Large infrastructure development activities, such as those pursued to unlock energy and mineral wealth, are often essential for countries to advance economically. At the same time, the planet is losing biodiversity—from species to entire ecosystems—faster than ever. One major cause of biodiversity loss is the clearing of natural habitats for development activities and the subsequent indirect and cumulative impacts of those activities.

Recognizing the challenges and opportunities development activities present for conserving natural capital, Conservation International (CI) engages with companies and governments to promote responsible mining and energy development through adherence to the mitigation hierarchy (see Fig. 1) of avoiding, minimizing, rehabilitating and finally offsetting biodiversity impacts.

Biodiversity offsets are conservation actions intended to compensate for the residual, unavoidable harm to biodiversity caused by major development projects. In following the mitigation hierarchy, companies first reduce their impacts on biodiversity through avoidance, mitigation and rehabilitation activities. Offset activities, also known as compensation, are only appropriate after avoidance, mitigation and rehabilitation measures have been thoroughly pursued. They should not be used when the residual impact is determined to be unacceptable by stakeholders, such as driving a species to extinction.

The use of offsets should lead to a no net loss of biodiversity and, ideally, create a net positive impact on biodiversity through conservation gains that go beyond offsetting a project’s residual impact. CI also recognizes the importance of “additional conservation actions” in benefitting biodiversity. Activities such as building the capacity of local conservation organizations and investing in local biodiversity research foster even stronger conservation outcomes, but these actions cannot be quantitatively linked to compensating for residual impacts.

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BUSINESS CASE

Biodiversity offsets by project developers are increasingly expected by governments and civil society. They may also be mandated in the context of no net loss or net positive impact requirements from regulators and project financiers as a way to balance development with conservation. In the past decade, there has been an increase in government policies on biodiversity offsets. Seventeen countries now have national level government policies specifically requiring offsets, and at least 29 other countries have national policies that promote or enable the use of offsets. ¹

Many project financiers are also increasing their requirements for impact mitigation and require the use of biodiversity offsets to compensate for residual impacts to biodiversity and ecosystem services. For example, the International Finance Corporation (IFC), a member of the World Bank Group that provides private sector financing and advisory services, has developed “Performance Standards” that define clients’ responsibilities for managing their environmental and social risks. Performance Standard 6 requires projects to achieve no net loss in areas of natural habitat, including offsetting significant residual impacts to biodiversity, and a net gain in areas of critical habitat. ²

Civil society is also articulating growing expectations around biodiversity offsets. The Business and Biodiversity Offset Program (BBOP), of which CI was a founding member, is an international, multi-sectoral partnership launched in 2004 that has identified several principles and best practices for development of biodiversity offsets. ³

Many companies are responding to these growing external expectations, demonstrated by a steady growth in the number of companies committing to no net loss of biodiversity. Fifteen companies in the mining and aggregates sectors have public, company-wide biodiversity commitments or aspirations to no net loss, neutrality, net positive impact or similar. ⁴

Through such responses, many companies hope to realize some or all of following benefits:

- Lowered exposure to reputational, regulatory, litigation, operational and financial risks
- Improved legitimacy or a license to operate
- Increased competitive edge and access to capital
- Increased investor and consumer confidence
- Improved community relationships

CI’S APPROACH

For over 20 years, CI has taken a holistic approach to the mining and energy sector. We engage major financiers, industry associations, government agencies, conservation practitioners, local communities and leading companies in South America, Africa and Asia-Pacific. Since 2005, CI has developed biodiversity offsets in partnership with companies, communities, governments and other civil society organizations.

CI works with our partners and stakeholders to design and implement biodiversity offsets informed by IFC and BBOP guidance. However, each offset is context specific, and plans must be designed through collaborative efforts that are tailored to the specific project and local situation.

CI’s global scientific expertise, long track-record of developing innovative conservation financing mechanisms and capacity for implementation around the world make CI a strong partner for companies on biodiversity offsets.

CI’S GLOBAL SCIENTIFIC EXPERTISE

As articulated in CI’s mission, sound science is a fundamental building block for achieving our conservation strategies around the world. There are several areas where CI is using science to explore how to best design offsets and understand their limitations:

- Determining key biodiversity and ecosystem values in a given area of development to understand residual impacts and design offsets that incorporate those values.
- Identifying offset opportunities and ways to ensure “additionality” or offsets’ new and additional contributions to conservation outcomes, in combination with factors such as risk, time horizons, cost-effectiveness and uncertainty.
- Understanding acceptability of residual project impacts, as well as potential indirect and cumulative impacts.
- Recognizing how proposed offsets fit into the larger landscape and contribute to local, national and global conservation priorities.

Spearheaded by The Betty and Gordon Moore Center for Science and Oceans as well as CI’s field programs, CI’s science-based global approach to conservation aims to fill remaining knowledge gaps and develop innovative solutions at all levels. CI and other leading institutions and partners also use pioneering research to create better conservation strategies, monitor changes and respond effectively to emerging environmental threats.

CI’S CAPACITY IN LONG-TERM CONSERVATION FINANCE

The need for sustained, long-term financing exists in the realm of biodiversity offsets to ensure that areas set aside to compensate for residual impacts persist over their intended lifespan. CI has advised several companies on financing structures needed to support biodiversity offsets, including the underpinning legal and governance considerations.

CI’s focus on ensuring effective management for the long term is both unique and vital. Many protected areas, once created, often lack sufficient funding to be effective. CI helps design and support endowments, trusts and other special mechanisms that create a steady flow of funds for managing important new or expanded protected areas into the future.

Through the Global Conservation Fund, CI has over a decade of experience financing the creation, expansion and long-term management of priority areas for conservation. During that period, over 75 protected areas have been created or expanded in 25 countries, totaling over 80 million hectares (ha), with over $200 million in granted and leveraged resources towards long-term financing of these areas.
CI’s Global Capacity for Biodiversity Offset Implementation: Project Profiles

CI has partnered with several corporations across various geographies on biodiversity offset projects that include diverse participants, ranging from local communities to national governments. Several of these offset projects are in the initial stages and have an expected timeline of anywhere from 20 to 100 years.

Colombia

CI-Colombia has been actively working on biodiversity offsets for the mining and oil & gas sectors at multiple scales, at national and municipal levels, and with various corporate partners. At the national level, CI has worked closely with the Ministry of Environment and Sustainable Development (Ministerio de Ambiente y Desarrollo Sostenible), the National Authority for Environmental Licensing (Autoridad Nacional de Licencias Ambientales, or ANLA) and other environmental NGOs to create a manual that guides users in how to prepare and quantify biodiversity offsets. Colombia has recently passed legislation and regulations that mandate obligatory offsets for environmental and biodiversity impacts.

At municipal levels, CI has been working closely with the regional government of the Department of La Guajira in designing municipal protected areas that help companies comply with voluntary and mandatory offsets programs. In terms of corporate partners, CI-Colombia is working closely with Carbones del Cerrejón—the largest mining operation in Colombia and one of the largest open pit coal mines in the world—in establishing biodiversity offsets as part of Cerrejón’s broader environmental strategy. The biodiversity offset plans include Conservation Area Networks using a multi-criteria approach that is based on the economic valuation of ecosystem services, as well as the development of a technical publication, “Ecological Restoration of Tropical Dry Forest,” which will become part of Cerrejón’s mine close-out plans.

In the Department of La Guajira, CI-Colombia, in partnership with Carbones del Cerrejón, has designed a Payment for Ecosystem Services (PES) scheme for biodiversity and water in the Rancheria basin. This PES scheme covers more than 40,000 hectares and benefits more than 100,000 local people in the region. CI-Colombia has also implemented conservation agreements for some biological species as part of Cerrejón’s voluntary offset program.

In the Antioquia Department of the Andes region, CI-Colombia, in association with AngloGold Ashanti, has developed the first model of compensation for water ecosystem services in the Nus River basin. This model involves tradeoffs in habitat quality, biodiversity, ecosystem services and forest hydrology.

Ghana

CI’s first offset partnership was with Newmont Golden Ridge Limited (NGRL), a subsidiary of Newmont Mining Corporation, in 2005. The goal of the project was to ensure that potential biodiversity issues and conservation opportunities at and around NGRL’s operations in Ghana were evaluated and managed with a goal of making measurable contributions to the conservation of Ghana’s natural heritage. An element of that work included providing guidance to NGRL on the design of a biodiversity offset for their mining concession—the Akyem Project in Eastern Ghana. This project was one of the first BBOP and CI pilots on biodiversity offsets. CI conducted assessments, rapid biological surveys and community biodiversity use surveys to inform the site selection process, as well as provided guidance on the regulatory and legal requirements for biodiversity conservation and offsets in Ghana.

A 250-hectare site on the northern portion of one of the adjacent forest reserves was proposed for the offset project. The offset project would involve restoration of areas within the forest reserve that have been degraded from farming activities, timber removal and intensive cropping. This offset has the potential to improve an important wildlife corridor to two nearby protected areas, provide refuge for displaced animals, improve habitat for species of conservation concern and conserve plant species used for medicinal purposes. Newmont is working on the final stages of developing an execution plan for the offset and aims to begin implementing the offset by 2015.

Guyana

The Amlia Falls Hydropower Project is a proposed 165MW hydropower and transmission line project. It represents the first large-scale investment in hydropower in Guyana under the country’s Low-Carbon Development Strategy. The project will unavoidably lead to environmental impacts in this portion of the Guiana Shield wilderness—a part of the Amazon rainforest—through dam, road and transmission line construction.

Project developer Amlia Falls Hydro Inc. (AFHI), which is a joint venture company of Sithe Global and the Guyana government, entered into a collaborative agreement with CI in 2011. As part of this collaboration CI advised AFHI on the biodiversity offset plan for the project, including: defining the biodiversity values to incorporate in the offset area; setting the target for number of hectares to be included in the offset; contributing to stakeholder engagement surrounding the offset; meeting potential project financiers environmental and social performance standards; and development of long-term financing mechanisms to ensure the offset area remains intact for the targeted 100 years lifespan. As of August 2013 the project was put on hold by AFHI pending political consensus to move forward, so the company’s activities and partnership with CI have been suspended.
Liberia

CI and ArcelorMittal Liberia (AML) are partnering to promote a pro-conservation development zone in Northern Nimba County, Liberia. This area will allow multiple land-uses to co-exist in appropriate designated zones, including a biodiversity offset in the East Nimba Nature Reserve (ENNR), and promotes sustainable economic development based on community stewardship through conservation agreements. The Nimba mountain range, which borders Guinea, Ivory Coast and Liberia, is a trans-boundary area and an Alliance for Zero Extinction (AZE) site. It is one of the few remaining West African wet-zone forests and is home to many unique species and ecosystems.

CI has supported initial landscape-zoning research and will continue work to establish a system to facilitate sustainable communities’ livelihoods in communities directly around the protected area. CI is supporting and contributing to the management of high priority, non-use conservation zones and areas of sustainable forest resource use across northern Nimba in order to offset the loss of biodiversity resulting from mine expansion. The composite offset is designed to result in a net gain of biodiversity as it is focused on the protection and management of a much larger area than the estimated 700 ha (500 ha for phase 1 and an estimated additional 200 ha for phase 2) of mainly forested land lost to the mine operation. In addition to addressing residual project impacts, the offset is nested within a larger land-use planning effort designed to reduce pressures from other activities threatening Nimba’s biodiversity such as chainsaw logging, shifting-agriculture, hunting and local alluvial mining activities.

In partnership with AML, CI is also working to develop a sustainable conservation finance model for the ENNR. It is hoped that this sustainable financing pilot will serve as the foundation of and guide the development for trust fund mechanisms for protected areas in Liberia, as well as ensure resources for conservation and sustainable forest management in perpetuity.

Papua New Guinea

In 2012, CI worked with Esso Highlands Limited (EHL), an Exxon Mobil Corporation subsidiary, to review and advise on a biodiversity strategy and offset plan related to the development of a liquefied natural gas (LNG) project in Papua New Guinea (PNG). EHL is the operator of the PNG LNG Project, which includes gas production and processing facilities, liquefaction and storage facilities, and over 450 miles of pipelines connecting the facilities. In the design phase, CI provided advice on the Project’s Biodiversity Offset Delivery Plan, and worked with EHL to: develop a technical rationale for offset selection; scope potential offset areas, activities and partners; assess the feasibility of a number of options to implement the plan; and recommend financing mechanisms to ensure the long-term sustainability of the offset. CI’s support to the project’s design phase included coordinating with EHL technical staff and consulting with local conservation groups and government officials. CI also brought to the project extensive practical experience implementing conservation in PNG, one of more than 20 countries where CI maintains field programs.

The design activities resulted in a holistic offset program with multiple components. These include support to PNG’s Department of Environment and Conservation to carry out next-generation protected areas planning and improve implementation of PNG’s National Biodiversity Strategy and Action Plan, a significant capacity building program aimed at creating the human capacity needed to implement and complement the offset program, field activities to improve management of existing protected areas and the creation of entirely new protected areas in the region where the PNG LNG project takes place. As of August 2013, CI and EHL are discussing implementation opportunities and CI hopes to support the offset program by bringing to the table its vast long-term financing experience; biodiversity assessment and monitoring capabilities; understanding of PNG’s conservation landscape; and ability to coordinate key stakeholders. Meanwhile, the Government of PNG has plans to create a national policy requiring biodiversity offsets for major infrastructure development projects.