USAID BIODIVERSITY AND DEVELOPMENT HANDBOOK

1 INTRODUCTION

STRENGTH IN NUMBERS: Elephants along the Chobe and Zambezi rivers, Botswana, part of the largest elephant population in Africa.
Photo: Michiel Terellen

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SETTING THE LIMITS: Members of the Pilar Municipal Marine Park in Cebu, Philippines, regularly check and replace marker buoys damaged by wind and waves. Marine sanctuaries in the park have increased the catch of local fishermen.
Photo: Vincent Lumbab, DAI

1 INTRODUCTION

1.0 EXECUTIVE SUMMARY

Why does biodiversity matter to international development?

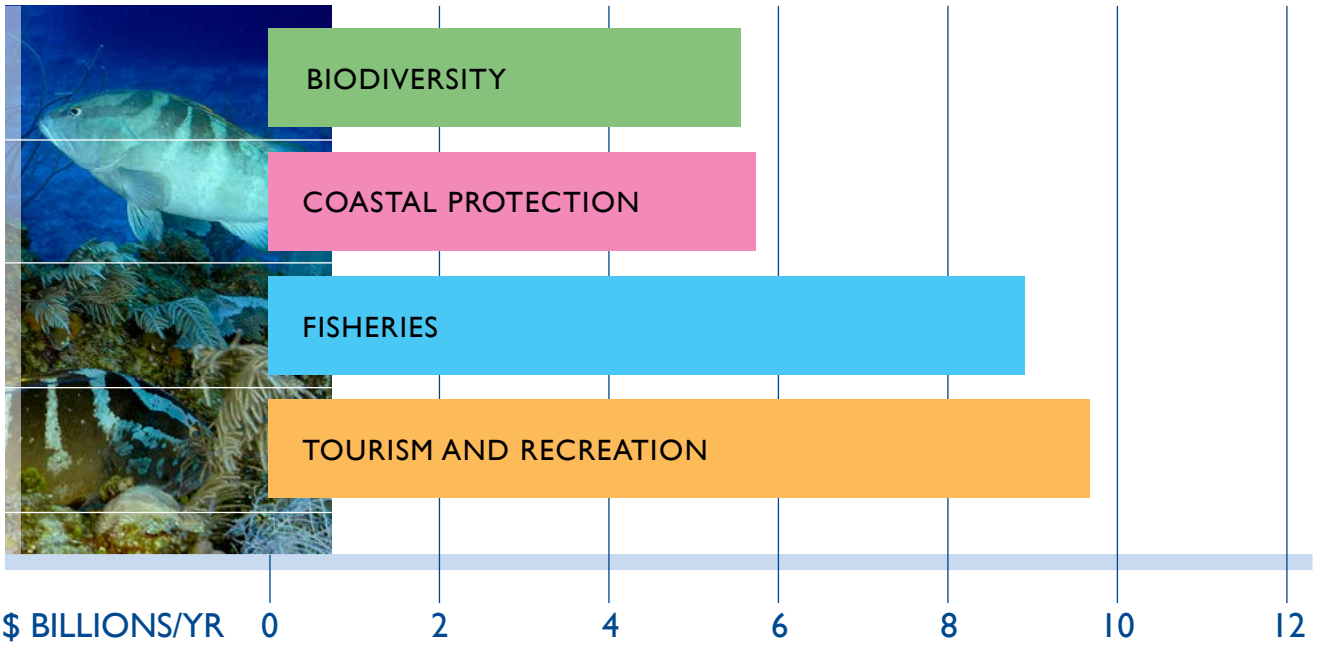
The U.S. Agency for International Development (USAID)'s biodiversity programming contributes to securing healthy and resilient ecosystems and the numerous goods and services they provide. Functional and productive ecosystems are crucial to addressing the world's most intractable development challenges, including hunger, poverty, conflict, and poor health. Agency programs support the United Nations' Millennium Development Goals (MDGs), a framework for global development efforts. USAID biodiversity programming contributes most directly to MDG 7, which states, "Environmental sustainability is part of global economic and social wellbeing." However, ecosystem and species health are closely intertwined with human well-being. As such, biodiversity programming efforts contribute directly or indirectly to achieving all MDGs. Figure 1 from a recent NOAA report illustrates the global economic value of biodiversity and ecosystem conservation for just one key resource, coral reefs.

Why did USAID produce this handbook?

The 2015 USAID Biodiversity and Development Handbook is a foundational resource for implementation of USAID's Biodiversity Policy. The main purpose of the handbook is to help USAID managers and implementing partners plan, design, implement, and monitor strong and sustainable conservation efforts in line with Agency experience, policy, and guidance. A strong secondary purpose is to contribute USAID knowledge and experience to the global conservation community, particularly in designing projects with robust learning components and in integrating conservation and development objectives. It draws from the USAID, partner, and global knowledge base of principles, approaches, resources, best practices, and case examples.

As illustrated throughout the handbook, USAID promotes a strategic and systematic adaptive management approach to addressing threats to biodiversity as diverse as agricultural expansion, illegal and unsustainable hunting, wildlife disease management practices, and climate change, while also leveraging such opportunities as policy reform, civil society engagement, and private sector support. Globally and locally, situations

Figure 1. Economic Value of Coral Reefs



can shift rapidly and the need for good information and adaptive systems is paramount. The aim is to achieve broad-scale conservation impacts and development benefits that will be sustained after funding ceases.

What has changed since the last Biodiversity Guide?

The 2001 and 2005 editions of the handbook remain essential resources to help USAID, its partners, and implementers learn about key biodiversity concepts and best practices. Since 2005, however, USAID biodiversity programming has advanced by accumulating data, lessons learned, and resources.

There is now much greater awareness within USAID, the U.S. Government, and the development community of the importance of biodiversity and the critical challenges facing species and ecosystems. This awareness is reflected in the Biodiversity Policy, the Executive Order on Wildlife Trafficking, and the Presidential Memorandum and Task Force on Illegal, Unreported, and Unregulated Fishing and Seafood Fraud, among other initiatives. Recent development challenges have also highlighted the importance of biodiversity and its conservation: the Ebola epidemic that is linked to consumption and handling of wildlife; conflicts related to natural resources and ecosystem deterioration that have had global impact—and how conservation can contribute to peace-building; and the growing awareness of how climate change has already transformed ecosystems and lives, including within the critical disaster-response sector.

At the same time, the scenario for programming USAID biodiversity funds has changed. The overall biodiversity budget has increased, and emphasis is being placed on key countries as outlined in the Policy. There is now a significant cadre of environment officers in the Agency. USAID/Washington has reduced funding for field-level conservation and is concentrating on supporting Missions through learning and knowledge management. New initiatives in global climate change, food security, and other development sectors provide an evolving context and new opportunities for the integration of biodiversity programming. Indeed, integrating biodiversity into development addresses one of the two objectives of the Biodiversity Policy.

What is the audience for the handbook?

The primary audiences are USAID managers of biodiversity projects and those integrating biodiversity into their projects and portfolios. The handbook will also be useful to USAID implementing partners, USAID actors in other sectors, and USAID staff who wish and need to learn more about biodiversity conservation to improve the resiliency, impact, and sustainability of their programs and portfolios. Among many other purposes, USAID managers may use information in the handbook to help integrate biodiversity into country development cooperation strategies (CDCSs), draft project appraisal documents (PADs) with clear theories of change, and integrate a body of evidence into statements of work. Implementing partners, other donors, researchers and students, as well as the conservation community in general, can use the handbook to better understand the USAID policy context, USAID experience and lessons, and how biodiversity intersects with key development sectors.

How is the handbook structured?

Given the rapid evolution and expanding scope of USAID programs and policies relevant to biodiversity, USAID's Forestry and Biodiversity (FAB) Office adjusted the format of the 2015 handbook while building on the content of earlier documents. The production of the handbook involved multiple authors, editors, and reviewers. A substantial change is incorporation of an explicit "how to" section (Chapter 2) to help USAID managers, partners, and implementers develop programs in line with the most recent Agency program cycle guidance while drawing from more conservation-tailored best practices guidance. The focus and key audiences for each chapter are identified below.

Chapter 1 provides a broad overview, definitions, and basic information about biodiversity. It also discusses USAID's role in biodiversity conservation and USAID's Biodiversity Policy. This chapter is aimed at a **general audience**.

Chapter 2 describes a step-by-step process for planning, implementing, and monitoring biodiversity programs and integrated programs with a biodiversity component. It is grounded in the USAID program cycle

but draws on practices from the *Open Standards for the Practice of Conservation* – an approach to project management tailored to biodiversity conservation projects. This chapter is aimed at **USAID managers and implementing partners**.

Chapter 3 provides more specific information about implementing conservation on the ground, framing the discussion around key operating principles, geographic scopes, and strategies for biodiversity conservation. This chapter does not cover all possible scenarios within these areas but rather provides examples that can help USAID managers contextualize the process explained in Chapter 2. Chapter 5 goes into more depth on conservation approaches for which USAID has long experience. This chapter is aimed at **USAID managers, implementing partners, and the broader conservation community**.

Chapter 4 describes several ways biodiversity affects, is affected by, and interacts with other development issues and sectors of particular interest to USAID. It includes specific examples of integrated USAID projects. This chapter is aimed at **USAID managers, implementing partners, and the broader conservation and development community, with each section targeting a specific development sector**.

Chapter 5 presents a series of annexes covering key policies and treaties related to biodiversity, along with references, resources, and a glossary of key terms. This section is aimed at a **general audience**.

1.1 WHAT IS BIODIVERSITY?

Biological diversity, or biodiversity, is a complicated concept that broadly refers to the variety and variability of living organisms and the ecological complexes in which they occur. The concept includes, but is not limited to, microscopic life, fungi, plants, and animals; interacting communities of species; habitats; ecosystems; and the biome as a whole. The Earth's biodiversity consists of genes and their chemical structures, species, and ecological and evolutionary processes that make up terrestrial, marine, and freshwater ecosystems. All of these elements and living systems interact to produce the web of life on Earth – the biosphere – a whole greater than the sum of its parts and upon which every human being and every human society is dependent.

In its most basic form, biodiversity is often characterized and identified at three levels:

Genetic diversity is the combination of different genes found in individuals within a population of a single species and the pattern of variation found across different populations of the same species. The genetic diversity of a population is shaped by evolutionary forces that are often driven by interactions with other species and the environment and thus changes over time. Genetic diversity provides a mechanism for populations to adapt to their ever-changing environment.

Species diversity is the variety and abundance of different types of organisms that inhabit an area. Species play important roles in the structure and function of ecosystems. For example, keystone species are those that have significant effects disproportionate to their abundance. African elephants are a savannah keystone species and play an important role in tree removal, which contributes to the maintenance of open grasslands.

Ecosystem diversity is the variety of ecosystems in a given region. An ecosystem is the sum of the interactions between a biological community and its physical and chemical environment and the resulting ecological processes. Examples of ecological processes include the pollination of plants by insects; the decomposition of waste by fungi that recycle nutrients; and feeding relationships, such as the predation of elk by wolves, which can regulate population size and structure.

Note that while USAID understands the critical importance of agricultural biodiversity, or agrobiodiversity, USAID biodiversity funds do not support programming in this sector.

1.2 THE IMPORTANCE OF BIODIVERSITY FOR HUMAN WELL-BEING

Biological diversity is important for maintaining healthy, functioning natural systems, as well as for fulfilling the intrinsic and aesthetic values that humans attach to them. Biodiversity also plays a fundamental role in sustaining human well-being more broadly. Indeed, human well-being is inextricably linked to the health of biodiversity and ecosystems around the world. Ecosystem degradation and impairment directly threaten human well-being through events such as floods, heat waves, water shortages, landslides, and other natural disasters. Ecosystem degradation also affects human health and well-being by increasing transmission of infectious diseases, reducing food yields, depleting natural medicines, reducing food availability, and straining water supplies.[1]

Sometimes the links between ecosystem health and human well-being are indirect, complex, and difficult to measure. The link between ecosystem health and poverty alleviation is one such relationship. People living in poverty are disproportionately affected by ecosystem degradation. Approximately 2.7 billion people – more than a quarter of the world's population – survive on less than $2 a day. As many as 70 percent of these people depend directly upon biodiversity and healthy ecosystems to provide them with life's most basic necessities, including food, water, shelter, medicine, and livelihoods.[2]

USAID's Biodiversity Policy identifies biodiversity conservation as an essential component of human development. It lays out a bold and innovative way forward for the Agency and the international community that recognizes not only intrinsic values of biodiversity, but also human development benefits.

1.3 THE STATUS OF BIODIVERSITY

Biodiversity, while fundamental to human well-being, is currently in a human-induced state of rapid decline. As such, the conservation of biodiversity is an international development priority for USAID.

The extent and speed of global biodiversity loss are alarming. For example,

- most vulnerable species are moving closer to extinction, and nearly a quarter of all known plant species are threatened with extinction;
- vertebrate species declined by one-third between 1970 and 2006 and continue to decline;
- the extent and health of all natural habitats continue to deteriorate globally, particularly in wetlands, salt marshes, coral reefs, sea grass beds, and shellfish reefs; and
- most large forest, river, and grassland ecosystems face extensive fragmentation and degradation.

The primary drivers of biodiversity loss are habitat conversion (e.g., conversion of natural forests to plantations or agriculture); overexploitation of natural resources (e.g., overfishing); pollution (e.g., excessive nutrient loads in freshwater systems); invasive alien species (in nearly all ecosystem types); and the myriad impacts of climate change. Climate change is a dramatic threat because it not only creates its own direct impacts (e.g., increased ocean acidity, stress from temperature fluctuations, increased drought, and glacial melting) but also exacerbates impacts from other threats, such as invasive species, fire, and logging.

Extensive global biodiversity loss is already having major impacts on the ecosystem services that healthy ecosystems provide and upon which humanity depends. The Millennium Ecosystem Assessment found that most major ecosystems around the world are in decline and noted in particular the collapse of global fisheries as a result of degraded marine and coastal ecosystems. For recent status updates see **"The biodiversity of species and their rates of extinction, distribution, and protection."**

1 MEA and World Health Organization *Ecosystem and Human Well-being: Health Synthesis* Geneva: WHO, 2005.

2 Secretariat of the Convention on Biological Diversity, *Biodiversity, Development and Poverty Alleviation: Recognizing the Role of Biodiversity for Human Wellbeing*. Montreal: CBD, 2009.

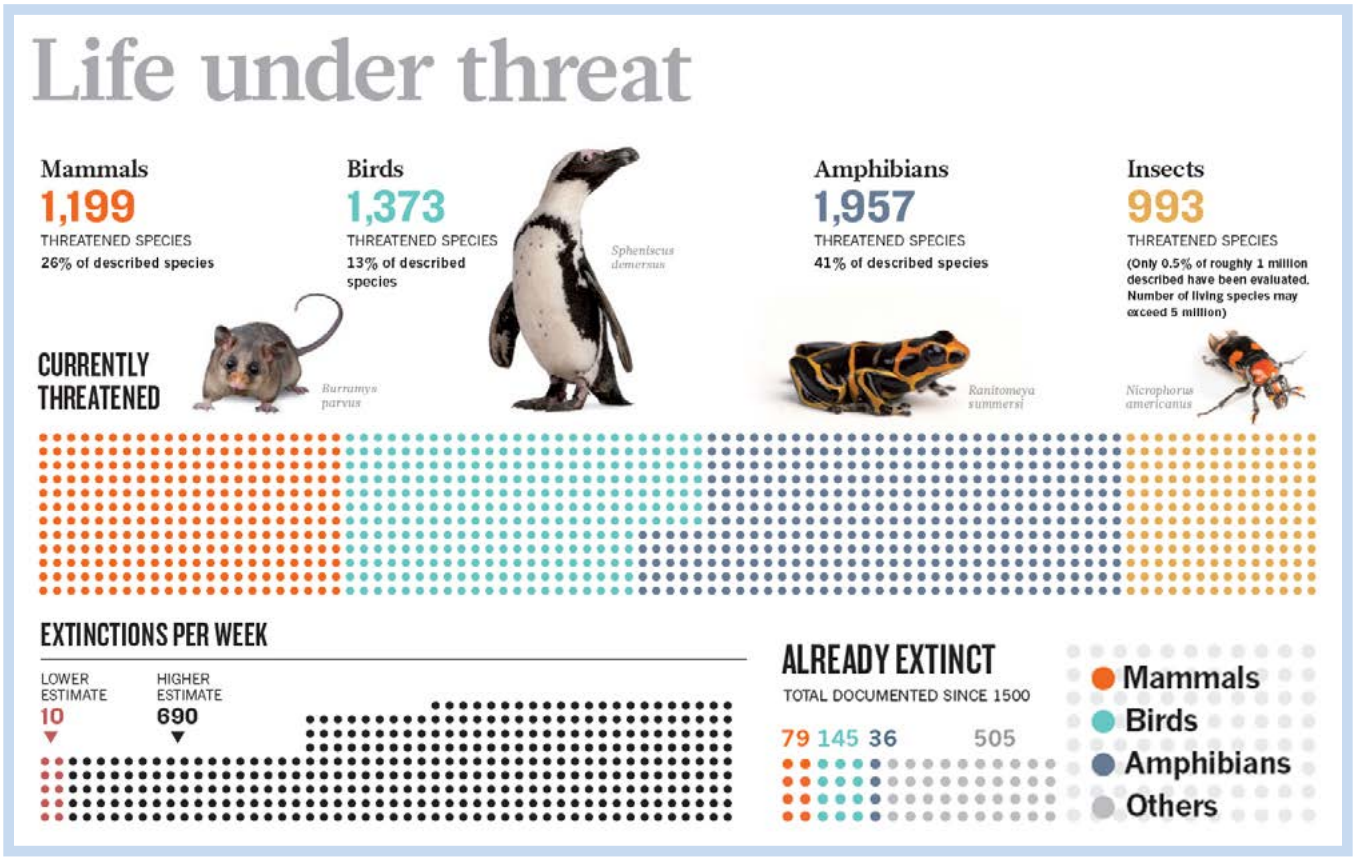
An analysis by the Convention on Biological Diversity (CBD) revealed that the main reason countries failed to meet the 2010 biodiversity target was that conservation actions tended to focus on the end state of biodiversity, specific threatened species, or direct threats to biodiversity loss. The study argued that countries should focus on broader issues and address the underlying social, economic, political, and cultural causes of biodiversity loss. This status is graphically presented in Figure 2.

In response to the decline of global biodiversity and the failure to achieve the CBD 2010 targets, the world's governments again agreed to a global strategic plan for biodiversity, known as the Aichi Biodiversity Targets. This ambitious strategic plan covers 2011 through 2020 and includes 20 targets, organized under five main goals:

- Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.
- Reduce the direct threats on biodiversity and promote sustainable use.
- Improve the status of biodiversity by safeguarding ecosystems, species, and genetic diversity.
- Enhance the benefits to all from biodiversity and ecosystem services.
- Enhance implementation through participatory planning, knowledge management, and capacity building.

By focusing on the underlying drivers of biodiversity loss and by understanding, valuing, and safeguarding the biodiversity and ecosystems upon which life depends, perhaps there can be greater progress in reducing the tremendous losses in global biodiversity and in setting a more sustainable course for the twenty-first century.

Figure 2. Status of Biodiversity (Adapted by permission from Macmillan Publishers Ltd: Nature. Monastersky, Richard. "Life under Threat." Biodiversity: Life – A Status Report, copyright 2014)



Monastersky, Richard. "Biodiversity: Life – A Status Report." Nature 10, December 2014.

1.4 USAID'S ROLE IN AND APPROACH TO BIODIVERSITY CONSERVATION

USAID pioneered and now supports one of the most comprehensive biodiversity conservation programs of any bilateral donor. The Agency has long recognized the importance of conserving biodiversity to achieving development goals. Natural forest conservation was a priority for several Missions in the 1970s, well before the term "biodiversity" was widely used. Enacted in 1986, amendments to Sections 118 and 119 of the Foreign Assistance Act placed a greater emphasis on tropical forests and endangered species conservation in U.S. foreign assistance. The Fiscal Year (FY) 1986 Appropriations Act also incorporated a $1 million directive for biodiversity conservation, the first of many congressional funding requirements. Biodiversity conservation is one of several environment-related Agency programming areas. Other relevant areas include sustainable forestry, climate change mitigation and adaptation, and water resources management.

In FY 2013 and FY 2014 the biodiversity Congressional Directive amounted to $212.5 million, including a sub-earmark of $45 million for combating wildlife trafficking. USAID investments consistently account for about two-thirds of U.S. Government support for international biodiversity conservation.

Through many types of projects implemented at global, regional, national and local levels, USAID assists developing countries in maintaining biologically diverse ecosystems and environmental services while supporting sustainable development and economic growth. This handbook lays out major elements of USAID's overall strategic adaptive management approach, as well as experience in diverse subsectors of biodiversity conservation, including but not limited to landscape-scale conservation, community based natural resource management (CBNRM), enterprise approaches, policy and incentive-based approaches, and protected area management. USAID staff also contribute to global, regional, and national policy fora and take a "hands-on" approach to management to support and learn from partners' efforts.

1.4.1 USAID's Biodiversity Policy

In June 2011, USAID received approval to develop a Biodiversity Strategy, which was subsequently shifted to become a Biodiversity Policy, making it an enduring Agency asset. Approved in March 2014 and formally

BOX 1. USAID BIODIVERSITY POLICY STRATEGIC FRAMEWORK

VISION

TO CONSERVE BIODIVERSITY FOR SUSTAINABLE, RESILIENT DEVELOPMENT

GOALS

1) Conserve biodiversity in priority places
2) Integrate biodiversity as an essential component of human development

OBJECTIVES

- Support enabling conditions for biodiversity conservation
- Reduce priority drivers and threats to biodiversity
- Integrate conservation and development for improved biodiversity and development outcomes
- Build partnerships to mobilize resources in support of biodiversity conservation
- Influence key international policies in support of biodiversity conservation
- Apply science, technology, and learning to enhance biodiversity conservation practice

launched in June 2014, the USAID Biodiversity Policy articulates the following vision: "To conserve biodiversity for sustainable, resilient development." To accomplish this vision, USAID is pursuing two goals, together with aligned objectives (Box 1). As a USAID policy articulates an overarching vision for the Agency, it leaves room for the development of additional resources such as this handbook to support implementation.

1.4.2 USAID's Biodiversity Code

USAID biodiversity activities and programs have become more complex and better integrated with other Agency development programs. At the same time, the Agency has been required by a congressional earmark to program increasing funds for biodiversity activities. As a result, a clear definition of what constitutes a biodiversity program is critical. The Biodiversity Code guides the Agency in determining which programs are included in the accounting toward the biodiversity requirement. The code has four key criteria, all of which must be met:

1. The project must have an explicit biodiversity objective; it is not enough to have biodiversity conservation result as a positive externality from another program.
2. Activities must be identified based on an analysis of threats and drivers to biodiversity and a corresponding theory of change.
3. Site-based projects must have the intent to positively impact biodiversity in biologically significant areas.
4. The project must monitor indicators associated with the stated theory of change for biodiversity conservation results.

All USAID programs and activities should strive to be "biodiversity friendly," but some may not qualify as biodiversity conservation under the code. The Biodiversity Policy incorporates some adjustments to the code, to allow management units to better design and justify programs that address some key drivers of biodiversity loss and immediate threats to biodiversity. Each year, the country-level and centrally funded programs are reviewed in USAID/Washington for consistency with the code. Note that the four criteria represent a minimum standard of compliance for direct programs. Alone, they do not represent best practice. Whenever possible, however, operating units are encouraged to embrace best practices in biodiversity programming, as articulated in this handbook.

1.5 SUMMARY

This chapter introduced key definitions and concepts about biodiversity, biodiversity conservation, and USAID's role in conservation. This introduction and the handbook as a whole rest on the foundation of decades of scientific inquiry and the evolution of USAID's programming to respond to new science and best practice. The Biodiversity Policy builds on USAID's long history of conserving a global biological heritage and reflects a deep understanding of the role that healthy natural systems play in achieving the Agency's human development goals. It recognizes that human well-being and progress and durable development gains are not possible unless these systems are valued and safeguarded. Successful implementation of the policy requires focus on four major actions, which parallel the structure of this handbook:

- adherence to Agency guidance and conservation community best practices throughout the program cycle;
- knowledge of key conservation approaches and how they apply in the USAID context;
- understanding of the connections between biodiversity and other key USAID sectors; and
- awareness of the wealth of policies, resources, and tools that support USAID's work.

More Information

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Conserving biodiversity in remote areas is challenging, even without makeshift bridges.
Photo: Andrew Tobiason, USAID

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