, survey portfolio companies of a large asset owner on nature risk and record a response rate of 6%. Our lower response rate likely reflects the emerging and specialised nature of the topic, coupled with

survey fatigue and in some cases legal constraints[6]. We also experienced a significant number of bounces and firewall limitations, such that the actual number of recipients is likely to have been markedly lower than the initial participant list. After excluding incomplete submissions, the final sample comprises 83 fully completed surveys, with a mean completion rate of 35% and the median respondent spending 21 minutes to complete the survey.

In line with similar recent surveys on climate and nature topics, we acknowledge that our respondent group may be biased toward investors with relatively high awareness of nature and biodiversity risks, which limits the extent to which our findings can be extrapolated to the broader investment community. Specifically, we note that the vast majority (80%) of survey respondents claim to already be integrating nature in their investment strategies and more than half (59%) engage collaboratively through Nature 100. However, this feature of the sample can also be regarded as a strength, as these respondents are more likely to provide thoughtful, well-informed, and precise answers. Moreover, understanding the views and actions of large investors with more advanced sustainability frameworks is particularly instructive. These investors can be seen as the '*canary in the coal mine'* as they often act as early movers and opinion leaders, shaping market norms and signalling emerging trends (Kruger et al. 2020).

2.2. Interviews

Interviews enable researchers to explore topics in greater depth, uncovering transmission mechanisms and motivational dynamics that are not easily captured in a survey. We held confidential online discussions (45 minutes each) with 13 investment professionals in autumn 2025 with the aim to further elaborate on the survey viewpoints and provide context to the survey responses. By design, we invited some investment professionals who had completed the survey, as they were already familiar with the research framework. We also included professionals who had not participated in the survey to capture fresh perspectives. The interviews were semi-structured, with a focus on testing hypotheses formed on the basis of the survey responses, but with ample time for un-constrained reflections and open discussion. Table I provides background information for both the survey respondents (n=83) and interviewees (n=13). We report the title/position of the responding person, the type of organization, size of AUM, the location of the firm's headquarters, strategy (active versus passive) and average holding period. Most responses (80%) come from investors with long term horizons and large AUM (42% hold more than $100 billion). Most of our respondents are

[6] Several investment banks told us they had an institutional ban on responding to surveys.

sustainability specialists, followed by portfolio managers. The elicited views mostly come from asset managers, and they are primarily based in Europe, reflecting the continent's leading position in nature and climate-related investing.

[Insert Table I]

3. Nature Investing

In this section, we report on investors' strategies to integrate nature and the motivations behind them. We also discuss the barriers they encounter in accounting for nature and biodiversity consideration.

Insight 1*: Investors predominantly integrate nature considerations to mitigate portfolio downside risk, most commonly through company risk assessments and private engagement.*

Survey respondents were asked to rank a list of potential motivations from most to least important. To ensure the validity of our results, we also posed the question in an alternative format, asking respondents to indicate their level of agreement on which dimensions are influenced by nature integration. Results are presented in Table II.

Survey results suggest that nature-related integration is primarily driven by risk management: 43% of respondents ranked "*reducing downside portfolio risk*" as their first or second most important reason for addressing nature-related issues.[7] This pattern suggests that, for most investors, nature considerations are still framed predominantly as a reputational or risk-avoidance concern rather than as a strategic source of long-term value creation. Consistent with this risk-oriented framing, 72% of respondents agree that incorporating nature considerations helps reduce overall portfolio risk, while 79% believe it serves to protect reputation.

Interestingly, over three-quarters of respondents consider moral obligation as the least or second-least important determinant of motivation, even though more than half agree that integrating nature reflects asset owners' non-pecuniary investment preferences. In other words, while values and ethical preferences shape awareness of nature issues, they do not appear to drive investment decisions. Several interviewees strongly rejected values and moral obligation as a motivating force, describing it as irrelevant to their investment mandates and even

[7] While the dominant motivation is risk mitigation, our respondents also demonstrate a high level of heterogeneity. For example, 17% of those that integrate nature considerations are primarily driven by nature being a 'cornerstone' of their investment strategy, suggesting our sample includes a significant number of nature-focused investors.

potentially '*dangerous*' as it '*distracts from the fact that nature is material to investments'*. This stands in contrast to Krueger et al. (2020), who find that nearly one-third of investors reported being strongly motivated by moral considerations in the context of climate change. The contrast implies that moral motivations, while influential in climate investing, may carry less weight in shaping investors' approaches to nature and biodiversity.

[Insert Table II]

In the next step, we question the investment strategy through which practitioners integrate nature. To structure the analysis, the survey distinguishes between five approaches, with results as detailed below. Respondents could choose more than one response and indeed on average 2.4 strategies were listed, suggesting many investors deploy several tactics to integrate nature.

First, risk assessment and engagement, where investors seek to identify exposure to nature-related risks as a way of informing due-diligence and stewardship. 71% of respondents selected this approach, which is unsurprising as asking questions is typically the first step investment managers take when approaching any emerging topic. It is also aligned with the LEAP approach recommended by the Taskforce for Nature-related Financial Disclosures – a guidance tool. Consistent with this risk management focus, a large share of respondents (75%) reported privately raising questions about nature-related risks and opportunities, while 63% have requested improved disclosure on these issues. Around half of the investors have asked companies to develop explicit nature or biodiversity strategies, and 34% have publicly supported or submitted shareholder proposals on nature-related matters. The prevalence of private rather than public engagement further indicates that most investors are still in a phase of information gathering and risk assessment rather than exerting sustained market pressure.

Second, negative screening, in which investors exclude companies or sectors deemed to pose unacceptable nature-related risks or to be insufficiently aligned with their responsible investment policies. Nearly half of survey respondents (53%) apply exclusionary screening to avoid firms with high exposure to biodiversity or other nature-related risks. For example, one fund reported screening for beef and cattle supply-chain risks as well as companies contributing significantly to deforestation when deploying new capital. However, investors generally emphasised that negative screening is not a core strategy but rather a preliminary filter for material risk identification. As one leading European sustainable investing institution noted, the aim is "*not about avoiding the sectors that need to transition, but rather about driving capital into those very sectors*." In a similar fashion, interviews with two large North American investment firms confirmed the scepticism toward exclusionary approaches, which they

viewed as potentially ineffective or even counterproductive, from a 'transition perspective'. They further argued that because nature-related risks are highly multi-dimensional, applying screens across all relevant parameters could reduce the investable universe to near zero.

Third, a best-in-class strategy focuses on selecting companies that outperform their peers on nature- and biodiversity-related criteria. While this approach does not necessarily guarantee a positive absolute impact on nature, as even the top performers in a high-impact sector (e.g., mining, utilities) may still have a significant negative impact on nature in absolute terms, it ensures companies compare favourably within their sector and have operational processes in place to mitigate harm The 39% of investors who report best-in-class screening typically do so by benchmarking companies against their sector peers also from a risk-management, i.e., value perspective. As revealed in an interview with a nature specialist "*I would not say we typically invest in companies that outperform their peers solely on nature. We compare against peers; we look at it from a risk management perspective*." In this context, several interviewees pointed to the importance of 'transitioning' large companies to nature-resilient business models and that such a strategy is a natural fit for listed equity markets.

In the last bucket, labelled *solution providers*, investors actively seek to identify and invest in public companies whose activities directly contribute to solving nature and biodiversity challenges. More than half of respondents (55%) chose this option. In discussions with investment specialists, it became clear that solution providers are defined flexibly. For example, an Asian investment company included investments in "*recycling fabrics, textile innovations, or companies focused on water efficiency and irrigation*". A Dutch investment company similarly defined solution providers as companies within TNFD high-priority sectors whose business models address nature challenges, citing examples such as "*bio-based plastics, recycling services, and water purification*." The approach tends to involve investing in companies which tackle the drivers of biodiversity loss as defined by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (land-use change, climate change, pollution, natural resource use and exploitation, and invasive species). Overall, the *solution provider* category is highly context-dependent, reflecting a broad and diverse set of interpretations of what it means to actively support nature-positive outcomes.

[Insert Table III]

In the next set of questions, we explore the barriers to nature integration. We begin by asking respondents to rank a list of potential obstacles from most to least important (score

varies from 1-most to 5-least). We consider established factors such as biodiversity data, trade-off between biodiversity impact and financial returns, lack of investable universe, as well as lack of understanding of the topic. We allow for free text analysis if investors identify barriers beyond those listed.

Insight 2: *While data availability is cited as the primary barrier by a majority, the root causes lie in distrust of current data offerings and a limited understanding of nature-related risks – rather than a lack of data per se. Structural and market factors pose even more fundamental obstacles, limiting the ability of investors to translate awareness into actionable portfolio decisions.*

Most investment professionals rank lack of reliable data as their top concern (58% rank it as number 1), which is not surprising given the concept's multidimensionality and the novelty of the nature topic in investment practise. For instance, in the associate free text, one investor wrote *"be wary of over-reliance on a single metric. If you can't explain it intuitively and connect it at least conceptually to financial performance, what is it really telling you?"*

Based on our discussions with investment professionals, the perceived 'data challenge' often stems from a conflation of two distinct issues: first, uncertainty about *what* data to use—what is relevant, material, or decision-useful—and second, concerns about the *quality* of the data that is currently available. Both are valid barriers, but the former will not be mitigated by offering more layers of sophisticated data. Indeed, '*limited understanding of the topic'* was ranked as the number one concern by 16% of respondents. This is evident in the current market: despite the proliferation of commercial data providers on nature and biodiversity, more than half of survey respondents (52%) still prefer to rely on proprietary models, underscoring the need for clearer guidance and more consistent frameworks rather than simply more data. Moreover, although access to reliable data is clearly a challenge, it can sometimes be used as a convenient rationale for delaying action. According to one interviewee, "*it is so easy to say we don't have the perfect data, we can't act now. We have enough data [on public equity] to act and it will of course continue to improve*."

Recent work in biodiversity finance (Flammer, Giroux, and Heal 2025) highlights that investors often perceive a potential trade-off between biodiversity impact and financial returns, which further amplifies lack of nature integration. This trade-off ranked as a first- or second-order barrier by 45% of survey respondents with a mean score of 2.78. At the same time, the "*lack of opportunities in the public equity domain*" was ranked first or second by 31% of respondents with a mean score of 2.83. The fact that both barriers are highly ranked yet distinct suggests that investors face multiple, overlapping challenges rather than a single dominant

constraint. Interviews confirm that investor hesitancy often arises from several interacting factors, reflecting both structural market realities and the current absence of scalable, investable nature-positive opportunities within listed equities.

Indeed, interviewees expressed scepticism about the role public equities can play in nature investing, though they made a clear distinction between '*what*' and '*how*'. According to participants, public equities today primarily offer opportunities to improve '*how'* products are produced—for example, reducing packaging in beverage production or other ways of investing in supply chain improvements. As a reflection of this, companies such as McDonald's, Walmart and Home Depot have been amongst the top ten holdings across many of the biodiversity-themed public equity funds which emerged in recent years.[8] In contrast, the '*what'*—where nature itself constitutes the investment opportunity e.g. via real assets in agriculture or forestry —is generally better suited to private markets. Some opportunities may appear in public markets, but they are typically limited to small-cap technology companies providing solutions (such as precision irrigation or technological advances in water management).

[Insert Table IV]

[Insert Table V]

4. Pricing of Nature Risks and Opportunities

In recent years, researchers have started examining whether a biodiversity premium exists—that is, whether exposure to biodiversity-related risks is systematically rewarded or penalized in asset prices. Coqueret, Giroux, and Zerbib (2025) demonstrate that a biodiversity-based factor earns a risk premium, particularly in sectors exposed to physical and transition risks, suggesting that biodiversity risk is starting to be reflected in asset prices. Garel et al. (2024) show that major policy milestones, such as the Kunming Declaration (COP15), trigger market reactions to firms' biodiversity footprints, indicating that investors increasingly anticipate regulatory or transition costs. In contrast, Xin et al. (2025) find that current ESG biodiversity ratings have limited predictive power for stock returns, highlighting the challenges of translating biodiversity risk into observable market signals. Together, these findings suggest a growing recognition of biodiversity risk in theory and certain market contexts, but also reveal substantial uncertainty and uneven pricing, leaving open questions about how, when, and for

[8] Environmental Finance (*March 2025*): https://www.environmental-finance.com/content/analysis/mcdonalds-walmart-and-ferrari-what-biodiversity-funds-are-holding.html

whom biodiversity risk is financially material. Through our survey and interviews, we query these questions directly with the investment community.

Insight 3: *Despite their recognised **financial materiality**, most investors contend that nature-related risks and opportunities remain inadequately priced in equity markets. This view highlights a persistent divergence between **economic materiality**—the intrinsic economy wide relevance of biodiversity-related risks—and **market materiality**, whereby such risks are fully reflected in asset prices.*

A key tension highlighted by the survey is the distinction between financial materiality and market materiality. Financial materiality refers to the intrinsic capacity of nature-related risks to affect a firm's future cash flows and long-term value. We find that almost 90% of respondents report being either *very* or *somewha*t worried about the impact on nature loss on their portfolio. This concern reflects the broader recognition that nature-related risks are financially material—that is, capable of affecting firms' future cash flows. Indeed, 95% of respondents perceive firms' dependency on ecosystem goods and services as high or very high. Transition risks, driven by potential regulatory, policy, or reputational responses to biodiversity loss, are also considered material, though slightly less urgent: 53% of respondents rate them as "*somewhat important*" and 40% as "*very important*." This pattern is consistent with Edmans (2023), who argues that dependency risk is likely to be perceived as more important than transition risk in areas—such as climate, and particularly nature—where regulatory responses are highly uncertain.

In contrast, market materiality reflects the extent to which these risks are incorporated into current asset prices. While investors overwhelmingly recognize the economic relevance of dependency and transition risks, they report that these risks remain inadequately priced in equity markets, highlighting the persistent challenge of valuing the goods and services provided by nature, as well as the dependencies and impacts of firms on these natural resources (see, e.g., Dasgupta, 2021). Nevertheless, a majority of respondents (63%) expect that nature-related risks and opportunities will be priced over the coming decade on the survey, with some stating in the interviews they anticipate either explicit pricing mechanisms or policy interventions to pave the way.

This distinction suggests a market inefficiency: while nature-related risks have economic materiality, i.e. real economic consequences through resource scarcity, regulatory shifts, or ecosystem decline, these exposures are often not observable or quantifiable within standard valuation models. As one interviewee challenged "*can you bring the externality back to the*

bottom line?". Our finding resonates with Gjerde et al. (2026) whose survey of company beliefs find that fewer than 25% believe investors assess how nature risks affect cashflows or costs of capital. The persistence of such inefficiencies reflects valuation uncertainty, information gaps and the long-term and uncertain nature of environmental change ("horizon gap"). Thus, although most professionals recognise the materiality of nature risks, few currently trade on them, implying that nature-related considerations remain in a pre-pricing phase similar to the early stages of climate risk integration.

[Insert Table VI]

[Insert Table VII]

Insight 4: *Sectors that are more directly dependent on natural capital tend to exhibit greater incorporation of nature-related risks and opportunities, likely because such risks are perceived as more immediate and operationally relevant.*

To explore subtleties that might be hidden when asking about the investment universe as a whole, we go on to question the extent to which nature-related risks are reflected in equity prices for sectors with high nature dependency, as defined by the TNFD.[9] In the collected responses, a consistent majority of respondents indicate that nature risks are *somewhat* integrated in land-intensive industries such as agriculture (55% of respondents selected "somewhat"), paper, pulp and timber (51%), and utilities (53%). By contrast, most professionals agree that listed equities in sectors such as pharmaceuticals, real estate, and tourism and travel do not incorporate nature-related risks. This may reflect a perception that provisioning sectors are directly and visibly dependent on natural ecosystems, whereas other sectors are more indirectly exposed and thus less likely to account for nature risk in valuations. Moreover, for provisioning sectors, part of nature risks can be classified as core business risks and therefore directly affect the company's cash flow.[10]

As discussed in Insight 3, a signal can be financially material yet not reflected in asset prices, creating potential opportunities for investors able to anticipate future market corrections. To explore this on a sector-by-sector basis, the survey included a follow-up

[9] The following sectors were included, based on TNFD and ENCORE's lists of sectors facing high levels of nature-related physical risk, impacts and dependencies: Agriculture, fishery and livestock; Food and beverages; Paper, pulp, and timber production; Tourism, travel & hospitality; Pharma, biotech, life sciences; Utilities (electricity, energy & water); Real Estate.

[10] For instance, water utilities may face immediate revenue losses from droughts, and forestry companies may incur costs from pest outbreaks or regulatory restrictions on land use.

question asking respondents whether sectors with high nature dependency are underpriced, overpriced, or fairly priced (i.e. neither) with regards to nature risks and opportunities. Even across these sectors, investors do not report systematic mispricing due to nature risks (the dominant response for all sectors is 'neither'), yet sectors with the most direct link to nature (agriculture, food and beverages, paper, pulp and timber) show a higher proportion of perceived mispricing compared to sectors with less direct links (utilities, pharma). Similar to the literature on climate risk (Krüger et al., 2020), the direction of potential mispricing is ambiguous: respondents are evenly split between over- and under-pricing. This bifurcation highlights the prevailing uncertainty in the market and reflects the challenges investors face in pricing nature-related risks consistently across sectors.

[Insert Table VIII]

Finally, we explore perceived nature investment opportunities—defined as activities that generate financial returns while supporting biodiversity restoration, sustainable forestry, ocean and terrestrial circularity, climate adaptation, and improved water management.

Insight 5*: Water, followed by forests and other raw material provision, is identified as the most investable nature opportunity in public equity markets. For water companies, this is largely due to 'availability' i.e. a relatively high number of listed water utilities (compared to other sectors) with recognised investment models and high liquidity.*

We asked survey respondents to identify the most attractive investable opportunities across a list of themes reported in Table IX. Water quality and management emerged as by far the most promising theme, rated as "*very important*" by nearly 80% of respondents. In the interviews, finance professionals point out that the strong endorsement of water-related opportunities stems from the presence of water-management companies and utilities on listed exchanges (representing scale and liquidity)—and the clear and growing investment needs in the sector. Interviewees mentioned [AI-driven] water scarcity as a global issue ("*Water scarcity is already happening…it's top of mind"*), and water pollution by failing utilities as a 'headline grabber' in countries such as the UK. Water-related challenges are also perceived as more immediately quantifiable, data-driven and actionable than other nature themes, making them easier to incorporate into existing investment processes.

Forests and agriculture represent other provisioning sectors with recognised business models and were also highlighted (*somewhat* or *very important* garnered 99% and 84% respectively). The opposite can arguably be said for investments in oceans or to improve

biodiversity, for which blueprints for investing are far and few between and are seen as the least important by survey participants.

[Insert Table IX]

5. Conclusions

This study provides a front-runner systematic look at how institutional investors incorporate nature and biodiversity considerations into public equity investment, drawing directly from the perspectives of investment professionals. By combining a bespoke survey of 83 investors with in-depth interviews of 13 practitioners, we uncover both the opportunities and limitations of nature investing in today's public equity markets. Our findings reveal several important patterns. First, nature-related considerations are primarily integrated as a risk-management tool rather than a driver of proactive investment strategy. Most investors focus on downside protection, operational risk assessment, and stewardship. Although more than half of survey respondents classify their fund offerings as solution providers, there is limited consensus amongst listed equity investors on what qualifies as a nature solution. This lack of agreement points to a clear policy implication: the development of a standardized nature investment taxonomy.

Structural market dynamics constitute the main barriers to nature integration. While survey respondents often cite lack of biodiversity data as a challenge, many overcome this through proprietary metrics and internal models. More fundamental constraints, however—such as limited investable opportunities in public equities, the trade-off between impact and financial returns, and the absence of standardized metrics—remain difficult to address without coordinated policy or market interventions.

Despite broad recognition of the financial materiality of nature-related risks, these risks are largely unpriced in equity markets. Investors perceive a clear divergence between economic materiality, the potential impact of ecosystem dependencies and degradation on the economy (which eventually can affect firm cash flows), and market materiality, where such risks are reflected in asset prices. Market inefficiencies exist because nature-related exposures are often long-term, uncertain, and difficult to observe in standard valuation models. While operational risks in land-intensive sectors are perceived to be partially reflected in equity prices, this is because these risks are tangible, measurable, and have immediate effects on cash flows. Events such as crop yield variability, droughts, or supply chain disruptions directly affect revenues

and profits, making them observable to investors and easily incorporated into standard valuation models. Moreover, the shorter time horizons of these operational risks align with typical investment horizons, and historical market responses provide further guidance for pricing. In contrast, broader system-level risks, including ecological degradation, regulatory changes, or shifts in consumer preferences, are diffuse, uncertain, and long-term.

Lastly, nature investment opportunities are concentrated in areas where investment models are well established and available. Water management, followed by forests and other provisioning industries, emerged as the most investable themes in public equity markets.

Taken together, our study highlights a persistent "*pre-pricing*" phase for nature risks, analogous to the early stages of climate risk integration. Nevertheless, investors anticipate that over the coming decade, growing awareness, regulatory interventions, and better measurement frameworks may gradually enable these risks and opportunities to be incorporated into asset prices.

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Table I. Respondents Background

Survey (n=83)

Type of Organization			*Respondent Title/Position*		
Asset Management Company	53	64%	Sustainability Specialist	39	47%
Pension Fund	9	11%	Fund/Portfolio Manager	22	27%
Bank	5	6%	C-suite/Executive	12	14%
Insurance Company	5	6%	Equity Analyst	2	2%
Sovereign Wealth Fund	2	2%	Other	8	10%
Other	9	11%			100%
		100%			
Average holding period			*Size of AUM*		
Short: less than 6 months	3	4%	Less than $500 M	11	13%
Medium: 6 months to 2 years	14	17%	Between $500 million and $1 billion	2	2%
Long: 2 to 5 years	38	46%	Between $1 billion and $20 billion	19	23%
Very long: more than 5 years	28	34%	Between $20 billion and $50 billion	10	12%
		100%	Between $50 billion and $100 billion	6	7%
			More than $100 billion	35	42%
Geographic Location					100%
Europe	62	75%			
North America	11	13%			
Asia	5	6%			
Oceania	3	4%			
Africa	1	1%			
South America	1	1%			
		100%			

Interviews (n=13)

Type of Organization		*Respondent Title/Position*	
Asset Management Company	8	Sustainability Specialists	6
Pension Fund	2	Equity Analysts	3
Sovereign Wealth Fund	2	Fund/Portfolio Manager	2
Investor Alliance	1	Institutional Investors Coordinator	2
			13

Table II. Motivations

A.2: Rank the below considerations **motivating** the integration of nature in your investment process from 1 [most important] to 6 [least important]:

Investors who integrate nature (n=67)[11]

	Mean	**1**	**2**	**3**	**4**	**5**	**6**
it is a cornerstone of our investment product strategy	**3.52**	14	3	16	11	14	9
it is a moral/ethical obligation	**4.60**	4	5	10	7	10	31
it is material to investment performance	**3.79**	8	13	7	9	17	13
it reduces portfolio downside risk	**2.42**	27	13	12	5	7	3
of growing client/stakeholder demand	**3.25**	4	23	10	17	8	5
strategic positioning as we anticipate it to become material in the near future	**3.42**	10	10	12	18	11	6

A3: To what extent do you agree with the following statements? Incorporating biodiversity considerations:
All investors (n=83)

	Disagree	**Neither agree nor disagree**	**Agree**
Generate excess returns	14	53	16
Helps attract fund flows	8	49	26
Protects reputation	1	16	66
Reduces overall portfolio risk	4	19	60
Reflects asset owners' non-pecuniary investment preferences	10	33	40

[11] Only investors who selected they do integrate nature (67 out of 83) complete this table.

Table III. Nature Integration and Actions

A.1. Do you currently consider nature-related risks and opportunities in your investment strategy?

All investors (n=83)

	#	%
Yes, nature has always been a consideration in our strategy	38	46%
Yes, we have started integrating nature in the past 1-3 years	29	35%
We are not integrating nature now, but expect to do so within the next1-3 years	11	13%
We are not integrating now, but expect to do so in the long term (5+years)	4	5%
We don't anticipate integrating nature in the foreseeable future	1	1%

A4: How do you integrate nature in your equity investment process? More than one answer can be selected.

All investors (n=83)

No Integration	*Assess & Engage*	*Negative/Exclusionary Screening*	*Mitigate/Best in Class*	*Solution Providers*
6	59	*44*	*33*	*46*

A5: What actions related to nature have you taken in the past 5 years with any of your portfolio companies?

All investors (n=83)

	#
None	5
Privately: Raise questions on nature risks and opportunities	63
Privately: Ask for improved disclosure on natural risks (e.g. via TNFD)	53
Privately: Ask for explicit strategies on nature	42
Collaborative Engagement: such as joining Nature Action 100/ other initiatives	49
Public: Submit or support proposals on nature/biodiversity	38
Divest: if the management did not respond to our requests	18

Table IV. Barriers

A7: What are the greatest barriers to incorporating nature considerations in your investment strategy? Please rank the following from most [1] to least important [4]:
All investors (n=83)

	Mean	**1**	**2**	**3**	**4**	**5**
Lack of opportunities in the public equity domain	**2.83**	10	16	36	20	1
Lack of reliable data	**1.70**	48	19	10	5	1
Limited understanding of the topic	**3.08**	13	13	15	38	4
Trade-off between nature impact and financial return	**2.78**	7	31	22	19	4
Other	**4.60**	5	4	0	1	73

Table V. Data

A8: If you use nature/ biodiversity metrics in your screening process, please indicate which:
All investors (n=83)

We don't screen stock using nature/biodiversity metrics	22
Internal metric/ proprietary model	43
Iceberg Data Lab (Corporate Biodiversity Footprint)	13
MSCI (Nature & Biodiversity Metrics)	23
S&P (Nature & Biodiversity Risk)	4
Bloomberg/Natural History Museum (BII)	10
ENCORE	24

Table VI. Pricing of Nature Risk and Opportunity

B1: How worried are you about nature loss affecting your investment in the next five years? (n=83)

	#
Very worried	18
Somewhat worries	55
Not worried	10

B2: To what extent do you believe current equity prices reflect nature-related rusks and opportunities? (n=83)

	#
Fully reflected	1
Have started to price them	16
Not currently priced, but they will in the coming decade	52
Equity markets will never correctly price nature/biodiversity	14

Table VII. Materiality of Nature Risk

B3: Please rate the financial materiality of the following nature related risks for equity markets (n=83)

	Very Important	Somewhat Important	Not Important
High dependency on nature (physical risk)	50	29	4
Large nature footprint (transition risk)	34	44	5

Table VIII. Pricing of Nature Risk and Opportunity - Sectors

B6: In your opinion, are nature related-related risks and opportunities incorporated in the equity prices for the following sectors: (n=83)

	Yes, integrated	Somewhat	No, not integrated
Agriculture, fishery and livestock	13	46	24
Food and beverages	4	38	41
Paper, pulp, and timber production	14	43	26
Pharma, biotech, life sciences	5	22	56
Real estate	4	36	43
Tourism, travel & hospitality	8	20	55
Utilities (electricity, energy & water)	12	44	27

B7: In your opinion, are the below sectors materially “underpriced “or “overpriced “due to [lack of] integration of nature risks and opportunities (n=83)

	Underpriced	Neither	Overpriced
Agriculture, fishery and livestock	26	31	26
Food and beverages	26	31	26
Paper, pulp, and timber production	23	41	19
Pharma, biotech, life sciences	12	53	18
Real estate	14	50	19
Tourism, travel & hospitality	18	39	26
Utilities (electricity, energy & water)	20	45	18

Table IX. Nature Opportunities

B4: Please rate the financial materiality of the following nature-related opportunities for equity markets (n=83)

	Very important	Somewhat important	Not important
Biodiversity improvements	24	45	14
Forest management & land use improvement	57	25	1
Ocen based raw materials/ resource provisioning/ circularity	41	29	13
Terrestrial raw materials/ resource provisioning/ circularity	49	32	2
Urban and infrastructure adaptation	34	42	7
Water quality & management	66	15	2