

# thriving together: the critical role of animals in achieving the SDGs



**ifaw**

Second Edition



**vision:**  
animals and people thriving together.



**mission:**  
fresh thinking and bold action for animals, people and the place we call home.

**index**

**2 vision & mission**

**3 index**

**5 executive summary**

**introduction**

8 the UN Sustainable Development Goals

9 animals and their habitats play a key role in human well-being and the SDGs

**ifaw and the SDGs**

12 integrating the SDGs into ifaw's work

14 SDG 2: zero hunger

16 SDG 3: good health and well-being

18 SDG 4: quality education

19 SDG 5: gender equality

20 case study: ifaw's contribution to gender equality in rural East Africa

23 SDG 8: decent work and economic growth

24 case study: welfare of jaguars, marine turtles and dogs intertwined with human well-being in Quintana Roo, Mexico

26 SDG 13: climate action

28 case study: protecting koalas means protecting Australia

30 SDG 14: life below water

31 case study: whale conservation's positive effect extends onshore in Iceland

32 SDG 15: life on land

33 as wildlife and people run out of space, we're creating Room to Roam

**recommendations & endnotes**

38 recommendations

39 endnotes

**About IFAW (International Fund for Animal Welfare)** - IFAW is a global non-profit helping animal and people thrive together. We are experts and everyday people, working across seas, oceans and in more than 40 countries around the world. We rescue, rehabilitate and release animals, and we restore and protect their natural habitats. The problems we're up against are urgent and complicated. To solve them, we match fresh thinking with bold action. We partner with local communities, governments, non-governmental organizations and businesses. Together, we pioneer new and innovative ways to help all species flourish. See how at [ifaw.org](http://ifaw.org)

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Cover photo: © Donal Boyd  
In 2016, IFAW lent its support to Wild is Life and the Zimbabwe Elephant Nursery (ZEN) to establish The ZEN Project—a landmark public-private partnership with support from the Forestry Commission of Zimbabwe that secures a vast expanse of former hunting ground in the Panda Masuie Forest Reserve. This groundbreaking partnership will change the face of conservation in Zimbabwe.



Photo: Jen Preback / © IFAW



Photo: J© Vanessa Mignon

## executive summary

Animals are critical to human well-being, from supporting communities through ecotourism, to anchoring key ecosystem services such as pest control and pollination. Yet, the welfare of animals and the conservation of wildlife species often comes as an afterthought to human development efforts. When public policy is designed and enacted, the value of animals is often ignored completely or undervalued. Therefore, it is the responsibility of wildlife conservation organizations to demonstrate to policy makers and their constituencies that animal welfare and wildlife conservation are necessary to people and communities.

Perhaps the most widely accepted framework for community development and human well-being today is the [United Nations' 2030 agenda](#), more commonly known as the [UN Sustainable Development Goals \(SDGs\)](#). Agreed to by all [193 member states of the UN](#), the goals outline international priorities to achieve sustainable human development. As

the preeminent guidance on human development, these goals inform the policies of governments, non-governmental organizations and the UN system.

While the SDGs are certainly more comprehensive than purely economic measures of progress such as gross domestic product (GDP), they place limited emphasis on the value of the natural world. Despite this, animals and their habitats are interwoven with the fate of humans. All species, big and small, imperiled and ubiquitous, have an important role to play in building a healthy, prosperous and sustainable future for people. There is no better example than the COVID-19 pandemic. Zoonotic disease emergence and spillover to people have become more and more common due the mistreatment of domestic animals and wildlife and their habitat. It is essential to include the natural world not only in recovering from the COVID-19 pandemic, but in the effort to prevent the next pandemic.

This report is the second edition that examines the connections between animal welfare, wildlife conservation and the natural world and their critical role in achieving the SDGs. As shown in this report, effective welfare and conservation can contribute significantly to achieving the SDGs and improving people's lives. IFAW seeks to enhance awareness of these connections and inspire greater collaboration for achieving the shared goal of improving conditions for all species on the planet.

▲ Green turtle swimming in shallow aquamarine waters. Green turtles graze on seagrasses and algae, which maintains the seagrass beds and makes them more productive.

▲ Zebras, elephants and wildebeests in Amboseli, Kenya. Healthy populations of herbivores are key to maintaining the savanna ecosystem.



Section 1

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# introduction



# the UN Sustainable Development Goals

In 2015, the [United Nations \(UN\)](#) developed a set of [17 Sustainable Development Goals \(SDGs\)](#) that would serve as a guiding framework for policy and for funding provided by the [UN](#), as well as provide a set of priorities for governments and civil society, through the year 2030. The goals span many social and economic development issues, and each goal includes several measurable targets. Going further than its predecessor, the Millennium Development Goals, the SDGs ambitiously encourage comprehensive action in developed and developing countries to address the needs of all people, with an emphasis on the underprivileged. The SDGs

are transformational in their understanding of development, envisioning a world not only devoid of widespread poverty, but one in which the structural inequalities and root causes that lead to poverty and inequality are resolved.

The SDGs reflect a holistic approach to development that recognizes the need to incorporate non-economic measures of growth and well-being. Informed by the [Multidimensional Poverty Index \(MPI\)](#) and the [Gross National Happiness \(GNH\) framework](#), the goals incorporate many aspects of human life in order to end poverty in its various forms

everywhere. In addition to traditional measures of economic growth such as [gross domestic product \(GDP\)](#), areas covered by the SDGs include health, education, gender equality and the environment. These areas are particularly important considering the harmful consequences of GDP-focused development, which has often exacerbated inequalities and environmental degradation.

▲ The UN's 17 Sustainable Development Goals (SDGs).



# animals and their habitats play a key role in human well-being and the SDGs

For thousands of years, human interaction with animals has shaped the ways we eat, work, relax and worship. Not only is humanity fundamentally linked to other species, some evidence suggests that our relationship with animals has shaped humans' evolutionary path itself.<sup>1</sup> While an increasing number of people ostensibly live detached from animals and the natural world, this relationship remains critical. Indeed, our relationship with the natural world has never been more important than it is at this moment, as demonstrated by unprecedented global climate change, global pandemics and environmental degradation. Therefore, in order to achieve sustainable human development that works for people and our planet, intergovernmental development initiatives such as the SDGs must recognize the relevance of animal issues to their mission.

However, few of the goals directly reference animals, ecosystems or the natural world. This gap was recognized in the [UN's own inaugural Global Sustainable Development Report \(GSDR\)](#) in 2019.<sup>2</sup> The GSDR is intended to be produced every four years as a scientific assessment on sustainable

development and progress toward the [Sustainable Development Agenda](#). The independent scientists who authored the report identified animal welfare as something missing from the SDGs. These scientists highlighted the clear links between human health and well-being and animal welfare, and the need to safeguard the well-being of both wildlife and domesticated animals with rules on animal welfare embedded in transnational trade.

Despite the unique human ability to control our environment to a certain extent, we remain connected to the ecosystem, and we rely on the services provided by healthy natural systems and animals. Every single goal indirectly relies on or benefits from animal welfare and wildlife conservation. Just to name a few examples:

- ▶ Healthy wildlife populations are essential to both pollination and pest control, which are foundational for food security.
- ▶ The mistreatment of wildlife and domestic animals is one of primary causes of zoonotic disease emergence.

- ▶ Entire economies are based on nature tourism, and therefore are reliant on wild animals.
- ▶ Studies have shown how vital particular species such as elephants and whales are to their ecosystem's ability to sequester carbon, mitigate climate change and protect people from natural disasters.

In addition to affecting a range of areas of development, animal welfare and wildlife conservation issues are especially relevant to international development forums because animals and their habitats do not conform to national boundaries. Animals are also critical to several global networks. They are relevant to international tourism, world health outcomes, transnational organized crime and even terrorism through poaching and trafficking. These are not issues that can be comprehensively resolved at the national level, and they will require significant international cooperation.

▲ A rhino keeper hand feeds two young rescued rhinos at the IFAW/Wildlife Trust of India's Centre for Wildlife Rehabilitation and Conservation in India.



Section 2

# ifaw and the SDGs



Photo: Joaquin De la Torre Ponce / © IFAW



Photo: © BAWA

## integrating the SDGs into ifaw's work

This is the second [Thriving Together](#) report, the first being published in 2018.<sup>3</sup> It builds upon [Measuring What Matters](#), an IFAW report that discusses the necessity of reevaluating the metrics used to measure development to include animals.<sup>4</sup> That report advocates for the adoption of holistic measures such as the [Gross National Happiness \(GNH\) framework](#) in place of purely economic indicators and shows how animals contribute to the GNH domain. Moving from the GNH to the SDGs framework is a natural progression; the SDGs were informed by the same holistic approach that led to the development of the GNH framework, which was enshrined in [Bhutan's constitution](#) in 2008. Although both frameworks recognize the necessity of economic activity, they include it as a component amongst multiple other human needs and values rather than as the singular goal of development.

Therefore, IFAW is committed to incorporating the SDGs into our work. We strive for a world of peaceful coexistence

between humans and the natural environment, and a world where animals are both respected and protected. Such a world cannot be reached unless the [human development and animal welfare agendas overlap](#). We have taken steps to integrate our projects into the communities that live closest to wildlife. This initiates a cycle in which the community benefits, leading to more successful conservation outcomes, ultimately producing additional long-term benefits for the community. Our efforts have covered several SDGs, some of which will be highlighted in this report, which have benefited people and animals around the world.

This report reviews a selection of SDGs and how they are intimately connected with the welfare and conservation of animals, both domestic and wild. We review specific IFAW case studies that incorporate these connections, demonstrating that wildlife conservation, animal welfare and human well-being are indeed interwoven and can be improved side by side.



▲ The UN's SDGs, symbolized by this logo, were agreed on in 2015.

▲ 1,800 superior grasses and leguminous forage plants donated by Denpasar Superior Cattle Breeding and Forage Feeding Center (BPTUHPT) were planted. These plants provide nutrition for Bonyoh and Bunga Hamlets' livestock, including cattle and goats, and the deep root system of the Indigofera shrubs can aid in preventing landslides.

◀ Veterinarians Dr. Erika Flores and Mizael Lara Acevedo monitor and measure a sedated jaguar named Covi during a health assessment at the Payo Obispo Zoo. Since Covi's eyes remain open under anesthesia, they are lubricated and bandaged so he's not startled by the light..



Photo: B. Hollweg / IFAW

# SDG 2: zero hunger

An estimated 2.4 billion people were affected by moderate or severe food insecurity in 2020, an increase of 300 million people from 2019 (likely due primarily to the COVID-19 pandemic).<sup>5</sup> SDG 2 aims to end hunger and achieve food security through sustainable agriculture and other methods. In order to make progress on this goal, SDG 2 targets the agricultural productivity of small-scale farmers and the sustainability of food production systems.

The productivity and sustainability of these farms, and therefore global food security, are dependent upon both the welfare of domestic animals and the health of the local ecosystems and their resident wildlife.

Healthy and cared-for domestic animals and healthy populations of wild animals support the agricultural and natural processes that promote food security and mitigate global hunger. Perhaps the most direct relationship between animals and hunger is their role in agriculture. Animal agriculture contributes to 40% of the global value of agricultural output and supports the livelihoods of 1.3 billion people.<sup>6</sup> Currently, poor animal welfare, especially in factory farming conditions, puts unnecessary strain on food production. When animals are healthy and well cared for, they are more productive and provide higher value food.<sup>7</sup> Animals that are kept in inhumane, crowded enclosures (a characteristic of factory farming), or whose medical needs are ignored, are more likely to get sick and spread disease to other animals. Widespread diseases disrupt food production networks and negatively affect food security.<sup>8</sup> This is particularly important considering animals provide a key source of protein for people around the world.<sup>9</sup>

Factory farming undermines food security by contributing to fundamental changes in the climate that in turn disrupt food availability. A September 2018 report from the United Nations determined that “climate change, climate variability and extremes are among the key drivers behind the recent uptick in

global hunger and one of the leading causes of severe food crises. The cumulative effect of changes in climate is undermining all dimensions of food security—food availability, access, utilization and stability.”<sup>10</sup> Animal agriculture makes up 14.5% of all human-generated CO2 emissions, 53% of nitrous oxide emissions, and 44% of methane emissions.<sup>11</sup> This extreme contribution to global warming would not be possible without concentrated, intensive animal agriculture, but can be offset by using more organic and sustainable techniques.<sup>12</sup>

**Agriculture systems rely on ecosystem services that are dependent on healthy, robust wildlife populations.** Wild birds and bats act as natural enemies to agricultural pests and provide biological control services in agroecosystems.<sup>13</sup> Using natural pest control lowers costs for farmers, which leaves more capital available to invest in productivity. Further, 75% of global crop species rely on animal pollination to reproduce. Developing countries tend to produce more horticultural and stimulant crops (which require animal pollination),<sup>14</sup> therefore, developing countries are disproportionately burdened by the effects of biodiversity loss when many already struggle with food security.

Conservation initiatives have the opportunity to achieve food security in underdeveloped communities by replacing the protein obtained through unsustainable bushmeat hunting with more sustainable livelihoods and food sources. Not only does bushmeat hunting contribute to species extinction and biodiversity loss, but the loss of species hunted for bushmeat ultimately degrades the broader environment that communities rely on for food, water and work. Understanding the role of animals in agriculture, as well as improving animal welfare and conserving wildlife, are critical to efforts to reduce global hunger.

## 2 ZERO HUNGER



### 2.4 billion

people were affected by moderate or severe food insecurity in 2020, an increase of 300 million people from 2019

75%

of global crop species rely on animal pollination to reproduce

◀ The water supply in Amboseli National park is shared between the Maasai community as well as the wildlife.





Photo: © Robert Marc Lehmann

# SDG 3: good health and well-being

Goal 3 is to promote the health and well-being of all people regardless of age or location. It covers a wide variety of health issues, ranging from epidemics to maternal and reproductive care. The field of public health has improved dramatically over the years, however pandemics and preventable chronic illnesses remain a serious public health concern. Communities can work towards reducing diseases and improving health and well-being by both conserving wildlife and promoting animal welfare.

Inhumane conditions for livestock contribute to the emergence and spread of communicable diseases due to the overcrowded, hot and unsanitary conditions to which they are often exposed. These conditions can create ideal conditions for pathogens to multiply. On overcrowded factory farms animals are routinely fed low levels of antibiotics to prevent disease; however, this practice has led to an uptick in antibiotic resistant pathogens and reduced efficacy of antibiotics to combat human diseases.<sup>15</sup> Manure from intensive farming operations pollutes local ecosystems and can release growth hormones, antibiotics and other contaminants into area water supplies where those toxins pose serious risks to human health and the environment.<sup>16</sup>

The spread of zoonotic diseases is exacerbated as wild habitats are destroyed by expanding farming operations and wildlife comes into closer and sustained contact with humans and domesticated animals.<sup>17</sup> Improving conditions for domestic animals and stopping habitat destruction by spreading agricultural practice would reduce disease incidence and improve health and well-being.

Likewise, trade in wild animals and their parts and products can expose humans to zoonotic disease.<sup>18</sup> Wildlife capture and trade has evolved such that live animals and animal products are moved on industrial scales from wild areas to human-dominated spaces. The likelihood of zoonotic disease outbreaks rises dramatically as trade increases due to poor

conditions for the animals and sustained contact between people and animals.<sup>19</sup> Illicit wildlife trade likely caused the outbreak of SARS where trafficked bats became infected and came into contact with humans.<sup>20</sup> Similarly, the Ebola virus was traced to the trade in non-human primates, bats, forest antelopes, rodents and shrews.<sup>21</sup> Scientists have traced HIV to its original roots in chimpanzees<sup>22</sup> and gorillas,<sup>23</sup> and believe that the virus first jumped to humans via the bushmeat trade. Most compellingly, COVID-19 is believed to have emerged as a direct result of the commercial sale of wild animal species to supply an increasingly urbanized demand. **Reducing global wildlife trade, particularly in markets where live animals are sold or slaughtered, would have a profound effect on protecting people from zoonotic disease spillover events.**

On the positive side of animals and well-being, a significant body of research demonstrates the positive effects of pet ownership on chronic illness recovery and prevention. A 2017 Swedish study found that dog owners who live in multi-person households had an 11% lower risk of death and a 15% lower risk of death from cardiovascular causes.<sup>24</sup> Results were even more pronounced (33% and 36%, respectively) in single-person households. Furthermore, owning a pet has been directly linked to stronger immune systems and lower rates of allergies in children.<sup>25</sup> Not only has pet ownership been suggested as a component of treatment for chronic physical illnesses, recent research suggests that pets could be helpful in treating mental illnesses as well.<sup>26</sup> Pet ownership has been shown to increase opportunities for physical exercise and social interaction, leading to a reduced sense of isolation and improved psychological wellbeing.

**Evidence increasingly shows that immersion in nature is beneficial for physical and mental health** as well.<sup>27</sup> Access to green spaces has beneficial impacts on heart rates and blood pressure, decreases the risk of preterm births and low birthweights, decreases incidence of

type II diabetes, strokes, asthma, coronary heart disease, and death overall.<sup>28</sup> In addition, access to nature is associated with reduced depression and anxiety, and increased cognitive function.<sup>29</sup> And because native wild animals are critical to maintaining healthy natural ecosystems, it follows that wildlife is also critical to the beneficial health outcomes associated with spending time in nature. Animals are integral to both the physical and psychological health of communities and therefore it is imperative that animal welfare is incorporated in any development project that targets Goal 3.

## 3 GOOD HEALTH AND WELL-BEING



11%

lower risk of death for dog owners who live a multi-person household

33%

lower risk of death for dog owners who live a single-person household



## SDG 4: quality education

SDG 4 calls to improve equality and quality in accessibility to education. The SDG tackles education from early childhood education through university and vocational training. It also includes target 4.7 which calls to “ensure that all learners acquire the knowledge and skills needed to promote sustainable development.”<sup>30</sup> Connecting education to the environment through outdoor education and lessons devoted to teaching biodiversity both improves education outcomes and helps ensure a positive relationship between people and animals.

There is substantial evidence that **healthy environments and the presence of wildlife improves education outcomes.** Studies have found that field work that involved hands on interaction with biodiversity improved students’ ability to learn taxonomic and structural details.<sup>31</sup> Additionally, outdoor education, which involves immersion in nature, leads to a wide range of benefits for health and well-being.<sup>32</sup> Education which promotes sustainability should include

respectful and positive interaction with animals. Better understanding of animals, their needs and their contribution to the ecosystem is needed for everyone from conservation practitioners, to policymakers, to schoolchildren. Everyone interacts with animals—both wild and domestic—and is influenced by their condition.

Education can help by mitigating fear and misconception about wildlife.<sup>33</sup> Zoonotic disease emergence has underscored the importance of educating both adults and children on safe human-animal interactions and the need to understand that how we manage animals has a direct correlation to human well-being. As the Earth’s population continues to grow and climate change-related migration of both people and animals increases, human-wildlife interaction will continuously rise, heightening the need for sustainable development education with a focus on animal welfare and human well-being.

### 4 QUALITY EDUCATION



**healthy environments and the presence of wildlife improves education outcomes**

▲ Maasai children in Amboseli, Kenya learn to celebrate and respect animals, and to gain a positive understanding for the ecosystem they share.



## SDG 5: gender equality

Goal 5 calls to end all forms of discrimination against women and girls. The targets include eliminating violence against women, recognizing and valuing unpaid care and domestic work and ensuring women have equal access to decision making, public life, economic and other resources.<sup>34</sup> All of these are closely connected to human-wildlife relations.

**Improving animal welfare and human well-being requires the participation of all parts of society to ensure everyone’s needs are met.** Gender inequality must be addressed to ensure proper sustainable wildlife management as conservation and human-wildlife conflict often affects men and women differently. According to the **UN’s Food and Agriculture Organization (FAO, in too many cases, conservation efforts do not ensure that women’s needs are addressed or their voices are heard, to the detriment of both people and animals.**<sup>35</sup>

Animals can be a source of income to the household generated by both men and women whether through food preparation, conservation efforts, hunting or other activity. In fact, women represent nearly half of those working in fisheries and aquaculture worldwide.<sup>36</sup> Despite women’s important role,

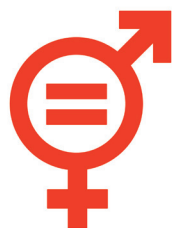
they have far less access and control over resources and information to maintain and improve their activities.<sup>37</sup> Moreover, food security of women and children (mainly girls) is often disproportionately affected by wildlife management and inequality in financial decision making in the household.<sup>38</sup> When food is scarce or money is tight, women and children tend to be the first ones to suffer from malnutrition.

An additional issue the FAO points to is the inclusion of women’s safety in conservation efforts. Women often risk themselves guarding small-scale agriculture operations from wildlife and travel great distances to get resources. Unfortunately, their risks as well as the time and resources they invest in such operations is often unaccounted for in conservation plans and sometimes not even reported.<sup>39,40</sup>

Moreover, women’s time constraints as well as societal norms and beliefs prevent them from being equally represented in conservation and wildlife management decision making.<sup>41</sup> The lack of women participating in the decision-making process is apparent at both the community and governmental level.<sup>42</sup> The time constraints and other economic and social inequalities

have become even more apparent during COVID-19.<sup>43,44</sup> It is important now more than ever to include women in decision making and create inclusive conservation management plans.

### 5 GENDER EQUALITY



**50%**

of those working in fisheries and aquaculture are women

▲ Local women and children retrieving water for the Chikolongo fish farm in Malawi that will help the community receive fresh water and a source of income from the sale of fish and vegetables.



Photo: Patrick Savialei / © IFAW

# ifaw's contribution to gender equality in rural East Africa

Through IFAW's community engagement program we seek to **create opportunities for women and girls to access education and employment opportunities and take on leadership roles in their communities**, especially with regards to natural resource management.

Wildlife rangelands are located in rural areas where women providing for their families often interact with wildlife more than men. Actions like collecting water, harvesting crops and collecting firewood for cooking put women at greater risk of dangerous encounters with animals like elephants, buffaloes, crocodiles and hippos.

At IFAW, we recognize the unique challenges faced by women and work to make their voices heard in conservation. When women have alternative opportunities for education and professions, economic livelihood increases, communities thrive and human-wildlife conflict plummets. The future of conservation needs local women in leadership positions. Here's how we're making that happen.

## Education scholarships in Amboseli, Kenya

Since 2014, through our Amboseli project, IFAW has offered education scholarships to 120 students studying at varying levels of secondary, college and university education. The first cohort of 60 students was inducted into the IFAW scholarship project in 2014 with 17 female students – 3 in high school and 14 in colleges and universities.

## Team Lioness – amongst the first all-women community wildlife rangers in Kenya

Since February 2019, IFAW's Team Lioness, who are amongst the first all-women community wildlife rangers, have been protecting wildlife in Amboseli's vast community lands. So far this specialized unit is made of 16 female rangers, all drawn from the local community. Most members of the Team are the first in their families to have formal employment which provides economic freedom to them and their families. The women are also role models providing social empowerment to other women from the local community. Members of Team Lioness hold multiple roles in society, including some of them being mothers. That's why IFAW, in collaboration with the German-based Margarete-Breuer Stiftung (MBS) Foundation, has constructed a nursery where infants and babies of Team Lioness are cared for during the working day, giving the women peace of mind that their children are safe as they go about their daily work duties.

## Esiteti Osotua women's community-based organization

IFAW has contracted the Esiteti Osotua women's community-based organization (CBO) in Amboseli, Kenya to provide monthly supplies and rations to more than 80 community wildlife rangers. The financial returns are split two ways with an agreed portion to the women's savings bank account and the other given to each of the 179 women to cater for the needs of their families such as paying school tuition fees and purchasing groceries. The group returns have been used to purchase young cows and bulls. Once mature, the cows provide milk for the women's families and

the bulls are sold at a profit. IFAW provided technical and financial support to help set up this CBO, including education and awareness about setting up and running a CBO, drawing their constitution, roles and responsibilities, leadership and governance, registration, linkage to county government of Kajiado, and starting businesses. IFAW is also involved with providing oversight and, where necessary, direction so as to ensure that the CBO is effectively managed and resources are equitably shared among the members. This CBO is supporting 692 dependents in Esiteti village.

## Jenga Mama (Empower Women) Project

IFAW has also partnered with the MBS Foundation to finance 60 local community women to undertake vocational training in hairdressing and beauty therapy, food and beverage production, plumbing, garment making and information technology. The training will see them acquire the professional skills and knowledge to start small businesses, which will reduce their dependency and interactions with nature, giving wildlife room to roam in their habitat. The economic returns will help support their families and community, helping them become advocates for wildlife. Animal welfare often starts with the well-being of people. By creating new alternative sources of income that generate stability and leadership, the women of Jenga Mama are helping their community create peaceful coexistence between people and wildlife.

◀ IFAW-supported Team Lioness Olgulului Community Wildlife Ranger (OCWR) Beatrice Sailepu uses binoculars while on patrol near the base camp at the Risa community in Amboseli, Kenya.



SDG 1: IFAW is facilitating opportunities for women and girls in the belief that this will increase their chances of being employed in different sectors.

Employment results in socioeconomic empowerment, thus reducing levels of poverty.

SDG 4: The high school and post high school education and training opportunities ensure that women and girls receive a quality education and increase the numbers of women who are educated.

SDG 5: By facilitating opportunities for education in high school and training at post high school level and resultant employment, IFAW is promoting gender equality and empowerment for women and girls in Amboseli.

SDG 8: IFAW is promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all – particularly for women and girls.

SDG 10: Socioeconomic inequalities are reduced by education, training and income-generating activities for women.

SDG 15: Through their patrols of wildlife habitat, Team Lioness reduces the degradation of natural habitats and halts the loss of biodiversity.

SDG 16: Providing opportunities for the socioeconomic empowerment of women ensures that women participate at all decision-making levels to promote peaceful societies.

SDG 17: Partnering with the women and the local community in Amboseli ensures that we strengthen domestic resource mobilization to improve domestic capacity for tax and other revenue collection.

**120**

students studying at varying levels of secondary, college and university education since 2014

**16**

women in one of the first all-women community wildlife ranger units have been protecting wildlife in Amboseli's vast community lands since 2019

**60**

local community women are financed to undertake vocational training in hairdressing and beauty therapy, food and beverage production, plumbing, garment making and information technology

▲ Jenga Mama participants practice hairdressing and giving manicures.



## SDG 8: decent work and economic growth

While economic growth is not the definitive metric of human development in the SDG framework, the SDGs recognize that employment and economic growth are necessary components of human well-being. Goal 8 seeks to promote economic growth in a sustainable way with a focus on productive, inclusive and decent work for all.

Perhaps the most visible example of an industry dependent on the conservation and welfare of wildlife is nature tourism. **The economic benefits of nature tourism are remarkable**; this is especially true in the developing world. Eighty percent of trips to Africa are for wildlife viewing.<sup>45</sup> In fact, one live elephant in a viewing camp in Africa can generate USD\$1.6 million for the global economy over its lifetime.<sup>46</sup> This phenomenon is not limited to the developing world; whale watching is estimated to generate USD\$2 billion annually with 13 million people participating in at least 119 countries.<sup>47</sup> In the U.S., viewing Yellowstone wolves alone generates USD\$70 million per year,<sup>48</sup> while the outdoor recreation industry

supports 6.1 million jobs and accounts for US\$646 billion in annual spending.<sup>49</sup> Robust wildlife populations and healthy ecosystems are critical to the economic well-being of both developed and developing regions.

Animals also support the livelihoods of many of the world's poorest people, often serving as the single biggest store of wealth they own. More than 650 million (of the one billion poorest people on the planet) rely entirely on animals for a living.<sup>50</sup> Animal welfare measures not only ensure that working animals are treated humanely, they also create more value for the poor who rely on them. For example, donkeys that are used in the brick industry in south Asia have a life expectancy of eighteen months when they are not well cared for, but when simple animal welfare practices are introduced, they can support the business for up to eight years before being sold as a healthy animal.<sup>51</sup> Through tourism, agriculture and other industries, **animals form the backbone of economic growth and livelihoods in many communities.**

**8 DECENT WORK AND ECONOMIC GROWTH**



**USD\$2 billion**

generated from whale watching annually with 13 million people participating in at least 119 countries<sup>47</sup>

**USD\$1.6 million**

for the global economy over its lifetime is generated from one live elephant in a viewing camp in Africa

▲ African elephant with an Egret on its back.



# welfare of jaguars, marine turtles and dogs intertwined with human well-being in Quintana Roo, Mexico

Jaguars once ranged from the [Southwest U.S.](#) to [Argentina](#). They were revered by ancient [Mesoamerican](#) people and ancient [Mayan](#) art and architecture featured the jaguar prominently. However, during the 20th century jaguars were hunted nearly to extinction for their fur. Although jaguar populations began to rebound, they now face myriad threats, including habitat loss, retaliatory killings, disease transmission

and poaching for the use of their parts and derivatives. Jaguars are the top predator in the [Americas](#). Declining jaguar populations have implications for many other species and the health of the entire ecosystem.

The State of [Quintana Roo](#) is located in the [Yucatán Peninsula](#) and is home to the largest jaguar population in [Mexico](#). Nonetheless, it also host several major

▲ Joselyn Gonzalez, at rear, and her sister, Naomi, paint an IFAW-supplied dog house for Rita, the family dog who is resting inside. As part of the Casitas Azules Project IFAW helped residents of the small village of Nuevo Durango, Mexico, a mostly Mayan community, build more secure chicken coops and dog houses to protect the animals from jaguars and other predators.

tourist destinations, which had brought a rapid growth in human population and urban expansion. As these cities and towns expanded inland, interactions between wildlife, humans and community animals became quite common.

Deforestation and the expanding human footprint are limiting jaguar habitat and prey as well as increasing overlap of human communities and jaguar habitat. Jaguars are opportunistic hunters and where their habitat overlaps with human communities, domesticated animals become easy prey. These factors lead jaguars to prey on community animals such as chickens, dogs, and livestock.

Nearly 50% of registered conflicts between jaguars and communities are specifically related to jaguar predation on dogs. These interactions bring new threats to jaguars, including ‘retaliatory killing’ by a fearful community and disease transmission from dogs to jaguars and other wildlife, including canine distemper and parvovirus. All the while, ‘free roaming’ dogs bring additional threats to other forms of endangered wildlife such as marine turtles, whose nests of abundant young often fall victim to hungry dogs.

In response, IFAW launched its jaguar coexistence project in [Mexico](#) called [Casitas Azules](#) (Blue Houses) in 2017, to help community members keep their dogs, their communities and their wildlife safe and therefore contribute to achieving coexistence between humans and wildlife. Through this project, IFAW has engaged urban and rural communities, including [Mayan](#) communities in [Quintana Roo](#), to improve management and care of domesticated animals to reduce human-jaguar conflict in response to predation, and reduce risk of disease transfer to jaguars during predation events.

This holistic approach has included building more than 150 doghouses and dog pens to provide adequate shelter while discouraging dogs from roaming free throughout the night, minimizing marine turtle predation and protecting them from jaguar predation and further community

animal loss. The comprehensive project also includes building predator-proof chicken coops when necessary, as well as jaguar deterrents such as lights, which tend to keep jaguars at a safer distance. All the materials, such as wood and mesh wire for the dog pens and chicken coops, is provided by IFAW from local sources and the structures are built by local carpenters or community members as part of the community engagement approach.

Wellness clinics are also offered to ensure the local community animal population is well-controlled and vaccinated to prevent disease transmission to jaguars. This reflects the [One Health and One Welfare](#) approach, which recognizes the interconnection between people, animals and their shared environment.

When a dog gets attacked by a jaguar it makes people in the community feel scared and angry, creating negative feelings about the jaguars. Dogs are beloved members of the family, so IFAW provides free veterinary services and round-the-clock care in an effort to save the life of any dog injured by a jaguar.

Families that engage in this project then become animal welfare ambassadors in their local community, which in turn encourages further guardianship and community safety.

SDG 3: Many people consider dogs to be another member of the family. The dog houses or pens help reduce dog injury and death from jaguar predation events, reducing the pain and suffering caused by the loss of a beloved pet.

SDG 8: By making the communities safer and protecting biodiversity, the project preserves and promotes conditions that drive tourism to the area. The project also provides materials and a stipend to local carpenters or community members to build the doghouses, pens or chicken coops.

SDG 11: Jaguar predation in the cities contributes to human-wildlife conflict. By encouraging adequate guardianship of dogs and reducing jaguar predation, the Coexistence Project of Casitas Azules makes the tourist cities of Quintana a safer place for people and animals to live.

SDG 14: Improving adequate guardianship and housing dogs during nighttime prevents dog predation on sea turtles adults or nest scavenging.

SDG 15: Removing a source of attractants that drive jaguars to enter urban areas helps conserve a key predator that contributes to the forest ecosystem and keeps populations of prey species in check.

**2000+**

domesticated animals –including dogs, chickens and sheep have benefited from the project

**11**

different locations throughout the State have been engaged, including two Mayan Communities

**600+**

community members have directly benefited from this project



Photo: © Rudi van Aarde

# SDG 13: climate action

SDG 13 strives to support swift action to combat climate change and its effects. In addition to broad targets to integrate climate resilience and mitigation measures into national planning, the goal also includes a target to enhance disaster preparedness, which will become increasingly important as natural disasters such as hurricanes and wildfires become more frequent and magnified due to climate change.<sup>52</sup> In this regard and others, SDG 13 overlaps significantly with the goals set by the 2015 Paris Climate Agreement<sup>53</sup> and underscores the need for the continued inclusion of climate considerations in sustainable development.

Climate change will continue to worsen if biodiversity is not protected, especially because animals play a key role in maintaining critical ecosystems that mitigate the damaging effects of CO<sub>2</sub> emissions. About 40% of the world's carbon is stored in tropical rainforests, and effective climate mitigation relies on healthy forest ecosystems to serve as a carbon sink.<sup>54</sup> In order for these ecosystems to be healthy and resilient, the wildlife populations that inhabit them must also be robust. **Large mammals in particular are essential to climate change mitigation and adaptation.**<sup>55</sup> For example, forests depend on large herbivores to propagate seeds and regenerate the forest; some species of hardwood trees are so specialized that they cannot reproduce unless their seeds pass through the stomach of an elephant.<sup>56</sup> Other examples include forest elephants promoting the growth of larger trees that are better carbon sinks,<sup>57</sup> while whales are a key part of carbon sequestration in oceans,<sup>58</sup> along with a host of other marine vertebrates. **Focusing on species conservation is important for protecting the species themselves, but it is also vital to mitigating climate change.**<sup>59</sup> Global losses of wildlife have cascading consequences throughout ecosystems, which in turn make humans more vulnerable to the dangers of climate change.

Climate change is linked closely with animal product production and the care of those animals. Meat and dairy account for around 14.5% of global greenhouse emissions,<sup>60</sup> which could rise precipitously as the world's population grows.<sup>61</sup> Plant-based diets are a major opportunity to mitigating climate change as well as reducing hunger.<sup>62</sup> Additionally, converting to more animal-friendly production processes can assist with climate mitigation efforts. For example, shifting to pasture-based systems for cattle rearing can help increase carbon storage. A study found that if Europe's farmland converted to organic principles, agricultural greenhouse gas emissions could drop by more than 40%.<sup>63</sup>

One of the most pressing dangers presented by climate change is its escalating effect on natural disasters. Climate change increases the frequency and intensity of severe natural disasters.<sup>64</sup> Despite some improvements in disaster risk reduction strategies, disaster-related mortality rates continue to rise.<sup>65</sup> One of the reasons for the high number of disaster-related deaths is that many people do not or cannot evacuate their homes before a disaster. Many families will not abandon their pets in their homes during an emergency. Forty-four percent of those that refused to evacuate during hurricane Katrina, which flooded the U.S. Gulf Coast in 2005, did so mostly because they refused to leave their pets behind.<sup>66</sup> For those who are also reliant on service animals, risks might be higher. In contrast, natural disasters can also cause a spike in animal abuse, as reported in Texas 2021 winter storms.<sup>67</sup> Thus, a lack of animal shelters as well as the widespread absence of animal considerations from disaster planning processes endangers families with pets during natural disasters.

From disaster planning, to changes in animal consumption in diets, and the key role of wildlife in climate mitigation, no climate-related action should be undertaken without considering both domestic animals and wildlife populations.

## 13 CLIMATE ACTION



40%

of the world's carbon is stored in tropical rainforests

14.5%

of global greenhouse emissions are from meat and dairy production<sup>60</sup>

◀ Elephants at Mana Pools National Park, Zimbabwe.

# protecting koalas means protecting Australia



Photo: © IFAW

Koalas are one of the world's most recognized species. In [Australia](#), they are featured in many Aboriginal Songlines and Dreamtime stories about their role in maintaining the health of the country. Once numbering in the millions, koalas were hunted to near-extinction for their fur in the late 1800s and early 1900s. Since the trade was banned, koala populations have slowly recovered over time but despite their iconic status, koalas are in real danger of extinction.<sup>68</sup> They are facing unprecedented threats from habitat loss due to land-clearing and development, as well as bushfires that are being exacerbated due to climate change.

Koalas are to [Australia](#) what elephants are to [Africa](#), an iconic flagship species and one without the other is unthinkable. Like elephants, koalas need room to roam and safe passage through the landscape. Like a proverbial canary in the coalmine, when koalas are in trouble it is a warning signal that the whole ecosystem is in trouble. In the same way, by protecting and restoring koala habitat, we are also protecting countless other flora and fauna species and the ecosystem services they provide, including climate change mitigation.

## Threats

**The number one threat to koalas is habitat loss.** Unfortunately koalas like to live in the same areas as humans – the flat, fertile areas along the east coast of Australia. There is a hot competition for real estate and koalas lose out to development time and time again. The east coast of Australia is a deforestation hotspot due to excessive land-clearing for development and Australia is the only developed nation on a list of global deforestation fronts.<sup>69</sup>

Besides habitat loss, bushfires are another threat to koalas. Bushfires have always been an integral part of the Australian landscape, with many animals and plants adapting to its impacts. However, due to compounding factors of climate change and fire mismanagement, bushfires have become more frequent and severe, intensifying the threat to koalas and other wildlife.<sup>70</sup> Koalas are slow-moving, but are

often able to escape normal ground fires that sweep through the forest floor by climbing to the tree tops. However, they stand little chance of escaping the increasingly frequent 'crown fires' that burn through the canopy. Many are killed and those that survive suffer burns and smoke inhalation and starvation due to lack of food.

**Koalas are one of ten global species identified by the International Union for Conservation of Nature (IUCN) as the most vulnerable to climate change.**<sup>71</sup>

Drought, rising temperatures, loss of moisture in eucalyptus leaves and more frequent and intense bushfires all threaten the species. The devastating [Black Summer](#) bushfires of late 2019 and early 2020 brought the situation to crisis levels hitting at the heart of already vulnerable koala populations. IFAW [commissioned research](#) into the status of [New South Wales \(NSW\)](#) koalas revealing declines of up to two thirds of the population due to droughts, bushfires, climate change and man-made causes over twenty years.<sup>72</sup>

## Solution

The problems facing koalas are numerous and complex and there is no one-size-fits-all solution. That's why IFAW has built a truly holistic rescue, rehabilitation and recovery campaign, with koalas as the flagship. First, IFAW advocated for and achieved "[Endangered](#)" status for koala populations in three eastern states and territories where they have seen the most losses, while also advocating for stronger protections in two southern states where koalas face unprecedented habitat destruction.

Protecting koala habitat is vital to protecting not only the species, but the thousands of species of flora and fauna that live there as well. Most koala habitat occurs on private land, so private landholders hold the key to koalas' future survival and are taking it into their own hands to protect and restore wildlife corridors and connectivity. An example of such a community-led initiative is [Bangalow Koalas](#) in the [Northern Rivers](#) region of [NSW](#) who [IFAW partners](#) with to restore a

wildlife corridor. IFAW also partners with the [Great Eastern Ranges](#) on a [campaign](#) to restore native forests, help wildlife in need and boost community healing and resilience. Through these partnerships, IFAW has planted more than 30,000 trees, each one providing a lifeline for koalas and other wildlife. With deforestation being a key driver of the CO2 emissions driving the climate crisis, tree planting is a relatively simple, cheap and tangible solution to combating the impacts of climate change.

Every individual koala contributes to the future survival of the species, and IFAW is leading a rescue and rehabilitation program to ensure injured and displaced koalas receive expert veterinary treatment and are able to be released back into the wild. IFAW supports [Friends of the Koala](#), which has an onsite koala hospital that treats around 300 koalas per year with increasing release rates. IFAW also partners with [Detection Dogs for Conservation](#) at the [University of the Sunshine Coast](#) to find injured koalas. One of the dogs, Bear, found over 100 koalas in the Black Summer bushfires.

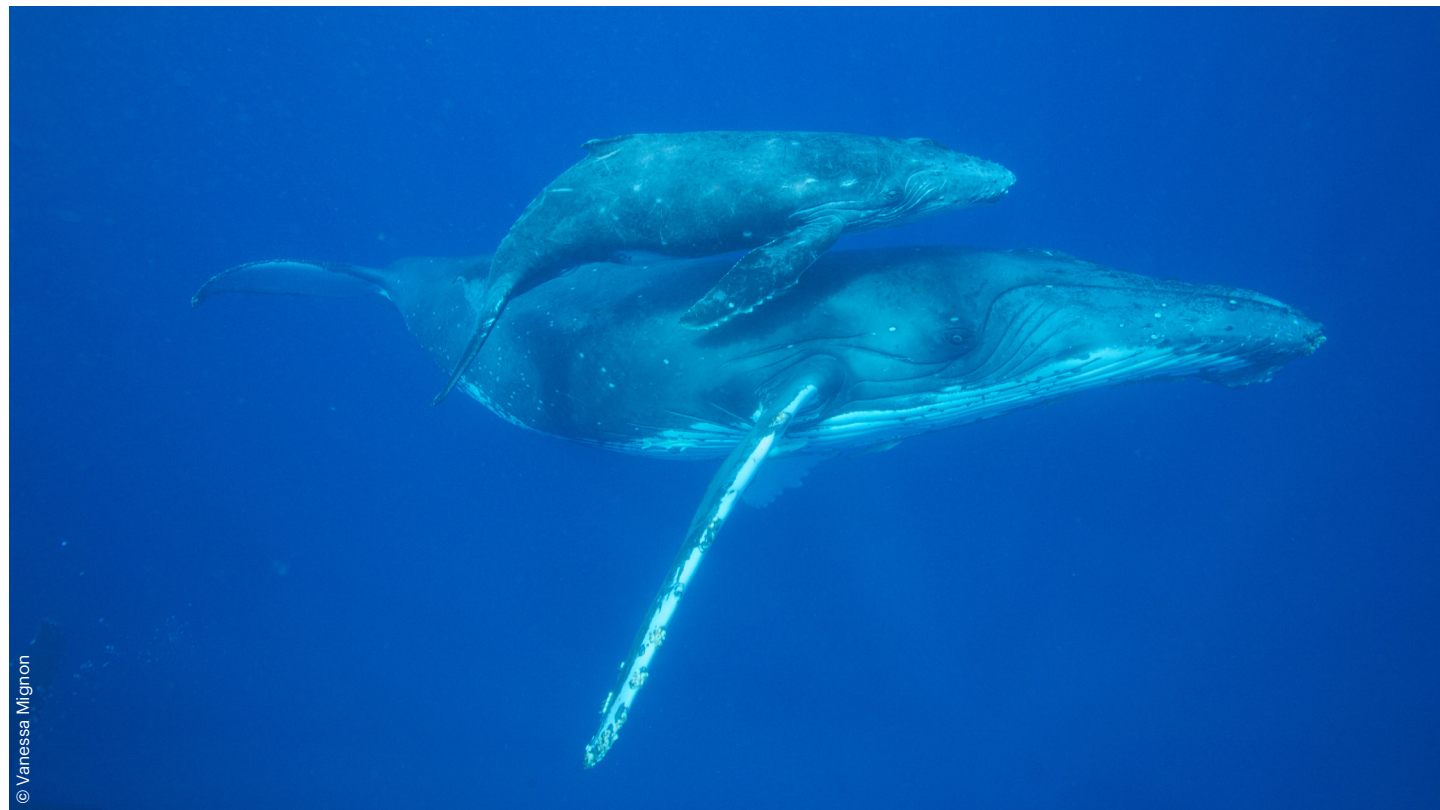
*IFAW acknowledges the Traditional owners of country throughout Australia and the [Oceania](#) region and their connection to land, waters and culture. We pay our respects to their Elders, past, present and emerging.*

**SDG 13: Koalas are highly susceptible to climate change. Increasing droughts, more frequent and intense bushfires, and hotter temperatures all affect the species substantially. Yet, protecting them, and protecting and restoring their habitat, will help mitigate climate change in a considerable way by sequestering more carbon.**

**30,000+**

trees were planted

◀ IFAW-sponsored veterinary nurse Marley Christian sets a crate next to a tree in a forest for Ginger, a rescued koala, to climb out of and return back to the wild in East Lismore, New South Wales, Australia.



© Vanessa Mignon

# SDG 14: life below water

The world's oceans provide numerous services to people and they are home to an extraordinary amount of biodiversity. However, the ocean environment is also in severe danger. Pollution, overfishing and ocean acidification impede the healthy functioning of the ecosystem that billions of people rely on for food, livelihoods and overall well-being. These forces also endanger marine life and biodiversity, which fuels a vicious cycle of ecological degradation. To address these serious concerns, **SDG 14** seeks to conserve and sustainably use the oceans, seas and marine resources for sustainable development.

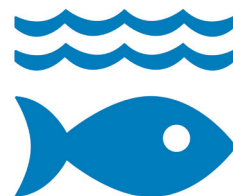
The importance of marine life in conserving the oceans cannot be overstated. When marine and coastal species are healthy and their habitats protected, they contribute to key ecosystem services that support the functioning of the ecosystem. Sea otters, for example, maintain kelp forests by preying on the sea urchins that would otherwise overgraze the kelp. Kelp forests prevent coastal soil erosion by lessening the effect of waves hitting the shore, which prevents

coastal property damage.<sup>73</sup> They also help prevent ocean acidification and global climate change; healthy kelp forests have the capacity to absorb billions of kilograms of carbon and help regulate ocean pH.<sup>74</sup> Thus, sea otter conservation not only protects biodiversity, but it also maintains an ecosystem that humans rely on for valuable services.

Whales also have important effects on ocean ecosystems. By feeding deep in the ocean and emerging to breathe at the surface, **whales circulate nutrients back to the surface, which supports a variety of other species.** They also help low-latitude ecosystems that lack nutrients to flourish when they migrate there to breed and calve.<sup>75</sup> In fact, healthy whale populations yield more fish for fishermen to catch. When combined with the economic benefits of whale-watching, a **whale provides far greater value as a member of a healthy ecosystem than as a hunted commodity.**<sup>76</sup> Marine species are integral to the ocean-based resources upon which many communities absolutely depend. Conserving them is not only important for the species

themselves, but it is absolutely essential to the sustainability of the marine environment itself.

## 14 LIFE BELOW WATER



▲ A whale and its calf swim together through the ocean.



Photo: © Júlíustein Björg / Getty Images

# whale conservation's positive effect extends onshore in Iceland

Commercial whaling is an unsustainable and cruel practice that severely disrupts whale-watching tourism, which is one of Iceland's most profitable and important industries. Not only does whaling remove whales from the population, it also causes whales to fear whale-watching boats. In 2011, IFAW started the **Meet Us Don't Eat Us** campaign to inform and educate tourists about the facts of whale meat consumption (**whale meat in Iceland is primarily eaten by tourists, not locals**) and encourage political leaders to make whaling hotspot Faxaflói Bay a protected sanctuary. Surveys indicate the campaign has helped reduce tourists' whale consumption by half since 2011. By protecting the whale population, our work supports sustainable livelihoods in the whale-watching industry that also protects Iceland's natural heritage. Whale-watching also indirectly supports related industries such as hospitality. Furthermore, a growing whale-watching tourism industry has led to the revitalization of Reykjavík's harbor district, reinvigorating the harbor area with restaurants and gift shops.

**SDG 8:** Protecting Faxaflói Bay allows the whale-watching industry to thrive, creating jobs and contributing to Iceland's largest industry: tourism. When whale-watching brings tourists to Iceland, supporting industries also witness growth.

**SDG 11:** To accommodate the flood of tourists brought into Reykjavík's harbor district to whale watch, the area has transformed into a booming and vibrant neighborhood full of green spaces, restaurants and cultural centers.

**SDG 12:** Commercial whaling, perhaps the 20th century's greatest example of unsustainable consumption and production, drove many whale species to the brink of extinction. As slow-breeding mammals, many whale populations have yet to recover and today face many other threats in addition to whaling. Protecting whales by ending commercial whaling helps ensure that the gentle giants are there for future generations.

**SDG 13:** Whales contribute significantly to the ocean's ability to sequester carbon by efficiently taking carbon from the ocean surface to the deep sea. Conserving whales instead of hunting them allows them to continue performing this essential ecosystem service.

**SDG 14:** Healthy whale populations benefit the marine ecosystem. Whales circulate nutrients back the surface, which is essential for phytoplankton that are critical to maintaining a healthy ocean and extracting carbon dioxide from the atmosphere.

▲ With more than 2.3 million tourists visiting Iceland each year, recent data shows at least 17% go whale watching. IFAW's Meet Us Don't Eat Us campaign promotes whale watching as a responsible and economically beneficial alternative to whaling.





Photo: © Robert Marc Lehmann

## SDG 15: life on land

Much like a healthy ocean, without a healthy environment on land, sustainable progress on the other goals is impossible. Humans rely on the terrestrial ecosystems in both subtle and obvious ways, some of which we may not realize until it is too late. To prevent the dire consequences of ecosystem degradation for development, SDG 15 calls on the international community to protect, restore and promote the sustainable use of ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss. To achieve this, SDG 15 incorporates targets across a variety of key ecosystems and urges the inclusion of the natural world into human development planning.

Wildlife conservation is central to SDG 15. Not only are preventing biodiversity loss and halting the extinction of endangered species explicitly mentioned in several targets, conservation also contributes to the larger ecological goals of this SDG. When wildlife habitats are protected, ecosystems thrive and destructive forces such as desertification are mitigated. For example, wildlife fertilize and rejuvenate the soil in fragile ecosystems, and apex predators keep the population of grazers in check. When habitats are overgrazed as pasture lands, or when critical ecosystem services are limited due to wildlife population decline, soil erosion can occur,

leaving the landscape without necessary nutrients and at risk of desertification.<sup>77</sup> For example, there is a strong correlation between prairie dogs' burrowing behavior and groundwater recharge and soil productivity in the American Southwest.<sup>78</sup> Similarly, elephants overturn soil and dig up water holes in times of drought, making the ecosystem more resilient to increasing drought conditions due to global warming.<sup>79</sup>

Paying close attention to these kinds of ecosystem services is especially important considering that the planet is currently experiencing its sixth mass extinction event. Even more startling, the number of vertebrate wild animals on Earth is estimated to have declined by 68% since 1970.<sup>80</sup> Because wildlife plays a critical role in maintaining ecosystems, this decline in biodiversity has severe ecological consequences. Currently, 58% of land on Earth is experiencing unsafe levels of biodiversity loss.<sup>81</sup> **As wildlife populations decline, ecosystems of all kinds are less resilient and therefore at risk.** Without resilient ecosystems, all agriculture, water management systems and industries (such as tourism) are left significantly more vulnerable. It is now more important than ever to incorporate life on land into development planning.

15 LIFE ON LAND



68%

estimated decline of number of vertebrate wild animals on Earth since 1970<sup>80</sup>

▲ Barbary macaques are an endangered species endemic to Morocco and Algeria. Demand for the pet trade, habitat destruction and unsustainable tourism threaten this monkey species.



Photo: © Rudi van Aarde

## as wildlife and people run out of space, we're creating Room to Roam

IFAW's Room to Roam initiative is a new and visionary approach to conservation in Africa, with elephants and people leading the way. Backed by 20 years of science, fieldwork and engagement with local communities, Room to Roam will ensure persistence of viable and stable elephant populations long into the future. Through connectivity, secure habitats, and by bringing people together, we will create safe passages for elephants and other wildlife to move freely within their home range of East and Southern Africa. The result is greater biodiversity, a natural resilience to climate change and a future where animals and communities can coexist and thrive.

### The problem

Today more than 150,000 elephants roam across increasingly fragmented landscapes that often fall outside of formal protection. They're at risk as they follow an inherent drive to travel centuries-old wildlife routes. Human development, population growth and competition for resources are leading factors that expose elephants to poaching and human-wildlife conflict. 1.2 billion people live on the African continent, a number that is expected to double in the next 40 years. When wildlife and humans live in proximity, both can be at risk. Animals become entangled in fences, destroy people's homes or raid their crops. This can result in people harming animals and animals harming people.

1.2 billion

people live on the African continent, a number that is expected to double in the next 40 years

60-70%

of African elephants spend time outside of national parks and protected areas, making them vulnerable to poachers or human-wildlife conflict

10,000+

elephants are killed every year by poachers; without bold and rapid action, elephants could be poached to extinction within a generation

▲ An elephant herd roaming the savanna of northern Botswana.



Photo: Karel Prinsloo / © IFAW

Climate change compounds the threat of fragmented landscapes, with animals like elephants risking their lives and traveling further than ever to seek essential water and food for survival. Ironically, healthy elephant populations are among the greatest contributors to Africa's healthy ecosystems and biodiversity.

### The Solution

IFAW believes every species and every habitat has the ability to bounce back. To survive, elephants need connected landscapes to travel as they once did across the African continent, through countries, over borders, at a distance from humans. They need access to healthy habitat and resources, and greater protection from the threat of poachers.

Reconnecting landscapes can protect biodiversity, reduce human-wildlife conflict and build climate resilience. IFAW collaborates with the [University of](#)

[Pretoria's Conservation Ecology Research Unit \(CERU\)](#) to base our approach on robust data and principles. The science of megaparks for metapopulations<sup>82</sup> advocates for ecological connectivity as essential for the survival of wild species by maintaining biodiversity and providing an opportunity for species to adapt to climate change. Thus, our vision builds on existing conservation clusters but looks to proactively expand and connect additional habitat in response to changing climate and human development pressures.

The Room to Roam vision includes supporting ranger programs, revitalizing parks and fostering a community-driven model of sustainable tourism and other conservationfriendly livelihood solutions. We are committed to the long-term rescue and rewilding of elephants, because each individual matters for the survival of the species. And we recognize the importance of including Indigenous peoples in the conversation.

### Community impact

Room to Roam doesn't only help elephants and other wildlife—it also opens new opportunities for local communities to enhance their well-being and coexist with wildlife.

Land outside of national parks belongs to communities and private landowners, including traditional leaders, conservancies and land trusts. When we engage communities in natural resource management—whether for ecosystem health and/or as an economic driver—they can be directly involved in planning and implementing long-term solutions.

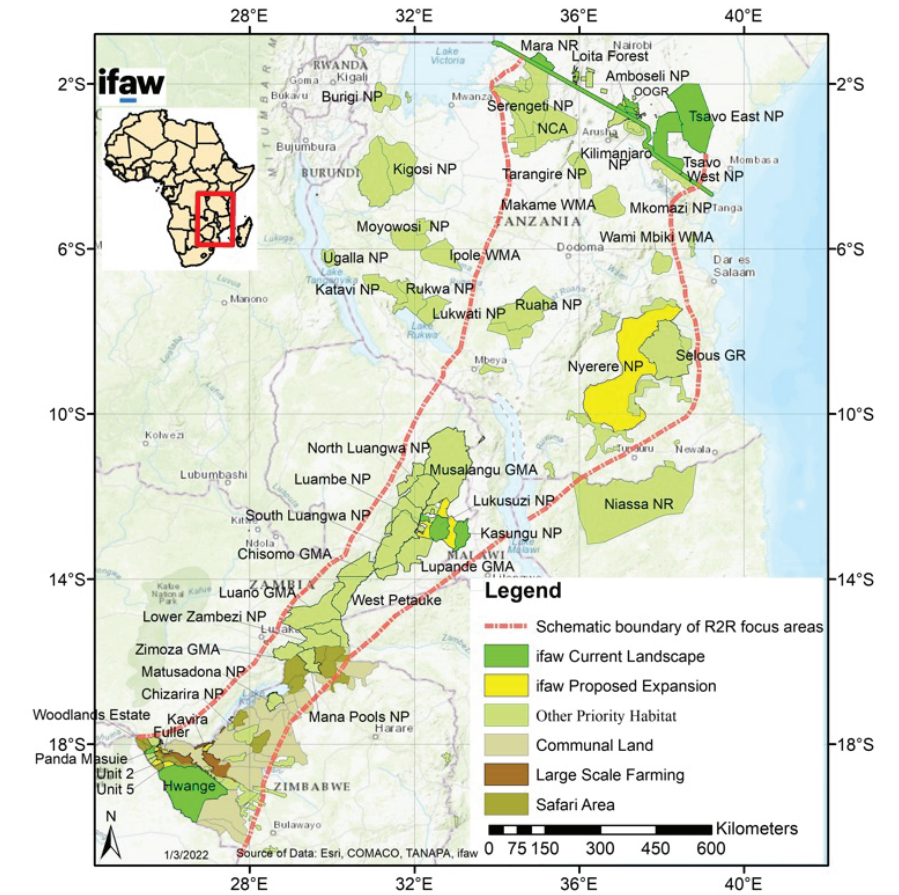
Across our focus landscapes, IFAW also supports development of hands-on skills, educational scholarships, women-in-business and other income-generating activities. When people are empowered by their own contribution, there is less incentive to rely on poaching or other unsustainable depletion of natural resources.

### Partnership

The context of our work crosses borders, cultures and organizations, meaning that relationships with people are at the heart of our approach and are a key to success.

In addition to forging partnerships with communities and traditional leaders, we also partner with governments, private sector actors and other NGOs in a long-term plan to reconnect critical landscapes and help wildlife flourish. Any lack of integration across these sectors leads to inefficiencies, drives duplication, adds tensions and creates sinkholes where funding can disappear. To succeed, our work must integrate partnerships and business development plans across multi-stakeholder landscapes.

We're inspired by a world where people and wildlife share this place we call home.



**SDG4:** Since 2014, IFAW has offered scholarships to hundreds of students at various levels of secondary, college, and university education. This includes scholarships toward wildlife management studies in Amboseli, Kenya and a junior ranger outreach program alongside Zimparks at primary schools in Zimbabwe.

**SDG8:** IFAW engages communities to increase access to alternative income sources while providing training and teaching job skills. Nature tourism is a key driver of the economies of the Room to Room communities.

**SDG11:** The Room to Roam initiative is highly supportive of international development agendas focused on sustainable development, transportation, agricultural expansion and more. When considered at the start, animals and people can live and thrive alongside one another.

**SDG13:** In order for elephants to adapt to climate change, they will need to be able to migrate as their food and habitat changes. Additionally, healthy populations of elephants help ecosystems store carbon and mitigate climate change.

**SDG17:** IFAW is forging partnerships with communities, traditional leaders, governments, private sector actors and other NGOs in a long-term plan to reconnect critical landscapes and help wildlife flourish.

◀ Elephants crossing a road in Amboseli National Park, Kenya.



Photo: B. Hollweg / © IFAW

Section 3

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# recommendations & endnotes



Photo: Julia Curtes / IFAW



Photo: Shaun McWinn / IFAW

# recommendations

Humanity's historic reliance on animals has not ended. Indeed, as the world faces increasingly complex global challenges, our relationship to the natural world is more important than ever. As demonstrated in this report, animals, both domestic and wild, contribute significantly to human development, and their welfare supports human well-being in all its forms, both material and non-material. As a link between people and the environment, animals will play a key role in achieving a sustainable future.

Policy makers must integrate the welfare of animals and conservation of wildlife when considering the implementation of the SDGs. Failure to do so not only ignores the intrinsic value of animals, but also endangers the prospect of a healthy future for coming generations. In practice, this means animals must be integrated into all stages of relevant human development projects, from planning to evaluation. In order to address the global, interconnected nature of animal and human well-being, these efforts should combine international, national and sub-national projects and stakeholders. Deepening

awareness within the policy-making community, and ensuring that they have access to accurate information regarding the role of animals in their projects is also vital. Doing so reveals how including animals in planning and policy is a valuable tool to improve the long-term success and sustainability of the SDG project and improve the lives of people. When animals and their habitats are healthy and cared for, everyone benefits.

Our policy recommendations include:

**1. Adopt a "One Health, one Welfare" approach by integrating animal welfare, wildlife conservation and habitat protection into human health and sustainable development policy and planning;**

**2. Include animals in disaster planning and disaster risk reduction efforts;**

**3. Adopt more sustainable agricultural and fisheries practices and reduce animal consumption to prevent biodiversity loss through land use change, combat climate change and reduce pandemic risk;**

**4. Support global efforts, such as the UN 30x30 initiative, to expand and protect habitat for wild animals while connecting existing protected lands and oceans. Initiatives like IFAW's Room to Roam ensure communities are part of the solution.**

▲ IFAW rescue team member Jen Gardner carries an older female dog, nicknamed Wonder by the IFAW team, through the burned landscape in California to safety.

# endnotes

- Pat Shipman, "The Animal Connection and Human Evolution," *Current Anthropology* 51, no. 4 (2010): 519-538, [https://www.jstor.org/stable/10.1086/653816?seq=1#page\\_scan\\_tab\\_contents](https://www.jstor.org/stable/10.1086/653816?seq=1#page_scan_tab_contents).
- Independent Group of Scientists appointed by the UN Secretary-General, "Global Sustainable Development Report 2019: The Future is Now – Science for Achieving Sustainable Development" (United Nations, New York, 2019), [https://sustainabledevelopment.un.org/content/documents/24797GSDR\\_report\\_2019.pdf](https://sustainabledevelopment.un.org/content/documents/24797GSDR_report_2019.pdf)
- Beth Allgood, et al., *Thriving Together* (Washington, DC: International Fund for Animal Welfare, 2018), [https://d1jyxz9imt9yb.cloudfront.net/resource/225/attachment/original/IFAW\\_SDG\\_animals-human-wellbeing-report.pdf](https://d1jyxz9imt9yb.cloudfront.net/resource/225/attachment/original/IFAW_SDG_animals-human-wellbeing-report.pdf)
- Beth Allgood, Marina Ratchford, and Kate Large, *Measuring What Matters* (Yarmouth, MA: International Fund for Animal Welfare, 2016), [https://s3.amazonaws.com/ifaw-pantheon/sites/default/files/legacy/IFAW\\_AnimalsAndHappiness.pdf](https://s3.amazonaws.com/ifaw-pantheon/sites/default/files/legacy/IFAW_AnimalsAndHappiness.pdf)
- FAO, IFAD, UNICEF, WFP, and WHO, "The State of Food Security and Nutrition in the World" (FAO, Rome, 2021)
- "Animal Production," Food and Agriculture Organization of the United Nations, <http://www.fao.org/animal-production/en/>
- Daisy Freund, "How Animal Welfare Leads to Better Meat: A Lesson from Spain," *The Atlantic*. (August 25, 2011), <https://www.theatlantic.com/health/archive/2011/08/how-animal-welfareleads-to-better-meat-a-lesson-fromspain/244127/>
- Committee on Commodity Problems, "Impacts of Animal Disease Outbreaks on Livestock Markets," (Introductory Paper on Animal Disease Outbreaks prepared for 21st Session of the Inter-Governmental Group on Meat and Dairy Products, CCP:ME 06/2, November 14, 2006), <https://www.fao.org/3/i8387e/i8387e.pdf>
- Alex Renton, "Still Hungry," *The Guardian* (August 14, 2005), <https://www.theguardian.com/lifeandstyle/2005/aug/14/foodanddrink.features10>.
- Food and Agriculture Organization of the United Nations, *The State of Food Security and Nutrition in the World 2018* (September 2018): xii, <http://www.fao.org/3/i9553en/i9553en.pdf>.
- Pierre Gerber et al., *Tackling Climate Change Through Livestock—A Global Assessment of Emissions and Mitigation Opportunities* (Rome: Food and Agriculture Organization of the United Nations, 2013), <http://www.fao.org/3/a-i3437e.pdf>.
- GRAIN and IATP, *Emissions Impossible: How Big Meat and Dairy Are Heating Up the Planet* (July 2018), <https://www.iatp.org/sites/default/files/2018-08/Emissions%20Impossible%20EN%2012.pdf>.
- Alison G. Power, "Ecosystem Services and Agriculture: Tradeoffs and Synergies," *Philosophical Transactions of the Royal Society B* 365 (2010): 2961, <http://rspb.royalsocietypublishing.org/content/royptb/365/1554/2959.full.pdf>.
- Ibid.
- "Stop Using Antibiotics in Healthy Animals to Prevent the Spread of Antibiotic Resistance," *World Health Organization* (November 7, 2017), <http://www.who.int/news-room/detail/07-11-2017-stop-using-antibiotics-in-healthy-animals-to-prevent-the-spread-of-antibiotic-resistance>.
- "10 things you should know about industrial farming," *UNEP* (July 20, 2020), <https://www.unep.org/news-and-stories/story/10-things-you-should-know-about-industrial-farming>.

▲ Nelson Mhlanga, IFAW Program Officer, Landscape Conservation, surveys Matetsi Unit 5 part of the larger Hwange-Matetsi-Zambezi landscape in Northwest Zimbabwe, one of four key landscapes that IFAW's Room to Roam initiative is focusing on to secure core elephant habitat.



- 17 Aysha Ahktar, "The Need to Include Animal Protection in Public Health Policies," *Journal of Public Health* 34, no. 4 (November 2013): 549–59, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3826830/>.
- 18 Ibid.
- 19 Louise Swift, Paul R. Hunter, Alexander C. Lees, and Diana J. Bell, "Wildlife trade and the emergence of infectious diseases," *EcoHealth* 4, no. 4(2007): 25, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7087654/>.
- 20 Ibid.
- 21 Ibid.
- 22 Paul M. Sharp and Beatrice H. Hahn, "Origins of HIV and the AIDS Pandemic," *Cold Spring Harbor Perspectives in Medicine* 1, no. 1 (September 2011), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3234451/>.
- 23 Mirela D'arc et al., "Origin of the HIV-1 Group O Epidemic in Western Lowland Gorillas," *Proceedings of the National Academies of Sciences of the United States of America* 112, no. 11 (March 17, 2015), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4371950/>.
- 24 Wwenya Mubanga et al., "Dog Ownership and the Risk of Cardiovascular Disease and Death—A Nationwide Cohort Study," *Scientific Reports* 7 (2017): 1–9, <https://www.nature.com/articles/s41598-017-16118-6.pdf>.
- 25 James E. Gern et al., "Effects of Dog Ownership and Genotype on Immune Development and Atopy in Infancy," *The Journal of Allergy and Clinical Immunology* 113, no. 2 (2004): 307–15, [https://www.jacionline.org/article/S0091-6749\(03\)02679-4/abstract](https://www.jacionline.org/article/S0091-6749(03)02679-4/abstract).
- 26 JoAnna Pendergrass, "How Companion Animals Support the Mentally Ill," *American Veterinarian* (February 19, 2018), <https://www.americanveterinarian.com/news/how-companion-animals-support-the-mentally-ill>.
- 27 Jim Robbins, "Ecopsychology: How Immersion in Nature Benefits Your Health," *Yale School of Environment* (January 9, 2020), <https://e360.yale.edu/features/ecopsychology-how-immersion-in-nature-benefits-your-health#:~:text=These%20studies%20have%20shown%20that,reduce%20anxiety%2C%20and%20improve%20mood>
- 28 Caoimhe Twohig-Bennett, and Andy Jones, "The Health Benefits of the Great Outdoors: A Systematic Review and Meta-Analysis of Greenspace Exposure and Health Outcomes," *Environmental Research* 166: 628–637, <https://doi.org/10.1016/j.envres.2018.06.030>.
- 29 Marcia P. Jimenez et al., "Associations between Nature Exposure and Health: A Review of the Evidence," *International Journal of Environmental Research and Public Health* 18, No. 9: 4790, <https://doi.org/10.3390/ijerph18094790>.
- 30 "Ensure Inclusive and Equitable Quality Education and Promote Lifelong Learning Opportunities for All," UN (Accessed January 10, 2021), <https://sdgs.un.org/goals/goal4>.
- 31 Graham W. Scott, et al., "The Value of Fieldwork in Life and Environmental Sciences in the Context of Higher Education: A Case Study in Learning about Biodiversity," *Journal of Science Education and Technology* 21, No.1 (2007): 11-21, <https://doi.org/10.1007/s10956-010-9276-x>
- 32 Anita Pryor, Cathryn Carpenter, and Mardie Townsend, "Outdoor Education and Bush Adventure Therapy: A Socio-ecological Approach to Health and Wellbeing," *Journal of Outdoor and Environmental Education* 9, No.1 (2005): 3-13. Doi: <https://doi.org/10.1007/BF03400807>
- 33 FAO, "Sustainable Wildlife Management and Gender," FAO, 2016, <http://www.fao.org/3/i6574e/i6574e.pdf>
- 34 "Goal 5: Achieve Gender Equality and Empower all Women and Girls," UN (Accessed January 10, 2021), <https://www.un.org/sustainabledevelopment/gender-equality/>
- 35 FAO, 2016, p. 1
- 36 Jackelline Siles et al., "Advancing Gender in the Environment: Gender in Fisheries - A Sea of Opportunities," IUCN and USAID, Washington, DC, 2019, [https://wocan.org/sites/default/files/2019-iucn-usaid-fisheries-web\\_0.pdf](https://wocan.org/sites/default/files/2019-iucn-usaid-fisheries-web_0.pdf)
- 37 FAO, "World Livestock: Transforming the Livestock Sector through the Sustainable Development Goals," FAO, Rome, 2018, p.43 <http://www.fao.org/3/CA1201EN/ca1201en.pdf>
- 38 FAO, 2016, p. 2
- 39 FAO, 2016, p. 3
- 40 FAO, 2018, p. 45
- 41 FAO, 2016, p.3
- 42 "Gender and the Environment: What are the Barriers to Gender Equality in Sustainable Ecosystem Management?," IUCN, January 23, 2020, <https://www.iucn.org/news/gender/202001/gender-and-environment-what-are-barriers-gender-equality-sustainable-ecosystem-management>
- 43 "Implications of Gender Roles in Natural Resource Governance in Latin America and the Caribbean," Economic Commission for Latin America and the Caribbean, January 18, 2021, <https://www.cepal.org/en/insights/implications-gender-roles-natural-resource-governance-latin-america-and-caribbean>
- 44 "UN Sustainable Development Goals Report 2020," UN, New York, 2020, page 35, <https://unstats.un.org/sdgs/report/2020/The-Sustainable-Development-Goals-Report-2020.pdf>
- 45 *Towards Measuring the Economic Value of Wildlife Watching Tourism in Africa—Briefing Paper* (Madrid: United Nations World Tourism Organization, 2015): 25, <https://sustainabledevelopment.un.org/content/documents/1882unwtowildlifepaper.pdf>.
- 46 Beth Allgood, Marina Ratchford, and Kate Large, *Measuring What Matters*.
- 47 Simon O'Connor et al., "Whale Watching Worldwide," IFAW, Yarmouth MA, 2009, [https://www.mmc.gov/wp-content/uploads/whale\\_watching\\_worldwide.pdf](https://www.mmc.gov/wp-content/uploads/whale_watching_worldwide.pdf)
- 48 Jessica Goad, Christy Goldfuss, and Tom Kenworthy, "The Jobs Case for Conservation," Center for American Progress (September 20, 2011), <https://www.americanprogress.org/issues/green/reports/2011/09/20/10343/the-jobs-case-for-conservation/>.
- 49 "The Outdoor Recreation Economy," Outdoor Industry Association, Boulder CO, 2012, [https://www.fs.usda.gov/Internet/FSF\\_DOCUMENTS/stelprdb5389204.pdf](https://www.fs.usda.gov/Internet/FSF_DOCUMENTS/stelprdb5389204.pdf)
- 50 "Animal Welfare Essential to Sustainable Development (WSPA)," YouTube video, 5:57, United Nations (October 8, 2011), <https://www.youtube.com/watch?v=PNXzFaWID2c>.
- 51 Ibid.
- 52 "The Impact of Climate Change on Natural Disasters," NASA Earth Observatory (2005), [https://earthobservatory.nasa.gov/Features/RisingCost/rising\\_cost5.php](https://earthobservatory.nasa.gov/Features/RisingCost/rising_cost5.php).
- 53 "How the Paris Agreement and the SDGs Work Together," 17Goals (December 14, 2015), <http://17goals.org/paris-agreement-sdgs/>.
- 54 Justin Worland, "These Animals Are Helping to Slow Climate Change—But They're Dying," *Time* (December 19, 2015), <http://time.com/4156004/animals-climate-change-forests/>.
- 55 Yadvinder Malhi, et al., "The Role of Large Wild Animals in Climate Change Mitigation and Adaptation," *Current Biology* 32, No. 4 (2022): 191-196, <https://doi.org/10.1016/j.cub.2022.01.041>.
- 56 Takakazu Yumoto et al., "Seed-Dispersal by Elephants in a Tropical Rain Forest in Kahuzi-Biega National Park, Zaire," *Biotropica*, 27, no. 4 (1995): 526–30, [https://www.jstor.org/stable/2388968?seq=1#page\\_scan\\_tab\\_contents](https://www.jstor.org/stable/2388968?seq=1#page_scan_tab_contents).
- 57 Fabio Berzaghi, et al., "Carbon Stocks in Central African Forests Enhanced by Elephant Disturbance," *Nature Geoscience* 12 (2019): 725-729, <https://doi.org/10.1038/s41561-019-0395-6>.
- 58 Andrew J. Pershing et al., "The Impact of Whaling on the Ocean Carbon Cycle: Why Bigger Was Better," *PLOS ONE* (August 26, 2010), <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0012444>.
- 59 Carolina Bello et al., "Defaunation Affects Carbon Storage in Tropical Forests," *Science Advances* 1, no. 11 (December 18, 2015), <http://advances.sciencemag.org/content/1/11/e1501105.full>.



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# animals and people

- 60 P.J. Gerber, "Tackling Climate Change Through Livestock," FAO, Rome, 2013, <https://www.fao.org/3/i3437e/i3437e.pdf>
- 61 Helen Harwatt, "Including Animal to Plant Protein Shifts in Climate Change Mitigation Policy: A Proposed Three-Step Strategy," Climate Policy 19, No. 5 (2019): 533-541, <https://doi.org/10.1080/14693062.2018.1528965>.
- 62 Quirin Schiermeier, "Eat Less Meat: UN Climate-Change Report Calls for Change to Human Diet," Nature, August 8, 2019, <https://www.nature.com/articles/d41586-019-02409-7>.
- 63 Xavier Poux and Pierre-Marie Aubert, "An Agroecological Europe in 2050: Multifunctional Agriculture for Healthy Eating," IDDRI, Paris, France, 2018, <https://www.soilassociation.org/causes-campaigns/a-ten-year-transition-to-agroecology/iddri-report-ten-years-for-agroecology-in-europe/>
- 64 Jason Anderson and Camilla Bausch, Climate Change and Natural Disasters: Scientific Evidence of a Possible Relation between Recent Natural Disasters and Climate Change, IPOL/A/ENVI/2006\_19 (2006), [https://www.ecologic.eu/sites/files/project/2013/Brief\\_CC\\_and\\_natural\\_disasters\\_scientific\\_evidence\\_of\\_relation\\_Jan\\_2006\\_EP\\_version.pdf](https://www.ecologic.eu/sites/files/project/2013/Brief_CC_and_natural_disasters_scientific_evidence_of_relation_Jan_2006_EP_version.pdf).
- 65 United Nations Economic and Social Council, *Progress towards the Sustainable Development Goals*, E/2017/66.
- 66 Sara Watson, "What to Do with Your Pet if You Need to Evacuate," Popular Science (August 3, 2017), <https://www.popsoci.com/pets-emergency-evacuations>.
- 67 Maria Morava and Scottie Andrew, "Animal Cruelty Cases Are Surging in Freezing Texas," CNN (20 Feb. 2021), [www.cnn.com/2021/02/19/us/animal-cruelty-texas-storm-trnd/index.html](http://www.cnn.com/2021/02/19/us/animal-cruelty-texas-storm-trnd/index.html).
- 68 "AKF: Shocking Figures Reveal The Devastating Impact Of The Koala Fur Trade," Australia Koala Foundation. August 25, 2015, <https://www.savethekoala.com/blog-post/akf-shocking-figures-reveal-the-devastating-impact-of-the-koala-fur-trade/>.
- 69 "Australia Remains the Only Developed Nation on the List of Global Deforestation Fronts," WWF Australia, January 13, 2021, <https://www.wwf.org.au/news/news/2021/australia-remains-the-only-developed-nation-on-the-list-of-global-deforestation-fronts#gs.t2hwu>.
- 70 UNEP, "Spreading like Wildlife – The Rising Threat of Extraordinary Landscape Fires," UNEP, Nairobi, Kenya, 2022.
- 71 IUCN, "Species and Climate Change: More than Just the Polar Bear," IUCN, 2009, [https://www.iucn.org/downloads/species\\_and\\_climate\\_change.pdf](https://www.iucn.org/downloads/species_and_climate_change.pdf)
- 72 "Koala Conservation Status in New South Wales," IFAW, accessed January 10, 2022, <https://www.ifaw.org/resources/koala-conservation-status-new-south-wales>.
- 73 "Kelp Forest," National Oceanic and Atmospheric Administration Fisheries, West Coast Region, [http://www.westcoast.fisheries.noaa.gov/habitat/fish\\_habitat/kelp\\_forest\\_habitat\\_types.html](http://www.westcoast.fisheries.noaa.gov/habitat/fish_habitat/kelp_forest_habitat_types.html).
- 74 Robin McKie, "How Sea Otters Help Save the Planet," The Guardian (July 10, 2016), <https://www.theguardian.com/environment/2016/jul/10/sea-otters-global-warming-trophic-cascades-food-chain-kelp>.
- 75 Joe Roman et al., "Whales as Marine Ecosystem Engineers," *Frontiers in Ecology and the Environment* 12, no. 7 (2014), [https://www.researchgate.net/publication/263782441\\_Whales\\_as\\_marine\\_ecosystem\\_engineers](https://www.researchgate.net/publication/263782441_Whales_as_marine_ecosystem_engineers).
- 76 Pat Goebel, "The Good, The Bad and The Ugly: A Comparison between Whaling and Whale Watching," University of Miami Shark Research (December 31, 2013), <https://sharkresearch.rsmas.miami.edu/the-good-the-bad-and-the-ugly-a-comparison-between-whaling-and-whale-watching/>.
- 77 Alisher Mirzabaev et al., "Desertification," in *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*, ed. P.R. Shukla et al., (IPCC, 2019), accessed January 15, 2022, <https://www.ipcc.ch/srccl/chapter/chapter-3/>
- 78 Lourdes Martínez-Estévez et al., "Prairie Dog Decline Reduces the Supply of Ecosystem Services and Leads to Desertification of Semiarid Grasslands," *PLoS ONE* 8, no. 10 (2013), <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0075229>.
- 79 The Elephants of Africa. "Tale of the Trunk" PBS (November 16, 1997), <http://www.pbs.org/wnet/nature/elephants-africa-tale-trunk/11391/>.
- 80 WWF "Living Planet Report 2020," WWF, Gland, Switzerland, 2020, <https://f.hubspotusercontent20.net/hubfs/4783129/LPR/PDFs/ENGLISH-FULL.pdf>.
- 81 Robert Thompson, "Scientists Warn of 'Unsafe' Decline in Biodiversity," BBC News. (July 15, 2016), <https://www.bbc.com/news/science-environment-36805227>.
- 82 Rudi J. van Aarde, Tim P. Jackson, "Megaparks for metapopulations: Addressing the causes of locally high elephant numbers in southern Africa", *Biological Conservation* 134 (2007) 289 – 297, <https://www.loe.org/images/content/070330/van%20Aarde%20&%20Jackson%202007%20Megaparks%20for%20metapopulations%20%20Addressing%20the%20%20%20%20%20%20causes%20of%20locally%20high%20elephant%20numbers%20in%20southern%20Africa.pdf>

▲ Aerial landscape with river, Matetsi Unit 5. Matetsi Unit 5 is part of the larger Hwange-Matetsi-Zambezi landscape in Northwest Zimbabwe, one of four key landscapes that IFAW's Room to Roam initiative is focusing on to secure core elephant habitat.



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# thriving together

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