EXTRACTIVE ACTIVITIES IN UNESCO WORLD HERITAGE SITES

Commitments, risks and investment implications

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SHORT SUMMARY

Investors help manage extractive industry risks to World Heritage

Extractive industries can have serious impacts on our cultural and natural heritage and are therefore considered incompatible with World Heritage status. Yet this report finds that companies hold oil, gas, and mining assets — licensed areas for exploration or production — in over one third of natural World Heritage sites. Nearly half of these sites lie within one kilometre of extractive assets. For the first time, the report also covers cultural sites, showing that one sixth are within half a kilometre of at least one extractive asset.

Extractive activities in World Heritage sites pose significant financial, legal, and reputational risks for investors. As stewards of capital, investors can help ensure companies operating near these sensitive areas meet global sustainability standards. Declaring World Heritage sites as no-go areas for extractive industry activities provides clear assurance against potentially harmful projects.

This report offers data and analysis to help investors, policymakers, and companies to identify and manage these risks and align investment decisions with global heritage protection commitments. As most extractive assets in World Heritage sites are areas licensed for potential exploration rather than active mines or wells, there is an opportunity to take preventive measures before extractive projects begin operating.

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"Since wars begin in the minds of men and women it is in the minds of men and women that the defences of peace must be constructed"

EXTRACTIVE ACTIVITIES IN UNESCO WORLD HERITAGE SITES

Commitments, risks and investment implications

FOREWORD BY UNESCO, IUCN AND WWF

While extractive industries can contribute to economic growth, they must respect and safeguard the integrity of World Heritage sites.

These irreplaceable places embody our shared human history and showcase the extraordinary beauty of our planet. They serve as crucial social, economic, and environmental assets – creating jobs, supporting local economies through tourism and cultural industries, and reinforcing community identity and resilience. Remarkably, World Heritage sites harbour one-fifth of global species richness, despite covering less than 1% of the Earth's land surface – underscoring their exceptional importance for biodiversity conservation.

UNESCO, together with its partners, continues to advocate for strong national legal protections, comprehensive impact assessments, and responsible land-use planning to ensure that extractive sectors comply with the commitments made by States Parties under the World Heritage Convention. The overlap between extractive assets and World Heritage sites highlighted in this report reveals the need to strengthen measures that exclude these designated areas from zones licensed for extractive activities.

However, protection efforts do not rest solely with States. Companies and investors also bear a fundamental responsibility to respect and uphold international obligations for conserving natural and cultural heritage, ensuring that their operations, investments, and value chains do not cause harm or pose risks to World Heritage sites.

Increasingly, global frameworks are reinforcing these expectations – such as the Kunming-Montreal Global Biodiversity Framework, which calls on businesses and financial institutions to assess and disclose their impacts on biodiversity and to progressively reduce negative impacts across all sectors. Embedding World Heritage protection into corporate sustainability strategies not only mitigates reputational and operational risks but also contributes to measurable conservation outcomes.

Protecting World Heritage is integral to responsible business practices and a cornerstone of sustainable development. Through stronger partnerships among industry, finance, governments, and conservation actors, we can ensure that the world's most extraordinary places endure, undiminished, for the future of all humanity.

Lazare Eloundou Assomo
Director of World Heritage
UNESCO

Tim Badman
Director, World Heritage
IUCN

Daudi Sumba
Chief Conservation Officer
WWF International

FOREWORD BY THE CHURCH OF ENGLAND PENSIONS BOARD AND GREENBANK

When immersed in the wonder of a World Heritage site, it is unlikely that one's attention turns to corporate activity, return on investment or profit margins. Similarly, in the corporate world, decisions are often made without consideration for such locations. The connection between the two is not always clear. For those fortunate enough to visit natural or cultural World Heritage sites, whether that be the Tower of London, Yellowstone National Park, the Historic Monuments of Ancient Kyoto, the Great Himalayan National Park or Virunga National Park, home to the mountain gorilla, it is often done outside the context of corporate life, when business or financial considerations are not top of mind.

It is generally expected that areas of significant value should be preserved and protected for the current and future generations to enjoy. World Heritage sites are recognised for their significant and unique value, including scientific, social and economic importance.

The complexities from the indisputable interconnections between society, the natural environment and the economy can be felt around the world with protected areas, including those by World Heritage sites. It is now well understood that nature loss presents a systemic risk to global financial markets and to long term investment returns. As investors, whether asset managers managing capital for clients with long-term liabilities or asset owners managing long term investments on behalf of beneficiaries, we have a responsibility to understand how our investments are creating long-term value without eroding the value of the nature we depend on around us.

This report, produced in partnership between investors and UNESCO, seeks to highlight the connection between extractive activities and World Heritage sites. It emphasises the policy protections these are afforded, and how investor and corporate actions can meet the spirit of these expectations, acting to mitigate direct financial and reputational risks and better preserve sites which truly are of outstanding natural and cultural value.

Adam Matthews
Chief Responsible Investment Officer
The Church of England Pensions Board

David Cox
Head of Greenbank

FOREWORD BY INTERNATIONAL COUNCIL ON MINING AND METALS

In 2002, members of the International Council on Mining and Metals (ICMM) made a landmark commitment not to explore or mine in World Heritage sites. We view these natural and cultural treasures as simply too precious to risk damaging by operating in these areas.

Despite advocating for two decades for broadscale adoption, only a small number of other companies, lenders and investors have followed suit. As a result, these areas remain vulnerable to future developments, and ultimately, degradation. The report's findings on the number of extractive assets in and around World Heritage sites reflects a collective failure to protect and conserve that which is widely recognised as too precious to be lost.

While most of the extractive assets identified in the report as being located in, or in proximity to World Heritage sites are claims and concessions, rather than active mines or oil and gas wells, the legal right and potential for these assets to be developed puts over a third of the world's natural World Heritage sites at risk.

Charting a new path, away from the realisation of this risk and towards effective protection and conservation, will require new forms of dialogue, leadership and action. This opportunity presents itself in three distinct aspects:

Firstly, the recognition that urgent action is required from all sectors of society - investors, financial institutions, governments, industry and others to help ensure these areas of outstanding universal value remain beyond the reach of development. The conversation this report initiates between investors and clients is a great first step in accelerating progress in this direction.

Secondly, to continue to build momentum for wide scale adoption of no-go commitments. While more companies and investors have taken up the call for no-go, and others remain steadfast in their commitments, there's clearly room for others to step up and strengthen the duty of care for protected areas through collective action. The influence of Governments could play a huge role here through legislating against industrial activity in these areas of outstanding universal value.

Finally, for companies to go beyond no-go commitments. Proactive initiatives and nature commitments that enable partnerships across value chains, investment in systems transformation and action to halt and address the root causes of nature loss are critical.

By uniting around principled commitments, open dialogue and collective action, governments, investors, financial institutions and industry are demonstrating a shared commitment to collective responsibility and protection of World Heritage sites and the outstanding universal value they contain.

Rohitesh Dhawan
President and Chief Executive Officer
International Council on Mining and Metals (ICMM)

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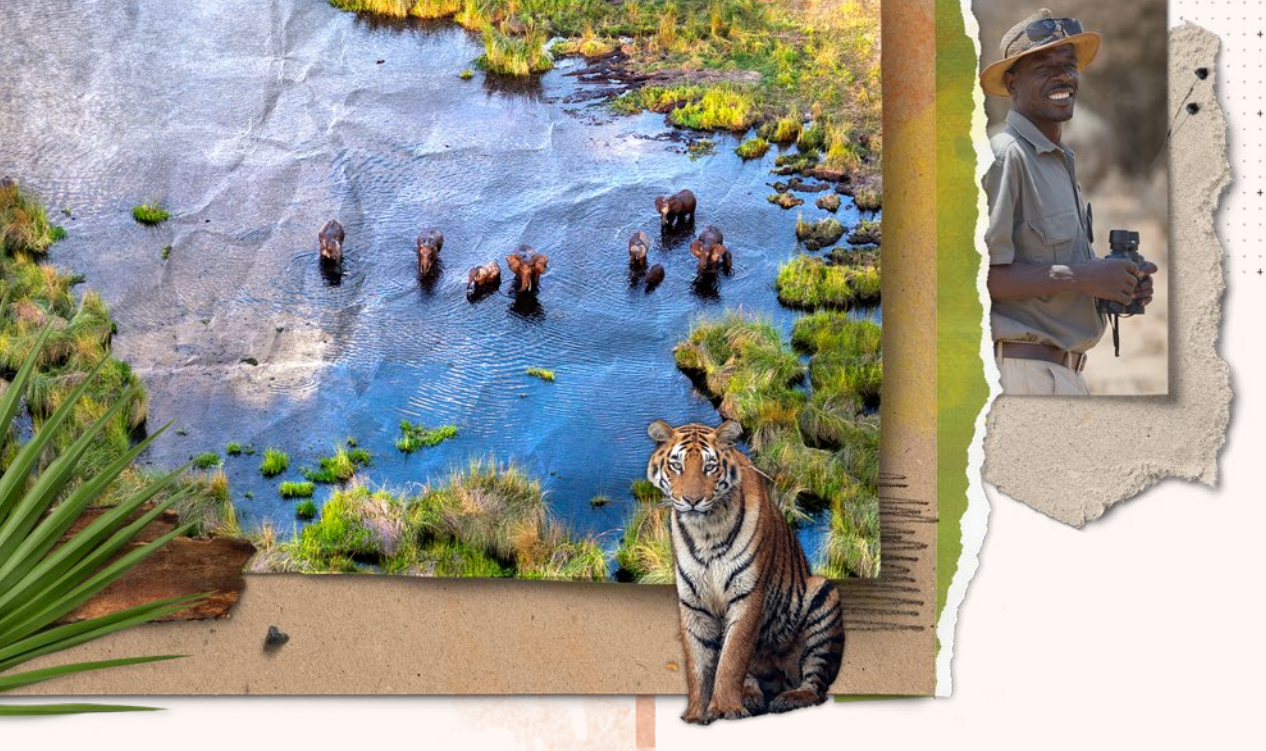

PART 01

INTRODUCTION

Many investors are working to incorporate nature considerations into their investment processes and stewardship efforts. This report seeks to build on that awareness by highlighting how and where sensitive areas may be under threat from certain industries. Investors can use the report to support their understanding of the potential risks of extractive industries operating in or near World Heritage sites, demonstrating its financial and reputational relevance, and how risks can best be assessed, incorporated into decisions, and addressed. Regardless of the approach, World Heritage sites should be declared no-go areas for extractive industries and other harmful industrial activities that threaten their Outstanding Universal Value (OUV).[1]

1 Harmful industrial activities are those that cause significant and often irreversible impacts on the Outstanding Universal Value (OUV) and other natural, economic, and cultural values of World Heritage sites. These activities can also affect local livelihoods and threaten the health, safety or well-being of communities. Such activities should not occur within World Heritage sites, and their impacts in buffer zones and wider setting must be assessed prior to their approval and avoided and mitigated.

For investors, the risks that portfolio companies face when operating in sensitive and biodiverse regions, including near World Heritage sites, can be significant; they can lead to financial, reputational, and regulatory consequences, as well as shareholder activism and changes in board and management. All of these can have a direct impact on a company's margins and can dilute the value of an investment. Investors are also exposed to potential reputational impacts of investing in companies that face these risks. One example occurred in the early 2010s, when sustained civil society pressure prompted oil companies Total and SOCO International to commit to ending exploration in UNESCO World Heritage sites, including Virunga National Park in the Democratic Republic of Congo.

With the rapid pace of climate change and nearly a million species on the brink of extinction,[2] the urgent challenge of protecting and restoring nature has become even more pressing. This is reflected in higher expectations for action not only from governments but also from investors and companies. For example, the UN-backed Kunming-Montreal Global Biodiversity Framework, signed by almost 200 countries, places greater focus on corporate action and includes a specific target to take legal, administrative, or policy measures to encourage and enable businesses to assess and disclose nature-related risks, impacts, and dependencies. Similarly, the Taskforce on Nature-Related Financial Disclosures (TNFD) recommendations are voluntary but have seen a range of global early adopters.[3]

Despite growing attention to nature-related risks, this report finds that the presence of extractive assets – areas licensed for the exploration or production of oil, gas, and minerals – within natural World Heritage sites remains high, affecting more than a third of natural sites[4] (36%, or 97 out of 266 assessed sites). For the first time, the report also presents data on cultural sites, which may warrant further attention from investors in the future as another key type of UNESCO World Heritage site. In addition to their cultural significance, around one-fifth of cultural sites overlap with Key Biodiversity Areas, and many contribute to sustainable land and resource management, including in urban areas, highlighting their important role in achieving international biodiversity and conservation targets.

The report is published by UNESCO in partnership with the Church of England Pensions Board, Greenbank, IUCN and WWF. A prior report from 2015 by WWF and investors similarly examined the overlap between World Heritage sites and extractive assets.[5] That report identified extractive assets within 30% (70 out of 229) of natural sites. In 2021, WWF and the Swiss Re Institute published a report focusing on the concept of spatial finance in relation to industrial threats to World Heritage sites.[6]

2 IPBES, 2019. Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Retrieved from https://www.ipbes.net/global-assessment

3 Taskforce on Nature-related Financial Disclosures. Retrieved from https://tnfd.global/

4 Inscribed on the World Heritage List as of May 2024. Of these, 39 have 'mixed' status, meeting both natural and cultural criteria. This assessment does not take into account the boundary modifications and the four natural and one mixed World Heritage sites inscribed at the 46th session of the World Heritage Committee in July 2024.

5 WWF-UK, 2015. *Safeguarding outstanding natural value: the role of institutional investors in protecting natural World Heritage sites from extractive activity*. Retrieved from https://wwfint.awsassets.panda.org/downloads/safeguarding_outstanding_natural_value.pdf
See also: https://www.wwf.ch/sites/default/files/doc-2019-10/2019_10_insuring_sustainable_future_1.pdf

6 Swiss Re and WWF, 2020. *Conserving our Common Heritage: the role of spatial finance in the protection of World Heritage*. Retrieved from https://www.wwf.ch/sites/default/files/doc-2020-05/Conserving%20our%20common%20heritage.pdf

PART 02

WORLD HERITAGE

and extractive industries

UNESCO World Heritage sites embody the shared heritage of all peoples and represent irreplaceable natural and cultural values that must be preserved for future generations. They are also important drivers of socio-economic development and provide ecosystem services essential to human well-being. These exceptional places are protected under an international treaty called the World Heritage Convention, which was adopted by UNESCO in 1972.

The concept of 'Outstanding Universal Value'[7] (OUV) is central to the conservation of World Heritage sites and refers to the significance of the natural and cultural heritage protected under the World Heritage Convention. It also justifies the inscription of such heritage on the World Heritage List. By ratifying the Convention and nominating sites for inscription on the World Heritage List, the 196 States Parties have undertaken commitments to ensure the protection of this heritage for present and future generations.

Large-scale infrastructure development and extractive operations can have significant environmental and social impacts. These include loss of biodiversity and habitats, disruption of ecosystem processes, introduction of invasive alien species, pollution, displacement of people, and loss of livelihoods and cultural heritage. Such activities can therefore cause irreversible damage to World Heritage sites, including their OUV and integrity. The intergovernmental World Heritage Committee, the governing body of the Convention, has therefore deemed extractive industry activities to be incompatible with World Heritage status.[8]

Countries can combine strong laws, careful planning, early impact assessments, permit control, public participation, and international commitments to ensure World Heritage sites are protected from the harmful impacts of extractive operations. *The Operational Guidelines for the Implementation of the World Heritage Convention* set out the provisions for the management and conservation of World Heritage, and guide for example the conduct of impact assessments,[9] which have become essential tools for mitigating development pressures on World Heritage.

Recognising that this unique and irreplaceable heritage belongs to all the peoples of the world, its protection is a shared responsibility for the international community. In this report, we focus on the key role that investors can play – by identifying, assessing, and potentially influencing the impacts of corporate extractive companies.

Acknowledging their shared responsibility to protect World Heritage, many companies in the extractive sector have committed not to explore or extract oil, gas, and other resources within natural and cultural World Heritage sites and to ensure that any operations outside the sites do not affect their OUV. Investors, through their capital allocation decisions and active stewardship, can also play a role in ensuring that oil, gas and mining companies endorse the World Heritage 'no-go' commitment,[10] respect human rights, and apply due diligence to the sector's environmental, social, and governance performance. Many companies and institutions in the financial sector, including banks, have adopted their own policies reflecting this commitment.[11]

7 Outstanding Universal Value (OUV) – 'cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity'. To be deemed of OUV, a site must meet at least one out of ten criteria and meet the conditions for authenticity (for cultural sites), integrity, protection and management. Each site inscribed on the World Heritage List will have a statement of OUV for which it is included on the World Heritage List, and which must be protected from adverse impacts of economic activities.

8 UNESCO World Heritage Centre, 2013. Emerging trends and general issues. Decision 37 COM 7. Retrieved from https://whc.unesco.org/en/decisions/5018/ UNESCO World Heritage Centre, 2016. State of Conservation of World Heritage Properties. Decision 40 COM 7. Retrieved from https://whc.unesco.org/en/decisions/6817/

9 UNESCO World Heritage Centre, 2024. *The Operational Guidelines for the Implementation of the World Heritage Convention*. Retrieved from https://whc.unesco.org/en/guidelines/

10 UNESCO, 2022. *UNESCO guidance for the World Heritage 'No-Go' commitment: global standards for corporate sustainability*. Retrieved from https://unesdoc.unesco.org/ark:/48223/pf0000383811

11 UNESCO World Heritage Centre, 2024. Corporate sector and the World Heritage 'no-go' commitment. Retrieved from https://whc.unesco.org/en/no-go-commitment

PART 03

SUMMARY

of key findings

The report presents a global analysis of the spatial overlap and proximity between extractive assets and the 1,191 World Heritage sites inscribed as of May 2024. The analysis covers six categories of extractive assets, encompassing areas licensed for exploration or production of oil, gas, and minerals. A comprehensive overview of the methodology is included at the end of the report.

The extractive asset categories analysed are as follows:

Mining assets:[12]

1. Mining projects: Encompass all stages of mineral extraction at a site, from exploration and development to production and closure, including technical, environmental, legal, and economic assessments.

2. Mining claims: Legally defined areas where individuals or companies have filed rights to explore or extract minerals.

Oil and gas assets:[13]

3. Oil and gas wells: Locations of physically drilled wells (exploration, development, production, or abandoned).

4. Planned oil and gas wells: Permitted or proposed wells not yet drilled.

5. Awarded oil and gas blocks (exploration licences): Areas where exploration or production rights have been formally granted.

6. Oil and gas block bid rounds: Blocks that have been publicly announced for competitive bidding but have not yet been awarded.

Oil, gas, and mining assets were identified in more than a third (36%) of natural World Heritage sites.[14] This marks an increase from the 2015 assessment,[15] which found that 30% of natural World Heritage sites overlapped with extractive assets. While the two assessments are not fully comparable, the rise may reflect several factors: the growing number of sites inscribed on the World Heritage List, boundary modifications, improvements in data accuracy, and potentially increasing pressure from the extractive sector.

As such, the number of World Heritage sites overlapping with extractive assets remains high, which poses potential risks to the affected sites. These risks vary depending on the type of asset, with active extractive operations posing the highest potential risk.[16] As most of the identified extractive assets in World Heritage sites are areas licensed for potential exploration rather than active mines or wells, there is an opportunity to take preventive measures before extractive projects begin operating.

In addition, almost half (48%) of the natural World Heritage sites were found to be located within 1 km of at least one extractive asset, 64% within 10 km, and 73% within 20 km of at least one extractive asset. This poses additional risks to the sites as activities of the extractive industry in close proximity to World Heritage sites could affect their values and integrity. Therefore, active measures must be taken by the relevant authorities, operating companies, and investors to avoid causing any negative impact on the OUV.

12 S&P Global, 2024. Metals & Mining. S&P Global Market Intelligence. Available at https://www.spglobal.com/marketintelligence/en/campaigns/metals-mining (Data sourced July 2024)

13 Enverus, 2024. Oil and Gas Data. Available at https://www.enverus.com/ (Data sourced July 2024)

14 The sites considered include natural and 'mixed' World Heritage properties that are inscribed on the World Heritage List based on the criteria for their outstanding natural value.

15 The number of natural and mixed World Heritage sites has increased by 37 sites, from 229 sites in total in 2014 to 266 in 2024 owing to new sites being inscribed on the World Heritage List. Due to boundary modifications proposed by States Parties, there have also been changes in boundaries of sites already inscribed on the World Heritage List. Compared to 2015, the commercial extractive datasets applied have also evolved, increasing their national coverage, in addition to other improvements, such as the accuracy of geolocation. The methodologies applied also vary; slightly different asset classes were considered, with the 2024 study not considering oil and gas pipelines but additionally considering planned wells and bid blocks. A comprehensive overview of the methodology is included at the end of the report.

16 The results provide a high-level assessment of the proximity of extractive assets to World Heritage sites. They do not accurately capture or distinguish the extent or magnitude of the 'threat' or 'impact' these assets may pose to World Heritage sites and may include extractive assets that represent no past, current, or future threat. See the methodology and data considerations at the end of the report.

This report also considers, for the first time, the proximity of extractive sector activities to cultural sites, with 17% of cultural World Heritage sites identified as being within half a kilometre of at least one extractive asset.[17]

RESULT HIGHLIGHTS

- Available data on extractive assets were compared with the boundaries of 266 natural World Heritage sites, using six categories of assets: mining claims, mining projects, oil and gas wells, planned oil and gas wells, awarded oil and gas blocks, and oil and gas bid blocks.
- Extractive assets were identified in 36% (97 out of 266) of natural World Heritage sites in all regions of the world. In total, 832 extractive assets were identified as 'active' within natural World Heritage sites.[18]
- The most common extractive assets identified within natural World Heritage sites are mining claims[19] (in 58 sites), followed by oil and gas wells (in 27 sites), awarded oil and gas blocks (in 25 sites), oil and gas bid blocks (in 14 sites), and mining projects (in 10 sites). None of the 266 assessed sites overlap with planned oil and gas wells.
- The results are consistent across regions,[20] with the highest occurrence of extractive assets in natural World Heritage sites in Africa (45%), Latin America and the Caribbean (43%), and Asia and the Pacific (42%), followed by Europe and North America (24%) and the Arab States (22%).
- Extractive assets in World Heritage sites are held by a variety of owners, ranging from private individuals and small companies to large listed international corporations and domestic or foreign sovereign actors.
- Extractive assets are also found near World Heritage sites but outside their boundaries. 48% (127 sites) of natural World Heritage sites are located within 1 km of at least one extractive asset, 64% (171 sites) within 10 km, and 73% (195 sites) within 20 km.
- Changes in methodology between the current and 2015 studies introduce uncertainty, limiting the reliability of trend comparisons. However, extractive assets remain widespread, affecting one-third of natural World Heritage sites. Extractive assets were identified in 54% of the sites that were overlapped with extractive assets also in the 2015 study (52 sites).
- Extractive assets were identified in close proximity (≤0.5km) to 17% of cultural World Heritage sites (158 out of 925 cultural sites). Oil and gas assets were significantly more prevalent, found close to 124 cultural sites (13%), compared to mining assets, which were found close to 45 cultural sites (5%).

17 Proximity of extractive assets to cultural World Heritage sites was assessed using the distance of half a kilometre to their central coordinates rather than their true boundaries. See methodology and data consideration at the end of the report.

18 The licence has been officially approved and registered, providing the holder with legal rights for exploration and/or production, subject to national laws and permitting conditions.

19 In some instances a company may be holding its claims and concessions to protect the area as a no-go zone. Such practice in World Heritage sites is undocumented and should be reported to UNESCO.

20 The country distribution used is consistent with the Regional Groups established for Periodic Reporting under the World Heritage Convention.

Box 1. Understanding extractive operations

Extractive assets refer to areas where companies hold legal rights (licences) for exploration and production of oil, gas, and minerals. The first step in extractive operations is securing these rights, which allow companies to conduct surveys and testing during the exploration phase to assess the presence and viability of resources. If commercially viable deposits are identified, companies may seek additional approvals to develop the site and begin extraction. This development phase may involve constructing infrastructure, drilling or mining, and transporting the extracted materials. Each stage typically requires regulatory oversight and may result in environmental and social impacts. However, the existence of an exploration licence does not necessarily mean that an active project will be developed; many assets remain undeveloped due to factors such as economic infeasibility, regulatory barriers, environmental risks, or community opposition.

World Heritage sites or other protected and conserved areas are not always systematically excluded from areas licensed for extractive activities, some of which may predate the site's inscription on the World Heritage List. IUCN, which evaluates all natural sites nominated for World Heritage status, recommends that overlapping extractive licences either be excluded from the nominated area or phased out over time. Publicly available licence registers, or cadastre systems, are essential for the responsible management of extractive resources and support sector oversight.

FIG 1. Number of natural World Heritage sites overlapping with extractive assets.

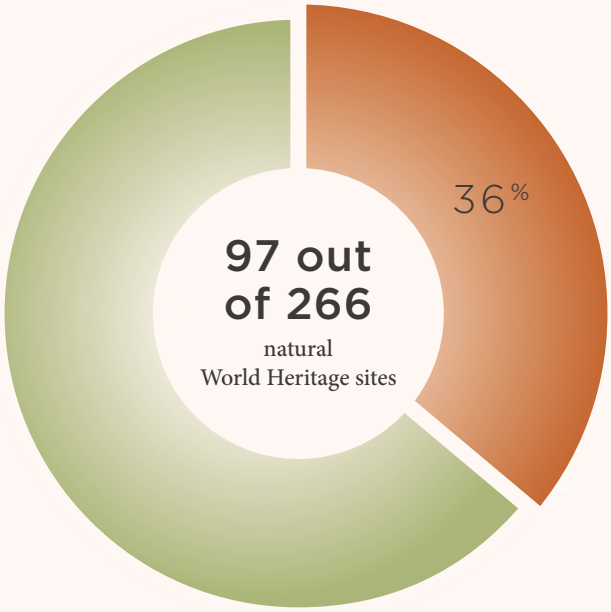

FIG 2. Number of cultural World Heritage sites located within half a kilometre of extractive assets.

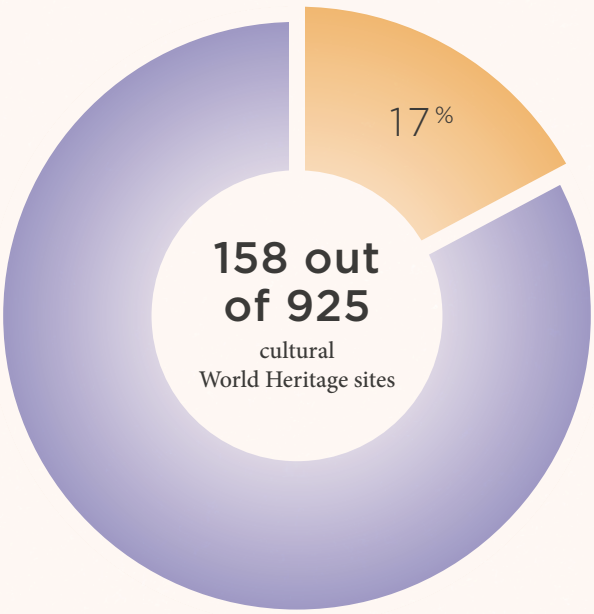

FIG 3. Number of natural World Heritage sites (WHS) overlapping with extractive assets by region.

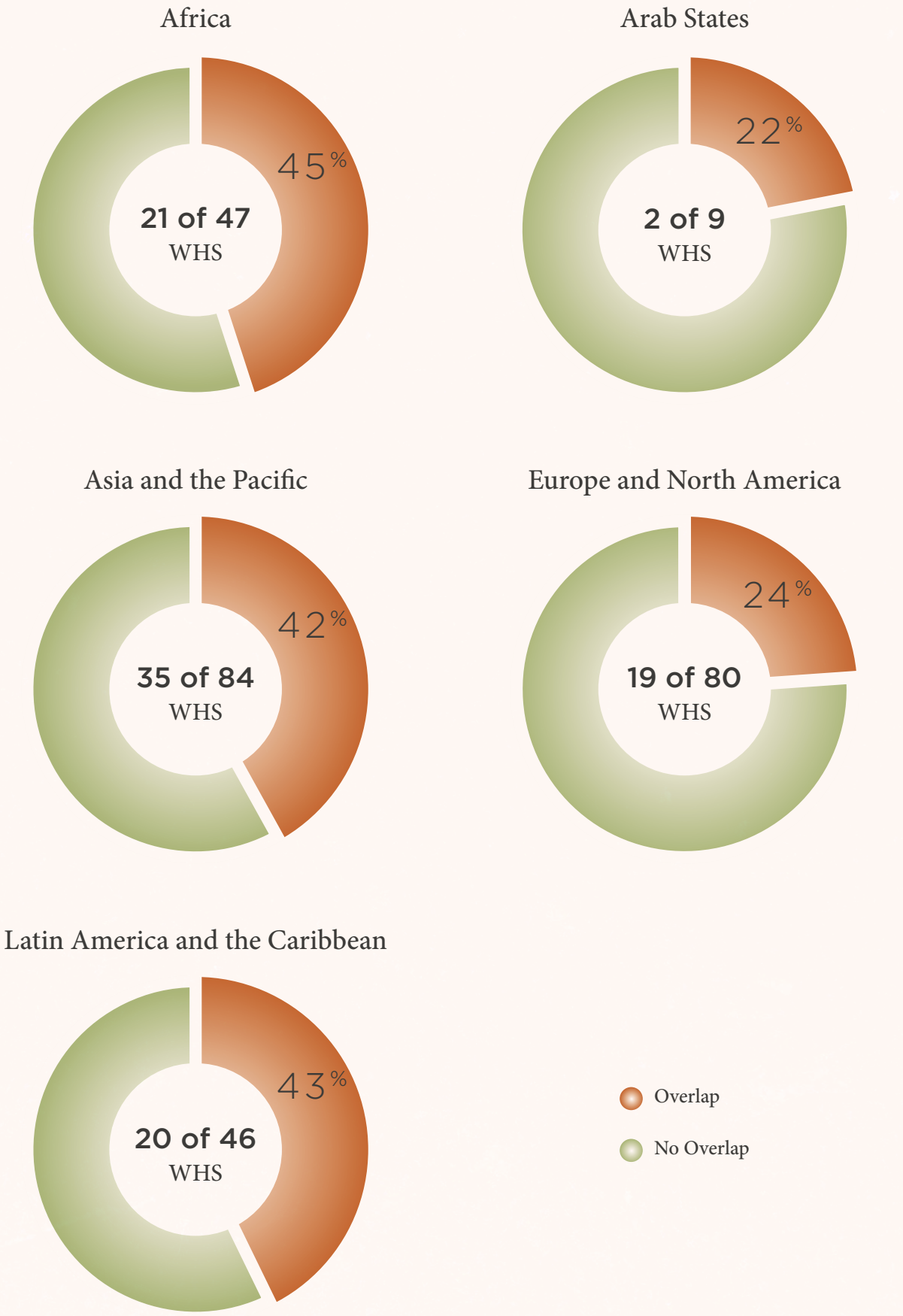

FIG 4. Natural World Heritage sites identified with extractive assets within 1, 10, and 20 kilometres of their boundaries.

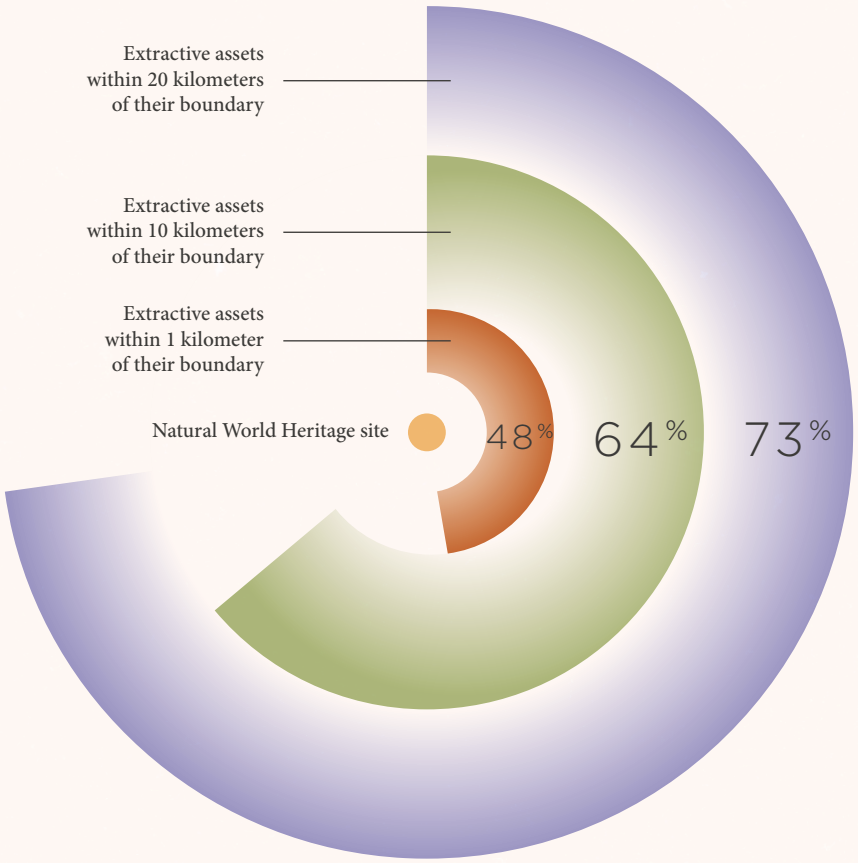

FIG 5. Overlap of natural World Heritage sites with different categories of extractive assets.

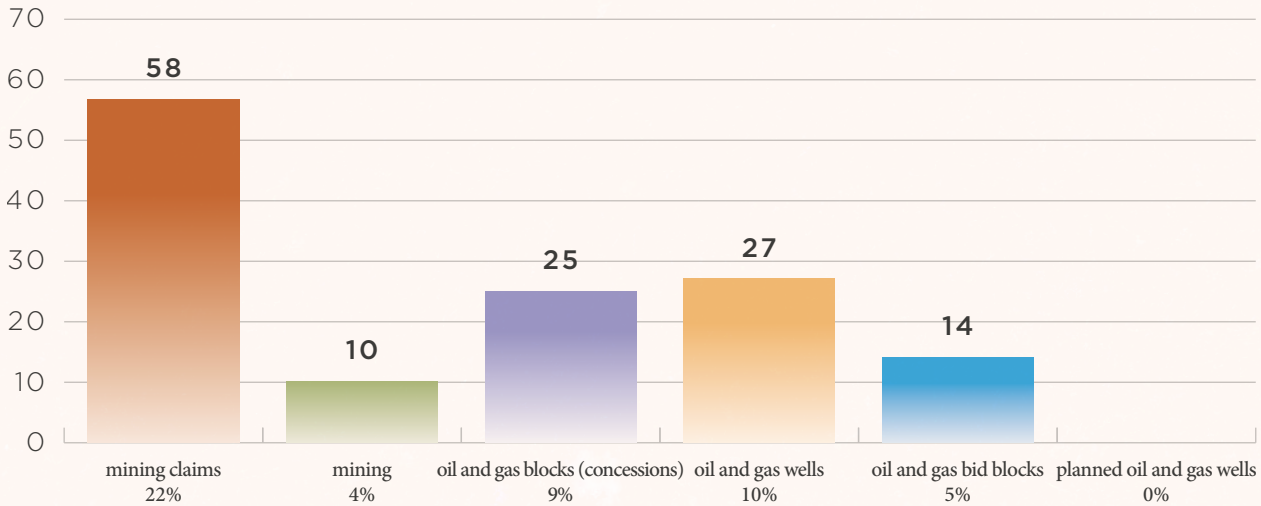

FIG 6. Natural World Heritage sites overlapping with extractive assets based on the assessment.*

* The approximate location is determined using property centroid points. While this assessment is global in nature, it is not fully comprehensive. There are notable gaps in national data for extractive assets. A comprehensive overview of the methodology and any data gaps is included at the end of the report.

PART 04

THE ROLE OF INVESTORS

in preservation of World Heritage

Sustainability cannot be achieved by a single actor in isolation. It requires global collaboration across many groups, all with differing roles and perspectives. In this report, we focus specifically on the role of investors by considering the theory of change in investment, noting that this will vary across types of investors. Investors can have several key roles to play in fostering a sustainable and enduring financial system. This is particularly powerful when there is an alignment of incentives: risks to World Heritage sites can present risks to companies, and, in turn, investments, through tangible financial loss.

For many types of investors, the first step is to identify and understand the key risks of corporate activities within and near World Heritage sites in investee companies. It can be in an investor's interest to consider exposure to and management of such risks when making investment decisions, as these can affect the long-term value of investments.

Second, investors can engage with investee companies, requesting disclosure of additional information or encouraging adjustments to practices for better risk management. Some investors may choose to do this collaboratively.

In addition, investors play a role in capital allocation and may wish to invest in companies *doing the most* to reduce negative impacts on the environment. There are not only risks, but also opportunities to invest in, support and engage with the most robust approach. Where appropriate, investors can directly invest in projects that help protect the OUV of World Heritage sites.[21]

Finally, investors may wish to approach this as a system-level risk. In addition to impacts on the natural world, human life, and society, ecosystem degradation and collapse would have profound economic implications across asset classes, geographies, and sectors. In response, investors may use advocacy and policy participation to support the development and uptake of industry and other appropriate standards.

THE ECONOMIC VALUE OF NATURE

The Dasgupta Review, an independent review on the economics of biodiversity commissioned by the UK Treasury and published in 2021,[22] highlighted the macro-level connection between nature and the economy. It also accentuated the reality that gross domestic product (GDP) figures fail to account for the depreciation of shared national assets, especially those in the natural environment, and that introducing 'natural capital' into national accounting systems would be a vital step towards measuring progress through the analysis of inclusive wealth.[23] This report has since become a seminal document in the study of this nascent area of economics.

Despite the many challenges in quantifying its value, nature is estimated to be worth US$125-400 trillion per year through the ecosystem services that it provides, with half of global GDP at least moderately dependent on nature.[24]

World Heritage sites are a clear testimony to nature's contribution to people and society. In addition to being sources of livelihood for millions of people through tourism, agriculture, and other sectors – and thus important regional drivers of socio-economic development – World Heritage sites provide essential ecosystem services.[25] For example, two million people

21 For example, in 2021, institutional sovereign debt investors worked with Belize to conduct a nature-for-debt swap. This financial mechanism involves the conversion of a portion of a country's outstanding debt into funds earmarked for environmental conservation or sustainable development projects. In 2021, Belize's debt-to-GDP ratio was around 125%, and the risk of further default was high. With the help of The Nature Conservancy and financial institutions, Belize converted a portion of its debt into blue bonds, which were contingent on commitments to protect marine biodiversity, including within Belize Barrier Reef Reserve System, a UNESCO World Heritage site. These blue bonds were de-risked by the US International Development Finance Corporation, which underwrote elements of the bonds to make them more appealing to external investors. This process was not without cost – Belize spent $85m more than the amount returned to the end investors. The key outcome was the protection of crucial biodiversity while reducing the country's debt burden by 12% of GDP.

22 Dasgupta, P., 2021. *The economics of biodiversity: The Dasgupta review (Full report)*. HM Treasury. Retrieved from https://assets.publishing.service.gov.uk/media/602e92b2e90e07660f807b47/The_Economics_of_Biodiversity_The_Dasgupta_Review_Full_Report.pdf

23 Inclusive wealth is the accounting value of an economy's stock of capital goods.

24 OECD, 2019. *Biodiversity: Finance and the Economic and Business Case for Action*. Retrieved from https://www.oecd.org/content/dam/oecd/en/publications/reports/2019/12/biodiversity-finance-and-the-economic-and-business-case-for-action_016f1faa/a3147942-en.pdf
World Economic Forum, 19 January 2020. Retrieved from https://www.weforum.org/press/2020/01/half-of-world-s-gdp-moderately-or-highly-dependent-on-nature-says-new-report/

25 IUCN, 2014. *The benefits of natural World Heritage: identifying and assessing ecosystem services and benefits provided by the world's most iconic natural places*. Retrieved from https://portals.iucn.org/library/node/44901

depend on the water provided by Mount Kilimanjaro's cloud forests, which play a vital role in retaining water and replenishing groundwater reserves. Forests within World Heritage sites cover 69 million hectares and together act as strong net carbon sinks, removing about 190 million tonnes of CO2 from the atmosphere each year. This is equivalent to about half of the UK's annual CO2 emissions from fossil fuels.[26]

Despite nature's essential role, the planet is undergoing rapid degradation of its natural assets due to human industrial and commercial activity, driven by tangible factors such as land-use change and pollution. Most global indicators point to a steep decline. According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), 75% of land and 66% of marine environments have been significantly altered by human activity, with nearly one million species at risk of extinction.[27]

The degradation is not only environmentally devastating and detrimental to human well-being but also poses growing risks for businesses. Although the level of risk may vary, all companies – directly or indirectly – depend on nature, whether through ecosystem services like pollination in agriculture or natural resources such as timber and water. Already, one in five companies faces operational risks from the loss of ecosystems.[28]

Yet many investors and companies still lack a clear understanding of biodiversity and its financial relevance. Nature's complexity, combined with the absence of a universal metric to assess its health, makes it difficult to quantify and integrate into decision-making. The forthcoming IPBES Business and Biodiversity Assessment will offer an update on the dependencies and impacts of businesses and financial institutions on biodiversity and nature, along with an overview of methods to measure these relationships.[29]

Unlike CO_2 emissions, which are globally interchangeable, nature-related impacts are often location-specific. This makes the physical footprint of corporate activity particularly important. Designating sites as protected, such as UNESCO World Heritage sites, is not sufficient to prevent irreversible damage unless companies proactively evaluate where they operate and the potential consequences of their actions.

RISKS TO INVESTORS

While most economic activities have some connection to nature, certain sectors, such as extractives, agriculture, fisheries, forestry, and apparel, are particularly high-risk due to their exposure to, and impacts on, nature across the value chain. Risks can arise from an organization's dependency on, or impact on, nature and can be categorised as physical, transition, or systemic, as outlined below.[30]

26 UNESCO, IUCN, WRI, 2021. *World Heritage forests: carbon sinks under pressure*. Retrieved from https://unesdoc.unesco.org/ark:/48223/pf0000379527

27 IPBES, 2019. *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.* Retrieved from https://www.ipbes.net/global-assessment

28 Swiss Re, 2020. *Biodiversity and ecosystem services: A business case for re/insurance*. Retrieved from https://www.swissre.com/dam/jcr:a7fe3dca-c4d6-403b-961c-9fab1b2f0455/swiss-re-institute-expertise-publication-biodiversity-and-ecosystem-services.pdf

29 IPBES. *Business and biodiversity assessment*. Retrieved from https://www.ipbes.net/business-impact

30 Network for Greening the Financial System, 2024. *Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors.* Technical document. Retrieved from https://www.ngfs.net/system/files/import/ngfs/medias/documents/ngfs-conceptual-framework-nature-risks.pdf

Dependency

Reliance on natural assets, ecosystem services or knowledge of biodiversity for ongoing business operations, either directly or through value chain (e.g., water use, pollination, pharmaceutical research and development).

Impacts

The effects on nature resulting from business operations, supply chains, or product use, such as pollution, deforestation, or landfill.

Physical risks

Changes which reduce the availability or quality of natural assets or the ecosystem services on which a company depends. These can include productivity loss, reduced availability of raw materials, and business and supply-chain disruptions.

Transition risks

Evolution of legal, societal and economic expectations of a corporation, which can occur through policy and regulation, technology evolution, consumer demand and market forces. For example, companies in the mining sector may face reduced scope to develop greenfield sites due to regulation, or consumers may direct their spend to products with less perceived impact on biodiversity.

Systemic risks

Systemic risk is the potential for a major failure—financial or environmental—to cause widespread disruption across markets and the broader economy. This includes collapses of key institutions or global challenges like climate change and biodiversity loss that impact entire systems.

Such risks can exist at the company level, such as higher business costs to meet environmental standards or lower revenues due to products and services falling out of favour among consumers. Recent examples include the imposition of US$10 billion in fines on chemical manufacturer 3M for water pollution linked to 'forever chemicals'[31], and the proliferation of policies such as the European Union's (EU) deforestation or packaging and waste regulations.

Alternatively, risks may be systemic, arising from economy-wide dependencies and impacts on biodiversity that affect critical natural systems or financial stability at the portfolio, sovereign, asset-class, or system level. For example, the collapse of the Amazon rainforest, one of the world's largest carbon sinks, would accelerate climate change, cause substantial and irreversible loss of natural heritage of global significance, alter the region's weather, and have ramifications for the entire global economy.

Investors are exposed to these risks both through financial risk-adjusted returns and potential reputational impacts from investing in particular companies. Investors should consider the time horizon when analysing such risks. Taking a ten-year view from 2025, the World Economic Forum suggests that the four most significant global risks are environmental, with biodiversity loss, natural resource shortages, and pollution all ranked in the top ten.[32]

As a result, some investors may wish to use policy, advocacy and industry standards as a lens for approaching risk management. This could include, for example, encouraging reporting

31 Prabhudesai, R. et al. 2025. *3M in 2024: Tiding Over Colossal Challenges*. Sustainability. Retrieved from https://doi.org/10.4135/9781071968772

32 World Economic Forum, 2025. *Global risks report 2025*. Retrieved from https://reports.weforum.org/docs/WEF_Global_Risks_Report_2025.pdf

aligned with the TNFD and the assessment of risk using the LEAP (locate, evaluate, assess and prepare) framework.[33] Regulators, especially in Europe, are recognising the important role that investors can play in greening the financial system, and, in turn, helping governments and policymakers deliver on their commitments. One example is the EU's Corporate Sustainability Reporting Directive (CSRD).

The ability to make informed investment decisions and differentiate companies based on their efforts and commitments is an important tool for investors in these efforts. Consistency in disclosures and frameworks can enable more effective comparison of risks and therefore better integration of these into investment processes. Some investors may wish to use this avenue to gain clearer information and influence practices, rather than, or in addition to, directly engaging with companies.

RESPECTING HUMAN RIGHTS AND THE RIGHTS OF INDIGENOUS PEOPLES

Social topics are often less comprehensively understood and integrated into investment decisions compared to environmental topics; however, this area is likely to receive greater focus in the future. Poor relationships with stakeholders and dissent from local communities can exacerbate human rights risks and impacts for individuals and communities, with drastic financial and operational repercussions. There are notable human rights risks associated with extractive activities, and the social and environmental costs may fall disproportionately on people in vulnerable situations, including Indigenous Peoples.

This chapter focuses on the rights of Indigenous Peoples, whose individual and collective rights were formally recognised in 2007 with the adoption of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).[34] Inspired by the UNDRIP, the UNESCO policy on engaging with Indigenous Peoples embraces the right of Indigenous Peoples to their traditional lands and territories and recognizes traditional management systems as part of management approaches.[35]

Many World Heritage sites are located within lands and territories of Indigenous Peoples, and consequently, several prominent cases of extractive activities in or near World Heritage sites have involved Indigenous Peoples. For example, in 1998, the World Heritage Committee held its first in-depth discussion on mining and World Heritage sites owing to uranium mining in Australia's Kakadu National Park, known as a living cultural landscape of the Aboriginal Peoples.[36]

Concerns over the proposed iron-ore mining in Sweden were raised by the UN Special Rapporteur on the Rights of Indigenous Peoples

33 Taskforce on Nature-related Financial Disclosures, 2023. *Guidance on the identification and assessment of nature-related issues: The TNFD LEAP approach (Version 1.1).* Retrieved from https://tnfd.global/wp-content/uploads/2023/08/Guidance_on_the_identification_and_assessment_of_nature-related_Issues_The_TNFD_LEAP_approach_V1.1_October2023.pdf?v=1698403116
TNFD Sector guidance for:
• Metals and Mining: https://tnfd.global/publication/additional-sector-guidance-metals-and-mining/#publication-content
• Oil and Gas: https://tnfd.global/publication/additional-sector-guidance-oil-and-gas/#publication-content
See also: United Nations Environment Programme, 2023. *Nature Risk Profile: A methodology for profiling nature related dependencies and impacts.* Retrieved from https://resources.unep-wcmc.org/products/WCMC_RT496

34 United Nations Department of Economic and Social Affairs, 2007. *United Nations Declaration on the Rights of Indigenous Peoples*. Retrieved from https://www.un.org/development/desa/indigenouspeoples/declaration-on-the-rights-of-indigenous-peoples.html

35 UNESCO, 2018. *UNESCO policy on engaging with Indigenous Peoples.* Retrieved from https://www.unesco.org/en/indigenous-peoples/policy

36 UNESCO World Heritage Centre, 2002. Decision 22 COM VII.28. *SOC: Kakadu National Park (Australia)*. Retrieved from https://whc.unesco.org/en/decisions/2516/
UNESCO World Heritage Centre. *Kakadu National Park*. Retrieved from https://whc.unesco.org/en/list/147

and the World Heritage Committee due to the potential impact on the traditional reindeer herding culture of the Indigenous Sami and the Laponian Area World Heritage property.[37] The World Heritage Committee has also called for adequate management of the tailings ponds in the Alberta Oil Sands region in Canada to avoid any potential impacts on Wood Buffalo National Park, located downstream and recognised as the traditional territory of several First Nations and Métis communities.[38]

Companies have a responsibility to respect human rights and the rights of Indigenous Peoples, by exercising human rights due diligence, including meaningful consultation and engagement – to avoid infringing on these rights.[39] Companies must always seek the free, prior, and informed consent of concerned Indigenous Peoples through a consultative process before advancing any planning that may impact their rights.[40] Investors should also expect investee companies to incorporate human rights principles into their due diligence practices. Indications that human rights have been violated, or evidence of substantial local community dissent to operations, should be investigated as material risks to a company's ongoing social licence to operate. Direct engagement with local stakeholders and rightsholders, including Indigenous Peoples, can help investors assess these risks.

STANDARDS AND GOOD PRACTICE: DISCLOSURE AND RISK MANAGEMENT

Disclosure is a prerequisite for investors to make informed decisions about risks and opportunities, and ultimately how best to allocate capital. Consistent and comparable disclosure, such as the use of the LEAP framework[41] or the GRI Standards,[42] allows corporate performance to be tracked over time and compared to both peers and expectations of best practice. There are several factors that investors should expect a company to disclose: dependencies, impacts, risk exposure, and risk management and mitigation activities. Two are examined in detail below.

Risk exposure: Investors expect to know the level of exposure a company has to a given risk. Companies should assess the proximity of their assets and operations to environmentally and culturally sensitive locations or areas with high conservation value, and publicly disclose material locations, the potential impacts of their operations, and the severity of these impacts. This should include operations that are within, adjacent to, or in the broader setting of any UNESCO World Heritage site. Extractive industries are considered incompatible with World Heritage status; however, operations located outside these sites may also have an impact on site values and such risks must be appropriately managed. An assessment of risk exposure should also include reputational risks.

Risk mitigation and management: Given the Outstanding Universal Value of World Heritage sites, it is arguable that the minimum expectation for risk mitigation is a strong

37 UNESCO World Heritage Centre, 2024. Decision 46 COM 7B.45 Laponian Area (Sweden). Retrieved from https://whc.unesco.org/en/decisions/8571

38 UNESCO World Heritage Centre, 2023. 45 COM 7B.22 Wood Buffalo National Park (Canada). Retrieved from https://whc.unesco.org/en/decisions/8296

39 Office of the United Nations High Commissioner for Human Rights, 2015. *A Guide for Business How to Develop a Human Rights Policy*. Second edition. Retrieved from https://www.ohchr.org/sites/default/files/Documents/Issues/Business/guide-business-hr-policy.pdf

40 Office of the United Nations High Commissioner for Human Rights, 2012. *Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework*. Retrieved from https://www.ohchr.org/en/publications/reference-publications/guiding-principles-business-and-human-rights.

41 Taskforce on Nature-related Financial Disclosures, 2023. Ibid.

42 Global Reporting Initiative, 2024. GRI 101: Biodiversity . Retrieved from https://www.globalreporting.org/standards/standards-development/topic-standard-for-biodiversity/

safeguard policy that ensures no harm is caused to these sites. However, such commitments are not yet universally adopted and, even where they are in place, are often only forward-looking, as companies commit to no new projects in these areas. Good practice involves commitments to consider existing operations, as well as responsible decommissioning or divestment – noting that the latter can introduce new risks if the acquiring party does not have similar standards regarding due diligence and risk management.

WORLD HERITAGE 'NO-GO' COMMITMENT

The clearest way for companies to demonstrate their support for the protection of World Heritage is through an explicit safeguard policy, which should include a World Heritage 'no-go' commitment for sectors and activities that may negatively impact UNESCO World Heritage sites, including those in the extractive sector. This demonstrates the company's desire to avoid harm and its intention to conduct business in a responsible manner.

Since 2013, the World Heritage Committee has formally welcomed and strongly recommended that companies endorse 'no-go' commitments and other safeguard policies, and in 2018 it acknowledged the growing role and interest of the financial sector in supporting the protection of World Heritage sites. UNESCO has recorded that nearly 2,000 companies have made such commitments.[43]

The creation of a strong policy represents an important step, but the key is its implementation, which, if effective, can reduce the investment risks discussed.

World Heritage sites are identified owing to their Outstanding Universal Value (OUV). This value is irreplaceable and unique to each site, and it is imperative that the focus be on harm avoidance. Offsetting, or any other methods seeking to 'counterbalance' predicted negative impacts on the OUV of World Heritage sites from proposed operations, are not acceptable.

In 2022, UNESCO established a set of seven criteria to benchmark corporate sustainability in the World Heritage context, which broadens the policy from the 'no-go' commitment in the extractive sector to wider safeguard policies that now encompass hydropower, sports, and other sectors.[44] The key expectations for companies in order to meet the UNESCO policy standard are outlined below, emphasising transparency and accountability.

1. **Clear commitment:** Companies should clearly and unequivocally commit to not investing in or implementing projects that could negatively affect World Heritage sites and the values for which they are designated and protected. This commitment should cover all activities deemed incompatible with World Heritage status, including those located outside site boundaries that could still harm their OUV – such as activities within sites' buffer zones or wider setting.

2. **Accountability and transparency:** The commitment should be binding for the company, forming the basis for effective implementation. The results of audits should be disclosed as a mechanism for ensuring accountability to a wider

43 UNESCO World Heritage Centre. *Corporate sector and the World Heritage 'no-go' commitment.* Retrieved from https://whc.unesco.org/en/no-go-commitment/

44 UNESCO, 2022. *Guidance for the World Heritage 'No-Go' commitment: global standards for corporate sustainability.* Retrieved from https://unesdoc.unesco.org/ark:/48223/pf0000383811

pool of stakeholders and rightsholders. Disclosures should provide details on audit methodology, scope, and key findings, and should be voluntarily shared with UNESCO and investors through sustainability reports using recognised reporting frameworks.

3. **Dialogue:** When developing and implementing a policy on World Heritage, or when proposing activities that may impact World Heritage sites, UNESCO should be consulted. World Heritage sites are actively monitored under the Convention, and specific monitoring and protection measures are applied to sites potentially affected by major development projects. Companies are also encouraged to actively engage with other expert organizations, such as the World Heritage Committee's advisory bodies, the International Union for Conservation of Nature (IUCN) for natural sites and the International Council on Monuments and Sites (ICOMOS) for cultural sites.

4. **Public disclosure:** Public disclosure serves as a strong demonstration of a company's intent and respect for World Heritage sites. Companies should publish their policies and strategies on relevant platforms, such as their corporate website. When disclosed to UNESCO, the organization conducts a review, and company policies are compiled into a global database of World Heritage commitments and highlighted on UNESCO's website.

5. **Impact assessment in line with international standards:** When a company's proposed operations may affect the OUV of a World Heritage site, it should conduct an up-to-date environmental or heritage impact assessment to identify current and potential adverse effects and recommend appropriate mitigation strategies. The impact on OUV may occur whether the proposed project or activity is located within the property boundaries, its buffer zone or the wider setting. Companies should adhere to the requirements of the World Heritage Convention and its Operational Guidelines by undertaking the assessments in accordance with international standard and tailored guidance provided by UNESCO, and submitting the impact assessments to UNESCO through the relevant national authorities prior to taking any decision.[45]

6. **Spatial assessment of risk:** When screening for potential negative impacts of operations, a robust spatial assessment should be conducted using tools such as geographic information system (GIS) mapping and specialist thematic products.[46] Increasingly robust data is also available on the boundaries of World Heritage sites and published in both national and global databases. UNESCO maintains a World Heritage online map platform,[47] which displays georeferenced and verified boundaries of World Heritage properties and their buffer zones.

45 UNESCO, ICCROM, ICOMOS and IUCN, 2022. *Guidance toolkit for impact assessments in a World Heritage Context*. Retrieved from https://whc.unesco.org/en/guidance-toolkit-impact-assessments/

46 IBAT, 2025. Integrated Biodiversity Assessment Tool. Retrieved from https://www.ibat-alliance.org/

47 UNESCO World Heritage Centre. *World Heritage Online Map Platform*. Retrieved from https://whc.unesco.org/en/wh-gis/

7. **Awareness raising and implementation:** After endorsing a specific World Heritage policy, it is essential to effectively inform and guide the key stakeholders within companies or organizations to ensure that the policy is fully operationalised and integrated into practice.

Box 2. Extractives sector and the World Heritage 'no-go' commitment

The International Council on Mining and Metals (ICMM) was the first organization to adopt a 'no-go' commitment on World Heritage in 2003, which applies to its 24 company members, representing a third of the global metals and mining industry.[48] This 'no-go' commitment is supported by ICMM's 10 Mining Principles.[49] According to the initial commitment, ICMM member companies would not pursue projects within UNESCO World Heritage sites and would evaluate activities proposed in the vicinity of these sites to avoid impacts on their OUV. This marked the start of the 'no-go' commitment and paved the way for the corporate sector to respect UNESCO World Heritage sites as no-go areas for the extractive industry.

Ipieca, the global oil and gas association with 42 corporate members, does not yet have a clear 'no-go' policy for World Heritage sites. However, many companies in the oil and gas industry have already adopted a World Heritage 'no-go' commitment, including Shell, TotalEnergies, SOCO, Tullow, Eni, bp, and Equinor.[50]

48 The International Council on Mining and Metals (ICMM). *World Heritage Sites and Protected Areas.* Retrieved from https://www.icmm.com/en-gb/our-work/nature/world-heritage-sites
ICMM. *Our members*. Retrieved from https://www.icmm.com/en-gb/our-story/our-members

49 ICMM. *Our principles*. Retrieved from https://www.icmm.com/en-gb/our-principles

50 UNESCO World Heritage Centre. *Milestones in the World Heritage 'no-go' commitment*. Retrieved from https://whc.unesco.org/en/no-go-commitment/

PART 05

CONCLUSIONS

to investors

This concluding chapter outlines several ways investors can identify, assess, and respond to risks arising from operations within and near UNESCO World Heritage sites. These guidelines rely on UNESCO policy standards, emphasising how investors can integrate these standards into their own processes. Given that investor standards related to nature are still developing, this guide aims to assist investors in navigating this area. Investors should consider utilising the processes most appropriate to the context of their investment decisions, made on behalf of their clients.

- Adopt a clear World Heritage safeguard policy that avoids investment in projects that may be harmful to World Heritage, and encourage and require the adoption of strategies and policies at the investee company level that protect these sites.
- Use resources and data on the location of economic assets and World Heritage sites and other culturally and environmentally sensitive areas to assess whether investee companies operate in or near such sites.
- Engage with third-party vendors to obtain metrics, data, and tools that can be used to inform investment decisions and identify spatially explicit information on environmental, social, and governance (ESG) risks.
- Initiate dialogue with companies operating in extractive industries to determine whether they operate, own equity in, or hold licences within or near UNESCO World Heritage sites.
- Seek commitments from extractive companies currently operating in sensitive locations to cease operations or demonstrate how they avoid causing harm.
- Expect that investee companies respect human rights in accordance with international human rights standards.
- Ensure meaningful public disclosure and risk management at the investment company level and encourage it in priority sectors where investments are made. This includes the oil and gas and metals and mining sectors as discussed, as well as other potentially high-impact industries, such as hydropower, agro-industries, fisheries, and forestry.
- Consider, as appropriate, escalations such as filing shareholder resolutions or voting where companies are unwilling to make strategic changes or adopt credible commitments, reflecting insufficient risk management.
- Avoid investments in companies that are unwilling to change their practices, as this is a material business risk and could therefore affect financial and operational performance.
- Partner with other investors or expert organizations, as appropriate, to build knowledge, lend technical expertise, contribute to solutions, and engage with companies.

PART 06

APPENDIX

FIG 1. Breakdown of 'mining assets' (mining projects and mining claims) and 'oil and gas assets' (oil and gas blocks, oil and gas wells, bid blocks, and planned wells) in natural and mixed World Heritage sites (WHS).

Region	Number of natural and mixed WHS	Area of natural and mixed WHS (Sq. Km)	Number of WHS overlapped by extractive asset/s (both mining and oil and gas)	% Overlapped	Number of WHS overlapped by mining asset/s	% Overlapped	Number of WHS overlapped by oil and gas asset/s	% Overlapped
Africa	47	433,536.99	21	44.68	14	29.79	13	27.66
Arab States	9	109,838.01	2	22.22	1	11.11	2	22.22
Asia and the Pacific	84	1,197,099.69	35	41.67	24	28.57	21	25.00
Europe and North America	80	1,583,301.51	19	23.75	10	12.50	10	12.50
Latin America and the Caribbean	46	429,767.43	20	43.48	17	36.96	5	10.87
Total	266	3,753,543.63	97	36.47	66	24.81	51	19.17

FIG 2. Breakdown of 'mining assets' (mining projects and mining claims) and 'oil and gas assets' (oil and gas blocks, oil and gas wells, bid blocks, and planned wells) in natural and mixed World Heritage sites (WHS).

Region	WHS with mine/s	No. of mines	WHS with mining claims	No. of mining claims	Estimated mining claims overlap with WHS (sq. km)	WHS with oil and gas wells/s	No. of oil and gas wells	WHS with oil and gas concession/s	No. of oil and gas concession overlapping with WHS	Estimated oil and gas concession overlap with WHS (sq. km)	WHS with bid blocks	No. of bid blocks overlapping with WHS	Estimated bid blocks overlap with WHS (sq. km)	WHS with planned oil and gas wells/s	No. of planned oil and gas wells
Africa	0	0	14	109	19091.49	3	6	9	13	29853.10	5	8	5504.74	0	0
Arab States	0	0	1	2	1074.27	2	6	1	6	480.01	1	3	2581.61	0	0
Asia and the Pacific	10	13	14	78	1439.46	12	295	10	19	7606.56	4	6	1273.41	0	0
Europe and North America	0	0	12	48	1291.16	7	60	4	11	1889.40	2	4	147.83	0	0
Latin America and the Caribbean	0	0	17	107	1344.38	3	34	1	2	4.09	2	2	22.68	0	0
Total	10	13	58	344	24240.76	27	401	25	51	39833.15	14	23	9530.27	0	0

FIG 3. Natural and mixed World Heritage sites (WHS) in close proximity to extractive assets, considering the buffer areas of 1, 10 and 20 km around the World heritage sites.

Region	No. of natural and mixed WHS	WHS close to extractive assets (1 km)	%	WHS close to mining assets (1 km)	%	WHS close to oil and gas assets (1 km)	%	WHS close to extractive assets (10 km)	%	WHS close to mining assets (10 km)	%	WHS close to oil and gas assets (10 km)	%	WHS close to extractive assets (20 km)	%	WHS close to mining assets (20 km)	%	WHS close to oil and gas assets (20 km)	%
Africa	47	30	63.83	24	51.06	13	27.66	35	74.47	27	57.45	16	34.04	41	87.23	31	65.96	23	48.94
Arab States	9	3	33.33	1	11.11	3	33.33	6	66.67	2	22.22	5	55.56	6	66.67	2	22.22	5	55.56
Asia and the Pacific	84	41	48.81	32	38.10	23	27.38	49	58.33	36	42.86	35	41.67	54	64.29	39	46.43	40	47.62
Europe and North America	80	28	35.00	17	21.25	16	20.00	47	58.75	28	35.00	31	38.75	57	71.25	37	46.25	36	45.00
Latin America and the Caribbean	46	25	54.35	22	47.83	7	15.22	34	73.91	29	63.04	13	28.26	37	80.43	33	71.74	16	34.78
Total	266	127	47.74	96	36.09	62	23.31	171	64.29	122	45.86	100	37.59	195	73.31	142	53.38	120	45.11

FIG 4. Proximity of cultural World Heritage sites (WHS) to at least one extractive asset within half a kilometre. Caution should be applied when considering the results, as unlike the natural and mixed World Heritage sites, cultural sites were considered using an estimation of their physical area rather than a true delineation (see data considerations).

Region	Number of cultural WHS	Number of WHS overlapped by extractives asset/s	%	Number of WHS overlapped by mining asset/s	%	Number of WHS overlapped by oil and gas asset/s	%
Africa	55	15	27.27	5	9.09	10	18.18
Arab States	84	20	23.81	1	1.19	20	23.81
Asia and the Pacific	205	40	19.51	4	1.95	38	18.54
Europe and North America	481	69	14.35	26	5.41	51	10.60
Latin America and the Caribbean	100	14	14.00	9	9.00	5	5.00
Total	925	158	17.08	45	4.86	124	13.41

METHODOLOGY USED TO ASSESS EXTRACTIVE ASSETS WITHIN WORLD HERITAGE SITES

This report provides a global analysis of the spatial overlap and proximity of historic, current and future extractive (oil and gas and mining) assets with the 1,191 World Heritage sites (WHS), as inscribed in May 2024, considering six different asset categories (see box below):

- Mining asset data: 1) mining projects and 2) mining claims.[51]
- Oil and gas asset data: 3) oil and gas wells, 4) oil and gas planned wells, 5) oil and gas awarded blocks (exploration licences) and 6) oil and gas block bid rounds (blocks placed for bidding).[52]

DEFINITIONS OF EXTRACTIVE ASSET CATEGORIES

Mining Asset Data (S&P)

- Mining projects: A mining project refers to the various stages and activities involved in the exploration, development, and production of minerals from a specific site. It covers the entire lifecycle of a mine—from initial exploration and feasibility studies to construction, active production, and eventual closure. It includes resource estimates, capital and operating cost evaluations, environmental/legal considerations, and economic feasibility.

  Source: S&P Global Market Intelligence

- Mining claims: Legally defined areas where individuals or companies have filed rights to explore or extract minerals. Each claim includes standardized types (e.g., EL/EP, ML, PL) and statuses (Granted, Application) as well as commodity information.

  Source: S&P Mining Claims dataset

Oil & Gas Asset Data (Enverus)

- Oil and gas wells: Locations of physically drilled wells (exploration, development, production, or abandoned). Enverus provides detailed attributes including well status, type, operator, spud/completion dates, and production history.

  Source: Enverus Well data

51 S&P Global, 2024. Metals & Mining. S&P Global Market Intelligence. Available at https://www.spglobal.com/marketintelligence/en/campaigns/metals-mining (Data sourced as at July 2024).

52 Enverus, 2024. Oil and Gas Data. Available at https://www.enverus.com/ (Data sourced as at July 2024).

- Planned oil and gas wells: Permitted or proposed wells not yet drilled. Includes pre-drilling records from regulatory filings or internal company forecasts. Useful for anticipating short-term drilling activity.

  Source: Enverus permits and planning datasets

- Awarded oil and gas blocks (exploration licences): Polygon features where exploration or production rights have been formally granted. These are active licenses or concessions with assigned operators and legal standing.

  Source: Enverus licensed acreage data

- Oil and gas block bid rounds: Blocks that have been publicly announced for competitive bidding but have not yet been awarded. These represent open licensing rounds or upcoming offerings tracked through government announcements.

  Source: Enverus bid round tracking

Geographic information system software was used to define the spatial overlap and proximity of extractive assets with WHS as defined by UNESCO.[53] Cultural WHS (n=925) were converted from point locations to 0.5 km circles and aggregated into a single area to estimate their extent. Natural and mixed WHS (n=266) were defined by their exact boundaries. The areas surrounding all WHS were assessed by applying 1, 10 and 20 km buffers. The six extractive layers were assessed through an area overlap analysis against the WHS layers (natural, mixed and cultural) and their three buffer variations to define overlap. The resulting 78 CSV files were cleaned, organised and filtered to attempt to highlight only '*significant*' extractive overlap. The following filters were applied:

- Mining projects: removal of all mines with a development stage '*closed*', or an activity status of '*inactive*'.
- Mining claims: Exclusion of all mining claims that expired before 01/08/2024, or overlapped ≤1.0 sq. km with a WHS.
- Oil and gas blocks: Exclusion of all oil and gas blocks that expired before 01/08/2024 or overlapped ≤1.0 sq. km with a WHS. Exclusion of all oil and gas blocks that are '*not operated*' or have a contract status of '*open*'.
- Oil and gas wells: No filters applied.
- Oil and gas bid blocks: Exclusion of all bid blocks with a '*close date*' before 01/08/2024 or that overlapped ≤1.0 sq. km with a WHS. Removal of all bid blocks with a '*bid status*' of '*suspended*'.
- Oil and gas planned wells: No filters applied.

Filtered data were assigned to each specific WHS and aggregated to UNESCO regions.

53 UNESCO World Heritage Centre, 2024.

DATA CONSIDERATIONS

- In any global study, inherent limitations arise due to methodology and data constraints. Consequently, the results presented here may include errors or biases and, in all cases, further due diligence is required to verify results. Similarly, the study does not evaluate the information on extractive activities available in the UNESCO State of Conservation Information System (SOC)[54] or IUCN World Heritage Outlook, which monitor factors affecting World Heritage sites over time.

- The results provide a high-level assessment of the proximity of extractive assets to WHS. **They do not accurately capture, or distinguish, the extent or magnitude of the 'threat' or 'impact' posed by the extractive assets to WHS** and may include extractive assets that represent no past, current or future threat to the WHS. A more detailed assessment, which falls outside the scope of this study, is necessary to accurately quantify the physical impacts of the extractive sector on WHS.

- Data coverage gaps: While this assessment is global in nature, it is not fully comprehensive. There are notable gaps in national data for extractive assets. For instance, while mining project data is available worldwide, mining licensing data is only available for 94 countries.

- Definition of licences: A 'block' or 'claim' refers to a licence granted by a state to companies or individuals, allowing them to explore and/or extract resources within a designated area for a set period. These areas, particularly for oil and gas, can be vast. The actual impact within these licenced areas is likely limited to smaller drill or mine site areas and may or may not directly affect the World Heritage sites.

- Data inaccuracies: Given the large scale of the extractive asset datasets considered – comprising over 2.4 million assets – there is potential for inaccuracies within the hundreds of data points for each specific asset, and such errors could potentially be carried forward to affect the accuracy of the results. Inaccuracies in the geolocation of the extractive asset datasets could potentially lead to incorrect results. However, it is important to note that such geolocation error is rare within the datasets used and is typically less than 1 km.

- Temporal considerations: The study does not evaluate whether the extractive assets were licensed before or after the WHS inscription date.

- Specific considerations: For cultural WHS, precise polygon boundaries were not available. As a result, the study applied a 0.5 km buffer around the point locations of these sites to establish an 'initial boundary'. In many cases, this buffer exceeds the actual boundaries of the site, especially for smaller WHS such as individual buildings or monuments. Therefore, overlap data for cultural WHS should be interpreted as referring to areas within 0.5 km of the site, rather than strictly within the site boundaries.

54 UNESCO World Heritage Centre. State of Conservation Information System (SOC). Retrieved from https://whc.unesco.org/en/soc/

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World Heritage sites should be declared as no-go areas for extractive industries to preserve their Outstanding Universal Value. Yet this report by UNESCO, the Church of England Pensions Board, Greenbank, IUCN (International Union for Conservation of Nature) and WWF finds that companies hold oil, gas, and mining assets — licensed areas for exploration or production — in over one third of natural World Heritage sites and within close proximity to one sixth of cultural sites.

Extractive activities in World Heritage sites pose significant financial, legal, and reputational risks for investors and highlight their critical role in upholding international conservation standards. This publication offers data and analysis to help investors, policymakers, and companies to identify and manage these risks and align investment decisions with global heritage protection commitments.

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