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BIODIVERSITY

THE OPPORTUNITY FOR AMBITIOUS CORPORATES

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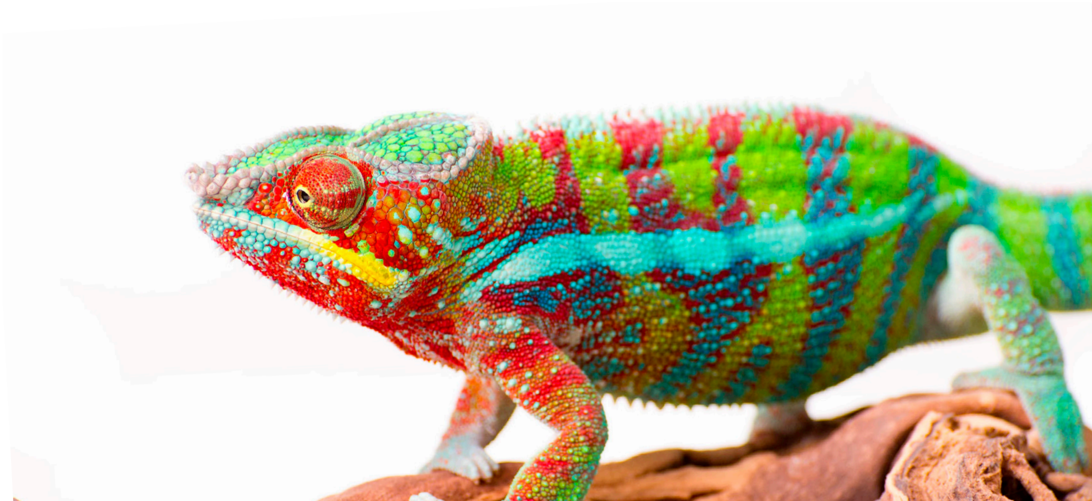
FOREWORD

"The latest science assessments show that across 65% of the terrestrial surface, land use and related pressures have caused biodiversity intactness to decline beyond the proposed "safe" planetary boundary, and more than 1 million species are threatened with extinction"

-Andrew Gonzalez,
Professor of Biology at McGill University

Our recent conversations with Professor Gonzalez, ahead of his attendance at the COP15 of the UN Convention on Biological Diversity last month, highlighted for us the growing importance of biodiversity, not just to the environment, but also to the economies that are dependent upon it. In 2020, both **The World Economic Forum** and **Swiss Re** estimated that over 50% of global GDP is exposed to the risks associated with biodiversity loss. With the Food and Land Use Coalition's **Growing Better** report forecasting a biodiversity and nature-first corporate business market to be worth over $1 trillion by 2030, it is no surprise that biodiversity related opportunities are already catching the eye of more progressive companies. We see that technology is set to play a leading role in helping businesses and their realise some of that commercial opportunity. This report highlights some of those critical early indicators and value enhancing opportunities.



01

COMMERCIAL DRIVERS FOR AMBITIOUS CORPORARES

Just as the adoption of Environmental, Social and Governance (ESG) practices and reporting has proved beneficial to company operations, ultimately helping to reduce risks and associated costs and to improve profitability, so too will greater attention to biodiversity-specific practices, measurement and reporting. Here's how that attention can help companies meet their investors' and management's growth expectations:

CONSUMER EXPECTATIONS AND THE OPPORTUNITY TO GAIN AND RETAIN CUSTOMERS

Consumers do care about the environment. A **recent survey** of UK consumers found that over 70% felt that significant change to lifestyle was justified to address issues relating to climate change and biodiversity loss. The interesting thing is that there was very little difference in this response between different generations, although Millennials and Generation-Zedders appear more inclined to actually take affirmative action to make those changes. Such concern will vary across regions, countries and demographics, but getting your biodiversity approach wrong could end up being a reputational catastrophe leading to difficulties in attracting new, and retaining existing, customers. Conversely, a well-manged biodiversity approach will assist in attracting and retaining some of that 70%-plus of customers that do care about the environment.

IMPROVED BUSINESS EFFICIENCY

A decade ago, environmental and sustainability factors barely featured in Enterprise Resource Planning (ERP) software solutions for companies' operations. Some of that still holds true for some providers but ERP vendors and their corporate clients are getting better at incorporating the monitoring, measuring, and collection of ESG data into their wider business frameworks and contributing to more insightful business decisions.

Specific biodiversity factors are notably absent from most of the top-10 ERP vendors, although that too is changing, albeit slowly. Both Oracle and Microsoft, for example, have included biodiversity as a priority, of late and have also developed their own technology to help clients with biodiversity measurement and information. Oracle is working with Reading and Cambridge universities in providing Cloud solutions to monitor fruit pollination and bee populations, respectively. Microsoft has developed **AI for Earth,** combined with Cloud technologies to allow companies and organisations to develop innovative solutions for the monitoring, modelling and management of ecosystems. Just ahead of the second half of COP15, recently held in Montreal, **Salesforce announced new policy priorities** for the protection and repair of natural habitats. Other ERP providers will follow, or ramp up their nascent biodiversity applications.

ATTRACTING AND RETAINING EMPLOYEES

The ability to attract and retain talent can very easily be hindered by poor sustainability credentials and this is particularly true amongst younger generations and those rapidly acquiring future skills. Many members of the workforce want to work for socially responsible companies and a positively presented environmental and biodiversity message on values will encourage like-minded candidates and make companies a more attractive employment proposition. Involvement of existing employees in practical and relevant activities around biodiversity can also help maintain morale, commitment and contribute to staff development..

SECURING POSITIVE SUSTAINABILITY RATINGS

ESG-focused indices are already available to institutional and retail investors to invest in publicly-listed companies. For public markets investors, indices like the Dow Jones Sustainability Index and the FTSE4Good can provide useful indicators of companies' environmental credentials. Corporate ESG ratings agencies like MSCI, Standard & Poor's, EcoVadis and Sustainalytics, meanwhile provide measures of companies' ESG credentials, with some covering both public and private businesses. ISS ESG, the responsible investment arm of Institutional Shareholder Services Inc, recently launched its Freshwater Index Series, to provide investors with better visibility on the impacts on environmental and biodiversity decline of their investments. Good environmental ratings from such indices and agencies can further enhance reputation, both with investors and potential clients.

OPPORTUNITY TO ACCESS CAPITAL AT PREFERENTIAL RATES

Green and sustainability-linked bonds and loans are not new. We wrote in our **recent report on ESG** how, Vistry, the publicly listed UK housebuilder, secured a £500 million revolving credit facility towards the end of 2021, with preferential interest rates linked to the company's sustainability performance. Finnish paper company, UPM meanwhile secured a revolving credit facility linked to both biodiversity and emission targets. Biodiversity-specific linked bonds are still relatively rare but will become more visible due to the preferential rates that good biodiversity practices can provide. In time, improved access to other forms of capital and preferential insurance rates, for example, will become similarly more common as savvy investors recognise the attractive prospect of lower risk profiled situations in which to invest.

MITIGATING LEGAL RISK

Legal action is already not uncommon where damage to the environment has reached perceived unacceptable levels. For example, privatised water utilities in England have recently been faced with a barrage of negative press and consumer protest in response to increased levels of untreated sewage being dumped into rivers and coastal waters. Already bearing fines levied by UK regulators, there is currently the prospect of an additional £150 million of fines under review. Internationally, there are numerous examples of this sort of legal action aimed at forcing companies to improve their biodiversity failings. A more sustainable, nature-positive approach to biodiversity would avoid this unnecessary additional cost to companies, as well as longer-term reputational damage.

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TECHNOLOGY IS HERE TO HELP YOU MAXIMISE BIODIVERSITY ADVANTAGE

As with the measurement and reduction of climate change impacts, technology is already helping the corporate world address on-the-ground issues related to negative impacts and reparations of reduced biodiversity. There is already a trend towards using satellite and drone technology for the tracking and monitoring of species movement and/or negative human interaction within ecosystems, for example.

Other technologies like artificial intelligence, machine learning, autonomous robotics, blockchain and hyperspectral imaging can now be used to provide valuable data on **essential biodiversity variables** (EBVs) that capture changes within ecosystems and across supply chains. The growing suite of technologies can provide information on the EBVs capturing trends in biological processes and human drivers of change that can be used to help assess impact and guide the conservation of healthy habitats and to identify those ecosystems that require restoration and enrichment. These technologies are very much at the ecosystem "coal face" to use a nowadays inappropriate metaphor.

Environmental, Social and Governance practices and reporting have become relatively mainstream amongst larger and more mature businesses. The greater proportion of research indicates it makes for reduced risk and better operating companies. Today, it is far easier for companies to measure and report on their carbon emissions. Yet biodiversity, which some would argue is the greater risk, remains relatively untouched. Measuring and capturing biodiversity data remains relatively complex and unexplored, yet the technology to do this is already available and being applied by international organisations and scientific networks. **GEO BON**, for example, is dedicated to doing this with state-of-the-art methods and technologies, which are increasingly becoming available and easier to integrate within appropriate commercial businesses. Here are a few other examples:

- The **Biodiversity Footprint for Financial Institutions (BFFI)** methodology developed by Netherlands-based ASN Bank and environmental consultancies, CREM and PRé Sustainability is a partially automated tool used to calculate the biodiversity footprint of the loans and investments made by several Dutch financial institutions.
- Paris-based **Iceberg Data Lab** launched its Corporate Biodiversity Footprint to help financial institutions and other companies assess their impact on biodiversity by using publicly disclosed data to estimate their impact with respect to land use, air pollution, greenhouse gas emission and the release of toxic items into freshwater ecosystems.
- The **Cool Farm Tool** was developed through a collaboration between Unilever, the Sustainable Food Laboratory in Vermont and the University of Aberdeen. It was originally designed to measure just greenhouse gas emissions on farms. Following further development by London-headquartered environmental consultancy, Anthesis it has been developed into an online version which can now measure a broader range of biodiversity impacts in farming environments.
- **ENCORE** (Exploring Natural Capital Opportunities, Risks and Exposure) is a Swiss-based enterprise that has developed a tool to help companies understand their impact on environmental change and the economy. A biodiversity module has just been released.
- Based in Cambridge, **IBAT** is the Integrated Biodiversity Assessment Tool hosting three biodiversity data sets available through subscription and already boasting a roster of large corporates and other organisations.
- Based in Montreal, **Habitat** is a biodiversity data analytics, mapping, modelling and planning enterprise that has developed a suite of tools to rapidly assess impacts and plan nature-based solutions for biodiversity and climate change mitigation. Recognised by the United Nations Environment Assembly, Habitat's clients range from state governments, cities, businesses and NGOs.

The tools offered by these companies have biodiversity-specific elements that allow companies and organisations to better assess their environmental impacts beyond what is more typically captured by broader ESG assessment tools. Imaginative applications, like those described above and their judicious use will permit forward thinking companies to enhance biodiversity assessments and identify value-improving opportunities.

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OTHER CONSIDERATIONS FOR M&A GROWTH INVESTORS

Just as more corporate M&A investors incorporating broader environmental, social and governance assessment of potential merger and add-on investment opportunities, so must they now start to think more definitively about biodiversity issues. Although a part of the broader environment assessment, relatively few investors are considering the adverse impact of biodiversity-loss specifically. That needs to change. Here are a few recommendations for including biodiversity within corporate M&A equity investment practices:

INCORPORATE BIODIVERSITY INTO INVESTMENT SCREENING AND INITIAL SELECTION

ESG considerations are increasingly included as part of screening processes. However, it's unlikely to have a specific inclusion of biodiversity factors within that screening process. Consider incorporating biodiversity as part of your prospect screening, both as a risk factor and as a potential "red flag" signal for a prospect under consideration. Identifying positive biodiversity footprints and practices within a prospect meanwhile can serve as another check point that will help prospects through to subsequent phases of the process.

INCLUDE BIODIVERSITY AS PART OF FORMAL DUE DILIGENCE AND INVESTMENT

include the analysis of biodiversity risks as distinct part of your ESG due diligence. Growing numbers of M&A investors now include ESG factors as part of their assessment of complimentary assets, though relatively few explicitly include biodiversity within that assessment. Assessing the materiality of biodiversity issues and prospects' maturity with this issue will bring additional rigour to this part of the assessment of potential investee companies. This can be especially useful for companies operating in sectors particularly reliant on healthy ecosystems, such as construction, infrastructure, textiles, apparel, transportation and agriculture. Examination of whether any prospect company has implemented a biodiversity management and governance plan and whether it holds relevant biodiversity-related certifications can help identify risks and opportunities that might otherwise be overlooked.

UTILISE BIODIVERSITY ASSESSMENT AND CONSULTANCY SERVICES

At both due diligence and for operational improvement post-acquisition. There's a myriad of specialised environmental consultancies, including some that are biodiversity-specific. It can make sense to gain insights and advice from such sustainability experts. Frequently in partnership with academic or large financial institutions, a number have contributed to the development of tools that can assist acquirers and add-on companies in the monitoring and capture of biodiversity data and information. We've already referenced a few such consultancies that have helped develop biodiversity-specific technologies in the previous section.

Many of those tools are digital and often well enough developed to assist companies with the monitoring and measurement of biodiversity data and information.

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THE BIODIVERSITY MARKET OPPORTUNITY

It doesn't take much background research to realise that managing human impact on biodiversity is mission critical to our broader ESG agendas. While intrinsically linked, the risks associated with biodiversity loss have long been living in the shadow of its "more popular" (and equally important) cousin, Climate Change. With the COP15 of the UN Convention on Biological Diversity just days away, biodiversity is starting to gain an audible voice in mainstream media. A new Global Biodiversity Framework will be negotiated and will set the stage for international biodiversity policy and financing. However, the current message about what can be done is often riddled with knowledge gaps, missed critical points and, as a result, missed opportunity to sufficiently highlight its importance.

In 2020, the **OECD estimated** that global biodiversity-specific finance amounted to between $78 and $91 billion, well behind the $632 billion that was dedicated to climate change finance. Even more disappointing is the estimate that less than 15% of that biodiversity-focused capital was provided by the private sector – financial institutions, private equity firms, larger corporations and SMEs. The bulk of biodiversity finance is still provided by national and local governments, supranational and regional bodies. This is a missed opportunity as regulatory requirement to address biodiversity loss, such as the Taskforce on Nature-related Financial Disclosures (TNFD) will inevitably increase, as will the capital to encourage that change. Given the size of the opportunity it is a little surprising that relatively few companies and investors are actively participating in biodiversity-related initiatives and investment opportunities. But that will inevitably change.

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WHAT'S DRIVING INTEREST IN BIODIVERSITY?

Although measuring and reporting on climate change footprints was an additional cost to companies, there's little argument today that improved environmental and broader ESG practices has helped produce better businesses, both for investors, limited partners and for the subsequent owners that acquire them upon exit. That change was significantly driven by regulation. Don't switch off yet! It's great if you have got this far and read about the commercial opportunities to improve your business by paying early attention to biodiversity but it's also important to understand that regulation will make that attention mandatory. In time, compliance requirements for forthcoming biodiversity regulation will be a significant driver for companies adopting relevant procedures and reporting. The recent rise in interest in biodiversity is primarily driven by the growing financial and social risks economies are exposed to, as a result of collapsing ecosystems and irreversible loss of biodiversity. Widespread ecosystem degradation is impacting regional climates, food and other resource production, and the mitigation of extreme environmental events.

Somewhat late on to the stage, the Taskforce on Nature-related Financial Disclosures (TNFD) was formally launched in June 2021 to provide a framework for companies and other organisations to report on risks from ecosystem and biodiversity degradation. Its aim is to improve the availability of data and information to enable companies and organisations to measure, monitor and report nature-related risks more accurately and contribute reliably into decision making. Founding partners supporting the TNFD initiative include the UN's Convention on Biological Diversity (CBD), other UN agencies and the WWF. The programme also has widespread support from G20 and G7 Finance and Environment Ministers, world leaders, financial institutions and many Trans National Corporations.

The TNFD might well follow a similarly long arc as its older cousin, the Task Force on Climate-related Financial Disclosures (TCFD), but it has already launched a beta version framework formulated to help organisations assess and report their performance with respect to biodiversity and to better understand the associated risks of failing to operate in a more sustainable manner. Compliance with any biodiversity-specific regulation around monitoring and reporting will become more important as investors, capital providers and clients increasingly consider how to assess biodiversity impacts of investments and suppliers. In time, there is a high probability that investor capital will divert from those companies that fail to take action to reduce their negative biodiversity impacts. Pilot tests of the TNFD disclosure framework have already commenced and further amendments and revisions are anticipated ahead of a final version which is scheduled for release in September 2023. Other regulatory changes will also have a bearing, as companies will need to address any biodiversity-specific issues highlighted within local regulation, as in the Environment Act passed in the UK in 2021, requiring a Biodiversity Net Gain of 10% for land development projects – anticipated to come in to force from November, 2023.

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GOING FORWARD

Panamoure agrees with the sentiment expressed in a recent **ESG Investor article** that, going forward, companies and investors must make biodiversity a routine part of their business operations and investment processes in order to understand related risks and dependencies. This is a necessary consideration for the development of coherent and robust strategies and practices and more detailed ESG processes and reporting. Those processes and reporting should comprehensively include biodiversity targets.

We also believe technology is well-placed to deliver that sustainable improvement, both onsite within ecosystems, as well as within companies' internal business operations. Just as larger corporates and major investors took the lead in adopting ESG practices generally and using technology to simplify recording and reporting, the same appears to be true now for the growing interest and adoption of biodiversity-specific measurement and reporting. Some of the leading publicly listed FTSE100 companies are already making this happen and major financial institutions like BlackRock, Goldman Sachs and Nomura are also discussing and advocating sound biodiversity practices.

We are finding many of our larger clients are already taking biodiversity on board and are working towards readying themselves for TNFD and forthcoming regulatory recommendations. In attempting to get ahead of those expectations, we are also encouraging our smaller clients to do likewise and at the very least, commence thinking about what will undoubtedly become a regulatory requirement in due course.

Hopefully, the pages above persuade you of the importance of the environment broadly and biodiversity specifically to the successful continuation of business-as-usual and its sustainable growth. Just as so many corporates have realised the value to be gained from diversity across their human capital, the same is true of a varied biosphere across the "natural capital" that is essential for a prosperous economy, financial stability, and long-term human wellbeing.

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