



Nature Risk Management: Looking to the Future

How Nature-Related Financial Risk Management
Could Evolve — Insights From Firm Benchmarking

By Jo Paisley, President, and
Maxine Nelson, Senior Vice President

CONTENTS

- 2 Introduction
- 3 Key Takeaways
- 4 The Gap Between Climate and Nature-Related Financial Risk Management
- 7 Why Isn't Nature Risk Management More Advanced?
- 11 Governance
- 13 Strategy
- 15 Risk Management
- 17 Metrics, Targets, and Limits
- 19 Scenario Analysis
- 20 Disclosures
- 21 Conclusions: Where Are We Going?

INTRODUCTION

Even though it remains very much in its infancy, nature-related financial risk management is likely to become increasingly important. Indeed, as nature interlinkages with climate change become more widely appreciated, and as the potential scale of financial losses from damaged nature becomes better understood, financial firms are expected to place a greater emphasis on measuring and mitigating nature risk.

But how might this new discipline evolve and how fast might firms need to improve their capabilities? Moreover, what are the key areas of concern in nature risk management, and how pivotal is regulation to its growth? These are the major issues we'll seek to address in this paper.

In 2024, following four years of climate risk management surveys (2019 – 2022), GARP published its first [survey of nature-related financial risk management](#) practices in financial firms (refer to this paper for definitions of nature concepts and nature-related risks). Through this series of surveys, we can look at how climate and nature risk management practices differ and how nature risk management could evolve, if it were to follow a similar trajectory to climate risk management.

Both the nature risk survey and the climate risk surveys follow a similar methodology, scoring and ranking the participating firms in a maturity model that spans six dimensions: (1) governance; (2) strategy; (3) risk management; (4) metrics, targets, and limits; (5) scenario analysis; and (6) disclosures.

To understand how the climate and nature risk practices differ, we analyzed the average scores for the six dimensions and the total population behavior for each question. For example, how well did the firms score in their governance or risk management of climate-related and/or nature-related risks? However, this clearly hides a wide range of practices across firms.

So, in this paper, we supplement the total population analysis by looking at the practices of the “leaders” (firms scoring in the top 25% of the respondents) compared with those of the “others” (firms scoring in the bottom 75%). Similar leaders' analyses have been undertaken for our climate risk surveys, and we've found that the gap between the leaders and the others tends to narrow over time. As we would expect a similar pattern for nature risk, this provides a guide to how nature-related financial risk management might evolve.

Before we turn to the analysis, let's consider some of the key takeaways.

KEY TAKEAWAYS

Nature-related financial risk management lags far behind its climate risk counterpart. Financial firms' nature survey scores are much lower than even the earliest climate ones. In fact, the current leading nature firms even score lower than the climate leaders in 2019.

Similar to the climate risk surveys, **firms ranked availability of data and reliable models as the most pressing near-term worries** for nature risk management, with regulatory uncertainty the third highest concern.

Financial regulation is not as well established for nature risk, although it is at a similar level to climate risk in 2019. The future course of supervisory interest is likely to be an important factor in driving how firms develop their nature-related financial risk management.

Boards currently have substantially less oversight of nature-related risks (46%) than they had of climate-related risks in 2019 (81%). All of the nature leaders' boards have oversight of nature-related risks and opportunities, compared with only 28% of the others. However, while board engagement is markedly lower for nature risk, C-level engagement is at a similar stage of development to climate in 2019.

Risk management processes are not well developed for nature-related financial risks. Only 27% of firms have performed a materiality assessment on nature-related financial risks. The nature leaders are markedly ahead in this area of risk management, with 75% of the leaders having performed a materiality assessment, compared with 22% of the others.

Firms have largely failed to identify nature-related risks and opportunities. Only 25% of respondents in the nature survey have done so, compared with more than 80% in each year of the climate survey. But the leading firms are far more advanced, with 75% of them having identified nature-related risks and opportunities, compared with just eight percent of the others.

Impact assessment of nature risk is lacking. Roughly 10% of the firms in the nature survey have assessed impacts on different aspects of their business, compared with 86% of firms when this question was first asked about climate impacts in 2020.

Innovation in nature-driven products and services is far behind climate. Only 31% of firms in the nature survey have changed their products or services because of nature risks, less than half those that had done so in response to climate change in 2019.

Climate is significantly outpacing nature in metrics usage. Only 17% of the firms in the nature survey use metrics to manage nature-related risks, compared with 67% in the 2019 climate survey.

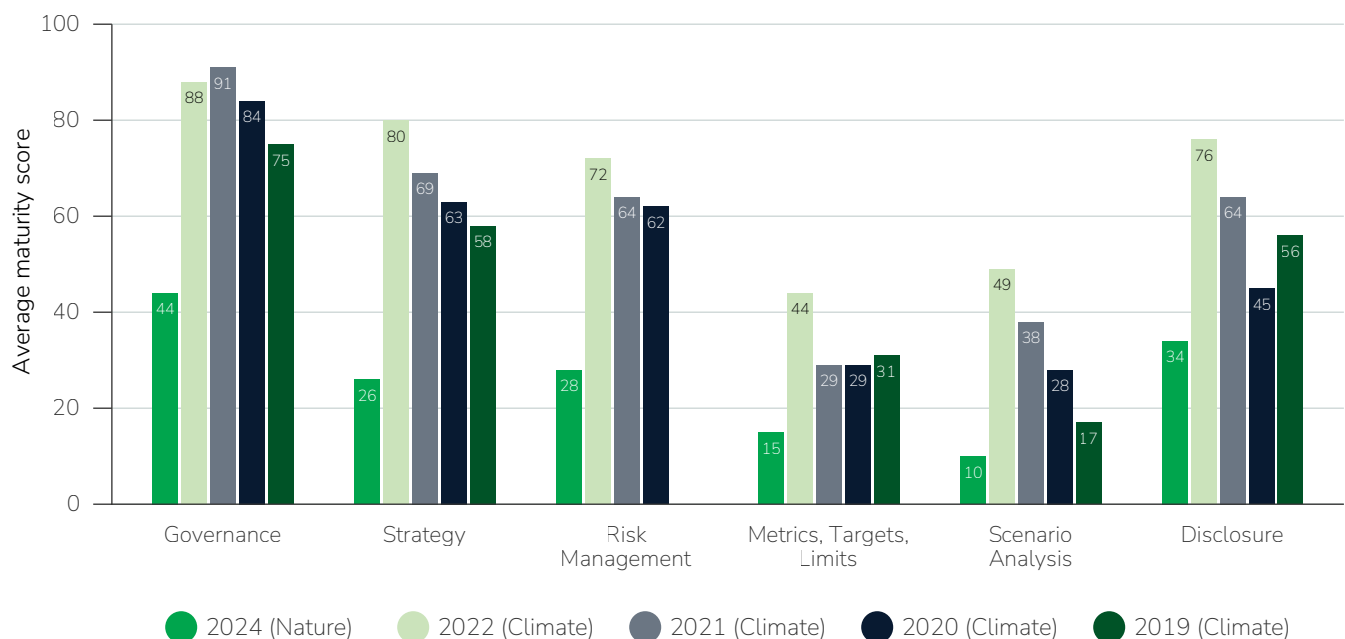
Scenario analysis in nature is in its very early stages. Just 19% of firms are using scenario analysis to understand the impact of nature on their portfolio or balance sheet, compared with nearly half at the time of the first climate survey in 2019.

Mirroring climate risk, the chief risk officer is the most commonly named leader for nature risk. Almost all leading firms in nature risk (90%) have allocated responsibility to senior management for nature-related risks.

THE GAP BETWEEN CLIMATE AND NATURE-RELATED FINANCIAL RISK MANAGEMENT

The differences between the scores for climate and nature risk management are striking, with nature risk's scores far lower than those seen in even the earliest climate survey. Figure 1 shows the average scores across the six dimensions of the climate and nature surveys. However, care is needed when interpreting trends, as year-on-year comparisons reflect a mixture of both evolving practices and changes in the population of participating firms.

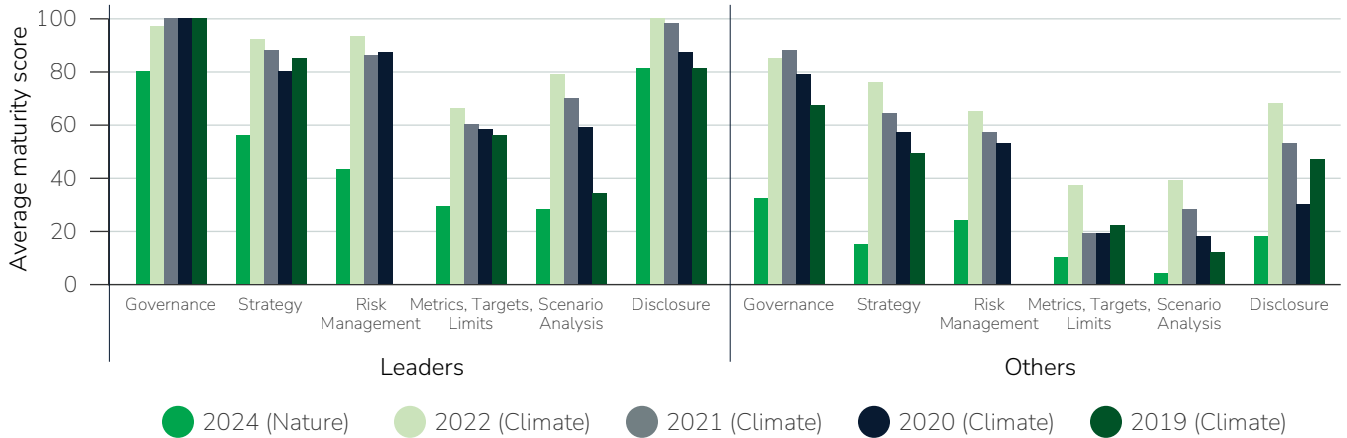
Figure 1 Average Scores per Dimension for Nature and Climate-Related Surveys



The nature risk firms scored highest for governance and disclosure, followed by risk management and strategy. The relatively more quantitative areas of metrics, targets, and limits, and scenario analysis achieved the lowest scores.

These average scores, however, hide a wide variation in scoring across firms. Figure 2 shows the scores for leaders and other firms for the nature and climate risk surveys.

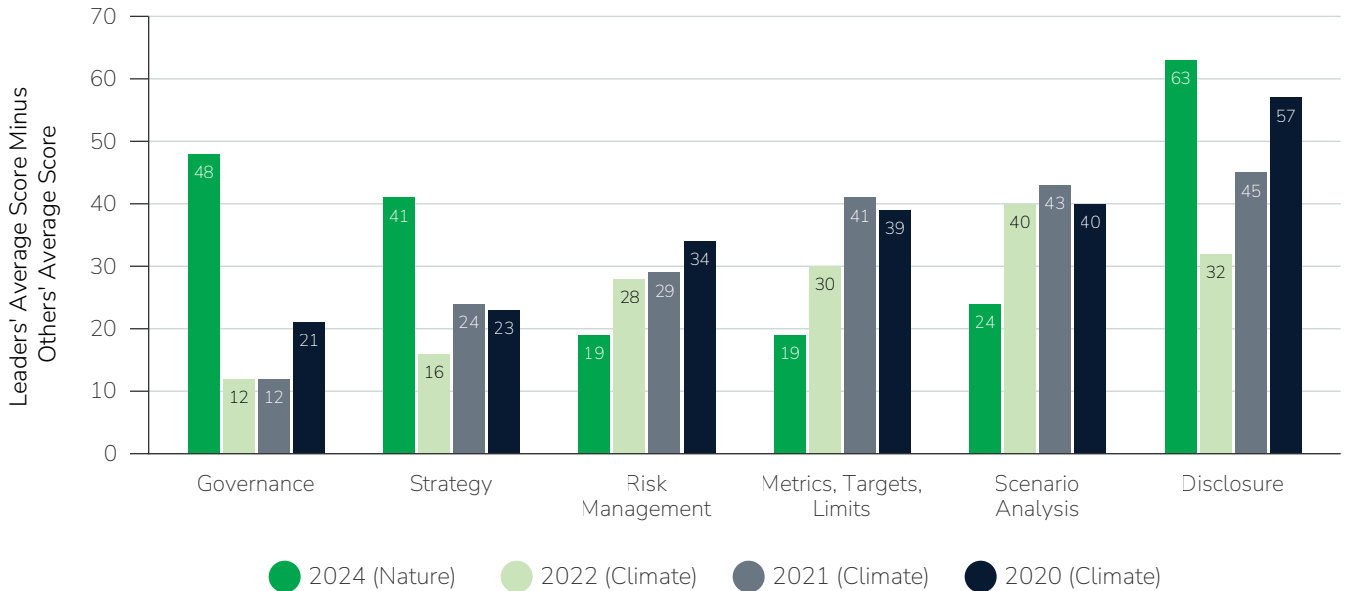
Figure 2 Scores for Nature and Climate — Leaders and Others



The nature leaders score lower than the climate leaders across all categories, even as far back as 2019. Indeed, in some cases (e.g., risk management) they score less than the climate others. The others' nature scores are far lower than any of the scores in the climate surveys.

In terms of how things have changed, Figure 2 shows very clearly the progress that both leading and other firms made in climate risk management from 2019 to 2022. This progress was reasonably smooth across all areas — except for metrics, targets, and limits, where we’ve seen a slower pace of advancements. Figure 3 focuses on the gaps between the leaders’ average scores and those of the others for both nature and climate surveys.

Figure 3 The Gap Between Leaders and Others in Nature and Climate Financial Risk Management



Disclosures is the area where we generally see the biggest distinctions between leaders and others. But there is an interesting difference between nature and climate across the other domains: the next largest gaps for nature (governance and strategy) are the two areas that have the smallest gaps between leaders and others in climate. On the other hand, the smallest gaps for nature (risk management; metrics, targets, and limits; and scenario analysis) are the areas where we have seen larger gaps for climate risk.

What is the explanation for this? For nature, very few of the firms scored particularly well in anything other than disclosure, governance, and strategy. So, the smaller gaps in the other domains merely reflect a low level of maturity across the entire industry.

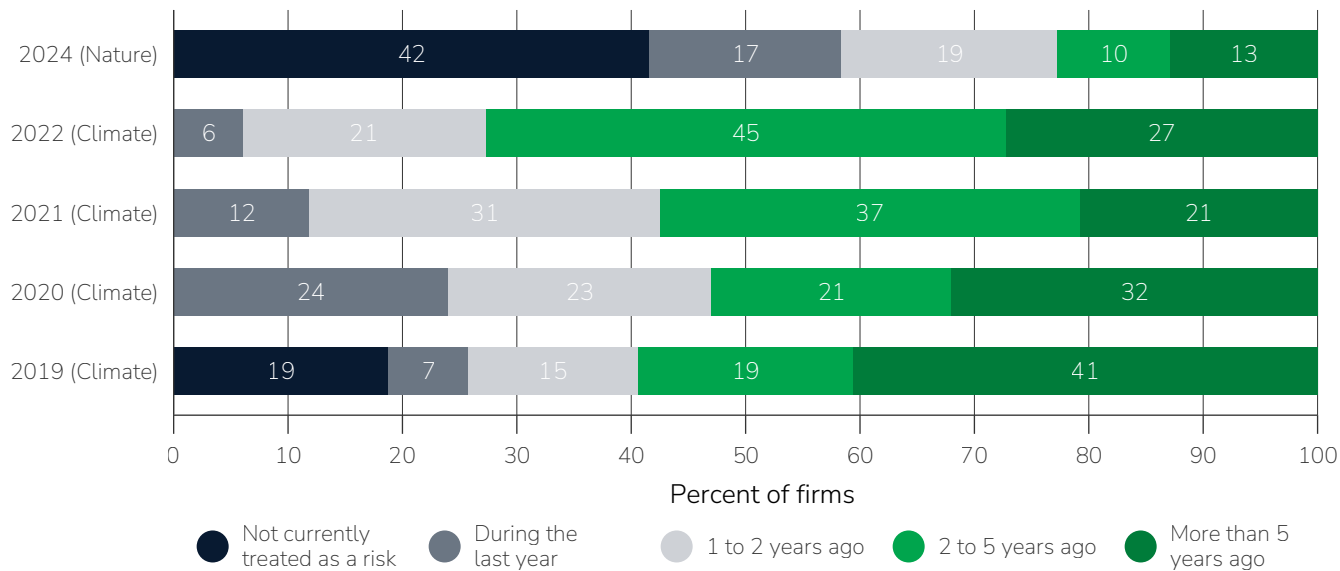
Overall, the gaps between climate leaders and others have fallen, as practices at the others have improved more quickly. (Leaders, however, are sometimes capped at the maximum score, and are therefore unable to increase their scores.) We'd also expect to see the disclosure, governance, and strategy gaps in nature reduce as the others improve, with the entire industry working on the remaining areas.

WHY ISN'T NATURE RISK MANAGEMENT MORE ADVANCED?

One reason for the much lower scores for nature risk is that it has not been an area of focus for very long. Figure 4 shows when climate and nature risks were first introduced in the firms.

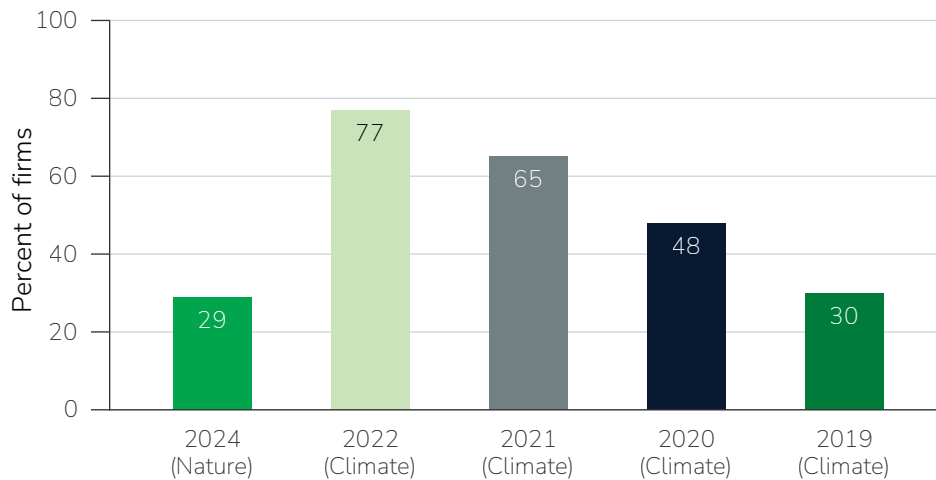
Only 13% of firms have been looking at nature risk for more than five years, with 42% not even treating it as a risk at present. In fact, there were more firms treating climate as a risk in 2019 than are doing so for nature in 2024. Firms, in short, simply haven't had sufficient time to build up their expertise in nature risk.

Figure 4 When Nature and Climate Risk Were First Introduced



Another potential reason for why nature lags climate risk management is that financial regulation is not as well established for nature. Figure 5 shows that only 29% of firms in the 2024 nature risk survey stated that their regulators had required them to report nature-related risks.

Figure 5 Firms Required by Regulators to Report Nature or Climate-Related Risks



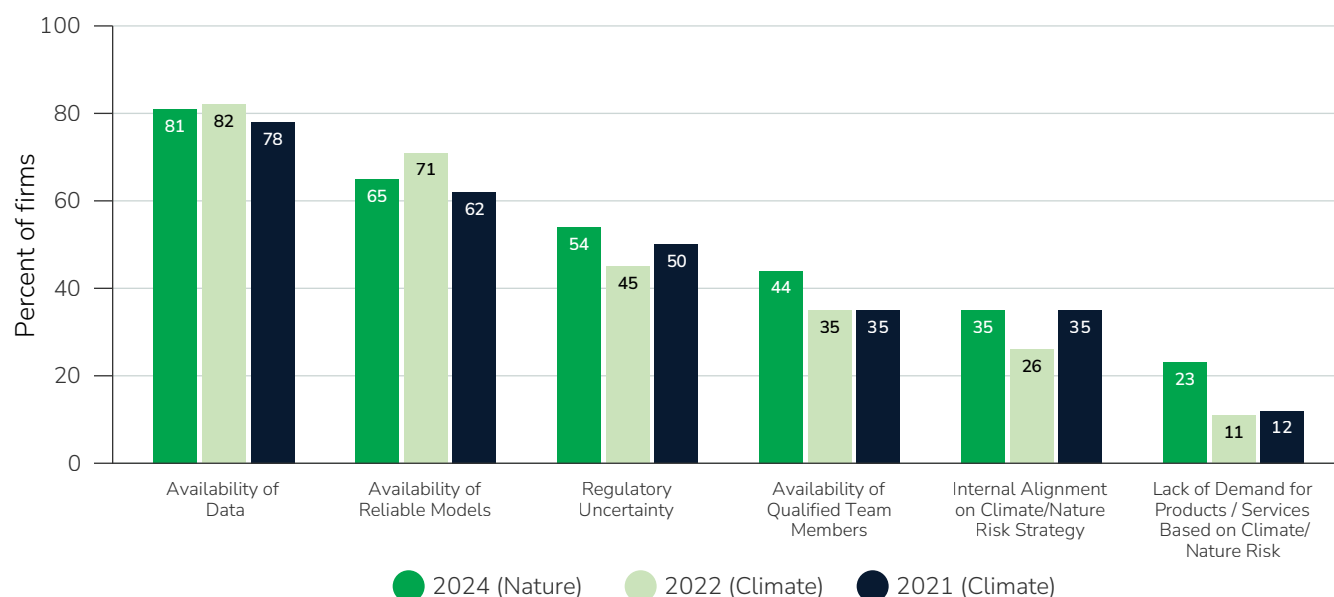
The percentage of firms that reported nature-related risks is, interestingly, very similar to that for climate reporting in the 2019 climate survey. This suggests that firms may be less convinced that nature risk will follow the path of climate risk and be a growing area of focus for regulators in the near term.

Survey findings support this hypothesis. In 2020, for example, a third of the climate survey respondents reported that their regulators were using their own calculations to evaluate firms' climate risks; contrastingly, only two firms reported that regulators were relying on their own calculations to assess nature in 2024. This suggests regulators are less advanced on nature risks than climate ones.

The future course of supervisory interest is therefore likely to be an important factor in driving how firms develop their nature-related financial risk management.

Another potential reason for differences in maturity is that nature risks are more challenging for firms (and regulators) to measure and manage. Figure 6 shows the challenges that firms view as the most significant in the next five years. Interestingly, the concerns are fairly similar across climate and nature risk, with the availability of data and reliable models being the most pressing near-term worries.

Figure 6 Highly Significant Short-Term Challenges



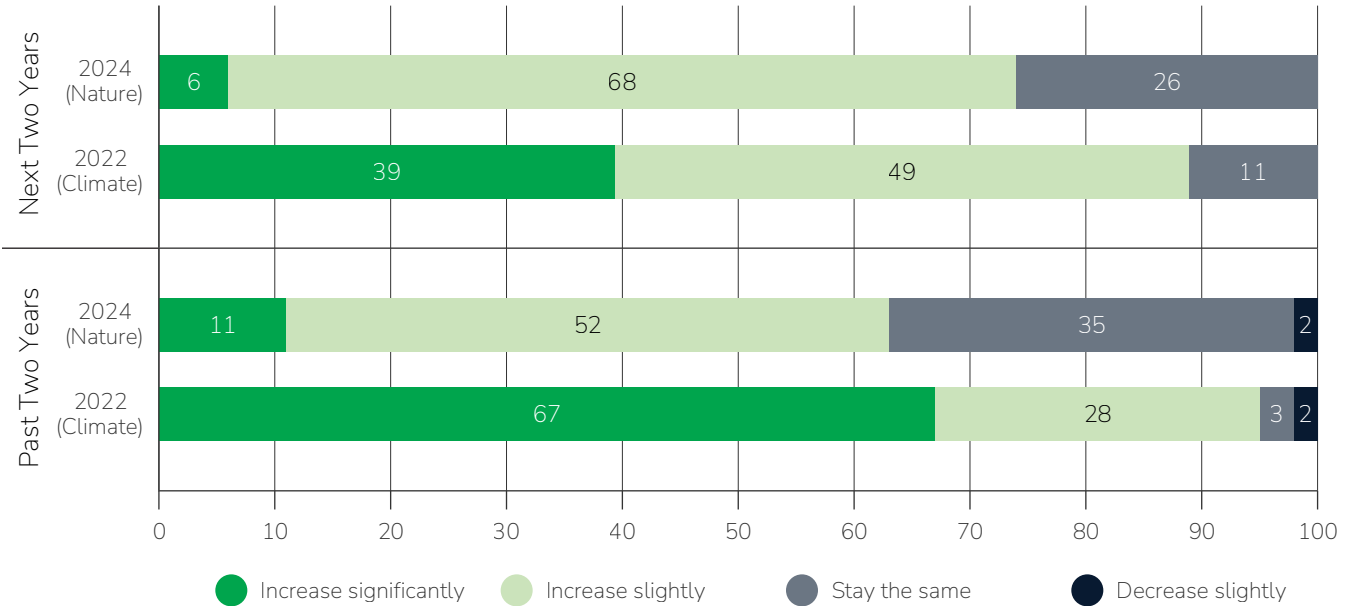
The concerns expressed by survey respondents mirror those of regulators, according to the Financial Stability Board (FSB). The FSB's recent paper, [Stocktake on Supervisory and Regulatory Approaches to Nature-related Financial Risks](#), provides a useful overview of current practices across supervisors. It explains that the authorities themselves identify a variety of challenges — including limited availability of data, challenges in developing analytical approaches and quantitative assessments, a lack of resources, and competing priorities.

In terms of future developments, the FSB also notes that supervisors are at an early stage on nature regulations, with some undertaking further work to improve their understanding of the risks. It is, perhaps, then no surprise that regulatory uncertainty is the third highest short-term concern for the nature risk survey participants.

Firms in the nature survey also expressed concern about the availability of qualified team members. Although it is difficult to compare staffing levels across firms, as they are of different sizes, we can look at past trends and anticipate future changes in staffing.

Figure 7 shows that staffing levels were reported to have risen significantly in the two-year period prior to the 2022 climate survey, with firms also expecting sizeable increases from 2022 to 2024. In contrast, the staffing changes associated with nature roles were more modest. This might be because it is harder to find people with the appropriate nature-related skills, or because firms are hesitant to increase their nature-focused staffing in the face of regulatory uncertainty.

Figure 7 Future and Past Changes in Staffing for Nature and Climate Risk Roles



When we look at staffing for the leaders and others, we see quite a bit of variation. For example, the number of nature roles at the leading firms have increased from 2021-23, with 75% now having staff working on nature full-time. In contrast, 21% of the others have no staff working on nature-related risk at all, and a further 62% have no full-time staff working on nature issues.

The leaders in nature are also doing more to build their internal capabilities: half the leading firms have provided nature risk management training to their risk management teams and a quarter have offered this to their entire firm, compared with just 11% and 6%, respectively, for the others.

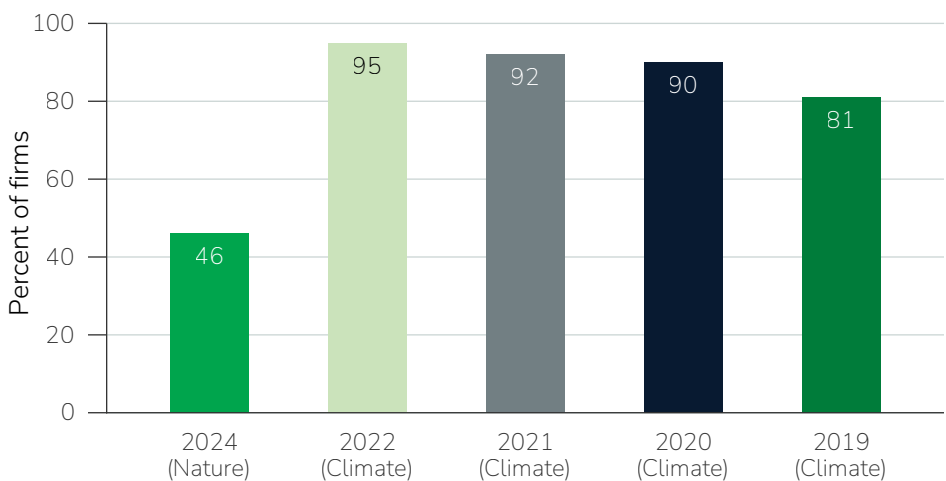
Overall, there are a host of plausible reasons why nature risk lags climate risk management — including, most notably, concerns over the availability of data and models, and the fact that this discipline is relatively new for both firms and regulators.

The next sections take an in-depth look at the six dimensions, shedding further light on the differences between climate and nature practices, as well as the distinctions that separate nature leaders from others.

GOVERNANCE

Effective risk management rests on strong governance, with the active involvement of the board of a company being a good indicator of a firm's commitment. We find that boards currently have substantially less oversight of nature-related risks (46%) than they had of climate risks, even back in 2019 (81%, see Figure 8). Moreover, only one-third of boards have seen papers or proposals about nature risk, compared with 88% of boards seeing climate-related information when we first asked this question in 2021.

Figure 8 Board Oversight of Nature and Climate-Related Risks and Opportunities



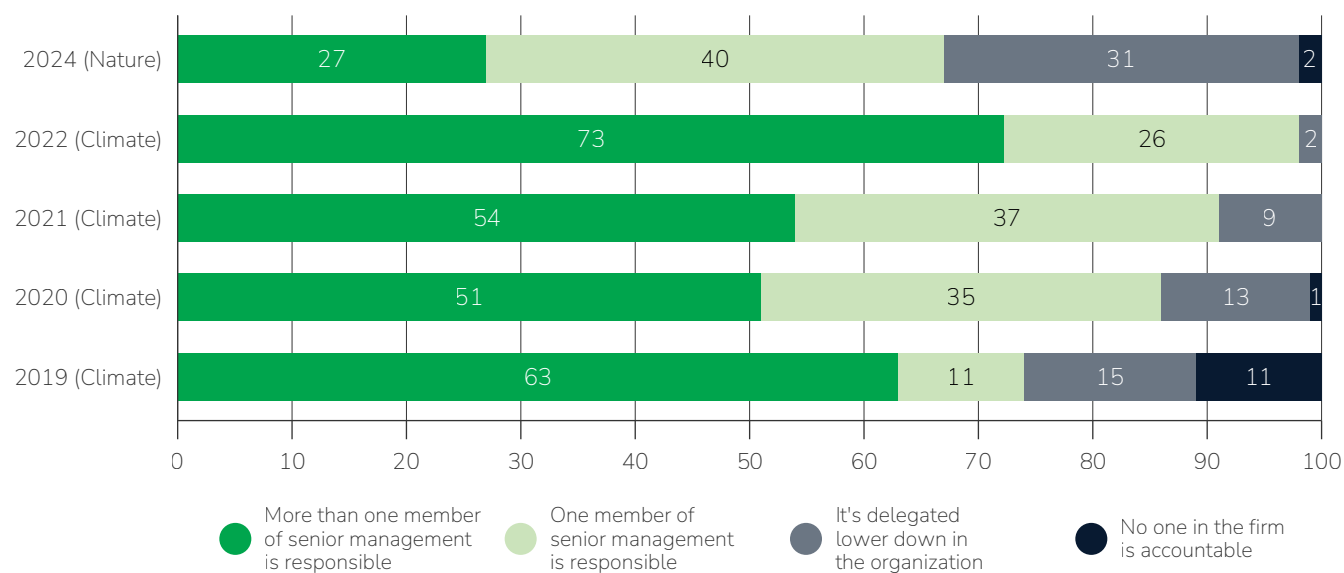
Board governance is one area in which leading firms differentiate themselves from other firms. All nature leaders' boards have oversight of nature-related risks and opportunities, compared with only 28% of the others. These boards are also a lot more active: 83% of leaders' boards saw nature-related risk papers or proposals in the last year, compared with only 17% of the boards at the others.

The leaders' boards are most commonly seeing information about nature-related transition and physical risks, the relationship between nature and climate risk, nature disclosures, and updates to the risk management framework.

More advanced firms tend to present their boards with focused dashboards to help communicate risks and opportunities. This practice is much less common for nature than climate. In our 2024 nature survey, only 6% of all firms' boards regularly see a nature-related dashboard, compared with 45% in the 2022 climate survey.

As depicted in Figure 9, roughly 70% of firms have C-level executives accountable for nature risk — just under the levels for climate risk in 2019. So, while board engagement is markedly lower for nature risk, C-level engagement is at a similar stage of development as climate was in 2019.

Figure 9 C-Level Executive Accountability for Nature and Climate Risk

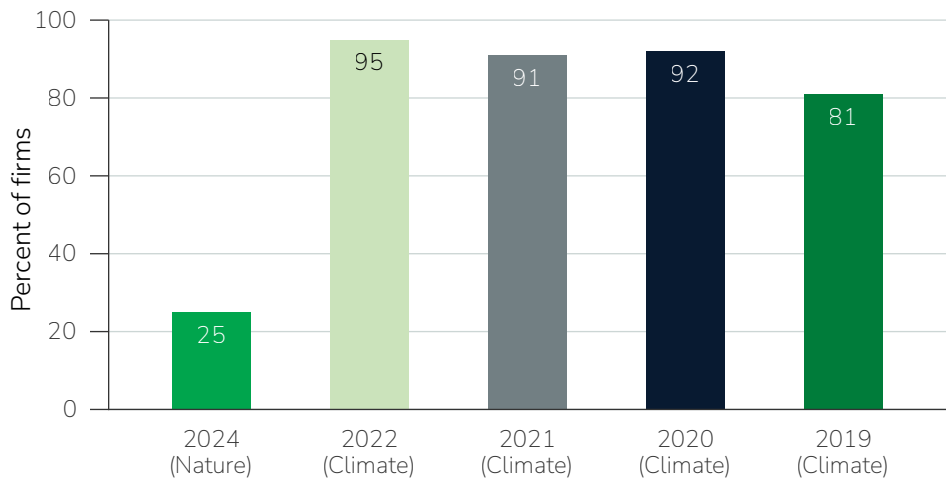


Mirroring climate risk, the chief risk officer is the most commonly named leader for nature risk, followed by the head of sustainability. Perhaps not surprisingly, the leading nature firms have allocated responsibility to more senior members of staff: more than 90% of the leaders have senior management responsible for nature-related risks, compared with just 62% of the others.

STRATEGY

Nature risk once again lags climate risk considerably with respect to strategy. Only 25% of firms have identified nature-related risks and opportunities, compared with more than 80% in each year of the climate survey (Figure 10).

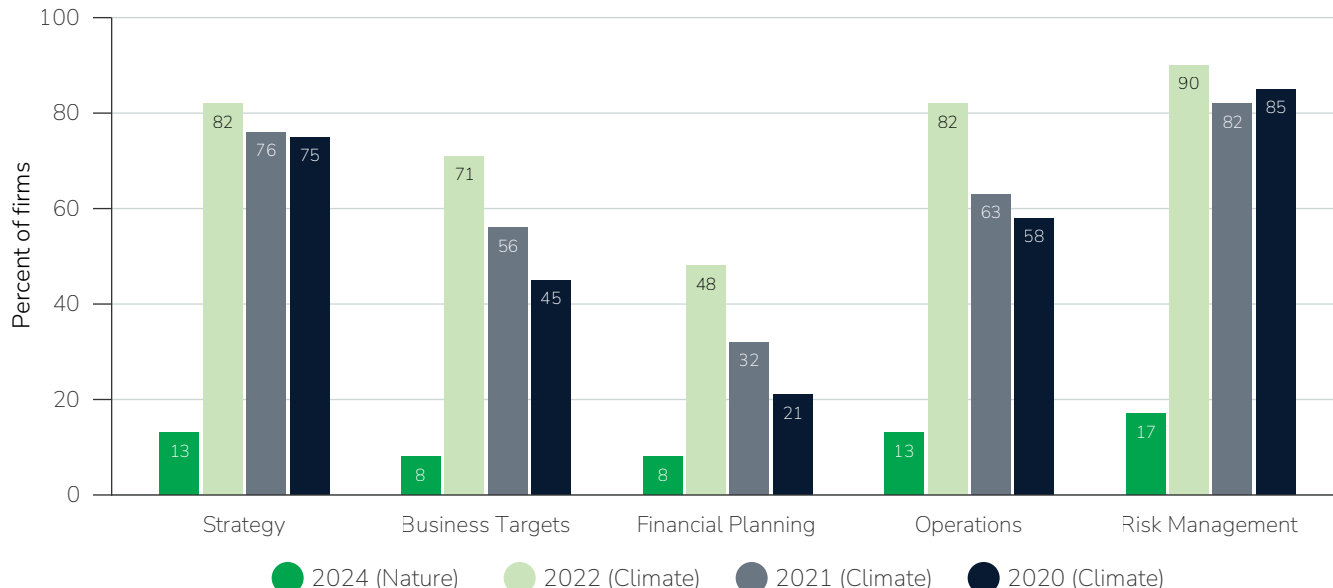
Figure 10 Identification of Risks and Opportunities



The leading firms in nature are certainly more advanced in developing their nature strategies than the others. For instance, 75% of leaders have identified nature-related risks and opportunities, compared with just eight percent of the others.

One way to identify the risks and opportunities is to review how different parts of the firm are likely to be affected by nature loss. This is yet another area where climate significantly outpaces nature. Figure 11 shows that only around 10% of the nature firms have assessed impacts on different aspects of their business, compared with 86% of climate survey respondents in 2020, when the question about climate impacts was first asked.

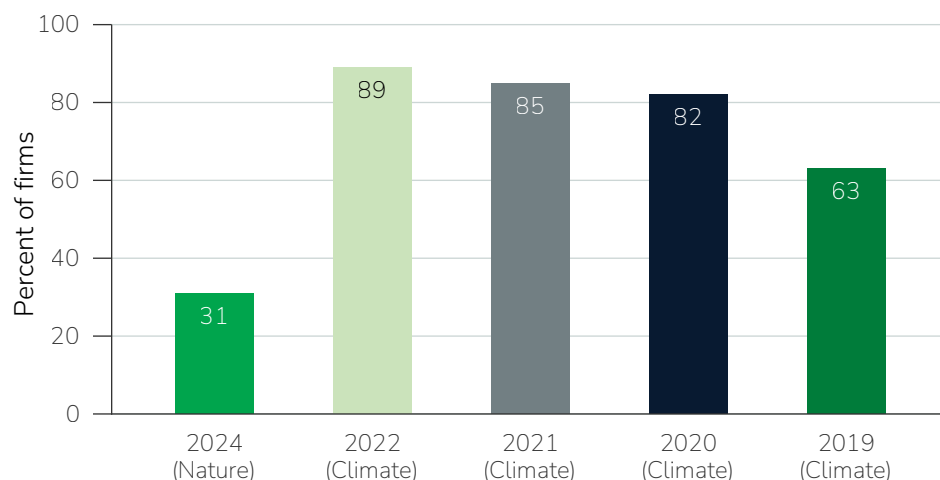
Figure 11 Aspects of Business Reviewed for Nature or Climate Risks and Opportunities



Firms in the nature survey also lack confidence in their strategic resilience; only 17% of firms in the 2024 survey thought that their strategies would be resilient to nature loss in the next five years. In contrast, more than 90% of the firms in the 2022 climate survey expressed confidence in their short-term resilience in the face of climate change. It's possible that firms in the nature survey have not yet done the work needed to ascertain their level of resilience, but the results might also reflect the fact that nature loss is expected to have large impacts in the short term.

A further indication of how far nature risk management is lagging climate is provided by Figure 12, which shows whether firms have introduced new products or services due to either climate or nature. In 2024, only 31% of firms reported they had changed their products or services because of nature risks, considerably lower than the percentages reported over the four years of our climate surveys.

Figure 12 Have the Products or Services Offered by Your Organization Changed Due to Nature or Climate-Related Risks?



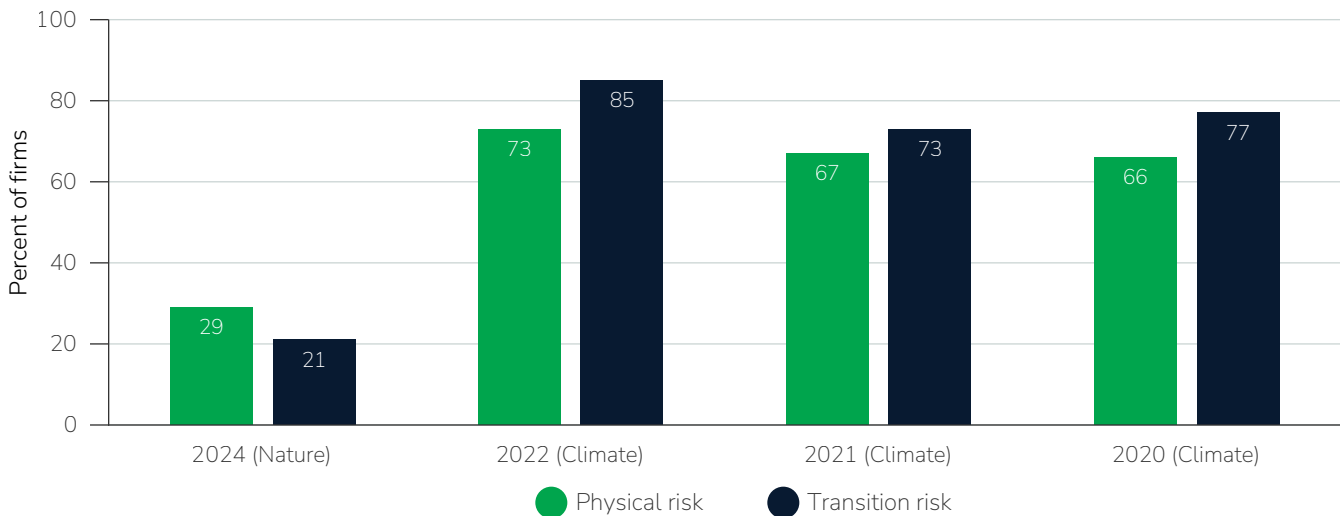
RISK MANAGEMENT

Perhaps not surprisingly, risk management processes are not yet well developed for nature-related financial risks. In terms of the operating model, similar to climate risk, a risk team has primary responsibility for nature-related risk at most firms, followed by the front-line business.

Interestingly, 27% of firms have performed a materiality assessment on nature-related financial risks. The leaders are markedly ahead in this area of risk management: 75% have performed an assessment, while the rest of the leaders indicated they either have one in progress or intend to undertake one. Only 22% of the others have undertaken a materiality assessment, with a quarter of them having one in progress, and 40% intending to perform one.

One way to embed these considerations in day-to-day risk management is via the due diligence of counterparties. Even as far back as 2020, firms were doing substantially more climate-related physical and transition risk due diligence of their counterparties than they currently are for nature-related risks (Figure 13).

Figure 13 Counterparty Due Diligence Includes Physical or Transition Risks

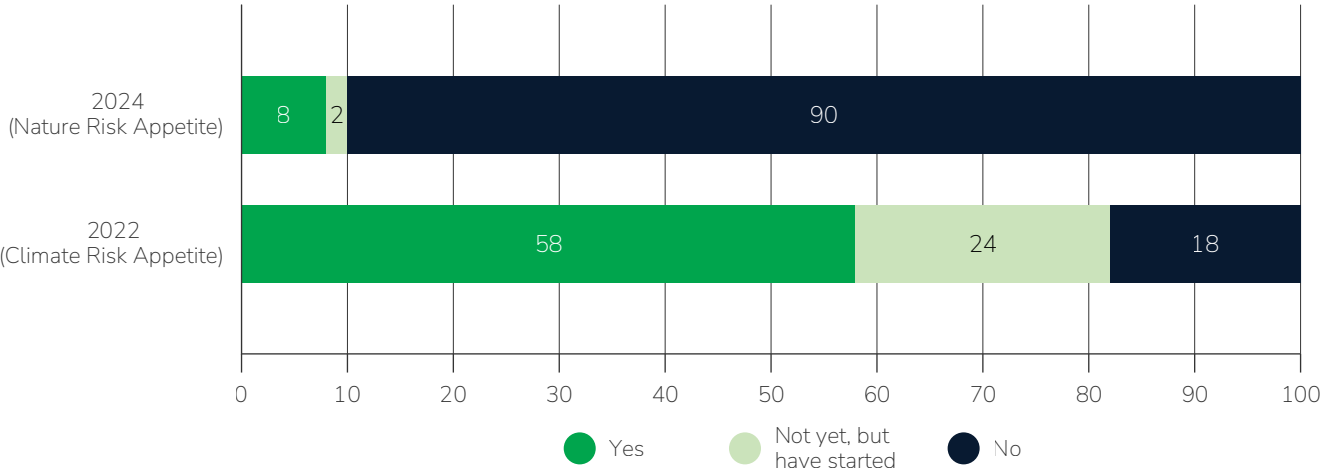


Leading firms, as usual, are ahead on this, being around twice as likely to undertake this type of analysis as the others. Although counterparty due diligence is still quite rare, those firms that are doing it are taking action in response.

The most common actions used for climate and nature-related risks are increasing engagement, requesting adaptation and/or transition plans, and reducing exposures (and one leading firm has already increased collateral requirements). These actions are mostly being undertaken by the nature leaders, who are also twice as likely as the others to embed nature-related risks in other risk types and to consider it in conjunction with climate risk.

As Figure 14 shows, the use of risk appetite statements is far less common for nature risk than climate risk. Just eight percent of firms (all leaders) reported they had a nature-related risk appetite statement in the 2024 survey, compared with 58% of firms in the 2022 climate survey.

Figure 14 Does Your Firm Have a Nature or Climate Risk Appetite Statement?



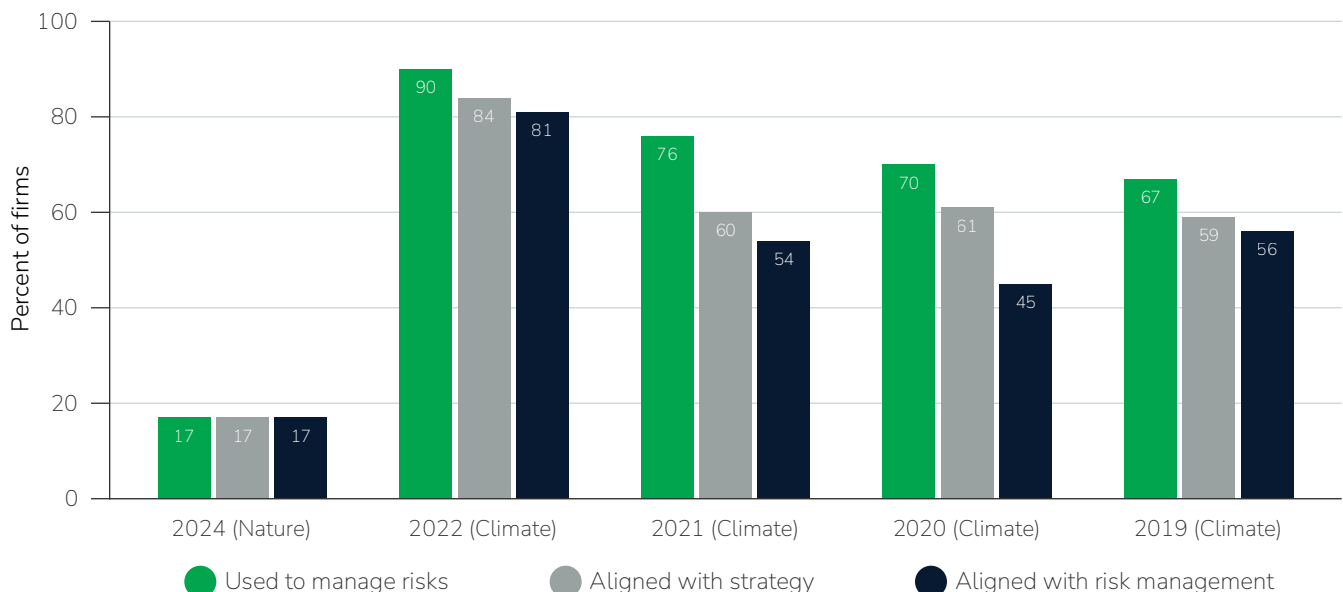
METRICS, TARGETS, AND LIMITS

A key part of effective risk management is the use of metrics, targets, and limits, which help firms to assess, monitor, and manage risks. To make this more concrete, these terms were defined in the nature survey as follows:

- A **metric** is a measure used to assess nature-related risks. For example, the percentage of counterparties with a policy (or with a strong policy) to address deforestation.
- A **target** is the outcome an organization aims to achieve. For example, a firm could strive to have deforestation policies implemented at more than 90% of its counterparties.
- **Limits** represent the worst outcome the organization is prepared to accept without taking corrective action. For example, a firm might state: "If less than 80% of counterparties have a policy to address deforestation, we will actively engage with and encourage those firms that do not have a policy to implement one."

Climate-related risks once again significantly outpace nature-related risks with respect to metrics: 67% of the firms in the 2019 climate survey used metrics, compared with only 17% of the firms in the nature survey (Figure 15).

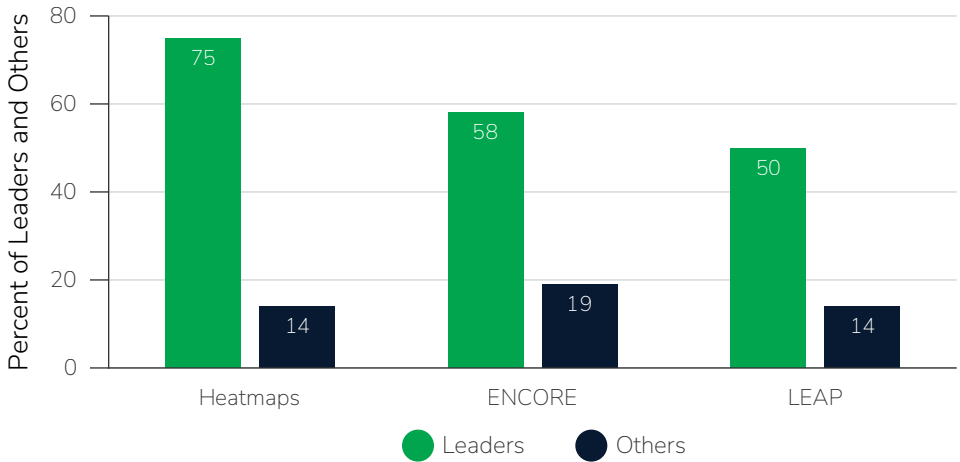
Figure 15 Use of Metrics



The few firms using nature measures have, at least, aligned them with their company's strategy and incorporated them into their risk management frameworks. The significant gap between the leaders and others again stands out in this area; the nature risk measures of at least half the leaders are aligned with the strategy and risk management frameworks of their organizations, compared with less than 6% of the others.

As we reported in our 2024 nature risk survey, the most common frameworks being used to assess nature-related financial risks are ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure), heatmaps, and TNFD's LEAP approach. But the usage is far greater in the leaders than others, as Figure 16 indicates.

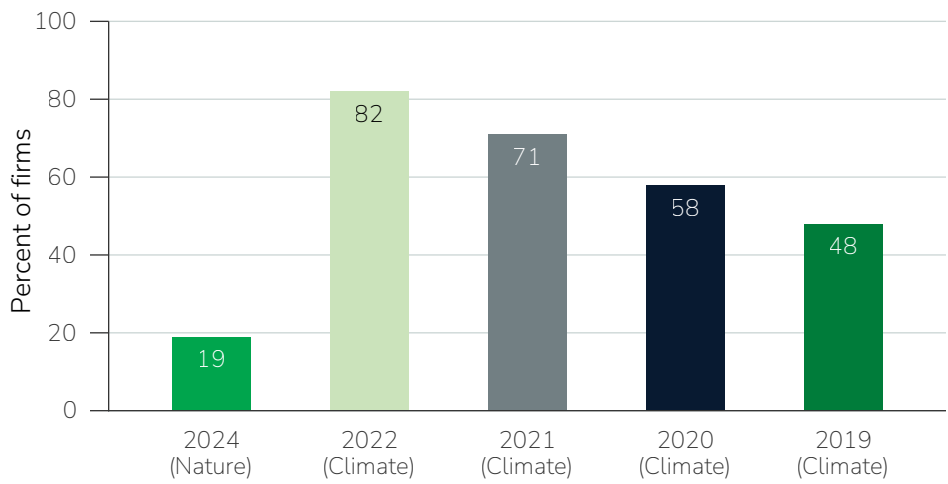
Figure 16 Most Popular Nature Risk Tools



SCENARIO ANALYSIS

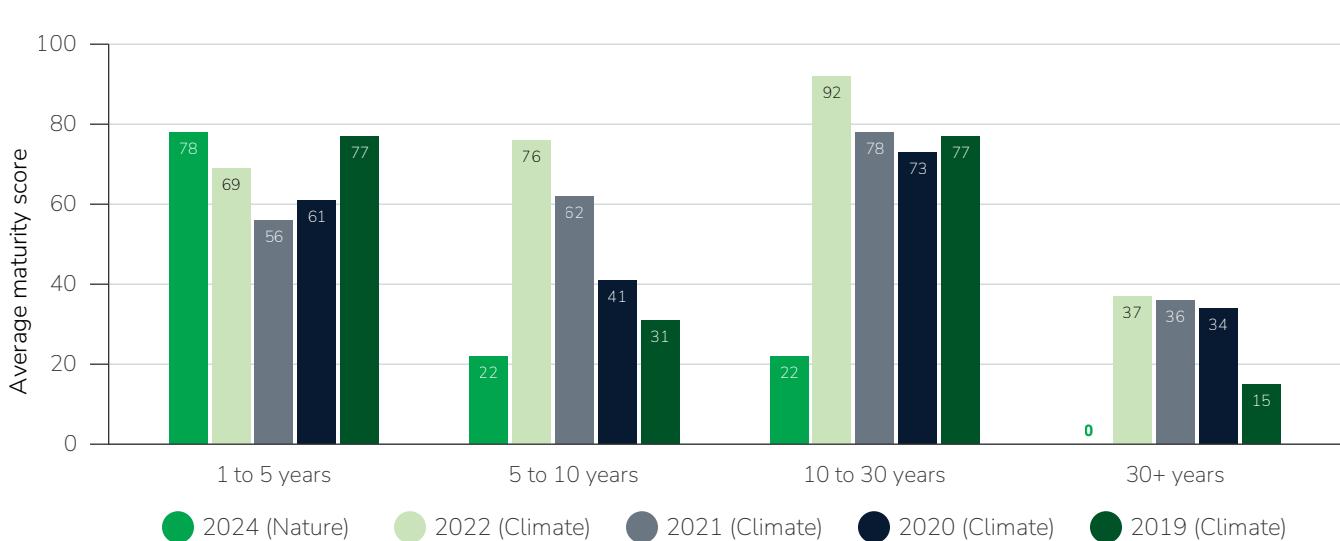
Scenario analysis is far less widely used for nature risk than climate risk, with only 19% of firms using it to understand the impact of nature on their portfolio or balance sheet, compared with nearly half at the time of the first climate survey in 2019 (Figure 17). Half of the leading firms in nature are making use of scenario analysis, compared with just 8% of the others.

Figure 17 Use of Scenario Analysis



Interestingly, the few firms that are undertaking nature scenario analysis are looking at far shorter time horizons of one to five years — a contrast to the longer time horizons that were more common for climate risk (Figure 18).

Figure 18 Time Horizons Used for Scenario Analysis

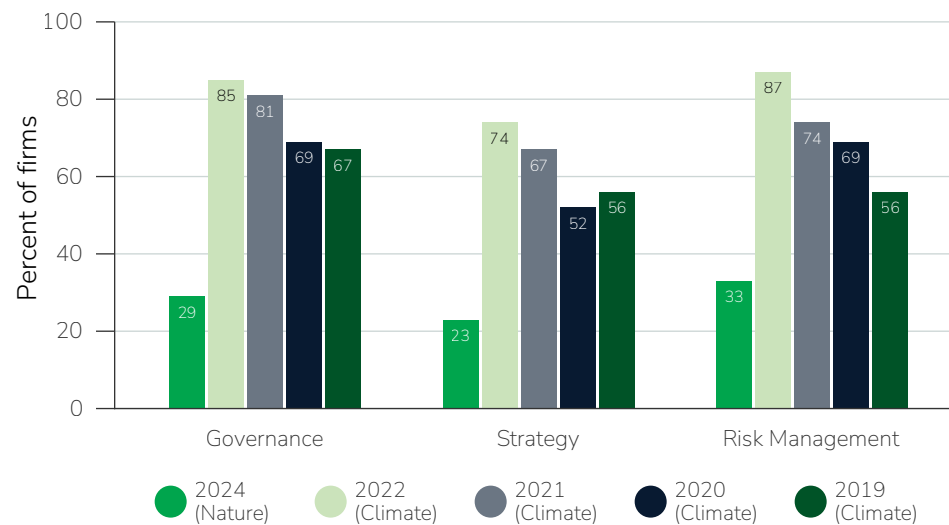


More than half the respondents in the 2022 climate survey reported they were going to be included in a regulatory climate scenario exercise, while not a single firm reported the same for nature in the 2024 survey. The low use of scenario analysis therefore probably reflects fewer regulatory exercises being held, as well as fewer nature scenarios being available.

DISCLOSURES

One-third of firms have disclosed information about their governance, strategy, and risk management of nature-related risks — a much smaller proportion of firms than disclosed about climate risk (Figure 19).

Figure 19 Nature and Climate-Related Disclosures



The firms with nature disclosures are mostly the leaders; indeed, this was the area where we saw the biggest gap in scores between leaders and others (recall Figure 3). Moreover, most of the leaders have made public announcements in relation to their firms' impact on nature, such as a commitment to be nature positive.

It is interesting that leaders' disclosures score so high relative to the other domains. This indicates the success of the Taskforce on Nature-related Financial Disclosures (TNFD) recommendations, which enables firms to build on their experience of disclosing climate-related information under the Taskforce on Climate-related Financial Disclosures (TCFD). It may, however, also indicate that disclosures are running ahead of the substance of nature risk management.

CONCLUSIONS: WHERE ARE WE GOING?

It's clear that nature-related financial risk management is lagging its counterpart in climate risk by many years. So, how might it evolve?

If nature-related financial risk management follows a similar pattern to climate-related risk, we would expect governance, strategy, and risk management processes to be the first areas to be addressed, followed by the more quantitative aspects such as metrics, targets, and limits, and scenario analysis. Movement in this area has begun, as nature leaders have already adopted many of the practices that we would expect to become more mainstream over time.

A pivotal factor in determining the speed at which nature financial risk management will evolve is how the focus from regulators will develop. With ever-increasing awareness of the [interlinkages between nature and climate change](#), as well as growing appreciation of the risks from nature loss, it seems reasonable to assume that the focus on nature will increase.

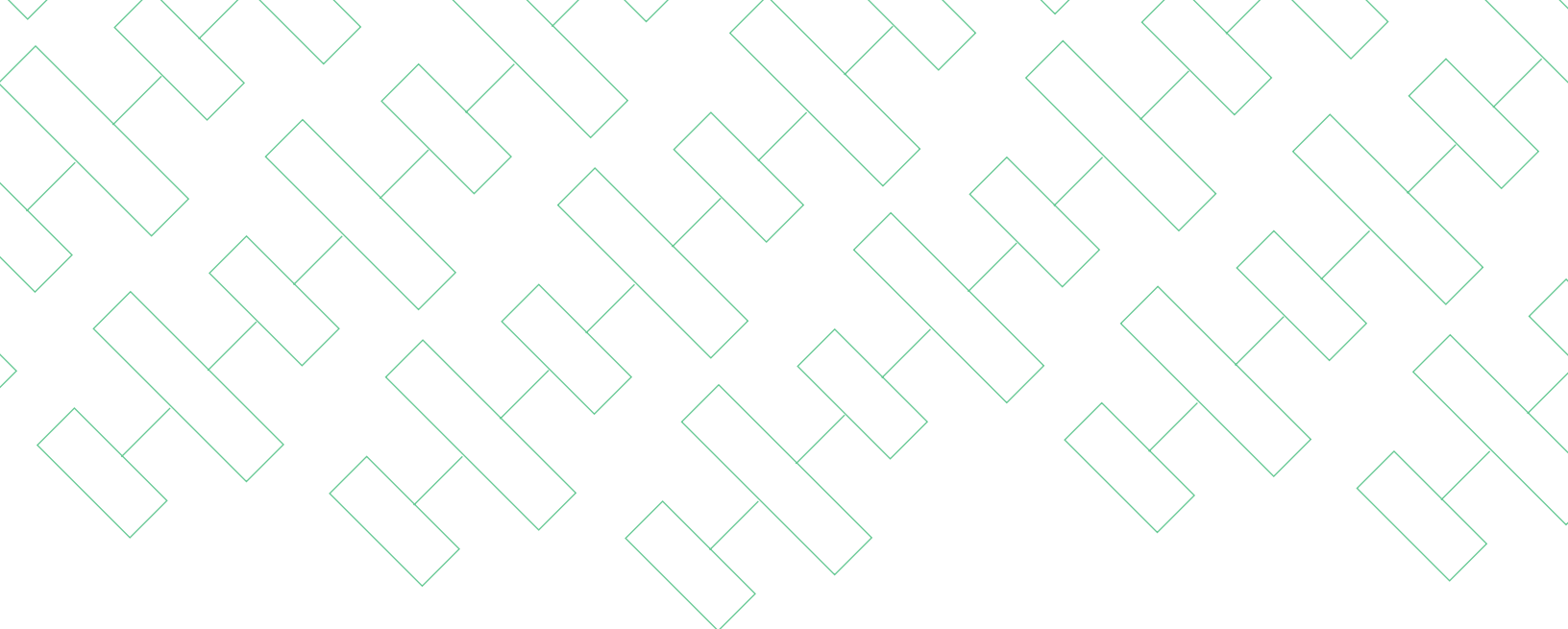
Indeed, work is underway by the Network for Greening the Financial System (NGFS) to promote better understanding of these risks across the regulatory community, including a [conceptual framework on nature-related financial risks](#). Certainly, the NGFS was an important factor in the increased supervisory focus on climate risk. This “coalition of the willing” now comprises over 140 supervisors and central banks who learn from one another, increasing the speed of adoption of regulations across its members.

Another factor influencing the speed at which regulation develops is global policy. The most impactful climate policy is the 2015 Paris Agreement, which called for countries to limit increases in the global average temperature to well below 2°C, while also pursuing efforts to cap increases at 1.5°C above pre-industrial levels. A track to limit global warming to 1.5°C will require us to reach net-zero global emissions by 2050, which is now seen as the focal point for action.

The equivalent global agreement on the nature side is the Kunming-Montreal Global Biodiversity Framework, announced in December 2022. The focus of that agreement is 2030, by which time participating countries have pledged (among other things) to (1) protect 30% of Earth's lands, oceans, coastal areas, inland waters; (2) reduce by USD 500 billion annual harmful government subsidies; and (3) cut food waste in half. Given these impending goals, we may expect that there will be an increasing focus on nature targets and, for example, any associated transition risks.

If more regulatory exercises take place, nature scenario analysis is likely to become more widespread. And we would expect that in time firms will innovate with nature-related products and services, although this may take a few years to become established.

It seems likely in the near term that there will be both increased nature-related financial risks and increased scrutiny on firms' management of those risks. Although nature risk management lags climate financial risk management, the latter has made great strides over just the last five years. If firms build on their climate expertise, we might expect nature risk capabilities to improve even more quickly. We believe it's important for risk professionals to pay attention to this emerging area, which we intend to monitor closely.



About the Authors

Jo Paisley, President, GARP Risk Institute, has worked on a variety of risk areas at the Risk Institute, including stress testing, operational resilience, model risk management, and climate and nature risk management. Her career prior to joining GARP spanned public and private sectors, including working as the Director of the Supervisory Risk Specialist Division within the Prudential Regulation Authority and as Global Head of Stress Testing at HSBC.

Maxine Nelson, Senior Vice President, GARP Risk Institute, currently focuses on management of the financial risks from climate change and other environmental risks. She has extensive experience in risk, capital, and regulation gained from a wide-ranging variety of roles prior to joining GARP. Maxine's roles include Global Head of Wholesale Risk Analytics and Head of Capital Planning at HSBC, responsibility for counterparty credit risk at the UK Financial Services Authority during the last financial crisis, leading the credit risk team at KPMG London, and global operational risk modeling at National Australia Bank. She has a Ph.D about how best to apply probability theory to real world problems.



garp.org

ABOUT GARP | The Global Association of Risk Professionals is a non-partisan, not-for-profit membership organization focused on elevating the practice of risk management. GARP offers the leading global certification for risk managers in the Financial Risk Manager (FRM®), as well as the Sustainability and Climate Risk (SCR®) Certificate, Risk and AI (RAI™) Certificate, and ongoing educational opportunities through Continuing Professional Development. Through the GARP Benchmarking Initiative (GBI)® and GARP Risk Institute, GARP sponsors research in risk management and promotes collaboration among practitioners, academics, and regulators.

Founded in 1996 and governed by a Board of Trustees, GARP is headquartered in Jersey City, N.J., with offices in London and Hong Kong.

For more information, visit garp.org or follow GARP on LinkedIn, Facebook, and X.

© 2024 Global Association of Risk Professionals. All rights reserved. (11.24)

HEADQUARTERS

111 Town Square Place
14th Floor
Jersey City, New Jersey
07310 USA
+1 (201) 719.7210

LONDON

17 Devonshire Square
4th Floor
London, EC2M 4SQ UK
+44 (0) 20 7397.9630

HONG KONG

The Center
99 Queen's Road Central
Office No. 5510
55th Floor
Central, Hong Kong SAR,
China
+852 3168.1532