

Measuring what matters:



TRUE
WELLBEING
FOR ANIMALS
AND PEOPLE

Why a Human Wellbeing Report by an Animal Welfare Organization?

You may be wondering why a report on human happiness was created by the International Fund for Animal Welfare. The answer is part of a debate about the reasons for saving nature and biodiversity that is currently raging in the conservation community. Are all our efforts for the animals' benefit, or is it for us?

IFAW believes that it is for both. In our view, the fate of mankind is so closely intertwined with biodiversity and a healthy planet that we cannot exist without it. The entire web of life is interconnected and we should be motivated to protect animals because our actions are the greatest threat to their survival and their extinction is the greatest threat to ours.

We realize that there are people who are moved to save animals because they believe that animals have intrinsic value. They love animals and that is enough to motivate them to conserve and protect wildlife and wild places. They wouldn't need to read a detailed report about how animals contribute to human wellbeing in order to continue being enthusiastic about advocating for animals, although they might learn some new and fascinating facts.

Then there are people and institutions whose primary concern is human welfare. They may or may not recognize the essential value of animals. For this audience, it is important to illustrate the link between proactive wildlife conservation and improved human wellbeing. By successfully demonstrating—through cited research and case studies—how people can benefit when we conserve and protect wildlife and treat companion and agricultural animals humanely, we can start to bring animal welfare and conservation into social, environmental and economic policies and practice in a more explicit way.

IFAW believes that the current system of measuring success via short-term economic growth doesn't ultimately support people or animals. All of us who work for either better human wellbeing or improved animal welfare can come together in the pursuit of the common goal of a broader set of wellbeing indicators that improve conditions for all species.

We hope the information in this report will start a conversation with the people who are motivated by human wellbeing as a primary goal or institutional mission and to encourage them to begin thinking about animals and animal welfare in a new way; as an important contributor in the improvement of people's lives. At the same time, we encourage organizations whose primary mission is to improve animal welfare to consider the wellbeing of the people interacting with these animals as a central factor in developing successful, long-term solutions.

Measuring what matters:

TRUE WELLBEING FOR ANIMALS AND PEOPLE

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A country's Gross Domestic Product
measures "everything except that which
makes life worthwhile."

—Robert F. Kennedy, 1968



Azzedine T. Downes
President and CEO,
International Fund for
Animal Welfare

A Shared Wellbeing

I am delighted to present this report that compiles examples from a growing body of research about the connections among animal welfare and human happiness, and how we might measure these intangible but critical components of our sense of wellbeing.

What we measure and why, often fuels our policies and actions.

Traditionally, nations have measured their country’s prosperity through an economic value, the Gross Domestic Product (GDP). This manufacturing-based calculation focuses on the monetary worth of anything a nation can produce, but it omits items of intrinsic, conceptual and cultural importance.

Nations around the world are beginning to explore methods of aligning their country’s success measures with their citizens’ contentment.

At IFAW, we believe that good animal welfare and conservation contributes to positive human health and happiness. We have been selling ourselves—and the animals of the world—short by looking only at limited economic growth, instead of at the less quantifiable but equally necessary concepts of vitality, wellbeing, cultural diversity and resilience.

Throughout this report, we cite research and provide case studies of what is working and where good animal welfare and conservation are helping people and communities around the world. The research is peer reviewed and the case studies highlight IFAW’s work and the efforts of other groups with whom we partner and whose examples we value.

The research on the subject is clear. Doing the right thing for animals is better for them and better for people. We urgently need a new system that holistically measures and increases the wellbeing of people and the planet and that includes measuring and valuing the wellbeing of animals. We are facing the imminent extinction of some of the most spectacular and awe-inspiring species on the planet because of economic pressures and outdated archetypes.

In this report, we have chosen to use the domains of Bhutan’s Gross National Happiness as a model to organize the research we uncovered. In addition, we look at many alternative models being considered in communities, U.S. States, and countries around the world, each of which puts the wellbeing of people and the planet at the center of the issue.

Like Bhutan, we can find alternatives to GDP measurements that are right for each nation or community.

We can create positive systems that highly prize not only people, but all the animals that, by virtue of simply being here with us, make this a happier world.

The large majority of the more than **112 MILLION EQUINE ANIMALS** worldwide live in developing countries and provide daily support to hundreds of millions of poor households. Horses, donkeys and mules are especially helpful to women’s survival and prosperity.

Wildlife play an important role in maintaining ecosystems. The world’s forests would be much less fertile if we did not have elephants, for example. **DOZENS OF IMPORTANT HARDWOODS** can propagate only if their seeds have passed through the digestive system of an elephant.

A study on wildlife tourism found that encountering wildlife can initiate an emotional response of awe, wonder and privilege, and can provoke a “**DEEP SENSE OF WELLBEING**” that transcends the initial encounter leading to spiritual fulfillment and psychological health benefits.”

Protecting Mexico’s Laguna San Ignacio, an important breeding ground for Gray Whales, from destruction, saved the whale population and doubled the income for many local people, who serve as many as **5,000 TOURISTS ANNUALLY**.

Companion animals have the ability to improve the human condition and contribute towards individual happiness and personal life satisfaction. More than **TWO-THIRDS OF AMERICANS** surveyed agreed that the treatment of companion animals is important when determining the overall wellbeing of a country.

Taking Care of Our World

My life’s work has been dedicated to the study and understanding of chimpanzees and to inspiring people to act on behalf of these incredible beings and other endangered species around the globe. After more than fifty-five years of research, I firmly believe that the wellbeing of our world relies on humans taking an active interest in the wellbeing of all living things.

I know that better treatment of animals ultimately makes life better for people. While most of us sense this in our hearts, as a scientist, I also like to see the data. This report provides important data and background on this issue and I am hopeful that it will help more people understand that taking care of our world and all species with whom we share it is good for overall human wellbeing.

I am excited that this report from IFAW cites research in all aspects of animal welfare and conservation and relates



Jane Goodall, Ph.D., DBE,
Founder, the Jane Goodall
Institute, UN Messenger
of Peace & IFAW Honorary
Board Member

it to human wellbeing. Policy makers in the human development field will be able to use this evidence in new ways to include good animal welfare and conservation in their strategies moving forward.

We already can point to the work that our institute has accomplished in the Gombe National Park in Tanzania—providing practical assistance to nearby communities while conserving the forest for chimpanzees—as evidence of this successful new paradigm of interconnectedness that places the wellbeing of all creatures at its core.

The health of our communities is interwoven with the health of our natural landscapes, and the decisions we make affect every animal, including humans, on this planet. We must find a new measurement of personal and societal success, one that is environmentally sustainable, and culturally and economically inclusive.

I am optimistic, especially when I see the conservation and humanitarian passions of young people around the world, that we can teach every nation that protecting their environment promotes their own happiness and that they can make decisions that will allow all creatures to live in harmony.

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introduction

Should a nation's prosperity be measured by economic activity alone, or by a more expansive measure assessing economic, social, and environmental wellbeing? Gross Domestic Product (GDP) has been the standard measure of economic prosperity since it was developed by Simon Kuznets during the Great Depression in his effort to assess the economy's recovery during that difficult time. Even then, Kuznets warned the United States Congress against relying solely on GDP to answer the most important questions for a country: "The welfare of a nation can scarcely be inferred from a measurement of national income as defined by the GDP."¹

GDP measures "the monetary value of all finished goods and services produced within a country's borders in a specific time period"² but it does not reflect wellbeing, which is the state of comfort, health, or happiness.³ GDP does not distinguish transactions that add to wellbeing from those that undermine it, nor does it account for non-economic transactions. Nobel Prize-winning economist Joseph Stiglitz explains this concept:

"Traffic jams may increase GDP as a result of the increased use of gasoline, but obviously not the quality of life. Moreover, if citizens are concerned about the quality of air, and air pollution is increasing, then statistical measures which ignore air pollution will provide an inaccurate estimate of what is happening to citizens' wellbeing."⁴

As GDP does not fully reflect national wellbeing, only economic activity, Stiglitz joins others in recognizing the inadequacy of using only GDP to guide national strategies aiming to help our communities thrive.⁵ A growing tide of experts shares this concern: the release of reports and calls for systemic change are heard from governments and economic advisors. While the solutions these parties propose differ, a central message is clear: relying on GDP as the benchmark of prosperity

and as the metric to inform policymaking is misguided. With its emphasis on economic activity and exclusion of social and environmental wellbeing, GDP cannot be relied upon as the sole measure to guide holistic and effective policy development. What we measure affects how we choose to invest our resources; and if our measurements are flawed, decisions are distorted. Using a measure more comprehensive than GDP to develop policy, therefore, is critical. One organization describes the value of alternative measures as "break[ing] down the barriers that have separated thinking about economic development and thinking about social progress, to help countries design development strategies that are more holistic and more effective."⁷

In this report we first introduce prominent alternative measures from around the world that go beyond GDP. Then we use one model, Bhutan's Gross National Happiness framework, to demonstrate the impact of good animal welfare and conservation on human happiness and wellbeing. We conclude that treating animals well generates positive benefits not just for animals but for humans as well. A shift to alternative indicators that are inclusive of human wellbeing should take the welfare of animals and the conservation of animal habitat into consideration as this will result in benefits for both animals and people.

ecosystem services



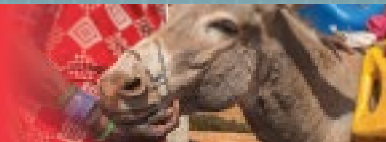
companionship



maintaining healthy populations



easing labor burdens



biodiversity



Good Animal Welfare and Conservation Benefits People

Many international conventions and national governments have put forth alternatives to the Gross Domestic Product as a measure for national and societal success. There is a growing movement to explore ways we can measure the ecosystem and societal impact of healthy animals in creating healthy, happy human societies.

PART I. ALTERNATE INDICATORS TO GDP

If we are to assess wellbeing, we must start by understanding what affects the wellbeing of individuals and society in the short and long-term. Most alternative measurement systems consider environment in their assessments. Environmental wellbeing is assessed differently across alternative measurement systems with a variety of data sets; some examples include the proportion of land under protected area status,⁸ the proportion of land under forest cover,⁹ the reliance on hydroelectricity for domestic use and export,¹⁰ outdoor air pollution attributable deaths,¹¹ greenhouse gas emissions,¹² water withdrawals as a percentage of resources,¹³ or biodiversity and habitat.¹⁴

While environmental sustainability is a central tenet of most alternative measurement systems, GDP, on the other hand, does not account for the environment. For example, GDP would not assess the cost associated with habitat loss from a proposed development project nor the value of clean air or wildlife if the land were instead developed into a park. GDP ignores these impacts and it may even reflect increasing immediate economic activity even though

the environmental cost results in a net loss of national prosperity. Robert F. Kennedy noted this discrepancy between GDP growth and environmental cost in his 1968 speech on the limits of GDP with the example that "[GDP] counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl." The National Wildlife Federation echoed the sentiment in its National Resolution calling for US policy indicators that go beyond GDP and described the troubling phenomenon that GDP often increases growth while environmental cost,¹⁵ like the loss of wildlife from loss of habitat, is not counted.

Social wellbeing is another area included in most alternative indicator systems. These frequently include measures of access to healthcare, education, political freedom, equity, and other factors established by research to be determinants of individual happiness and societal wellbeing.

A spate of indicator systems have sprouted up globally to go beyond GDP in assessing national prosperity. While these new systems are varied with unique combinations of economic, social, and environmental indicators, all share the goal of measuring wellbeing and not just economic activity.¹⁶ On the next page is an overview of emergent indicators beginning with Gross National Happiness, the system we will continue to use as a model in Part II.



“People who are emotionally happier, who have more satisfying lives, and who live in happier communities, live longer, are more productive, earn more, and contribute more meaningfully to society.”

A Selection of Global Indicator Systems
By Date of Introduction

The small nation of Bhutan pioneered efforts to create an alternative measure to GDP and developed the **Gross National Happiness** (GNH) system in 1972. Bhutan’s government established a GNH Commission tasked with assessing proposed national policies through this framework in order to determine the potential impact on happiness or wellbeing of the population.¹⁷ While GDP measures only economic activity, the GNH system in Bhutan assesses nine domains. GNH equally weighs psychological wellbeing, time use, community vitality, cultural diversity, ecological resilience, living standard, health, education, and good governance. Each domain is built using a number of variables.¹⁸ A survey is used to research wellbeing and happiness of citizens and those figures are used to estimate GNH; ten per cent of the Bhutanese population took survey in 2013 requiring approximately seven hours per person to complete.¹⁹



Since the early 1970s, the government of Bhutan has studied what factors contribute to happiness in society and has developed nine domains of wellbeing.

The Ecological Footprint is one of the earliest accounting systems developed to track and measure humanity’s demand on nature, used by the Global Footprint Network since the 1990s to engage with governments and investors and demonstrate the advantages of making ecological limits and environmental impact targets central to decision-making.²⁰ **The Happy Planet Index** (HPI), developed by the New Economics Foundation (NEF) and introduced in 2006, is another measure of sustainable wellbeing. It uses global data on experienced wellbeing, life expectancy, and Ecological Footprint to generate an index revealing which countries are most efficient at producing long, happy lives for their inhabitants, while maintaining the conditions for future generations to do the same.²¹

The European Commission developed another alternative indicator system, **Beyond GDP**, and it uses indicators that are inclusive of environmental, social, and economic aspects of progress.²² Beginning in 2007, the European Commission initiated a process that sought to measure societal progress with a method as clear as GDP yet that includes social and environmental indicators. In 2015, the European Commission announced its plan to use the **Social Progress Index** to guide its investments in the future.²³ **The Social Progress Index** was developed by the U.S. based nonprofit Social Progress Imperative and funded by corporations and private foundations.²⁴ This index does not comingle social and economic indicators like most other ‘beyond GDP’ efforts.

The **Fifth Trondheim Conference on Biodiversity** in 2007 brought together scientists, managers, policy advisors, and NGO and community representatives from 75 countries to explore further the relationship between biodiversity, ecosystem services and human wellbeing and to understand the synergies and trade-offs inherent in various development paths.²⁵ The Conference report stated that current and future human wellbeing and development depends on biodiversity and the health and production of ecosystem services. Moreover, the maintenance of healthy ecosystems contributes to human health and wellbeing and thus needs to be considered in health policy.²⁶



Animals improve empathy in children and contribute to their healthy social and emotional development.

Since 2008, the global wellbeing improvement company Healthways and the management consulting firm Gallup have partnered to create a measure of wellbeing that goes far beyond just physical health to focus on capturing how Americans feel about and experience their daily lives and painting a comprehensive picture of their wellbeing. In 2014, their “**State of Global Wellbeing**” report was released, based on more than 133,000 interviews in 135 countries. The report contains country and regional rankings; analysis of the five elements of wellbeing (purpose, social, financial, community, physical); 50 wellbeing profiles of countries across the globe; industry perspectives on wellbeing improvement; and recommendations for wellbeing improvement.²⁷

In 2011, the U.N. General Assembly passed a “**Resolution on Happiness**” encouraging countries to measure their citizens’ happiness and wellbeing, and use that measure to help guide public policies.²⁸ This was followed in 2012 by the first UN high-level meeting on happiness and wellbeing, chaired by the Prime Minister of Bhutan.²⁹

A **World Happiness Report** was commissioned for the UN meeting, published by the Earth Institute at Columbia University. To be updated annually, it reviewed the state of happiness in the world and used metrics to explain personal and national variations in happiness.³⁰ The Second World Happiness Report,³¹ released in 2013 and published by the Sustainable Development Solutions Network (SDSN), provides more detailed analysis of the global happiness data (mainly based on life evaluations

from the Gallup World Poll); examines trends over time; breaks down each country’s score; and provides guidance for policy makers on how to effectively incorporate wellbeing into decision making processes. The report also shows the major objective benefits of subjective wellbeing: that is, people who are emotionally happier, who have more satisfying lives, and who live in happier communities, live longer, are more productive, earn more, and contribute more meaningfully to society. These benefits in turn flow to their families, workplaces, and communities, to the advantage of all. Therefore wellbeing should be developed both for its own sake and for its side effects.

The Organization for Economic Cooperation and Development (OECD) set an international standard in 2013 by creating **Guidelines on Measuring Subjective Wellbeing**.³² These guidelines were produced as part of the OECD Better Life Initiative, a project that seeks to measure society’s progress across eleven domains of wellbeing, ranging from jobs, health and housing, through to civic engagement and the environment.³³ The latest OECD report, “How Was Life? Global Wellbeing since 1820,” recommends turning away from a purely economic assessment of our wellbeing and taking a more holistic look at the quality of life in human societies. It notes that societies are richer, healthier, and better educated than ever before but many remain hugely unequal, environmentally damaging and, in some instances, highly violent. Economic growth alone has not solved all our problems; in many cases those problems are only getting worse.³⁴

Regional and Other Indicator Systems

It has become increasingly clear that GDP bears little connection to individual wellbeing, and many states in the U.S. are working together to implement alternative measures that more accurately reflect the happiness and wellbeing of its citizens. Four states have developed and officially adopted a **Genuine Progress Indicator (GPI)**, which seeks to quantify in a consistent way the cost and value of factors not measured by GDP (to date, 20 other US states are working on ‘beyond GDP’ metrics³⁵). In 2009, the state of Maryland officially adopted its GPI, calculated by using 26 indicators within three categories: economic, environmental, and social. The economic category indicators are built on the state’s gross product calculations but include seven additional indicators including the cost of income inequality and the cost of underemployment to get a more complete economic picture. The environmental indicators measure factors such as the costs of pollution, climate change, and net changes in natural resources.³⁶ The social indicators include the value of education and volunteering and the costs of crime and lost leisure time. The Maryland case is notable because the GPI number is generated, in part, by the state Agency of Natural Resources from readily available data, and was announced as a supplement to (and ideally eventually a replacement for) GDP alone.³⁷ So far, the states that have implemented GPI have discovered that much of their economic growth came at the expense of the other components of GPI. Their workers have longer commutes, they have depleted natural resources, volunteerism and free time have declined and income gains have been unequal.³⁸

The Maryland and Vermont GPI follows previous work, specifically the national Genuine Progress Indicator developed by John Talberth, formerly at the organization Redefining Progress.³⁹ In order to apply the national GPI approach to Maryland, certain adjustments were made, such as removing certain national indicators that are not applicable to subnational governments or altering the indicators to illustrate the cost of net land changes.⁴⁰ In turn, the national GPI was the result of previous economic indicators intended to replace GDP like the Index of Sustainable Economic Welfare (ISEW), originally developed in 1989 by Herman Daly and John B. Cobb, which balances consumer expenditure with factors like income distribution and costs associated with pollution.⁴¹

Another innovative example of alternative indicators include regional initiatives like the **Seattle Area Happiness Initiative**. Using this model, happiness is measured by an interactive survey that anyone can take and thus provides people’s own assessment of their lives and their city. The Happiness Report Card uses survey data to understand where people feel they are hurting, and where they are thriving. Survey results are complemented by objective data that give a more balanced picture of wellbeing.⁴²



Grace Ge Gabriel, IFAW Asia Regional Director, who is from China, enjoys the affection from a local dog. “Civilized cities don’t ban the ownership of man’s best friend.” she says.

Several districts and cities in Brazil are also implementing a similar measurement to Bhutan’s GNH.⁴³ Canada is implementing the Canadian **Index of Wellbeing**⁴⁴ and Italy is using the **Regional Quality of Development** (Quars) indicator of progress.⁴⁵ Malaysia has embarked on the **Economic Transformation Programme** and the **Government Transformation Programme** to achieve social wellbeing.⁴⁶ African leaders have called for the replacement of GDP by GNH, but South Africa is the only state in the continent so far that has developed alternative indicators.⁴⁷

Globally, economists are designing and promoting alternative indicator systems like these listed above. While the systems differ, they hold at their core the premise that GDP should not be relied on as the benchmark for national wealth and wellbeing. Prosperity requires a more comprehensive look at the social and environmental status of communities and the equity of their economies to better assess the wellbeing of individuals.



In Part II we consider how sound animal welfare and conservation supports human happiness wellbeing and thus national prosperity. Using the lens of Gross National Happiness and the nine domains, we see how good animal welfare and conservation is not only good for the sake of animals but it is also beneficial for human happiness and wellbeing.

PART II: HOW GOOD ANIMAL WELFARE AND WILDLIFE CONSERVATION SUPPORT HUMAN HAPPINESS AND WELLBEING USING BHUTAN’S GROSS NATIONAL HAPPINESS AS A MODEL

People derive multiple benefits from animals, which contribute enormously to the wellbeing of society; but the value assigned to these benefits is not often captured by GDP. The welfare of animals and that of humans are closely linked: companion animals, wildlife, and farm animals have the ability to improve the human condition and contribute towards individual happiness, personal life satisfaction, and overall community wellbeing.

Humans have relied on animals as companions, workers, food, and symbols of freedom and strength. As seen from ancient cave paintings to our interactions today, we have long had a bond with animals and relied upon them to support and improve the human condition.⁴⁸ In a nationwide survey of registered American voters, more than seven in ten said that the protection of wildlife and habitats is important in determining a country’s overall wellbeing and the happiness of its citizens; and more than two-thirds of agreed that the treatment of companion animals and the health of farm animals are important when determining the overall wellbeing of a country. The majorities of opinion from this polling held across party lines, regions, ages, and gender.⁴⁹

Animals, animal welfare, and wildlife conservation have a role in alternative indicators and statistical measures for human wellbeing proposed by the ‘beyond GDP’ movement. Areas of wellbeing which can be linked to animal welfare and wildlife conservation include happiness (GNH), life satisfaction

(World Happiness Report), life expectancy (Happy Planet Index), health (Social Progress Index), assistance in long-term disability (GNH), safety (Social Progress Index), education and knowledge (Millennium Development Goals), social support and connections (State of Global Wellbeing) community vitality (Canadian Index of Wellbeing); and cultural services and spirituality (GNH).

This paper provides examples of such links to support the role of animals in human wellbeing using Bhutan’s GNH model. As mentioned above, there are nine domains under Bhutan’s GNH. The first domain, Psychological Wellbeing, evaluates life satisfaction, positive emotions, negative emotions, and spirituality. Health evaluates mental health, including depression and anxiety, self-reported health and nutrition status, number of healthy days, and long-term disability. Education and Learning evaluates holistic schooling, literacy, knowledge, and value elements. Cultural Diversity and Resilience evaluates cultural participation, speaking the native language, and artistic skills. Community Vitality evaluates donations of time and money, community relationship, family, and safety. Living Standards evaluates assets, housing, and household income. Ecological Resilience evaluates ecological issues, environmental responsibility, wildlife damage, and urbanization issues. Good Governance evaluates government performance, fundamental rights, services, and political participation. Finally, Time Use evaluates work and sleep.



Rescued Asian elephant and rhino calves are cared for at the IFAW/ Wildlife Trust of India’s Wildlife Rescue Centre. Throughout time, animals have had cultural and spiritual values for people around the world.

1) Psychological Wellbeing

The Psychological wellbeing domain evaluates elements of life satisfaction. All elements hold importance, yet the 2013 World Happiness Report asserts that mental health is the single most important determinant of individual happiness in every case where this has been studied. According to the updated 2015 World Happiness Report, about 10% of the world's population suffers from clinical depression or crippling anxiety disorders, representing the biggest single cause of disability and absenteeism, with significant costs in terms of misery and economic waste.⁵⁰ A specific example of the contributions of animals towards human mental health is in the use of domestic animals to assist in the socialization of patients with mental disorders. This practice dates back to at least the 18th century when William Tuke, a Quaker philanthropist who ran a British asylum for people with severe mental disorders, indicated that his patients gained health benefits from being around animals. The courtyards of the

asylum were stocked with rabbits, seagulls, hawks and poultry in the hope of encouraging 'benevolent feelings', greater responsibility and self-control.⁵¹

Spending time in nature promotes wellbeing, whereas nature deprivation may do the opposite.⁵² The concept of biophilia, introduced by Edward O. Wilson, maintains that humans have deep affiliations with nature rooted in our biology.⁵³ Our connectedness to nature (including animals) is positively correlated with life satisfaction and wellbeing, possibly because nature may foster a more positive self-image, make us feel more well rounded, and increase our perceived purpose in life.⁵⁴ For example, a study on wildlife tourism found that encountering wildlife can initiate an emotional response of awe, wonder and privilege, plus it can provoke a "deep sense of wellbeing that transcends the initial encounter leading to spiritual fulfillment and psychological health benefits."⁵⁵ Similarly, emotional wellbeing of city-dwellers is thought to increase when they are exposed to nature.⁵⁶

Along with nature and wildlife, animals as companions can also contribute to happiness and wellbeing. A 2011 study showed that pet owners exhibited greater self-esteem, were more physically fit, were less lonely, were more conscientious and socially outgoing, and had healthier relationship styles (i.e., they were less fearful and less preoccupied) than non-owners.⁵⁷ Companion animals also have been shown to increase resilience in families experiencing difficult circumstances.⁵⁸

Moreover, animal-assisted therapies support the human wellbeing in very specific ways. A therapy animal can serve as a social facilitator, a focus of attention, an object of attachment and nurturance, a source of social support and a comfort for a person just to touch, a model of positive social behavior, and a catalyst for learning new skills and ways of thinking and behaving.⁵⁹ The range of benefits supported by specific studies include anxiety reduction, improved communication between patients and therapists, enhanced attendance at, compliance with, and retention in therapy,

and improved behavior outside the context of therapy.⁶⁰ A calming effect and reduced anxiety has been shown for people in a psychiatric ward when an animal was present, and for hyperactive children participating in a classroom or farm program.⁶¹ Animals also improve empathy in children and contribute to their healthy social and emotional development. These benefits could have a considerable impact on the financial burden imposed by mental health care.

Some traditional spiritual practices linked to nature and animals have an important role in enhancing social wellbeing.⁶³ Animals have served a variety of spiritual functions around the world: linked with supernatural forces, serving as guardians and shamans, and appeared in images of an afterlife. They have even been worshipped as agents of gods and goddesses.⁶⁴ Buddhist and traditional beliefs about appropriate interactions with animals, like teachings not to kill animals and instructing believers to maintain a good relationship between humans and animals, are codified in Bhutan's conservation principles

Gray Whales and Communities in Laguna San Ignacio

Halfway down the Pacific Coast of the Baja California Peninsula lies a truly incredible place. Laguna San Ignacio is a UNESCO World Heritage Site, a Biosphere Reserve, a whale sanctuary, a migratory bird sanctuary, and one of the last places on earth where gray whales can give birth and raise their young in peace.

It is the gray whales that make this inlet so unique. Every year hundreds of these awe-inspiring marine mammals make the longest migration of any animal on earth – from their Arctic feeding grounds to this Mexican lagoon - to give birth, nurse, and raise their young. Communities around Laguna San Ignacio have long recognized how special these whales are and are proud that their lagoon is a unique and precious place. The extraordinary experience of connecting with the whales - who are friendly to humans - is also shared with small numbers of eco-tourists, who can visit seasonally. People who have interacted with the whales at Laguna San Ignacio say it is one of the most remarkable experiences of their lives.

Laguna San Ignacio is also home to small fishing villages whose livelihoods and way of life depend on the lagoon. Most of these long-time residents have protected the lagoon for generations, leaving few footprints on the delicate coastal landscape. But despite its remote location, pristine nature, and protected status, Laguna San Ignacio is not immune from the pressures of globalization.



BETH ALLGOOD

Every year, hundreds of gray whales migrate from the Arctic to Laguna San Ignacio in Mexico to give birth, nurse, and raise their young.

In 1994, a proposal was presented to build the world's largest industrial saltworks on the shores of Laguna San Ignacio that would have threatened both the whales's survival and the communities' way of life. Although the saltworks could have resulted in a short-term increase in jobs, the local communities were opposed to the development. They recognized the long-term environmental, social, and sustainable economic value of keeping the lagoon free from this huge-scale industrial endeavor.

To combat the plan, environmental groups from Mexico, and other international groups from around the world, including IFAW, came together to support the local residents. Hollywood celebrities, Nobel laureates and over one million other citizens from around the world signed petitions and sent emails to stop the development and support the communities' efforts to save their lagoon and the whales.

The high profile, multi-faceted campaign culminated in victory in the year 2000, when Mexican President Zedillo announced the cancelation of the project.

At that time IFAW and other partners involved in the campaign, including Wildcoast, and the Natural Resources Defense Council, joined forces with the International Community Foundation, Pronatura Noroeste, and Ejido Luis Echeverria Alvarez to form the Laguna San Ignacio Conservation Alliance. Their goal was to secure permanent protection for key areas around the lagoon and to help local residents seek sustainable economic alternatives so that large-scale industrial projects can never again threaten Laguna San Ignacio.

Working with the community, Alliance members agreed that a long-term approach was the right one. The Alliance created a fund that would support community needs (medical, business, and communal), as well as a fund to monitor and enforce the community agreements.

The Conservation Alliance and local partners have focused on three key strategies for permanently protecting Laguna San Ignacio:

- ▶ First, to secure additional legal protections on private, communal, and government lands around the lagoon.
- ▶ Second, to strengthen local communities by supporting training, infrastructure, and environmentally sound businesses.
- ▶ Third, to monitor environmental conditions and to respond to any challenges or threats, such as trash dumps, illegal fishing, or inappropriate development.

The communities are also proud to continue to offer small-scale eco-tourism opportunities to people from around the world. It is an unforgettably intimate experience to have a whale and her calf come right up to your small boat and interact with you. Supporting the local community, who own and operate the fishing boats or create the meals you enjoy at camp, is an added benefit to the adventure. These residents have chosen to protect the lagoon and the whales instead of abandoning both to large scale industry. This holistic approach is as priceless as the whale encounter itself.

The challenge now for the Alliance and the international conservation community is to remain committed to facilitating educational and economic opportunities in the local villages around Laguna San Ignacio to support the people who fought so hard to protect the whales and the lagoon. In this fragile Pacific habitat, the balance between conservation and opportunity is paramount.



ANNE MCENANY

Small numbers of eco-tourists can visit the whales seasonally at Laguna San Ignacio for one of the most remarkable experiences of their lives.



The Sacred Tiger's Nest Monastery is one of the holiest places in Bhutan and one of many in that country that represent the cultural and spiritual importance of tigers to their people.

be seen in decorative art and temple architecture that illustrate aspects of the divinities of animals.⁷² One of the highest virtues in Hinduism is compassion for animals, or *bhuta daya*.⁷³ These are among the many examples of how animals further spirituality bring wellbeing to individuals and communities.

2) Health

Similar to most alternative indicator accounting systems, GNH includes health as a key factor in human wellbeing. The contribution to physical health from animals was noted early in Florence Nightingale's "Notes on Nursing," indicating that people confined to their rooms because of medical problems gained pleasure from the presence of a bird and that a pet "is often an excellent companion for the sick, for the long chronic cases especially."⁷⁴ These early observations have been followed in more recent years by experimental work designed to explore the effect of animals on human health and wellbeing,⁷⁵ most of which have demonstrated either short-term, relaxing effects of animal contact, or long-term health improvements. A widely cited study found that dog owners were 8.6 times more likely to be alive one year after a heart attack than non-dog owners.⁷⁶ Studies have also found that petting one's own dog reduces blood pressure.⁷⁷ Owning a pet can lead to a significantly lower risk of developing coronary heart disease as compared to non-owners.⁷⁸ Other studies find that when an employee brings his or her dog to work the result includes lower levels of cortisol production, the stress-causing hormone.⁷⁹ In 2013, the American Heart Association stated that pet ownership (and in particular that of dogs), should be considered as a means to reduce cardiovascular risk factors and improve survival in individuals with existing cardiovascular disease.⁸⁰ The companionship of a dog or cat has also been associated with a significant reduction in the frequency of minor physical ailments one month on from obtaining the animal.⁸¹ Other studies demonstrate that children exposed to pets in early life experience enhanced immune function, fewer allergies and less wheezing and asthma in children exposed to pets during infancy,⁸² and protection against adult asthma and allergies in adults at age 28 when they were exposed to pets before age 18.⁸³ In recent years, studies have found a link between interaction with animals and an increase people's level of oxytocin, a beneficial hormone with powerful effects on the body's ability to be in a state of readiness to heal and to grow new cells.⁸⁴

and laws.⁶⁵ Shamanism, a range of traditional beliefs and practices concerned with communication with the spirit world, gives animals an important role as omens and message-bearers and is practiced in areas throughout the world.⁶⁶ Native American spirituality, for example, includes a strong reverence for animal life and the environment.⁶⁷ Native American tradition holds the belief that each individual is connected to and will be accompanied by nine animals throughout his or her life.⁶⁸

Other major belief systems also respect and find value from animals. In his book, *For Love of Animals: Christian Ethics Consistent Action*, author Charles Camosy describes the aspects of Catholicism that emphasize valuing non-human life, rejecting consumerism, and caring for God's creations; demonstrating how much of society and individuals treat animals quite differently.⁶⁹ In official statements of the Roman Catholic Church, followed by 1.22 billion worldwide and 75 million within the United States, provides guidance on the value of animals as the "imprint of the Creator," limiting how animals may be used for human purposes.⁷⁰ Within Hinduism myths and legends, animals are frequently mentioned and revered as vehicles and incarnations of the many gods and goddesses.⁷¹ The importance of animals to Hinduism can



Pets and People: Helping Them Both in Disasters

In August of 2016 extended rainfall caused catastrophic flooding in the Southern part of Louisiana, leaving 13 people dead, 11,000 people seeking refuge in shelters, and more than 100,000 people eventually registering for federal aid to help rebuild their damaged homes. The Red Cross estimated that it was the worst natural disaster since Hurricane Sandy hit the East Coast and claimed the lives of over 285 people four years earlier.

In both instances, IFAW was there to help. After Sandy struck, IFAW animal rescue teams went door to door rescuing animals that were left behind and returning them to families who had lost almost everything else in the storm. In Ascension Parish, Louisiana, one of the most severely impacted flood areas this past summer, IFAW (as a part of NARSC, the National Animal Rescue and Sheltering Coalition) responded by facilitating temporary animal sheltering at the Lamar Dixon Expo Center. It was the same location where, eleven years prior, victims of Hurricane Katrina came to look for their lost pets. We were honored to once again assist people in reuniting with their beloved animal companions.

During these disasters and others across the nation, IFAW has seen firsthand how hesitant people are to evacuate, even in life-threatening situations, if their pets can't go with them. In 2005 when Hurricane Katrina was pummeling the Gulf states many pet-owning residents ignored evacuation orders because they would not leave for higher ground without their pets. At the time, sheltering for pets was not readily available for everyone affected by the storm. It made a difficult situation even more dangerous for everyone involved, and it provided an important lesson for emergency management planners.

So shortly after Hurricane Katrina, the US government amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act to include provisions for pets to ensure that State and local emergency preparedness operational plans address the needs of individuals with household pets and service



Happy, a fluffy white miniature poodle, stayed at Lamar Dixon while his family dealt with flood damage. He went home after the waters started to recede.

animals following a major disaster or emergency. The PETS Act authorizes the Federal Emergency Management Agency (FEMA) to provide rescue, care, shelter, and essential needs for individuals with household pets and service animals, and to the household pets and animals themselves following a major disaster or emergency

IFAW works with FEMA, the United States Department of Agriculture (USDA) and other federal agencies to help the federal government design and implement these plans for pets during natural disasters. IFAW is a founding member of NARSC, which is dedicated to improving state and local disaster preparedness planning for pets and training animal rescue responders in search and rescue techniques and animal sheltering practices.

Whenever possible, IFAW is alerted ahead of disasters and responds when invited in the US and abroad (with local partners) to take care of pets so that people can take care of their own needs. During this traumatic and stressful time, they can be comfortable in the knowledge that someone is looking after their animal family members. IFAW and its partners continually train first responders for all types of disaster situations so that they may also help in animal rescue efforts. Knowing that skilled rescue workers are out in the

disaster zones looking for surviving animals gives owners separated from their pets some hope for reunification.

In the most recent case in Louisiana, our work was focused on this kind of animal recovery, making families whole again in the most challenging of situations. During the flooding, the IFAW team supported more than 300 dogs, cats, chickens, rabbits, guinea pigs, and guinea hens dropped off at the Lamar Dixon shelter by owners who could not both care for themselves and their pets during the disaster. Shelter vets microchipped sheltering animals and volunteers arranged for transport of unowned animals to out of state SPCA and Humane society locations to make room for disaster affected pets. Even first responders were moved by the situation; Major Hal Bridges, a National Guardsman deployed to the flooding response, adopted a puppy from a litter of nine, whose family found refuge at the temporary shelter.

To reduce human worry and stress about their animal companions during natural disasters and to expedite reunifications afterwards is a priority of our work as part of NARSC. It was incredibly rewarding to see owners ultimately reunite with their pets once they could all return home. We believe strongly that when pets are taken care of, people are happier.

The companionship of a dog or cat has been associated with a significant reduction in the frequency of physical ailments.

The exercise needs of companion animals also have powerful motivating effects on their owners' commitment to physical activity.⁸⁵ This influence results in increased exercise and time outdoors, especially for the elderly.⁸⁶ Recognition that animals may be able to bolster our physical and psychological wellbeing has resulted in widespread application of animal-assisted activities and therapies for patients dealing with a range of physical, developmental and psychological issues. Animal-assisted therapy, in particular, uses animals in a structured therapy situation to improve the physical, mental, social and/or cognitive functioning of a patient.⁸⁷ Examples of the calming effect of animals have been seen in studies with patients with Alzheimer's disease⁸⁸ and in children with Down's syndrome and Autism spectrum disorders, among others.⁸⁹ Patients with seizure dogs benefit with canine companions naturally alerting patients, providing stability, and, as some parents of patients reported, a reduction in symptoms.⁹⁰

Along with companion animals, nature and wildlife play a role in human health. While psychological benefits were discussed above, there are also physical benefits resulting from access to nature. For instance, one report found that people with access to nearby natural settings are healthier than other individuals and greater exposure to green space can even reduce the mortality risk associated with income related inequality in health.⁹¹ Time spent outdoors can also protect against health issues resulting from low levels of vitamin D (like heart disease and diabetes) by increasing levels of this important vitamin.⁹² It can also reduce the symptoms resulting from Attention Deficit Hyperactivity Disorders.⁹³

Moreover, animals may contribute to improved health as trained Service or Assistance Dogs (or occasionally other species) for people with physical, sensory, psychiatric,

intellectual, or other disabilities. These animals help people accomplish tasks that would otherwise be extremely difficult or simply impossible. Examples of work or tasks include assisting individuals who are blind or have low vision with navigation and other tasks, alerting those who are deaf or hard of hearing to the presence of people or sounds, providing non-violent protection or rescue work, pulling a wheelchair, assisting an individual during a seizure, alerting people to the presence of allergens, retrieving items such as medicine or the telephone, providing physical support and assistance with balance and stability to those with mobility disabilities, and helping people with psychiatric and neurological disabilities by preventing or interrupting impulsive or destructive behaviors.⁹⁴

In addition to dogs, the use of horses, or hippotherapy, has become popular for patients with disabilities. Many riders have been reported to benefit from the therapeutic connection and relationship with the horse, while others benefit physically, from the movements that build core strength, body awareness and muscle memory.⁹⁵ Ecotherapy, or interaction with nature and wildlife in the broadest sense, helps patients and the effects can span from a boost in mood and self-confidence to stimulating physical activity.⁹⁶

3) Education and Learning

Bhutan's GNH assesses the education domain with holistic schooling, literacy, knowledge, and value elements. Animals can profoundly impact learning. One study showed that schools that use outdoor classrooms and other forms of education that include contact with nature and wildlife produce significant student gains in social studies, science, language arts and math.⁹⁷ Educational visits to nature and wildlife reserves can link to the curriculum and improve students' confidence, self-esteem, and learning skills.⁹⁸

Humane education is defined as the use of education to nurture compassion and respect for living things.⁹⁹ Because many children have a natural affinity for animals and nature, humane education programs help educators engage students and meet their educational goals by offering opportunities for aligning school lessons, activities, and special programs with topics and issues of great interest to today's youth.¹⁰⁰ Humane education programs teach participants kindness towards people, animals, and the environment¹⁰¹ and the benefits of including this education in the classroom can go so far as to reduce in-school violence and bullying, support moral development, instill a sense of responsibility for both animals and people, improve critical thinking skills, motivate students to become more engaged, and promote academic achievement like performance on standardized tests.¹⁰² Endangered animals are frequently the top environmental issue among children, thus animal themed lessons and educational activities can help teachers and schools achieve goals in language arts, science, social studies, and other subjects by engaging students with topics they care about and thereby motivating them to learn. Humane education programs also offer opportunities for integrating meaningful



IFAW's Animal Action Education Programs reach more than 5 million students and educators around the world with materials and activities that teach children kindness towards people, animals, and the environment.

community service with formal instruction, fostering civic responsibility, enriching student engagement with curricula, and engaging youth as assets and resources that contribute to the community in positive ways.¹⁰³

4) The Cultural Diversity and Resilience Domain

The Cultural Diversity and Resilience domain is assessed with indicators concerning cultural participation, speaking native language (this is specific to Bhutan), and artistic skills. Although these elements may be less tangible than material services, they are nonetheless highly valued by people and communities. The cultural diversity and resilience nonmaterial benefits people receive from animals include recreation, aesthetic appreciation, inspiration, and a sense of place and spiritual value. Animals have been the spiritual companions of humans since the beginning of recorded time with the earliest indication of the spiritual significance of the human-animal

relationship found in the 20,000-year-old cave wall paintings of Cro-Magnon people.¹⁰⁴

In many countries images of wildlife provide a sense of awe and nationality defining the very essence of that nation: a bald eagle shown on the back of the US quarter; a kangaroo hopping across Australia's open grasslands; the association of Russia with the image of the Eurasian brown bear; the ring tailed lemur as an iconic symbol of Madagascar; for example. These nations use animal imagery to invoke pride and connect with local wildlife populations as a form of cultural diversity and heritage, even when the economic incentives to poach or to use the habitat for commercial gain are far more obvious. One example is in Gujarat, India, where exploitation of whale sharks was reaching unsustainable levels. A Whale Shark Campaign was started (and a new name for the shark was coined, meaning "loved one") and the whale shark was protected nationally. Whale sharks are now being used as a flagship species to develop marine tourism in the state.¹⁰⁵



Animals may be able to bolster our physical and psychological wellbeing. This boy in the Philippines happily cradles a kitten.

Animals have been the spiritual companions of humans since the beginning of recorded time.



From Barrel Fish to ‘Beloved One’: Saving Whale Sharks in India

Whale sharks (Rhincodon typus) are the largest non-cetacean animals in the world, in fact, some of these placid filter feeding fish can get as long as 40 feet. The species can be found in tropical waters across the globe, including off the coast of India.

In Gujarat, India’s westernmost state, there had been a small scale fishery of whale sharks for many years, because their liver oil was used to waterproof wooden boats. At the end of the twentieth century, however, the international market in shark fins exploded. Shark fins are lucrative: one whale shark fin could command over \$57,000 in China, where they are used for shark fin soup. By 1999, over 600 whale sharks, (known locally by the somewhat derogatory term “barrel fish” for the plastic barrels used to catch them) were killed off Gujarat annually.

It was revealed that more than one-third of the barrel fish killed there each year were juveniles. In fact, the Indian Ocean is one of

the few “nurseries” for whale sharks in the world and safety in this critical habitat is essential for the species’ survival.

In order to save these gentle giants, India passed laws in 2001 to protect the whale shark from exploitation. But over the next few years, the killing continued. The economics of the shark fin trade outweighed any conservation considerations.

A different approach was needed to change the minds of the local people and to encourage them to comply with the law. So in 2004, IFAW and the Wildlife Trust of India, among other organizations, started a campaign to connect the community to the whale shark and to highlight what the animal could bring to them culturally.

The first step was to give it a new name. It was rechristened Vhali or “beloved one.” An important Indian spiritual leader, Shiri Morari Babu joined the campaign, and

likened the whale shark to a daughter coming home to give birth. The community began to feel more spiritually connected to the fish and felt satisfaction in their role as nurturers and protectors of it.

Vhali campaign organizers held painting contests for kids and told the daughter-giving-birth story in plays all over the state. Underwater footage of the whale shark was screened at festivals so community members could see how gentle and beautiful they are. Fishermen began to make public pledges to protect it and set it free when it was caught in their nets. The Gujarat government compensated them for revenue loss and net damage.

Several cities in the region have since adopted the Vhali as the city mascot. The whale shark is now a flagship species for tourism in the state which brings revenue as well as pride to the community. Both the whale sharks and the people that honor them are thriving as a result.



Now known in India as Vhali or “beloved one,” whale sharks were saved from overfishing through a regional campaign that celebrated their unique connection to Indian culture.

Yara, a young girl in Mexico with cerebral palsy, cuddles “Bella” who was trained as her assistance dog to detect when she might have seizures. A therapy animal can also serve as an object of attachment and nurturance and a comfort for a person just to touch.



5) Community Vitality

Community Vitality is assessed through elements like donations of time and money, community relationships, family relationships, and safety. Community relationships are critical for wellbeing and there is abundant research on the essential role of relationships for human wellbeing and longevity. Animals support community vitality through building community relationships and safety. For instance, walking a dog can serve as an icebreaker, enabling conversations with neighbors that may not otherwise begin.¹⁰⁶ Companion animals can serve as important sources of social support, providing many positive psychological and physical benefits for their owners. The socializing role of dogs is perhaps most apparent for people with disabilities. Studies have repeatedly shown that the presence of a service dog encourages more approaches and positive acknowledgements from both friends and strangers.¹⁰⁷ In this context, the dog has the ability to serve a normalizing role, enhancing relations with people who might otherwise feel overlooked or alienated.

The benefits for the individual can be profound, but so too can the benefit to the community at large. When communities work together to promote animal welfare or to come up with solutions to animal welfare issues, there are other benefits that arise from getting together, building bridges, and establishing structures for decision making about other emotionally and ethically sensitive issues, like community decision-making groups. The report

The Human Impacts of Humane Interventions for Dogs: A Global Perspective evaluates worldwide efforts to deal with roaming and unhealthy dogs in economically disadvantaged areas. The report assesses the human benefits of dealing with roaming dogs, documenting the beneficial impact of humane interventions on both animals and people. For example, humane interventions for dogs can strengthen the community by empowering residents to participate in grassroots organizations, increasing social ties, walkability, access to needed resources, and reducing neighborhood strife, by building ties to each other over a relatively non-contentious issue, like dogs. Interventions can also bolster the economy by protecting and improving tourism as well as by reducing costs stemming from dog-related diseases, bites, and livestock predation.¹⁰⁸

The socializing role of dogs is perhaps most apparent for people with disabilities.

GOMBE



How the fate of people and chimpanzees are intertwined in Tanzania

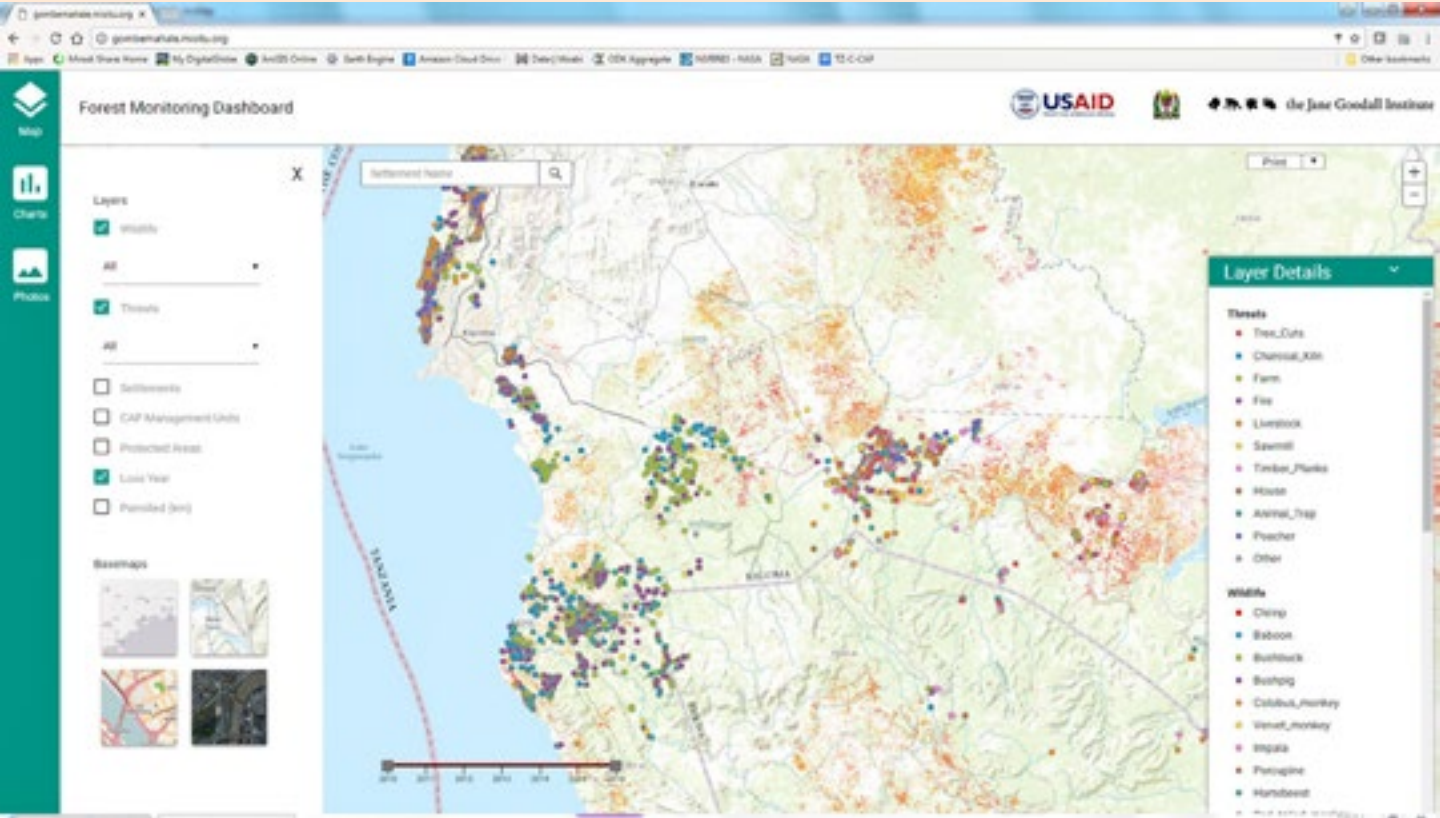
In 1960, when Jane Goodall entered the forest of what is now Gombe National Park in Tanzania, the world knew very little about chimpanzees. She took an unorthodox approach in her field research, immersing herself in their habitat and their lives to experience their complex society as a neighbor rather than a distant observer and coming to understand them not only as a species, but also as individuals with emotions and long-term bonds. Through her studies, she saw how similar chimpanzees were to humans, and how humans are ultimately “part of, not separated from, the amazing creatures with which we share the planet.” She realized that what she learned from the chimpanzees shaped her understanding of human behavior and our place in nature.

In 1986, Dr. Goodall attended a primatology conference in Chicago. Little did she know, while she would arrive as a scientist, she would leave as an activist, after coming to the realization that her beloved chimpanzees were in terrible danger and in need of protection. Chimpanzees are currently listed as endangered by the International Union for the Conservation of Nature (IUCN). It is estimated that only as few as 150,000 chimpanzees remain in the wild from as many as 2 million just hundred years ago. The greatest threat to their survival is deforestation, in addition to hunting for the bushmeat and pet trades and disease — all threats driven, at least in part, by humans.



THE JANE GOODALL INSTITUTE

Dr. Goodall's studies added to our knowledge of chimpanzees as a species but also demonstrated that they exist as aware individuals with emotions and long term bonds much like our own.



JGI developed a Forest Monitoring Dashboard that combines data about the community, animal and environmental activities in and around Gombe National Park.



Measuring what matters: True wellbeing for animals and people

Later, this realization that chimpanzees were in danger was deepened after a flight over Gombe where Dr. Goodall saw that, her beloved park on Lake Tanganyika, where she conducted her pioneering research, was now existing within a nearly bare landscape. Growing populations in the region were increasing demand on the forests’ natural resources, which are being cut for firewood, building supplies and land for homes and agriculture. As forest habitats shrink and become fragmented, chimpanzee communities are disrupted.

The surrounding area that was once habitat for the chimpanzees had become populated by communities who were struggling to survive. Extreme poverty, poor access to healthcare, unsustainable agriculture exacerbated by an ever expanding local population, as well as increases in populations of refugees from war torn-neighboring countries, led to the rapid conversion of this habitat into human settlement.

When Dr. Goodall flew over the area and saw the ravages of accelerated deforestation surrounding the place she had worked for decades, she knew that any true solution needed to begin with people. After all, rapid population growth and poverty-driven activities are the driving forces of deforestation. Because the plight of humans and chimpanzees is so intricately connected, the Jane Goodall Institute employs community centered conservation practices that not only aim to protect chimpanzees, but also improve the lives of people living near important chimp habitat.

Only if the people living around the wilderness areas like Gombe become our partners can we hope to save the habitat and animals who live there,” she said.

JGI began working village by village — listening to people’s concerns, discussing the human costs of forest loss, and sharing community-centered conservation solutions that communities can use to reverse the negative impacts of deforestation on their lands and livelihoods.

Ultimately, these conversations led to the development of programs that improve the lives of the people living in and around chimpanzee habitat. JGI offers a constellation of programs that address immediate needs while engaging families and communities to think a generation ahead so that today’s children become tomorrow’s ecosystem stewards. These programs help communities with such pressing needs as sustainable agriculture, education, clean water and sanitation facilities, family planning and reproductive health education and health care.

Expanding on these community-centered conservation programs, JGI began working with the communities to establish their own land-use management plans. Identifying how the land is being used currently, and how they would like to use it in the future, communities agree to set aside a portion of their land as private forest reserves. Then when

the land-use plan is in place, it takes local people to see it through. JGI helps communities select and train volunteer forest monitors to patrol their lands and gather data from their forest reserves. Community members can view the information on a digital dashboard that includes human activities on the land. As access to land-use information broadens, so does the understanding and engagement that is essential to the plan’s success and improved decision-making around future conservation in the area.

Today, flying over the landscape that was once a source of despair, you can see the signs of community-centered conservation taking shape on a regional scale. With thousands of hectares under improved land management, those 12 original communities which have grown into 52 communities are well on their way to creating a forest corridors for key chimpanzee habitats within the greater Gombe landscape and beyond stretching from Tanzania’s Mahale Mountains National Park in the south all the way to the forests of Burundi in the north.

Current research suggests that the chimpanzee population, which was declining in the region 10 years ago, appears to be stabilizing. Chimpanzees are being reported in places where they haven’t been seen for more than a decade. Birds and other wildlife are coming back. And across the landscape, people are growing a brighter future for their families and their communities. By addressing the needs of local people, JGI is working to instill in them a lasting passion for conservation and hopefully ensure a bright future for our closest relatives — the chimpanzees.



Dr. Jane Goodall has spent over fifty-five years studying chimpanzees and is the founder of The Jane Goodall Institute (JGI) which works to protect the famous chimpanzees of Gombe National Park in Tanzania.



Aerial images before and after restoration projects and community engagements clearly illustrate the recovery of healthy forest that supports both the local people and wildlife.



6) Living Standards

The living standards domain of GNH is measured with elements of assets, housing, and household income. When it comes to wildlife, some non-consumptive uses and animal welfare practices are captured in the current GDP-driven system, but other uses are not properly reflected. For example, the powerful economic returns to local communities of wildlife tourism are not fully reflected in GDP. Wildlife watching tourism is an important industry for many African countries and a significant source of foreign exchange, as well as a vehicle for economic growth, job creation and poverty alleviation. A 2014 report calculated the value of a live elephant to viewing camps, safaris and photo tours in

Kenya, Tanzania, Zambia and South Africa, where elephants drive a growing regional ecotourism industry. When viewed through the “non-consumptive lens” of tourism, the report estimates a single elephant can contribute \$22,966 per year to the local economy, and that grows to \$1.6 million during a 70-year lifespan.¹⁰⁹ Other examples of how wildlife is often more valuable alive include sharks (a live shark is worth nearly \$180,000 per year in tourism revenue versus \$108 from a single shark fin);¹¹⁰ manta rays (worth about 2,000 times more as wild tourist attractions than as meat in a fish market);¹¹¹ and gorillas (in Rwanda, gorilla tourism fuels a \$200 million industry and communities near national parks share 5 per cent of the money generated by park permits).¹¹² Conservation of animals and human wellbeing are linked and leading thinkers in conservation and international

development have called for a stronger integration of conservation and poverty alleviation agendas.¹¹³

In considering how animals contribute to GNH's material wellbeing domain, we can consider animal welfare as it relates to livestock and farm animals. Livestock and farm animals serve as critical sources of economic capital globally and particularly in herding and farming communities. Farm animals play key roles in the livelihoods of families and can strengthen household food and nutrition security.¹¹⁴ Since the 1980s a number of studies have quantified the economic returns of animal welfare: for example, improved productivity accompanying more appropriate animal handling may result in twenty per cent higher daily gains, improved feed efficiency and greater

margins of profit in the livestock production sector.

The World Health Organization, the International Fund for Agricultural Development, and the World Society for the Protection of Animals have done extensive work to enable small farmers to make the most of their livestock, while protecting animal health and environmental sustainability. The organizations recognize that “the welfare of humans and the welfare of animals are closely linked” meaning food security for humans depends on the health and productivity of animals.¹¹⁵ For this reason, animal welfare has come to be regarded as a global common good, ever more so for the food security of around 1 billion poor farmers who depend on livestock for food and income.¹¹⁶

When examining the economic impact of tourism,
per year to the local economy, and that grows to

a single elephant can contribute \$22,966 USD
\$1.6 million USD during a 70-year lifespan.

*Protecting elephants
can directly benefit
local communities
through sustainable,
eco-friendly tourism.*





Wild Elephant Conservation Enhances Village Life around Liwonde National Park, Malawi

Situated south of Lake Malawi, on the Shire River, Liwonde National Park is one of Malawi's most important reserves. Known for its diversity and beauty, it contains within its 212 square miles lagoons, marshes, seasonal floodplains, open savannah, Mopane woodlands, hills and mountains. It is home to a large number of mammals, including elephants, and more than 600 species of birds. However, Liwonde is a wildlife island in a sea of people. The park is totally surrounded by densely populated, extremely poor communities, engaged primarily in subsistence agriculture.

IFAW has been working in Liwonde National Park since 2010 to help provide a safe and protected range for wildlife, particularly for elephants. We have focused on strengthening the park's capacity to prevent and respond to threats to them and other wildlife in the park, including poaching, the bush meat trade, human/animal conflicts, and loss of habitat.

As part of this initiative, IFAW began to work closely with one particular community of people who live on the western border of Liwonde National Park. Chikolongo village, home to approximately 6000 people, had on-going problems with human-wildlife conflict for some time. The confrontations were mainly due to elephants leaving the park during the dry season, when natural vegetation in the park was sparse, to raid precious crops in the community. The people of Chikolongo were also dependent on the park for water collection. Village women and children had to walk over a mile into Liwonde to collect water several times a day from the Shire River - a body of water with a notoriously high population of both crocodiles and hippopotamuses. This resulted in a tragic annual average of 18 deaths from river animal attacks.

As IFAW partnered with the community to find resolutions for these issues, it became clear that there was a need for alternative income and food sources,

for new access to potable water and for a fence to stop elephants from raiding the community crops. IFAW worked with the local villagers, the Department of National Parks and Wildlife (DNPW) of the Government of Malawi, and the German Embassy to build a pilot fish farm and other economic projects. They also facilitated the effort to erect a fence to keep the elephants inside the park, and worked to construct a pump house and water tanks to move and store water from the Shire River to the village.

IFAW's collaboration with the Chikolongo village and other organizations has resulted in significant improvements:

Boundary Fence:

- ▶ A 4.5 mile game-proof electrified fence was built which clearly defines the park boundary. In addition to providing protection against animal attacks and crop destruction, the fence also limits access to poachers. The fence is



The standard of living has improved for thousands of individuals living in the Chikolongo community. Seven fish ponds and a natural dam have been successfully constructed.

now maintained and patrolled by local community members and over the last two years there has been almost no instances of human-elephant conflict and a reduction in the number of locals who poach in the river and park.

Food Security:

- ▶ Seven fish ponds and a natural dam were successfully constructed. The ponds currently hold approximately 50,000 tilapia.
- ▶ Crops were planted on the edges of the ponds, allowing Chikolongo villagers to grow produce they can then sell to Mvu Lodge in the park.
- ▶ Animal husbandry (chickens, ducks, goats) is being expanded.
- ▶ Beekeeping has also been established, with 40 hives set up. Each hive produces on average 10 kg of honey every two months, which sells for US\$5.00/kg. A secondary benefit of the beekeeping project is that the presence of larger numbers of bees in the area helps deter elephant raids.

Access to Clean Water:

- ▶ A pump house close to the Shire River was built to move water through underground piping from the river to village.
- ▶ Water storage tanks were constructed in the village to hold the water pumped from the Shire River.

There has been considerable benefits to the Chikolongo community due to fence security, water access and new sources of food and income.

- ▶ The standard of living has improved for thousands of individuals living in the Chikolongo community. They are benefitting economically from the agricultural activities, including commerce with the park lodge which caters to tourists who come to view the elephants and other wildlife.
- ▶ Since the fence was erected there has been only one incident of an elephant breaking through, and no deaths due to human/elephant conflict in the Chikolongo community. Villagers also no longer have to worry about elephants raiding their crops.

- ▶ There has been a significant added safety advantage for women and girls, who are traditionally responsible for collecting water and firewood. Not only are they safer from wildlife (and human male) assaults at the river, but the new ease and expediency of water collection gives the girls more time to go to school.
- ▶ The pluses of having healthy elephants, safely within the park, are also apparent to the people of Chikolongo and nearby communities. Local schoolchildren overwhelmingly agree that wildlife is important to their community and that protected areas such as Liwonde National Park are crucial.

When elephants are raiding crops or hurting family members, when fetching water could mean death from a crocodile or hippo, then it is harder to see the benefit of wildlife. Working with the community to manage conflicts, build resources to support their livelihoods and create dialogue about conservation clearly helps people feel good about living near wild animals. This in turn improves community wellbeing in significant ways.



In Chikolongo women and girls are traditionally responsible for collecting water and firewood. The new water pump house and storage tanks mean they are they safer from wildlife assaults and the girls have more time to go to school.



IFAW's East Africa Regional Director James Isiche bonds with a rescued elephant calf. We have been working in Tsavo National Park in Kenya protecting the nation's largest population of wild elephants from poaching, habitat loss and human-wildlife conflict.

7) Ecological Diversity and Resilience

Ecological Diversity and resilience evaluates ecological issues, responsibility towards the environment, rural wildlife damage, and urbanization. Animals are part of ecological diversity and their welfare is critical to ecological resilience. One example is the pollinating service of birds and bees critical to ecological diversity. Pollinators play a central role in the growth of plants and crops. For instance, pollination in the United States impacts more than 150 food crops—from almonds, apples and alfalfa, to melons, plums, and squash.¹¹⁷ Almost all fruit and grain crops require pollination to produce their crop. Declines in pollinator activity could have serious economic repercussions throughout the country. In 1994, for example, honeybee shortages caused by parasites and pesticides forced almond growers in California to import bees from distant states to ensure adequate pollination of their \$800 million crop.¹¹⁸

Other animals are also important for transporting nutrients that support ecological resilience. For instance, “elephants and rhinos are ecological engineers, creating conditions that hundreds of other species have evolved to exploit.”¹¹⁹ They do this is by dispensing seeds throughout regions through consumption of plants¹²⁰ and by toppling and trampling trees and thereby supporting regrowth and preventing wildfires.¹²¹

8) The Good Governance Domain

The Good Governance domain evaluates government performance, fundamental rights, services, and political participation. Animal welfare and environmental conservation organizations have noted the tight connection between good governance practices and animal welfare and environmental conservation. For instance, the World Wildlife Fund found that well-governed cities are those that are most sustainable.¹²² The United Nations Millennium Development Goals noted the importance of environmental sustainability to political stability and the goals attributed the balance of economic growth with environmental sustainability to resulting political stability.¹²³

The private sector has noted the relationship between animal welfare and good governance. According to the Financial Times, some investors consider the disclosure of animal welfare practices in a supply chain to be an excellent proxy for management quality.”¹²⁴

The UN Development Program worked with communities in Bosnia to identify threats that made the communities feel unsafe. Roaming dogs topped the list of security threats. The International Fund for Animal Welfare worked with the communities, which still had tensions resulting from the war in the 1990s that pitted neighbors against each other. The challenge of working together to find a humane solution to the roaming dog issue has acted as a bridge to bring people in the community together, develop trust in one another, and improving community governance systems.¹²⁵

Humane Community Development: IFAW and UNDP Partnership



We may consider them “man’s best friend” but across the world, roaming dog populations can cause real problems in human communities; from nuisance issues like excessive barking, rummaging through trash and excreting in streets, to serious threats to public health and safety. In fact, nearly 20 years after the conclusion of the civil war which ravaged Bosnia and Herzegovina in the mid-1990s, the United Nations Development Program (UNDP) conducted a survey to prioritize development issues according to citizens’ concerns about human safety and wellbeing. This 2013 survey revealed that roaming dogs were a top safety concern in communities throughout the nation.

Regions lacking sufficient inoculation of animals can see cross-species spread of zoonotic diseases, including to humans. Many countries face the threat of rabies, for example, (a disease which is nearly 100% percent fatal, and whose primary victims tend to be children) due to an inadequately vaccinated population of feral dogs. Another issue can be that roaming packs of dogs exhibit little caution around humans, resulting in attacks on people. Faced with these kinds of conflicts, people begin to take measures to avoid dogs, and worry about their children walking to school. It has been theorized that, beyond the potential threats to human health and safety, unhealthy or dangerous populations of roaming dogs can negatively impact local economies, and lessen community morale.

IFAW’s Humane Community Development Program (HCD) is a unique approach to assisting communities in addressing both animal welfare and human wellbeing needs. HCD is a guided participatory assessment and planning process though which communities are able to develop and implement individualized management plans to address issues of human-dog conflict, with the support and guidance of IFAW. HCD aims to address the problems a community faces with respect to dogs by utilizing local knowledge and engagement to build community-driven intervention plans.

Throughout Bosnia and Herzegovina, the effects of civil war remain present in many communities in the form of mistrust and animosity amongst groups, dividing neighbors over the smallest of conflicts. HCD brings stakeholders from all different groups to the table, from hunters to veterinarians, policemen and politicians, across social, cultural, and religious borders, to confront issues related to dogs.

Though IFAW provides a structured process, expert guidance, and start-up funding, the responsibility to develop and implement the intervention rests with the community. By creating a plan that is fundamentally driven by community members’ knowledge and decisions, as well as being supported by their local municipal government,



People in Bosnia and Herzegovina are coming together to help their communities’ dogs and address human safety concerns about roaming dog populations.

the process fosters a unique stewardship. Both engaging and empowering, HCD enables the community to take action in a way that is not reliant on external support or NGOs. It strengthens local governing institutions by providing a successful example of problem solving, decision making, and action on a development issue.

The process also engenders positive social impacts. By resolving issues with dogs collaboratively, HCD can indirectly lead to decreased neighborhood conflict and increased social capital. It brings people together around an issue about which they are passionate, allowing a platform to build trust and form new social ties. Because roaming dogs are often seen as a sign of social decline, addressing issues related to roaming dogs can positively impact peoples’ feelings about their community. Reducing dog problems can enhance walkability and feelings of safety, benefit the local economy and create pride within the community.

This country has faced its share of unhappiness over the last several decades, but the mayor of Lopare, a town in the Majevica region of Bosnia and Herzegovina, characterized HCD as the best development project his city had ever seen and stated that HCD had brought “sunshine and light” into his community. During the ceremony that marked the implementation of the HCD plan, the father of the local veterinarian pointed out two men to IFAW staff. “Before you came to our community, those two men would never have set foot in the same room together. Now, they are working together to help our community’s dogs” he said. IFAW’s Humane Community Development Program looks to successes like this to continue engaging with municipalities around the world to support interconnected wellbeing of people and animals.

9) Time Use

Time Use evaluates factors like work and sleep. When it comes to work, companion animals appear in workplaces around the globe. In the United States, a study produced by Central Michigan University found that the presence of a dog in the office can increase employee productivity.¹²⁶ And according to a study conducted by the American Pet Products Manufacturers, 20% of US companies are pet-friendly, allowing employees to bring their pet to work.¹²⁷ Some animals are brought to the workplace not to be companions, but to serve on the job as assistance animals, working animals, and working dogs like government, military and law enforcement working dogs.¹²⁸

In some communities, working animals are vital to economic vitality as transporters, herders, security, and rescue animals. In one case study in the Livelihoods Report by The Brooke, an animal welfare organization studying the benefits of equine animals as transporters, in Ethiopia 40% of households surveyed used donkeys to reduce women's work, resulting in an average \$300 benefit per household per year.¹²⁹ The economic benefit is derived mostly through the use of working animals to transport goods.¹³⁰ Animals also provide other time use productivity functions, like herding. Herding dogs in New Zealand work together to fend off predators and keep flocks numbering in the thousands moving up to 50 miles a day.¹³¹ Working dogs are also used for search and rescue work. Search and rescue dogs have a heightened sense of smell, which can enable these operations.¹³² For example,

after avalanches or earthquakes, rescue dogs are able to use their sense of smell to find people in critical situations.¹³³

While animals can boost work productivity, they may not boost sleep, the second element of the time use domain. A 2012 Harris poll found that 70% of companion animals sleep with their owners, at least occasionally, yet the impact of sleeping with a companion are disputed.¹³⁴ Some research suggests harmful effects including insomnia and increased risk of disease.¹³⁵ Other research finds the effect of insomnia exaggerated as pet owners who sleep with the pet take an average of only 4 minutes longer to fall asleep than pet owners who do not sleep with their pets.¹³⁶

In the United States, a study produced by Central Michigan University found that the presence of a dog in the office can increase employee productivity.

Brooke Study: Healthy Donkeys Help Women and Children Stay Healthy and Even Prosper

“Basically the donkey is like me but to plainly put it, the donkey is me.” Lucy Waititu, 23, Kamuchege, Mwea, Kenya

Brooke, an international animal welfare charity working to improve the lives of working horses, donkeys and mules, undertook research in 2013 to explore the contribution of working equids to the lives of women from the perspective of the women themselves. It documented the extent to which women rely on working equids for support in fulfilling their many roles within the household and the wider community. This includes help with domestic drudgery, providing an income for women and their families, and enabling savings by undertaking transport of water, goods, produce, firewood, animal feed and manure. Equine animals’ role also extends to the social sphere of women’s lives as they raise women’s status in the community and provide them with the opportunity to make their voices heard and access loan and business opportunities.

The research highlights the devastating impact of the loss or sickness of a working equid on women and their families. It shows the importance of good equine welfare as working equids in poor health, be it because

they are overworked, suffer wounds, foot problems, are not provided with adequate harnessing or given access to nutritious food, shelter, and water, are impaired in their ability to benefit women optimally. Therefore good equine welfare is not a luxury but a necessity for women and their families.

In 2011 there were an estimated 112 million equine animals in the world, with 43 million donkeys, 11 million mules, and 58 million horses (FAO). The large majority of these animals lives in developing countries and provides daily support to hundreds of millions of poor households by doing a wide range of work in both urban and rural areas.

In their own words, from communities in four countries and two continents, here are just a few examples of what the women told Brooke about the critical importance of working equine animals in their lives and the extent to which they rely on them for support in fulfilling their many roles within the household and the wider community:

“The donkey affects each and every aspect of my life as a woman. On a typical day the donkey fetches water, which I use to do the laundry, to do the dishes, to clean the house and for

bathing. It also fetches sawdust which I use to cook all meals, then I hire it out and it brings in income on a daily basis that I use to buy flour for the evening meal. In other words, I eat, drink, dress, live off the donkey and more so as a woman and one not employed, I work hand in hand with the donkey.” Lucy Waititu, 23, Kamuchege, Mwea, Kenya

“The death of a donkey spells doom (...) Household chores increase and become unmanageable. Our home and children become dirty and our children are shunned at school.” Jane Muthoni, 33, Nachu, Kenya “

“Thanks to my donkey I have more time to take care of my children. My donkey is just my backbone. It solves all my household problems.” Emete Yassin, 30, 2nd Choroko, Turombora village, Ethiopia

“If there is a donkey in the house, the mother carries her child on her back and lets the donkey carry other stuff such as water or crops. But if she doesn’t have a donkey she has to leave the child behind at home even when there is no one to look after the baby, as she has to carry the load herself. So donkeys have a huge contribution in caring for babies.” Medina Hussien, 35, Gedeba, Ethiopia



DELPHINE VALETTE, COURTESY OF BROOKE

Donkeys can raise women’s status in the community and provide them with the opportunity to make their voices heard.

“[When donkeys are sick] workload increases and we have less time for our families. During this time there are more arguments within the family and even fighting as everyone is stressed. Children have to work too, reducing their study time.” Participant from Mutithi, Kenya

“ They are our identity and our source of income. Not having one means no food for the family.” Dhanrai, 38 window Bala Village, India

“I use the income from my donkey to buy gas, salt, rice, and chicken and eggs

for the children, as well as onions and oil. I get the rest of the foods from my backyard.” Leila Hassen, 1st Ashoka, Gidano Village, Ethiopia

“If my baby could speak, she would tell her life as a child of a donkey. The maternity fees I paid while I was pregnant came from income brought by my donkey. When I delivered my daughter, I was able to pay for the Statutory National Health Insurance Fund through money earned by my donkey, which catered for all the delivery fees. My child eats, dresses and lives off income

from my donkey.” Lucy Waititu, 23, Kamuchege, Mwea, Kenya

“Our living is primarily dependent on them and if we don’t take care of their needs our family cannot survive.” Umesh, 30, Noida, India

“When they are building a school we send our gharry horses to transport water and wood for the construction for free. We also participate when there is a road construction and other development work in our village.” Tuba Shebamud, Wanja, Ababora village, Ethiopia

“Donkeys help us join working groups so that when someone needs a soft loan she uses her donkey as security and is able to access the loan. Through this way we can say that donkeys have the utmost contribution to our development.” Participant from Kamuchege group, Kenya

“When you assist your fellow community members with your donkey at no charge you end up being respected by the community.” Participant from Tharuni’s Women Group, Kenya

Adapted from: Invisible Helpers – Women’s views on the contributions of working donkeys, horses and mules to their lives.

Brooke. May 2014 Adapted and printed with permission from Brooke.

What is an elephant worth?

Elephants have reached the tipping point and the next 5 years are critical for their survival. There is nearly universal agreement that elephants need and deserve enhanced protection from poaching, habitat degradation, and human-wildlife conflict, but debate rages within the conservation and animal welfare communities on the best way to protect them.

At the heart of the controversy is how we value elephants other wildlife and nature in general.

Do we value elephants and other wildlife simply for their intrinsic value, because they are sentient and they exist? Do we value them for the ecosystem services they provide?

Or are we strictly measuring in hard economic terms the costs and potential income from protecting their habitat and keeping them alive long-term, versus the short-term income to be made from selling their ivory?

Even if we choose to look at this issue in the harshest economic terms, losing elephants would have a huge impact on the Gross Domestic Product (GDP) in the countries where tourists flock to see these majestic animals. A report by the David Sheldrick Trust for Elephants estimates that the value of one, live elephant over its 70-year lifetime in a viewing camp in Africa can contribute \$1.6 million to the global economy. As their herds disappear, and the big tusked are killed, and tourists are scared away by security threats from poaching, revenues in these countries drop, as do revenues for global airlines who fly to these countries and global tourism companies that organize the tours.

But the loss of elephants can have impacts far greater than just money. Elephants provide critical ecosystem services, including dispersing seeds, tearing down trees, and digging waterholes – which is especially valuable to other animals in times of drought, all behaviors that provide vital services to animals and people in these landscapes in Africa and Asia.

Of course, throughout time elephants have had cultural and spiritual values for people as well. We associate them with power, family, dignity, strength, and peace, and of course an excellent memory. They have religious significance in some religions and cultures such as Buddhism and with the Masai tribes in Africa for example.

And even if they meant nothing at all to humans, elephants have intrinsic value. They are valuable just because they exist as feeling, living beings, with family and community relationships much like our own.

If we drove wild elephants to extinction because of our insatiable desire for their ivory tusks, we would be much poorer for it, in all areas of our lives.

So has value of their tusks overridden the value of their very lives in our equation to save them?

Our system has created two conditions that are directly contributing to the ongoing loss of elephants.

The first is simple. It's a problem of short-term perspective. The immediate sales of ivory trinkets count toward GDP more than long-term value of the lives of wild elephants in attracting tourism dollars year after year. In fact, global ivory trade bans are still being debated as elephant numbers plummet. Most domestic ivory trade restrictions continue to have exemptions and loopholes.

And second, our global economic system has promoted wide global income inequalities. There are several ways this has manifested. One, the incentives from tourism projects are not always widely shared, so that the incentive to protect elephants and other wildlife (the tourism revenue) is not realized by the communities that are at risk by conflict with

them. When this happens they may engage in retaliatory killing when elephants destroy their crops or hurt or kill their families.

And people in relatively poor countries are killing elephants, out of desperation in many cases, to feed a market for ivory for relatively richer people to show their wealth, power and prestige. And the middle men - the smugglers in of illegal ivory trade - are also often dealing in illegal arms, drugs and human trafficking, so there are no winners here.

IFAW works in elephant habitats with communities and we have success stories to share about living with elephants, but we cannot expand these projects worldwide until we address the global economic value system that is contributing to the possible extinction of elephants.

This case with elephants is just one example of a decision making framework that does not consider or support the happiness and wellbeing of people, animals, and the planet.

How we value an elephant MUST change if we are to save them. We must establish ways to measure and communicate to decision makers that elephant lives, and the lives of the people who live nearest them, have more value than ivory tusks, and that elephants' continued existence in the wild matters to us more than a trinket on our shelves.





IFAW/WTI has pioneered the rescue, rehabilitation and release of orphaned rhinos in India. All three of our released female rhinos have now given birth in the wild.

conclusion

Safeguarding the welfare of animals leads to positive human outcomes, such as companion animals contributing to physical and mental health, healthy farm animals linked to higher productivity and quality, and nature and wildlife strengthening the vitality and resilience of communities. These links show that we need to treat animals better not just for their sake, but also for ours. Therefore, when assessing the success of a policy, a program, or even a country, we need to use alternative indicators of wellbeing beyond economic growth to take into account what really matters to people, and those indicators should include measures that take conservation and animal welfare into consideration, for the benefit of human and animal wellbeing.

The shift from economic activity alone to measuring national prosperity by a holistic metric that considers social and economic wellbeing in addition to economic equity is a paradigm shift for organizations engaged in conservation and animal welfare advocacy. Joining economists and others in their support of alternative indicator systems and the use of these models can provide additional support to the efforts to change the system to better support the wellbeing of animals and people. In addition, adding conservation policy advocates to the coalition of those working to reform systems policy to include alternatives to GDP adds urgency to the fight as the extinction crisis grows ever more critical and time is not on our side.

By considering the non-economic benefits of animals and nature, we envision a widening scope of what matters to us. The presence, interaction with, and care for animals in our midst has profound impacts on human wellbeing. What we measure affects how we choose to invest our resources; and if our measurements are flawed, decisions are distorted. By linking human and animal welfare, we show that treating animals well is important not just for their sake, but also for ours. If we want the happiness and wellbeing benefits that animals provide, we must act to properly recognize their value and include that value in our policies.

Erika Flores of IFAW's project in Playa del Carmen, Mexico rescued "Cata" after she had been run over by a car. The benefits for an individual of connecting with animals can be profound, but so too can the benefits to the community at large.



notes

1. Daly, L., & McElwee, S. (2014). Forget the GDP Some States Have Found a Better Way to Measure Our Progress. New Republic. Retrieved May 1, 2015 from <http://www.newrepublic.com/article/116461/gpi-better-gdp-measuring-united-states-progress>

2. Gross Domestic Product. (n.d.). In Investopedia. Retrieved May 1, 205 from <http://www.investopedia.com/terms/g/gdp.asp>

3. Well-being. (n.d.). In Webster's Dictionary. Retrieved May 1, 2015 from <http://www.merriam-webster.com/dictionary/well-being>

4. Stiglitz, J., Sen, A., Fitoussi, J. P (2015, September). Report by the Commission on the Measurement of Economic Performance and Social Progress. Retrieved from http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf

5. FAQ. Social Progress Imperative. Retrieved May 1, 2015 from <http://www.socialprogressimperative.org/about/faq>

6. IB Times (2014). S&P: Income Inequality and 'Education Gap' Hurting Economic Growth. International Business Times. Retrieved May 1, 2015 from <http://www.ibtimes.com/sp-income-inequality-education-gap-hurting-economic-growth-1649850>

7. FAQ. Social Progress Imperative. Retrieved May 1, 2015 from <http://www.socialprogressimperative.org/about/faq>

8. ODI (2011). Bhutan's success in conservation: Valuing the contribution of the environment to Gross national Happiness, Overseas Development Institute. Retrieved May 1, 2015 from http://www.developmentprogress.org/sites/developmentprogress.org/files/bhutan_report_-_master.pdf

9. ODI (2011). Bhutan's success in conservation: Valuing the contribution of the environment to Gross national Happiness, Overseas Development Institute. Retrieved May 1, 2015 from http://www.developmentprogress.org/sites/developmentprogress.org/files/bhutan_report_-_master.pdf

10. ODI (2011). Bhutan's success in conservation: Valuing the contribution of the environment to Gross national Happiness, Overseas Development Institute. Retrieved May 1, 2015 from http://www.developmentprogress.org/sites/developmentprogress.org/files/bhutan_report_-_master.pdf

11. Social Progress Index (2015). Social Progress Imperative. Retrieved May 1, 2015 from <http://www.socialprogressimperative.org/data/spi>

12. Social Progress Index (2015). Social Progress Imperative. Retrieved May 1, 2015 from <http://www.socialprogressimperative.org/data/spi>

13. Social Progress Index (2015). Social Progress Imperative. Retrieved May 1, 2015 from <http://www.socialprogressimperative.org/data/spi>

14. Social Progress Index (2015). Social Progress Imperative. Retrieved May 1, 2015 from <http://www.socialprogressimperative.org/data/spi>

15. Environmental costs. (n.d.) In Glossary of Statistical Terms. Retrieved May 1, 2015 from <https://stats.oecd.org/glossary/detail.asp?ID=819> (defining environmental costs as the costs of our natural assets deteriorating due to economic activities)

16. BRAINPOOL Final Report: Beyond GDP – From Measurement to Politics to Policy (2014). World Future Council. Retrieved May 1, 2015 from http://www.worldfuturecouncil.org/fileadmin/user_upload/Future_Justice/BRAINPOOL_Project_Final_Report.pdf

17. Environmental costs. (n.d.) In Glossary of Statistical Terms. Retrieved May 1, 2015 from <https://stats.oecd.org/glossary/detail.asp?ID=819> (defining environmental costs as the costs of our natural assets deteriorating due to economic activities)

18. Gross National Happiness (2012). A Short Guide to Gross National Happiness Index. Center for Bhutan Studies. Retrieved May 1, 2015 from <http://www.grossnationalhappiness.com/wp-content/uploads/2012/04/Short-GNH-Index-edited.pdf>

19. The Conversation (2014). Beyond GDP: are there better ways to measure well being? The Conversation. Retrieved May 1, 2015 from <http://theconversation.com/beyond-gdp-are-there-better-ways-to-measure-wellbeing-33414>

20. Footprint Network (2015). Footprint Basics – Overview. Retrieved May 1, 2015 from http://www.footprintnetwork.org/en/index.php/GFN/page/footprint_basics_overview/

21. Abdallah, S., Michaelson, J., Shah, S., Stoll, L., Marks, N., (2012). Happy Planet Index 2012 Report. New Economics Foundation. Retrieved May 1, 2015 from http://b3cdn.net/nefoundation/1c5606c88532a0033d_hpm6vi4wp.pdf

22. European Commission (2007). 2007 Conference. Beyond GDP: Measuring progress, true wealth, and the well-being of nations. Retrieved May 1, 2015 from http://ec.europa.eu/environment/beyond_gdp/2007_conference_en.html

23. Social Progress Imperative (2015). European Commission Confirms Plans To Use Social Progress Index to Guide Investment of 60 Billion Euros. Retrieved May 1, 2015 from <http://www.socialprogressimperative.org/blog/posts/european-commission-confirms-plans-to-use-social-progress-index-to-guide-investment-of-60-billion-euros>.

24. Sponsors. Social Progress Imperative. Retrieved May 1, 2015 from <http://www.socialprogressimperative.org/about/sponsors>

25. Schei, P Chairman’s Report: The Trondheim/UN Conference on Ecosystems and People – Biodiversity for De-velopment – The Road to 2010 and Beyond. (2007). Retrieved May 1, 2015 from <http://www.naturoppsyn.no/multimedia/54863/Chairmans-report-2007.pdf>.

26. Schei, P Chairman’s Report: The Trondheim/UN Conference on Ecosystems and People – Biodiversity for De-velopment – The Road to 2010 and Beyond (2007). Retrieved May 1, 2015 from <http://www.naturoppsyn.no/multimedia/54863/Chairmans-report-2007.pdf>.

27. (2014). New Gallup-Healthways Global Well-Being Index Creates a Catalyst for Worldwide Change. Business Wire. Retrieved May 1, 2015 from http://www.businesswire.com/news/home/20140915006610/en/Gallup-Healthways-Global-Wellbeing-Index-Creates-Catalyst-World-wide?utm_campaign=Wellbeing+Index+2013&utm_source=hs_email&utm_medium=email&utm_content=14155395&_hsenc=p2ANqtz-9Vuti9EHeB6RFAINatXARqRelzIM-LcJrLEqc5fBPcGmC7FYFFPiIrdpOxl7ADS8PiG36ouk-et-zhM8MhN7EFSzTzGw&_hsmi=14155395#.VEkA9ovF9op.

28. UN (2011). Happiness should have a greater role in development policy – UN Member States. UN News Center. Retrieved May 1, 2015 from <http://www.un.org/apps/news/story.asp?NewsID=39084#U-Du7aicPXV>.

29. UN (2012). Defining a New Economic Paradigm: The Report of the High-Level Meeting on Wellbeing and Hap-piness. United Nations Sustainable Development Report. Retrieved May 1, 2015 from <http://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=617&menu=35>.

30. Columbia University (2012). First World Happiness Report Launched at the United Nations. The Earth Institute at Columbia University. Retrieved May 1, 2015 from <http://www.earth.columbia.edu/articles/view/2960>.

31. UNSDN (2013). World Happiness Report 2013. Sustainable Development Solutions Network. Retrieved May 1, 2015 from <http://unsdsn.org/resources/publications/world-happiness-report-2013/>.

32. OECD (2013). OECD Guidelines on Measuring Subjective Wellbeing. OECD. Retrieved May 1, 2015 from <http://www.oecd.org/statistics/Guidelines%20on%20Measuring%20Subjective%20Wellbeing.pdf>

33. OECD (2013). OECD Better Life Index. OECD. Retrieved May 1, 2015 from <http://www.oecdbetterlifeindex.org/>

34. <http://www.oecd.org/statistics/how-was-life-9789264214262-en.htm>

35. Ceroni, M. (2014, September 23). Beyond GDP: US states have adopted genuine progress indicators. The Guard-ian. Retrieved May 1, 2015 from <http://www.theguardian.com/sustainable-business/2014/sep/23/genuine-progress-indicator-gdp-gpi-vermont-maryland>

36. Cha, M. (2013, January 29). What’s Missing from GDP? Demos. Retrieved May 1, 2015 from <http://www.demos.org/publication/whats-missing-gdp>

37. Wealth vs. Well-being: How do we Measure Prosperity. Maryland Department of Natural Resources. Retrieved May 1, 2015 from <http://www.dnr.maryland.gov/mdgpi/>

38. McElwee, S. (2014 February 5). Implementing GPI in Vermont, Maryland, and Oregon. Demos. Retrieved May 1, 2015 from <http://www.demos.org/blog/2/5/14/implementing-gpi-vermont-maryland-and-oregon>

39. Genuine Progress Indicator. Redefining Progress Retrieved May 1, 2015 from http://rprogress.org/sustainability_indicators/genuine_progress_indicator.htm

40. McGuire, S. Posner, S. Haaka, H. (2012, April). Measuring Prosperity: Maryland’s Genuine Progress Indicator. Solutions 3, no. 2, 50-58. Retrieved May 1, 2015 from <http://www.thesolutionsjournal.com/node/1070>

41. Lawn, P (2003). “A theoretical foundation to support the index of Sustainable Economic Welfare, Genuine Pro-gress Indicator, and other related indexes,” Ecological Economics, Vol 44, no.1, 105-118.

42. Happy Counts (2015). Gross National Happiness Doman Averages 2011 – 2015. Happy Counts. Retrieved from www.happycounts.org

43. Times of India (2008). Brazil to ‘import’ happiness from Bhutan. The Times of India. Retrieved May 1, 2015 from http://timesofindia.indiatimes.com/Brazil_to_import_happiness_from_Bhutan/rssarticleshow/3776664.cms

44. Canadian Index of Wellbeing. Retrieved May 1, 2015 from <https://uwaterloo.ca/canadian-index-wellbeing/about-canadian-index-wellbeing>

45. The QUARS Assessing the Quality of Development in Italian Regions. Sbilanciamoci. Retrieved May 1, 2015 from www.sbilanciamoci.org/docs/misc/eng/quars.pdf

46. Singh, R. (2014). It’s time to look beyond GDP figures. The Rakyat Post. Retrieved May 1, 2015 from <http://www.therakyatpost.com/news/2014/09/08/time-look-beyond-gdp-figures/>

47. Anguyo, I. (2014). Abolish GDP in favour of Gross National Happiness. News Vision. Retrieved from <http://www.newvision.co.ug/news/659053-abolish-gdp-in-favour-of-the-gross-national-happiness.html>

48. Oyama, M. and Serpell, J. (2013). “General Commentary: Rethinking the role of animals in human wellbeing,” Frontiers in Psychology, Vol 4:374.

49. Beekeeper Group Nationwide Poll, Poll questions received online September 9-12, 2014 (surveying 1,000 inter-views among likely voters nationwide with interviews conducted online. The margin of error at the 95% confidence level is ±3.1.)

50. World Happiness (2015). World Happiness Report 2013. Sustainable Development Solutions Network. Retrieved May 1, 2015 from <http://worldhappiness.report/wp-content/uploads/sites/2/2015/04/WHR15.pdf>

51. Wells, D. (2011). “The value of pets for human health,” The Psychologist, Vol 24, no. 3. Retrieved May 1, 2015 http://www.thepsychologist.org.uk/archive/archive_home.cfm?volumelD_24-editionID_198-ArticleID_1812-getfile_getPDF/thepsychologist%5C0311wells.pdf

52. Kellert, S. R. (1997). Kinship to mastery: Biophilia in human evolution and development. Washington DC: Island Press.

53. Biophilia Hypothesis. (n.d.). In Encyclopedia Britannica online. Retrieved May 1, 2015 from <http://www.britannica.com/science/biophilia-hypothesis>

54. Mayer, F. S., Frantz, C. M. (2004). The connectedness to nature scale: A measure of individuals feeling in com-munity with nature. Journal of Environmental Psychology, Vol 24, pp.503-515.

55. Curtin, S. (2009). “Wildlife tourism: the intangible, psychological benefits of human–wildlife encounters,” Cur-rent Issues in Tourism, Vol 12(5-6).

56. Maller, C., Townsend, M., Pryor, A., Brown, P., St. Leger, L. (2006). “Healthy nature healthy people: ‘contact with nature’ as an upstream health promotion intervention for populations,” Health Promotion International, Vol 21(1), 45-54 (noting nature refers to any single element of the natural environment (such as plants, animals, soil, water or air), and includes domestic and companion animals as well as cultivated pot plants.)

57. McConnell, A. Allen, R. Brown, C., Shoda, Tort, Stayton, L., Martin, Cl. (2011) “Friends with benefits: On the positive consequences of pet ownership,” Journal of Personality and Social Psychology, Vol 101(6).

58. Walsh, F. (2009) “Human-Animal Bonds II: The Role of Pets in Family Systems and Family Therapy,” Family Process, Vol 48.

59. University of Pennsylvania (2004). Can Animals Help Humans Heal? Animal-Assisted Interventions in Adoles-cent Mental Health. Center for the Interaction of Animals and Society University of Pennsylvania School of Veteri-nary Medicine. Retrieved May 1, 2015 from <http://www.vet.upenn.edu/docs/default-source/Research/CIAS/cias-aai-white-paper.pdf?sfvrsn=0>; Folse, E. (1994) “Animal-assisted therapy and depression in adult college students,” An-throzoõs Vol 7, 188–194.; Garrity, T.F., Stallones, L., Marx, M., Johnson, T. (2015). “Pet ownership and attachment as supportive factors in the health of the elderly,” Anthrozoõs, Vol 3, 35–44.; Beck, A.M. & Katcher, A.H. (1984). “A new look at pet-facilitated psychotherapy,” Journal of the American Veterinary Medical Association, Vol 184, 414–421.

60. University of Pennsylvania (2004). Can Animals Help Humans Heal? Animal-Assisted Interventions in Adoles-cent Mental Health. Center for the Interaction of Animals and Society University of Pennsylvania School of Veterinary Medicine. Retrieved May 1, 2015 from <http://www.vet.upenn.edu/docs/default-source/Research/CIAS/cias-aai-white-paper.pdf?sfvrsn=0>

61. Veterinary Calendar (2008). Companion animals enhancing human health and wellbeing. Retrieved May 1, 2015 from <http://veterinarycalendar.dvm360.com/companion-animals-enhancing-human-health-and-wellbeing-proceedings?rel=canonical>

62. Melson, GF (2005). Why the Wild Things Are: Animals in the Lives of Children. Cambridge, MA: Harvard Uni-versity Press.

63. World Health Organization (2005). Ecosystems and human wellbeing: Health synthesis. World Health Organiza-tion Millennium Ecosystem Assessment. Retrieved May 1, 2015 from <http://www.who.int/globalchange/ecosystems/ecosystems05/en/>

64. World Health Organization (2005). Ecosystems and human wellbeing: Health synthesis. World Health Organiza-tion Millennium Ecosystem Assessment. Retrieved May 1, 2015 from <http://www.who.int/globalchange/ecosystems/ecosystems05/en/>

65. Allison, E. Gross National Happiness and Biodiversity Conservation in Bhutan; Natural Capitalism Solutions. Retrieved May 1, 2015 from www.natcapsolutions.org/LASER/LASER_GHN-Bhutan.pdf

66. What is Shamanism? Shaman Portal. Retrieved May 1, 2015 from http://www.shamanportal.org/what_is_shamanism.php

67. Native American Legends Native American Totems & Their Meanings. Legends of America. Retrieved May 1, 2015 from <http://www.legendsofamerica.com/na-totems.html>

68. Native American Legends Native American Totems & Their Meanings. Legends of America. Retrieved May 1, 2015 from <http://www.legendsofamerica.com/na-totems.html>

69. (2014). Berkley Center for Religion, Peace &World Affairs. Retrieved May 1, 2015 from <http://berkeleycenter.georgetown.edu/events/catholic-social-teaching-and-animal-rights>

70. The Roman Catholic Church. The Humane Society of the United States. Retrieved May 1, 2015 from <http://www.humanesociety.org/assets/pdfs/faith/catholic-statement-2014.pdf>

71. Jayaram, V. Treatment of Animals in Hinduism. Hindu Website. Retrieved May 1, 2015 from <http://www.hinduwebsite.com/hinduism/essays/animals.asp>.

72. Jayaram, V. Treatment of Animals in Hinduism. Hindu Website. Retrieved May 1, 2015 from <http://www.hinduwebsite.com/hinduism/essays/animals.asp>.

73. Jayaram, V. Treatment of Animals in Hinduism. Hindu Website. Retrieved May 1, 2015 from <http://www.hinduwebsite.com/hinduism/essays/animals.asp>.

74. Nightingale F. (1860). Notes on Nursing, What It is and What It is Not. New York, NY: Appleton.

75. Wells, D.L. (2009). “The effects of animals on human health and wellbeing,” Journal of Social Issues, Vol 65, 523–543.

76. Friedmann, E., Katcher, AH, Lynch, J., Thomas, S. (1980). “Animal companions and one year survival of pa-tients after discharge from a coronary care unit,” Public Health Reports, 95, 307–312.

77. Baun, M.M., Bergstrom, N., Lanston, NF., Thomas, L. (1984). “Physiological effects of human/companion ani-mal bonding,” Nursing Research, Vol 33(3), 126-129.

78. Anderson, W.P, Reid, C.M., Jennings, G.L. (1992). “Pet ownership and risk factors for cardiovascular disease,” Medical Journal of Australia, Vol 157, 298–301. Retrieved May 1, 2015 from <http://www.ncbi.nlm.nih.gov/pubmed/1435469>.

79. Swan, R. (2013). More companies, citing benefits, allow pets to work. USA Today. Retrieved May 1, 2015 from <http://www.usatoday.com/story/money/business/2013/02/27/pets-reduce-stress-welcome-workplace/1951957/>.

80. Levine G., Allen, K., Braun, L., Christian, H., Friedmann, K., Taubert, K., Thomas, S., Wells, D., Lange, R. (2013). “Pet ownership and cardiovascular risk: a scientific statement from the American Heart Association,” AHA Scientific Statement Circulation, Vol 127, 1–11.

81. Serpell, J.A. (1991). “Beneficial effects of pet ownership on some aspects of human health and behavior,” Journal of the Royal Society of Medicine 84, 717–720.

82. Gern, J., et al. (2004, February). “Effects of dog ownership and genotype on immune development and atopy in infancy,” Journal of Clinical Immunology, 113(2), 307-314.

83. De Meer, G., Toelle, BG., Ng, K., Tovey, E., Marks, GB. (2004). “Presence and timing of cat ownership by age 18 and the effect on atopy and asthma at age 28,” Journal of Allergy Clinical Immunology, 113(3), 433-438.

84. Rovner, J. (2012). Pet Therapy: How Animals And Humans Heal Each Other. Morning Edition. Washington, DC: National Public Radio. Retrieved May 1, 2015 from <http://www.npr.org/blogs/health/2012/03/09/146583986/pet-therapy-how-animals-and-humans-heal-each-other>.

85. Parker-Pope, T. (2011). Forget the Treadmill. Get a Dog. NY Times. Retrieved May 1, 2015 from http://well.blogs.nytimes.com/2011/03/14/forget-the-treadmill-get-a-dog/?_r=0.

86. Parker-Pope, T. (2011). Forget the Treadmill. Get a Dog. NY Times. Retrieved May 1, 2015 from http://well.blogs.nytimes.com/2011/03/14/forget-the-treadmill-get-a-dog/?_r=0.

87. Giorgi, A. (2013). What is Pet Therapy? Healthline. Retrieved May 1, 2015 from <http://www.healthline.com/health/pet-therapy#Overview1>.

88. Hart, L.A. (2006). “Understanding animal behavior, species, and temperament as applied to interactions with specific populations,” Handbook on Animal-Assisted Therapy: Theoretical Foundations and Guidelines for Practice. 2nd edn, 81-96.

89. Esteves, S.W. and Stokes, T (2008). “Social effects of a dog’s presence on children with disabilities,” Anthrozoos 21(1), p5(11).

90. How does 4 Paws for Ability meet the needs of children with seizures. 4 Paws for Ability. Retrieved May 1, 2015 from <http://4pawsforability.org/seizure-assistance-dog/>

91. Mitchell, R., and Popham, F (2008). “Effect of exposure to natural environment on health inequalities: an obser-vational population study,” The Lancet, 372(9650), 1655-1660.

92. National Wildlife Federation. There’s a reason they call it the great outdoors. Be Out There National Wildlife Federation. Retrieved May 1, 2015 from <http://www.fws.gov/international/pdf/education-parents-get-kids-outdoors.pdf>

93. National Wildlife Federation. There’s a reason they call it the great outdoors. Be Out There National Wildlife Federation. Retrieved May 1, 2015 from <http://www.fws.gov/international/pdf/education-parents-get-kids-outdoors.pdf>

94. U.S. Department of Agriculture (2011). A Brief Information Resource on Assistance Animals for the Disabled. United States Department of Agriculture. Retrieved May 1, 2015 from <http://www.nal.usda.gov/awic/companimals/assist.htm>

95. Equine Therapy. Horses Help the Disabled to Become Enabled. Retrieved May 1, 2015 from <http://www.equine-therapy-programs.com/horses-help-disabled-people.html>

96. Ecominds (2013). Feel better outside, feel better inside, ecotherapy for mental wellbeing resilience and recovery. Mind. Retrieved May 1, 2015 from <http://www.mind.org.uk/media/336359/Feel-better-outside-feel-better-inside-report.pdf>

97. American Institutes for Research (2005). Effects of Outdoor Education Programs for Children in California. Re-trieved May 1, 2015 from <http://www.air.org/resource/effects-outdoor-education-programs-children-california>; US Fish and Wildlife Service (2007). Teaching and Learning in Nature. U.S. Fish and Wildlife Service. Retrieved May 1, 2015 from <http://www.fws.gov/northeast/cpwn/pdf/educatornature.pdf> (noting the wildlife components of nature-based programs might include, for example, planning and conducting wildlife monitoring projects; researching local wildlife diversity and documenting habitat conservation issues in their local communities.

98. The Royal Society for the Protection of Birds. Wellbeing through Wildlife. Retrieved May 1, 2015 from http://www.rspb.org.uk/Images/wellbeing_tcm9-132872.pdf

99. Animal Studies Repository (2003). Humane education: Past, present, and future. Humane Society Institute for Science and Policy. Retrieved May 1, 2015 from http://animalstudiesrepository.org/cgi/viewcontent.cgi?article=1002&context=sota_2003

100. Sustainable Jersey Actions (2015). Sustainable Jersey. Retrieved May 1, 2015 from <http://www.sustainablejersey.com/actions-certification/actions/#close>

101. American Humane Society. Humane Education Resources. Retrieved May 1, 2015 from <http://www.americanhumane.org/interaction/programs/humane-education/>

102. IFAW (2013). New global education program, cats, dogs, us brings compassion into classroom. Retrieved from <http://www.ifaw.org/united-states/news/new-global-education-program-cats-dogs-and-us-brings-compassion-classroom>

103. IFAW (2013). New global education program, cats, dogs, us brings compassion into classroom. Retrieved May 1, 2015 from <http://www.ifaw.org/united-states/news/new-global-education-program-cats-dogs-and-us-brings-compassion-classroom>

104. Randour, M. Animals Teach Us Spirituality and Heighten Our Capacity for Love and Joy. Retrieved May 1, 2015 from <https://innerself.com/content/living/leisure-and-creativity/pets/5790-animals-teach-us-spirituality.html>

105. Wildlife Trust of India. West Coast Marine Conservation Project – Whale Shark Conservation Project. Retrieved May 1, 2015 from <http://www.wti.org.in/ProjectsDetails.aspx?ProjId=19>

106. Sweat, R. (2014). Studies show walking the dog helps people meet people. Retrieved May 1, 2015 from <http://www.petplace.com/article/dogs/behavior-training/bonding-with-dogs/studies-show-walking-the-dog-helps-people-meet-people>

107. Hart, L.A. (2006). “Understanding animal behavior, species, and temperament as applied to interactions with specific populations,” Handbook on Animal-Assisted Therapy: Theoretical Foundations and Guidelines for Practice. 2nd edn, 81-96, ed A. H. Fine. Burlington, MA; Esteves, S.W., Stokes, T. (2008). “Social effects of a dog’s presence on children with disabilities,” Anthrozoos 21(1), 5(11). Retrieved May 1, 2015 from <http://www.therapydogs.org/documents/Social%20effects%20of%20a%20dog%20on%20children%20with%20disabilities.pdf>

108. Arluke, A., Atema, K., (2015). Roaming Dogs. The Oxford Handbook of Animal Studies. doi: DOI: 10.1093/oxfordhb/9780199927142.013.9

109. iWorry Campaign. (2014). Dead or Alive: Valuing an Elephant. London. The David Sheldrick Wildlife Trust. Retrieved May 1, 2015 from <http://iworry.org/wp-content/uploads/2013/09/Dead-or-Alive-Final-LR.pdf>

110. Vartan, S. (2012). Thanks to eco-travelers, sharks are worth more alive than dead. Retrieved May 1, 2015 from <http://www.mnn.com/lifestyle/eco-tourism/blogs/thanks-to-eco-travelers-sharks-are-worth-more-alive-than-dead>

111. Heimbuch, J. (2014). World’s largest manta ray sanctuary opens in Indonesia. Mother Nature Network. Retrieved May 1, 2015 from <http://www.mnn.com/earth-matters/animals/stories/worlds-largest-manta-ray-sanctuary-opens-in-Indonesia>

112. McLendon, R. (2014). 11 startling stats about Earth’s disappearing wildlife. Retrieved May 1, 2015 from <http://www.mnn.com/earth-matters/wilderness-resources/blogs/11-startling-stats-about-earths-disappearing-wildlife>

113. Sachs, J et al. (2009). Biodiversity conservation and the Millennium Development Goals. Policy forum. Volume 325, 1502-1503.

114. IFAD. (2014). Livestock and family farms: Boosting nutrition, incomes and resilience. Retrieved May 1, 2015 from <http://www.ifad.org/story/feature/livestock.htm>

115. Food and Agriculture Organization. AGA in Action. Agriculture and Consumer Protection Department Animal Production and Health. Retrieved May 1, 2015 from http://www.fao.org/ag/againfo/home/en/news_archive/AGA_in_action/2012_Joining_efforts_to_address_animal_welfare.html

116. Food and Agriculture Organization. AGA in Action. Agriculture and Consumer Protection Department Animal Production and Health. Retrieved May 1, 2015 from http://www.fao.org/ag/againfo/home/en/news_archive/AGA_in_action/2012_Joining_efforts_to_address_animal_welfare.html

117. Pollination: an Essential Ecosystem Service. Ecological Society of America and the Union of Concerned Scientists. Retrieved May 1, 2015 from <http://www.esa.org/ecoservices/comm/body.comm.fact.poll.html>

118. Pollination: an Essential Ecosystem Service. Ecological Society of America and the Union of Concerned Scientists. Retrieved May 1, 2015 from <http://www.esa.org/ecoservices/comm/body.comm.fact.poll.html>

119. Monbiot, G. (2015). Attacks on the Last Elephants and Rhinos Threaten Entire Ecosystems. The Guardian. Retrieved May 1, 2015 from <http://www.theguardian.com/environment/georgemonbiot/2015/may/22/attacks-on-the-last-elephants-and-rhinos-threaten-entire-ecosystems>

120. Monbiot, G. (2015). Attacks on the Last Elephants and Rhinos Threaten Entire Ecosystems. The Guardian. Retrieved May 1, 2015 from <http://www.theguardian.com/environment/georgemonbiot/2015/may/22/attacks-on-the-last-elephants-and-rhinos-threaten-entire-ecosystems>

121. Wolf, A., Doughty, C., Malhi, Y. (2013). Lateral Diffusion of Nutrients by Mammalian Herbivores in Terrestrial Ecosystems. PLoS ONE, 8. doi: 10.1371/journal.pone.0071352

122. Governance and Citizenship. World Wildlife Fund. Retrieved May 1, 2015 from http://wwf.panda.org/what_we_do/footprint/cities/urban_solutions/themes/governance/citing_examples_of_the_following_cities:_Vienna,_Wellington,_Sutton,_Freiburg,_and_Bogotá

123. The United Nations Development Agenda. (2007). Goals, Commitments and Strategies agreed at the United Nations world Conferences and Summits since 1990. United Nations Department of Economic and Social Affairs, The intersection of green journalism, good governance and environmental conservation. The Green Vision. Retrieved May 1, 2015 from <http://www.thegreennews.info/the-intersection-of-green-journalism-good-governance-and-environmental-conservation/>

124. Grene, S. (2015). Happy animals equal good governance. Financial Times. Retrieved May 1, 2015 from <http://www.ft.com/intl/cms/s/0/ad4df32e-b8fd-11e4-b8e6-00144feab7de.html#axzz3k57SG9cG>

125. Partnering with UN Development Program to help dogs in Bosnia. IFAW. Retrieved May 1, 2015 from <http://www.ifaw.org/united-states/our-work/cats-and-dogs/partnering-un-development-program-help-dogs-Bosnia>

126. Life Hack. Pets and Productivity: Does Having an Animal in the Office Make You a Better Worker. Life Hack. Retrieved May 1, 2015 from <http://www.lifehack.org/articles/productivity/pets-and-productivity-does-having-an-animal-in-the-office-make-you-a-better-worker.html>

127. Dholakiya, P. (2014). For a Productive Workplace Let Your Office Go to the Dogs. Entrepreneur. Retrieved May 1, 2015 from <http://www.entrepreneur.com/article/237982>

128. United States Department of Agriculture. Service and Working Animals. Retrieved May 1, 2015 from <https://awic.nal.usda.gov/companion-animals/service-and-working-animals>

129. Brooke. The benefits working animals bring to humans. United Kingdom: The Brooke. Retrieved May 1, 2015 from <http://www.thebrooke.org/our-work/stories/livelihoods>

130. Brooke. The benefits working animals bring to humans. United Kingdom: The Brooke. Retrieved May 1, 2015 from <http://www.thebrooke.org/our-work/stories/livelihoods>

131. National Geographic. Working Dogs. Washington, D.C.: National Geographic. Retrieved May 1, 2015 from http://video.nationalgeographic.com/video/dog_domestic_working

132. Jones, K., Dashfield, K., Downend, A., Otto, C. (2004). “Search-and-rescue dogs: an overview for veterinarians,” Vet Med Today Disaster Medicine, Vol 225, No. 6.

133. National Geographic. Working Dogs. Washington, D.C.: National Geographic. Retrieved May 1, 2015 from http://video.nationalgeographic.com/video/dog_domestic_working

134. Psychology Today (2014). Should Pets Be Banished From the Bedroom? Retrieved May 1, 2015 from <https://www.psychologytoday.com/blog/animals-and-us/201407/should-pets-be-banished-the-bedroom>

135. Psychology Today (2014). Should Pets Be Banished From the Bedroom? Retrieved May 1, 2015 from <https://www.psychologytoday.com/blog/animals-and-us/201407/should-pets-be-banished-the-bedroom>

136. Psychology Today (2014). Should Pets Be Banished From the Bedroom? Retrieved May 1, 2015 from <https://www.psychologytoday.com/blog/animals-and-us/201407/should-pets-be-banished-the-bedroom>

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