



CONSERVATION  
LEADERSHIP  
PROGRAMME



Wildlife  
Conservation  
Society

# INTERNSHIP REPORT

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# Internship Final Report

## Section 1:

### Executive Summary

Mining is often cited as an industry that destroys biodiversity. How to make the mining industry biodiversity-friendly is a topic of great concern in China and even globally. Wildlife Conservation Society (WCS) has launched an effort to develop strategies to engage with China's business stakeholders and prioritize biodiversity in their overseas investment. The mining industry is one of the key focus sectors of this initiative. We are working with relevant stakeholders to develop commitments and design roadmaps for China's mining sector toward reducing biodiversity net loss in their overseas investments and/or projects.

From November 2022 to January 2023, I worked as an intern research analyst and cooperated with the WCS China Impact Team to develop a comprehensive understanding of existing practices of mining, primarily through literature review, data collection and analysis.

### Introduction

A report shows that human activities have changed nearly 80% of the land surface, affected more than 60% of the marine environment, nearly nine out of ten wetlands have been lost, one-quarter of species are facing the risk of extinction, 20% of the Earth's surface is threatened by invasions from plants and animals<sup>[1]</sup>. In addition to environmental impacts, biodiversity loss could result in economic losses of \$10 trillion per year<sup>[1]</sup>. In conclusion, biodiversity is essential for the maintenance of ecosystem health and delivery of the Sustainable Development Goals<sup>[2]</sup>. Poorly managed mining operations can pollute the environment and damage the biodiversity and ecosystem. UNEP (United Nations Environment Programme) points out that sustainable mining requires companies to better understand and appreciate the value of biodiversity both to their long-term operations and to local communities<sup>[3]</sup>.

However, almost 20% of global mining-related biodiversity impacts were related to China's and India's infrastructure build-up, which dominates the mining-related biodiversity footprint of these countries<sup>[4]</sup>. Now, China's mining sector begins to reckon with its ecological toll at home and abroad, and it is facing increasing calls to curb its ecological footprint overseas. In this project, we mainly worked with relevant stakeholders to collect and analyse domestic and foreign laws, regulations, commitments and guidelines for biodiversity protection, as well as mining cases of both Chinese and foreign companies on reducing biodiversity loss.

## Section 2:

### Aim and Objectives

During this internship, my main aim and underlying objectives are as follows:



- To support the commitment and roadmap preparation for China's mining sector towards biodiversity net loss (BNL):
  - Reference collection about standards / rules / CSR / ESG / practices of global and China's mining companies on biodiversity net loss or conservation.
  - To prepare case studies including project description and information summary.
  - To provide regular updates to China Impact Team and participate in team meetings.

## **Activities and Methodology**

During the three-month internship, with the help and guidance from WCS colleagues, I used the knowledge and skill learned from my undergraduate courses and graduate program, combined with the task requirements to produce three main deliverables.

1. My main task is to collect and organize laws/regulations/commitments/guidelines on biological protection issued by authorities of China and other countries, as well as standards, frameworks, and guidelines on biodiversity protection issued by various organizations. Through literature review and online searching, I added and organized the specific content summary, effective time, and links of each entry, helping to establish more comprehensive background information on biodiversity conservation.
2. In addition to helping to build the information base, I also supported collecting and updating a large number of relevant practical cases on biodiversity protection in the mining industry from both Chinese and foreign mining companies. Moreover, I added detailed information on the practical cases, especially the measures and methods of biodiversity conservation, such as the description and application of the case related to Mitigation Hierarchy (an important approach to reducing biodiversity loss).
3. Finally, I participated and assisted in writing the case studies. After designing the framework of the case analysis and selecting representative cases with good and detailed outcomes of biodiversity protection measures, I finished analysing and writing the details for each selective case. The case studies are mainly used to show the background, biodiversity protection measures, and outcomes of the cases.

## **Outputs and Results**

1. Searched and compiled more than 150 domestic and foreign laws, regulations, and guidelines related to biological protection, as well as various standards, frameworks, and commitments for biodiversity protection issued by government authorities, United Nations agencies, intergovernmental organizations, international organizations, NGOs, financial institutions, business alliances, industry organizations, third-party organizations, mining companies, and stock exchanges, etc.
2. Collected more than 50 mining cases on biodiversity conservation, and organized and updated them according to years, relevance, and other requested conditions.
3. Collected and listed more than 35 overseas investment cases of a dozen Chinese mining enterprises, including their introductions, backgrounds, ESG/Sustainable development/CSR policy/status reports, public performance, etc. In addition, I also searched specific information



details of each case such as project location, investors, negative impacts, biodiversity protection measures, etc.

4. Analysed and summarized ten typical cases and make slides for each of them. The content includes the project overview, biodiversity situation, biodiversity protection measures, the evaluation of measures, implementation risks, etc.

## **Achievements and Impacts**

Since WCS started operations in China in 1996, it has been making continuous efforts and engaging in multiple activities to protect wild animals and endangered species, develop safer habitats, and encourage the harmonious coexistence of animals and humans in China. At the same time, it has achieved amazing impacts and strong social influence. I think this project is very beneficial for Chinese mining enterprises to realize their corporate social responsibilities, especially environmental governance, and the outcomes will give the public guidance on how to reduce biodiversity loss in the mining sector. At present, most Chinese mining enterprises are still unaware of the importance and necessity of biodiversity protection. In addition, some Chinese mining companies do not know how to start and practice even if they want to protect biodiversity. This project will provide with Chinese mining sectors and mining companies detailed guidance and methodological instructions to help them better formulate protection policies for mining projects and apply scientific methods to implement them. My achievements will help WCS to fill the knowledge base on biodiversity conservation, help Chinese mining companies grasp the current development trends of biodiversity and understand and apply scientific methods to reduce biodiversity loss.

As for me, this internship has exposed me to a new field. I did not have any experience related to biodiversity before. Through this internship, I learned what biodiversity is and some professional methods and measures to reduce the loss of biodiversity. I have also known the current practice and development status of biodiversity protection in China and other countries. I was also aware of the urgency of protecting biodiversity. Many mining companies at home and abroad have experienced or faced the risk of conflicts with local residents and the destruction of the ecological environment because they do not realize the importance of protecting biodiversity. The topic of how to maximize economic benefits while protecting the environment and developing sustainably has always attracted me. After the three-month internship, I have a deeper understanding and more thoughts on this topic. I have also gained a broader ecological understanding and had a chance to use my skills, especially qualitative methods. This experience practiced my critical thinking and encouraged me to combine my interest and real application. I decide to engage in work related to sustainable development, corporate social responsibility, and environmental protection in the future and this internship has increased my knowledge of biodiversity and environmentally sustainable development. A lot of qualitative analysis work has also enabled me to search relevant materials more effectively and quickly in future work.

## Section 3:

### Conclusion

After my internship is over, WCS colleagues will continue to dive into exploring how to reduce biodiversity loss and contribute to providing stakeholders of China's mining sector with a roadmap and guidance for biodiversity conservation and strengthen education and training for relevant companies and personnel to help them better understand the current policies and effective methods to reduce biodiversity loss, and help them better properly designed the measurement and scientifically implemented and monitored the protecting process. At present, my job after graduation is still uncertain, but I hope to combine my quantitative and qualitative experience and skills to contribute to public policy, environmental protection, and sustainable development in China and the world. This internship has increased my knowledge and experience in biodiversity conservation, as well as some scientific ways to reduce biodiversity loss, such as the hierarchical mitigation method, which broadens my knowledge and makes me begin to consider and balance how to better solve conflicts and contradictions between the economic interests and environmental protection issues.

### Acknowledgements

I am very grateful to the WCS (US) BEIJING REPRESENTATIVE OFFICE for giving me such an impressive internship opportunity. Since I am currently pursuing a graduate degree in public policy in the US, it's not easy to get a remote internship that is very relevant to my major and my interest. In addition, I would also like to express my deep gratitude to Ms. Wenyu Liu from WCS. As my supervisor, she gave me lots of generous help and patient guidance from check-in to check-out during my internship. Through working with her, I felt the harmony of the WCS workplace and the kindness of the team. I benefited from the incredible working atmosphere and teamwork relationship, which makes it easier for me to involve in work.

## Section 4:

### Appendices

The following screenshots show some of the outcomes I did during this internship:

矿业行业生物多样性保护相关案例及详细信息							
No.	组织机构/公司	机构网址	案例名称	案例/文件链接	项目简介	项目开始日期	项目地点
1	世界银行 (World Bank)	<a href="http://www.worldbank.org/zh">http://www.worldbank.org/zh</a>	国家生物多样性补偿计划: 利比里亚采矿业的路线图	<a href="http://hdl.handle.net/10966/21919">http://hdl.handle.net/10966/21919</a>	This project focuses on the mining sector, which has the	2014	利比里亚
2	世界银行 (World Bank)	<a href="https://www.worldbank.org/en/home">https://www.worldbank.org/en/home</a>	脆弱国家的智慧绿色基础设施: 多层次方法(P54)	<a href="http://hdl.handle.net/10966/22751">http://hdl.handle.net/10966/22751</a>	This study addresses	2008	Tiger Range Countries
3	世界自然保护联盟 (IUCN)	<a href="https://www.iucn.org/">https://www.iucn.org/</a>	采矿与生物多样性保护 - Exploration in a biodiversity hotspot (p10)	<a href="https://portals.iucn.org/library/sites/library/files/documents/2004-071.pdf">https://portals.iucn.org/library/sites/library/files/documents/2004-071.pdf</a>	infrastructure's impacts on	2000	Namibia
4	世界自然保护联盟 (IUCN)	<a href="https://www.iucn.org/">https://www.iucn.org/</a>	采矿与生物多样性保护 - Restoring a forest after bauxite mining (p20)	<a href="https://portals.iucn.org/library/sites/library/files/documents/2004-071.pdf">https://portals.iucn.org/library/sites/library/files/documents/2004-071.pdf</a>	whereby a continual stream	1966	Australia
5	世界自然保护联盟 (IUCN)	<a href="https://www.iucn.org/">https://www.iucn.org/</a>	采矿与生物多样性保护 - Renewing vital wetlands in Australia (p24)	<a href="https://portals.iucn.org/library/sites/library/files/documents/2004-071.pdf">https://portals.iucn.org/library/sites/library/files/documents/2004-071.pdf</a>	An innovative improvement	2000	Australia
6	世界自然保护联盟 (IUCN)	<a href="https://www.iucn.org/">https://www.iucn.org/</a>	采矿与生物多样性保护 - A community and business forum in Kyrgyzstan (p30)	<a href="https://portals.iucn.org/library/sites/library/files/documents/2004-071.pdf">https://portals.iucn.org/library/sites/library/files/documents/2004-071.pdf</a>	programme in Australia over	2000	Kyrgyzstan
7	世界自然保护联盟 (IUCN)	<a href="https://www.iucn.org/">https://www.iucn.org/</a>	采矿与生物多样性保护 - The Bushmanland Conservation Initiative (p42)	<a href="https://portals.iucn.org/library/sites/library/files/documents/2004-071.pdf">https://portals.iucn.org/library/sites/library/files/documents/2004-071.pdf</a>	Revive our Wetlands is a	1999	South Africa
8	Conservation Hierarchy	<a href="https://conservationhierarchy.org/">https://conservationhierarchy.org/</a>	奥尤陶勒盖(OYU TOLGOI LLC)和金矿的生物多样性净收益	<a href="https://conservationhierarchy.org/casestudies/oyu-tolgoi-mine/">https://conservationhierarchy.org/casestudies/oyu-tolgoi-mine/</a>	The Community & Business		Mongolia
9	Wiley Online Library	<a href="https://onlinelibrary.wiley.com/">https://onlinelibrary.wiley.com/</a>	公司无净损失和净正面影响的煤炭生物多样性承诺 (第10页)	<a href="https://onlinelibrary.wiley.com/doi/epdf/10.1002/2475-2379">https://onlinelibrary.wiley.com/doi/epdf/10.1002/2475-2379</a>	Forum (CBF) was established		NA
10	亚洲开发银行	<a href="https://www.adb.org/">https://www.adb.org/</a>	改善江西稀土行业的生态保护和林业成果	<a href="https://www.adb.org/zh/projects/documents/rp-ic-51013-001-ods">https://www.adb.org/zh/projects/documents/rp-ic-51013-001-ods</a>	Plans announced in 1999 to	2018	江西
11	亚洲开发银行	<a href="https://www.adb.org/">https://www.adb.org/</a>	运用以社区为重点的投资来解决森林保护和森林退化问题	<a href="https://www.adb.org/projects/47084-001/main">https://www.adb.org/projects/47084-001/main</a>	develco a zinc mine in	2014	

Screenshot 1 Relevant Cases and Detailed Information on Biodiversity Protection in The Mining Sector



No	Company Name	Investment Location	Ownership	Code for listed public company	HQ location	Does it have Environment department (team), ESG Public team or CSR accessible (please list all HR capacity for Environment ESG or CSR)	Finance scale (based on latest available information)	Single or multiple sector engagement ?	Sectors and industries engaged in ?	Roles along sector supply chain (trader, supplier, producer, seller, finance investment)	Generally, single or multiple countries in its business scope	Countries it covers (according to public accessible information between 2015-2020)	Long term investment in specific countries or trader	Link ESG
1	老挝金象矿业有限公司	Laos	Private owned without IPO					Single	Sale of minerals and metal materials; Import and export of goods	Producer, Trader	Single	Laos	Laos	
2	济南城源集团有限公司 Jinan Yueao Group Co.,Ltd.	Mozambique	Private owned without IPO	254330169	Jinan	YES	http://www.jiaoyuansuo.com/	multiple	铁矿开采、冶炼、球团、烧结、轧钢、铸锭、连铸、热轧、冷轧、镀锌、深加工	trader, supplier, producer, seller, finance investment	multiple	Africa	Mozambique	
3	中钢印尼有限公司 Sinosteel Group Corporation (Limited)	Indonesia	SOE national	100014493	Beijing	Yes	http://www.sinoel.com/	multiple	钢铁生产、贸易、工程承包	trader, supplier, producer, seller, finance investment	single	Indonesia	Indonesia	http://eel.com/
4	中钢国际工程(中国)有限公司 (中钢国际工程有限责任公司印尼代表处)	Indonesia	SOE-national	79698878-9	Nanchang		http://en.intec.com/	single	煤炭开采、矿业投资、矿业工程承包	supplier, producer, seller, finance investment	single	Indonesia	Indonesia	
5	PT. Zhongguo International 金川集团国际有限公司(爪哇毛里求斯代表处)	Indonesia	SOE-provincial	2246905-2	Jinchang	Yes	http://www.jnmc.com/	multiple	从事金属矿产开发、贸易、工程承包、以及装备制造	trader, supplier, producer, seller, finance investment	single	Indonesia	Indonesia	http://com/

Screenshot 2 Case Collection of China's Overseas Investment in Mining Projects

导航

在文档中搜索

标题 页面 结果

Case Study

A National Biodiversity Offset Scheme: A Road...

1. Project Information and Context

2. Impacts on Biodiversity and Mitigation Me...

2.1 Impacts on Biodiversity (including Resi...

2.2 A Role for Biodiversity Offsets in Securi...

3. Biodiversity Offset Design

3.1 Choice of Methods to Account for Biod...

3.2 Site Selection for Equivalence and Calc...

4. Biodiversity Offset Implementation

4.1 Planned Offset Activities

4.2 Proposed Arrangements for Offset Imp...

5. Conclusion and Summary Road Map

### Case Study

**A National Biodiversity Offset Scheme: A Road Map for Liberia's Mining Sector**

<https://openknowledge.worldbank.org/handle/10986/21919>

**1. Project Information and Context**

Liberia had an estimated 4.3 million hectares of forests in 2011, comprising approximately 50 percent of Liberia's landmass. These forests support very high levels of biodiversity, provide a wide range of ecosystem services (for example, bushmeat, medicines, construction materials, and charcoal), and generate employment and revenue from commercial and chainsaw logging. Pervasive poverty and competition for commercial land contracts for palm oil, mining, and forestry are threatening these last extensive forest areas in West Africa. Encouraging inward investment while striking a sound balance between different interests, respecting the legal and customary rights of local people, and conserving biodiversity represents a major challenge.

The conservation imperative for Liberia is remarkable biodiversity at risk. The Act for the Establishment of a Protected Forest Areas Network of 2003 committed the government to establishing a protected areas network covering at least 30 percent of the existing forest area (about

Screenshot 3 Case Study

## References

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<https://ipbes.net/global-assessment>
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<https://www.unep.org/news-and-stories/story/moving-global-mining-industry-towards-biodiversity-awareness>
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