



**CBD**



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Montreal, 14-18 October 2013  
Item 3 of the provisional agenda\*

### **AICHI TARGETS PASSPORT**

#### *Note by the Executive Secretary*

1. The Executive Secretary is circulating herewith, for the information of participants in the seventeenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice, a booklet entitled “Aichi Biodiversity Passport” which provides an update of indicators from decision XI/3 that are ready for use.
2. The Aichi Passport was produced by the Biodiversity Indicators Partnership in collaboration with the Secretariat of the Convention on Biological Diversity; with financial support from the United Nations Environment Programme, the European Commission, the Federal Office for the Environment, Switzerland, and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany.
3. The booklet is presented in the form and language in which it was received by the Secretariat of the Convention on Biological Diversity.

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\* UNEP/CBD/SBSTTA/17/1.



United Nations Decade on Biodiversity

# AICHI TARGETS PASSPORT



Convention on  
Biological Diversity



# Acknowledgements

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The Aichi Passport was produced by the Biodiversity Indicators Partnership in collaboration with the Secretariat of the Convention on Biological Diversity; with financial support from UNEP, the European Commission, the Federal Office for the Environment (FOEN), Switzerland and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany.



Convention on  
Biological Diversity



## THIS DOCUMENT WAS PREPARED BY:

### **Lead Authors**








Anna Chenery, Heather Plumptre, Claire Brown and Matt Walpole (UNEP-WCMC).





### **Contributing Authors**

Ian Burfield, Stuart Butchart (BirdLife International); David Morgan (CITES); Richard Gregory (RSPB); Beatriz Gomez, Robert Höft, Kieran Noonan-Mooney, Nadine Saad (CBD Secretariat); Roswitha Baumung, Linda Collette, Kenneth MacDicken, Leticia Pina, Beate Scherf, Yimin Ye (FAO); Marion Karmann, Stefan Salvador (Forest Stewardship Council); Alessandro Galli (Global Footprint Network); Albert Bleeker (International Nitrogen Initiative); Diego Juffe-Bignoli (IUCN); Shyama Pagad (IUCN SSC Invasive Species Specialist Group); Nicolas Gutierrez (Marine Stewardship Council); Melodie McGeoch (Monash University); Benjamin Halpern (National Center for Ecological Analysis and Synthesis); Valerie Gaveau (OECD); Natasha Ali, Maiko Lutz (RBG Kew); David Harmon, Luisa Maffi (Terralingua); Carmen Revenga (The Nature Conservancy); Thomasina Oldfield (TRAFFIC International); Siobhan Kenney (UNEP-WCMC); Rik Kutsch Lojenga (Union for Ethical BioTrade); Dirk Zeller (University of British Columbia); Marc Hockings (University of Queensland); Jonathan Loh (WWF, Terralingua); Monika Böhm; Ben Collen, Louise McRae (Zoological Society of London).

# The key

Icons are used to show the level of progress made towards the target, the status of the indicator within the BIP and trends available.

Progress towards achieving Aichi Target*	
	Positive changes
	Negative changes
	No clear change, or both positive and negative trends shown by indicator
	Baseline
	Under development
Indicator Data Information	
	The most recent data we have for this indicator is from the stated year.
	The next data update is due for this indicator in the stated year.

Indicators and Partners	
	This is a new indicator brought into the BIP following adoption of the Strategic Plan for Biodiversity 2011-2020 to monitor progress towards the Aichi Biodiversity Target/s.
	This indicator is one of the original suite brought together by the BIP to monitor progress towards the 2010 Biodiversity Target. This indicator is now being taken forward to track progress towards the Aichi Biodiversity Targets.
	A new Indicator Partner has been welcomed into the BIP to support the production of this indicator.
	This indicator Partner was originally a member of the BIP to develop indicators for the 2010 Target. Their role in the Partnership continues as they take forward and/or develop new indicators for the Aichi Targets.

## Indicator Projections and Future Scenarios

The development of global indicators for monitoring progress towards targets is one component of the BIP's work. Partners are also working to use their indicators in novel ways to predict future trends or project the results of different policy scenarios. Some examples of this new and exciting work are presented in the **Indicator Projections** section on page 85 of the Passport.











## BIP support to national indicators

As well as bringing together global indicators, the BIP has an extensive programme of supporting National and regional Indicator development. More information is available through the national indicator development link on [www.bipindicators.net](http://www.bipindicators.net)



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# Introduction

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Established in 2007, the Biodiversity Indicators Partnership (BIP) is a global initiative aiming to bring together organizations around the theme of monitoring progress towards international biodiversity targets. In 2010, the Strategic Plan for Biodiversity 2011-2020 was adopted. At the heart of this overarching framework for international biodiversity action are the 20 Aichi Biodiversity Targets which cover a wide range of biodiversity-related topics. Many of these, such as public awareness, economic incentives and policy mainstreaming, were not reflected in the previous CBD 2010 biodiversity targets but are key to sustaining biodiversity.

## The Aichi Passport

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A “proof of concept” Beta version of the Aichi Targets Passport was released in October 2012 which included one or two indicators for each Aichi Target. Since the release of the Beta version, the BIP Partnership has continued working to enhance and increase the number of global indicators available for each of the targets.

As the Aichi Biodiversity Targets are multi-faceted, in most cases an individual global indicator is insufficient if used in isolation to assess overall progress towards a target. The BIP is therefore happy to announce that the new edition of the Passport sees the linking of multiple indicators under many of the Aichi Biodiversity Targets to provide more comprehensive storylines of progress.

In several instances a global indicator for an Aichi Biodiversity Target has not yet been identified. However, this does not mean that progress towards this target cannot be assessed. Many countries have national level indicators and/or other relevant information which can be used to assess progress towards the target at a national level. These national level assessments can be used to inform global level assessments of progress.

This Aichi Passport presents a suite of indicators, which are as far as possible, global in their coverage, scientifically valid and peer reviewed, and relevant to the Aichi Targets. In particular, indicators are presented to highlight:

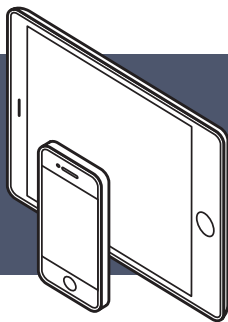
- 1) What progress has been made towards the targets to date;
- 2) What baselines exist from which future progress can be monitored.

For further information on all the indicators compiled for monitoring progress towards achieving the Aichi Biodiversity Targets visit the BIP website: [www.bipindicators.net/indicators](http://www.bipindicators.net/indicators)

The indicators presented in the Aichi Passport are those contained in CBD decision XI/3 with some additional indicators that have been or are being developed to fill gaps.

The Aichi Passport is available in hard copy and as a Smartphone App. All formats can be downloaded from the BIP website:

**<http://www.bipindicators.net/resource/aichipassport>**



Disclaimer: The designation employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the Convention on Biological Diversity concerning the legal status of any country, territory, city or area of its authorities, or concerning the delimitation of its frontiers or boundaries.

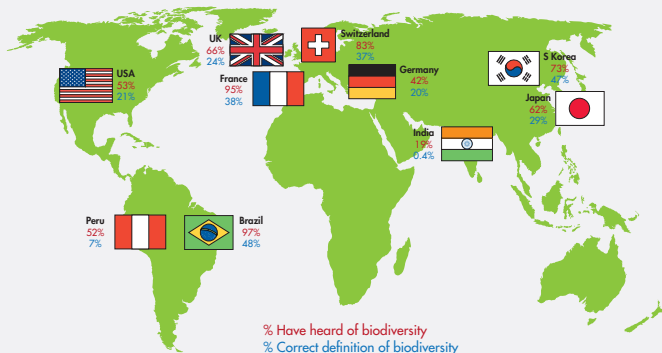


# Aichi Target 1: Awareness of Biodiversity

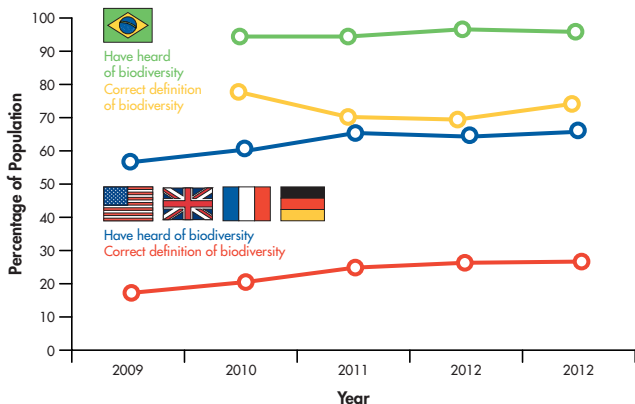
## Indicator: Biodiversity Barometer



Awareness of biodiversity continues to increase around the world. The Biodiversity Barometer shows that an average of 67% of 31,000 respondents in 11 countries around the world had heard about biodiversity over the last 5 years.



Biodiversity awareness around the world – IPSOS survey commissioned by the UEBT



**Percentage of respondents that have heard about and provided the correction definition of biodiversity, based on 1000 respondents per country per year, for Brazil (green and yellow) and France, Germany, UK and USA (red and blue).**

Source: UEBT and IPSOS, 2013

## The full story

The 2013 Biodiversity Barometer shows high level of biodiversity awareness in countries like Brazil (94% awareness), France (95%) and China (94%). The actual understanding of what biodiversity means, defined as people that can define biodiversity correctly, still remains much lower. In most countries less than half of the surveyed people were able to define biodiversity correctly. A positive exception is China, where 68% of surveyed persons defined biodiversity correctly.

Data from the four countries surveyed since 2009 (France, UK, USA, Germany) show that the 2010 International Year of Biodiversity campaign resulted in a significant increase in biodiversity awareness and understanding. Yet, this increase appears to be levelling out. However, the number of people that are able to correctly define biodiversity continues to increase in countries such as Germany, USA and Brazil. Brazil has high biodiversity awareness and rates that remain stable over time.

When defining biodiversity many of the surveyed persons give examples of regions in Brazil that are rich in biodiversity, like the Amazon.

The data for the UEBT Biodiversity Barometer are taken from nationally representative samples of people between 16 and 64 years. The barometer shows that young people are more aware about biodiversity than older people, men are slightly more aware than women, and higher income and education also increase awareness rates.

## Indicator relationship to Aichi Target 1

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*Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.*

The *Biodiversity Barometer* indicator measures the level of public awareness of biodiversity. The indicator also measures understanding of biodiversity in these regions, through the number of people that provide correct definitions of biodiversity. This information helps to identify gaps and distinguish groups that are most in need of awareness raising activity. Although this indicator does not have global coverage yet, the BIP hopes to see the continued expansion of the indicator to include additional countries in future surveys.

## Indicator Partners

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Union for Ethical BioTrade

## Further Information

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For further information on the *Biodiversity Barometer* indicator visit <http://www.bipindicators.net/biodiversitybarometer>



## **Aichi Target 2: Integration of biodiversity values**

### ***No global indicators yet available***

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Though global indicators for this target have yet to be developed or identified, there are a number of possible national indicators that could be used by countries to assess progress. Examples of these are noted in CBD decision XI/3 and include:

- Trends in guidelines and applications of economic appraisal tools;
- Trends in integration of biodiversity and ecosystem service values into sectoral and development policies;
- Trends in policies considering biodiversity and ecosystem service in environmental impact assessment and strategic environmental assessment.

For more information on national indicator development go to <http://www.bipindicators.net/>





## Aichi Target 3: Incentives

### *No global indicators yet available*

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Though global indicators for this target have yet to be developed or identified, there are a number of possible national indicators that could be used by countries to assess progress. Examples of these are noted in CBD decision XI/3 and include:

- Trends in identification, assessment and establishment and strengthening of incentives that reward positive contribution to biodiversity and ecosystem services and penalize adverse impacts.

For more information on national indicator development go to <http://www.bipindicators.net/>

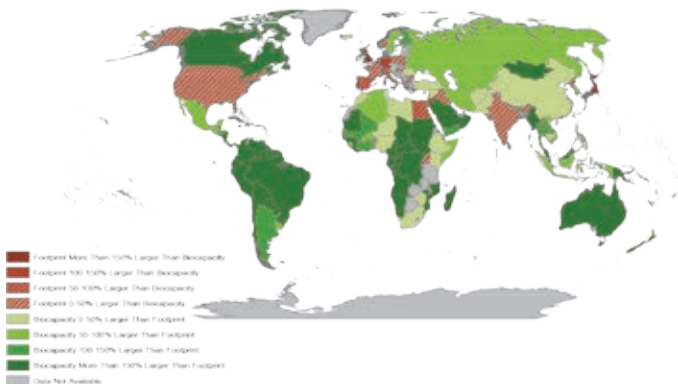


## Aichi Target 4: Use of Natural Resources

### Indicator: Ecological Footprint



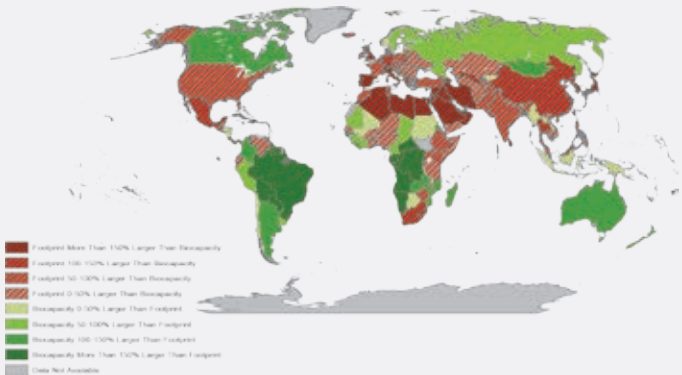
*Human production and consumption now demands one and a half planets worth of ecological resources and services, compared to only 0.7 planets worth in 1961.*



### Ecological Footprint vs. Biocapacity for world countries, 1961.

*Biocapacity reserve (green) is defined as a domestic Ecological Footprint of consumption less than domestic biocapacity; biocapacity deficit (red) is an Ecological footprint of consumption greater than domestic biocapacity.*

Source: Global Footprint Network, 2013



## Ecological Footprint vs. Biocapacity for world countries, 2008.

*Biocapacity reserve (green) is defined as a domestic Ecological Footprint of consumption less than domestic biocapacity; biocapacity deficit (red) is an Ecological footprint of consumption greater than domestic biocapacity.*

Source: Global Footprint Network, 2013

## The full story

The global Ecological Footprint shows that humans now demand one and a half planets worth of ecological resources and services, compared to only 0.7 planets worth in 1961. While these demands have increased for all land types, demand for forest products and carbon sequestration has increased fastest. The available regenerative biocapacity of nature to meet these demands varies by country, as does levels of consumption; North America consumes 8.7 global hectares per person whereas Africa consumes only 1.4 global hectares per person. The global average biocapacity available to meet these demands per person is only 1.8 global hectares; globally, we are overexploiting the planets ecological assets.

This storyline is based on data from 2008; the next data update is not fixed.

*Disclaimer: A few other footprint assessments for individual countries exist that may differ from Global Footprint Network results and its standards.*

## Indicator relationship to Aichi Target 4

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*Target 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.*

The Ecological Footprint tracks human demand on nature in terms of biologically productive areas a population uses for producing all the resources it consumes and absorbing all its waste. This demand is compared to the availability of nature, called biocapacity, which represents the regenerative capacity of nature. When the Ecological Footprint exceeds biocapacity, stocks are being depleted, and/or emissions are accumulating in the biosphere (such as CO<sub>2</sub> in the atmosphere and oceans). Thus a minimum condition for sustainable consumption is not being met and the use of natural resources is not within safe ecological limits.

## Indicator Partner

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Global Footprint Network  
Advancing the Science of Sustainability

Global Footprint Network

## Further Information

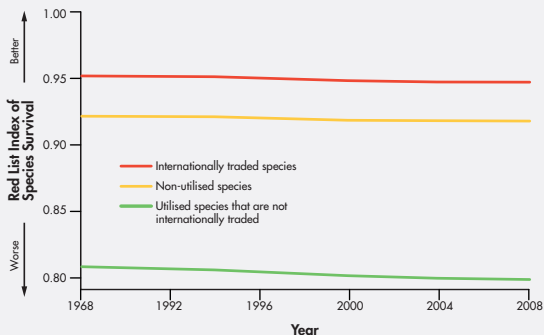
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For further information on the *Ecological Footprint* indicator visit <http://www.bipindicators.net/ecologicalfootprint>

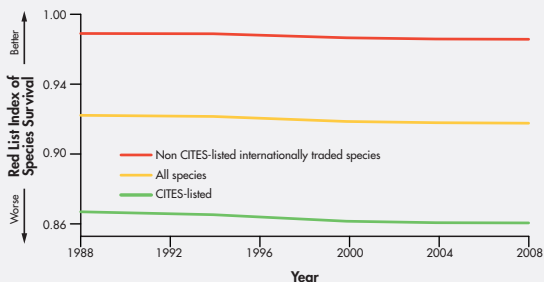
## Indicator: Status of species in trade



*Internationally traded species continue to decline in Red List status. CITES-listed birds are more threatened overall than all species on average.*



### Red List index for internationally traded species



### Red List Index for birds listed on CITES Appendix I and II

Source: BirdLife International, 2010

## The full story

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The aim of this index is to track changes in the wild status of internationally traded species, and in particular species listed on CITES Appendix I and II. Data are currently available for birds only.

Internationally traded species have continued to decline in status since 1988, although they are, on average, less threatened than utilised species that are not internationally traded. One possible reason for this difference relates to what the species are used for, as internationally traded species tend to be small-medium sized, common and attractive species that are used as cage-birds, whereas locally used or nationally-traded species tend to be larger-bodied species that are hunted for food and are more sensitive to exploitation.

Unsurprisingly, CITES-listed birds are more threatened overall than all species on average (as species have to be threatened, or resemble threatened species, in order to be listed). Among internationally traded species, the status of those listed on CITES Appendix I or II is declining faster than those that are not-CITES listed. However, CITES addresses only international trade and significant trade may also take place at a local and national level.

## Indicator relationship to Aichi Target 4

*Target 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.*

The *Status of species in trade* indicator reflects the impact of international trade on natural resources, in this case internationally traded species, and the effectiveness of measures to address this impact and keep the use of species in international trade well within safe ecological limits.

## Indicator Partners

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Convention on International Trade in Endangered Species



**UNEP WCMC**

UNEP World Conservation Monitoring Centre



BirdLife International

## Further Information

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For further information on the *Status of Species in Trade* indicator visit  
<http://www.bipindicators.net/speciestrade>

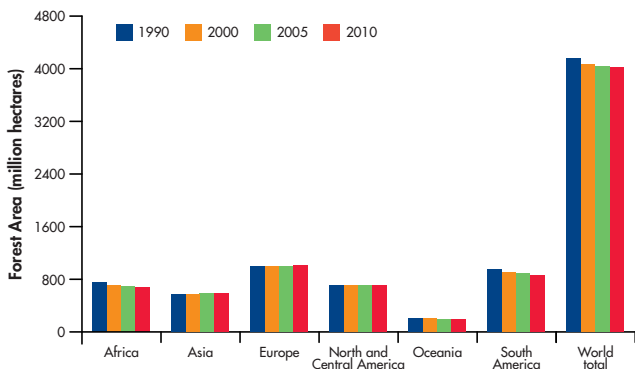


## Aichi Target 5: Loss of habitats

*Indicator: Extent of forest and forest types*



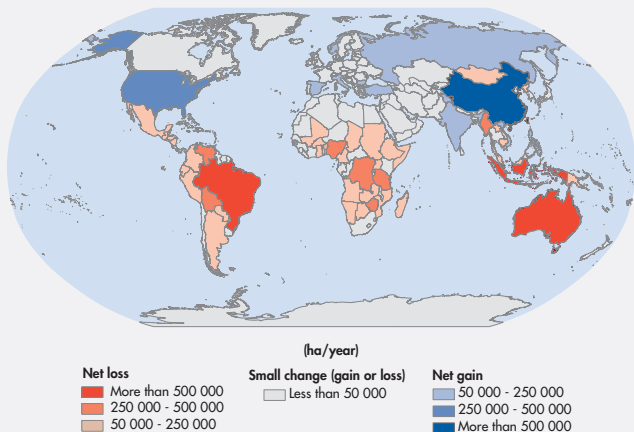
*At the global level, the rate of forest area loss has slowed from -8.3 million hectares per year during the period 1990-2000, to -5.2 million hectares per year during 2000-2010.*



### Trends in forest area, 1990-2010 (million hectares)

Source: FAO





## Net change in forest area by country, 2005-2010 (ha/year)

Source: FAO, 2010

## The full story

The net change in forest area in the period 2000-2010 is estimated at -5.2 million hectares per year (an area about the size of Costa Rica), down from -8.3 million hectares per year in the period 1990-2000.

The reduction in net loss of forest area at the global level is largely due to both reductions in the rate of deforestation and increases in the rate of forest expansion in several key regions. Globally, forest expansion is driven by afforestation, or the establishment of forest through planting or deliberate seeding, in regions like Asia as well as natural expansion of forests in North America and Europe, including the Russian Federation. The rate of forest loss continues to be high in tropical South America (e.g. Brazil), tropical Africa and Southeast Asia despite significant reductions in deforestation rates, particularly in Brazil, since the 1990s.

This storyline is based on 2010 data; the next data update is due in 2015 due to the 5-year reporting cycle of the Forest Resource Assessments (FRA) of the FAO.

## Indicator relationship to Aichi Target 5

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*Target 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.*

The *Extent of Forests and Forest Types* indicator measures trends in forest area over time, enabling the rate of loss of forests to be monitored.

## Indicator Partner

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Food and Agriculture Organization of the United Nations

## Further Information

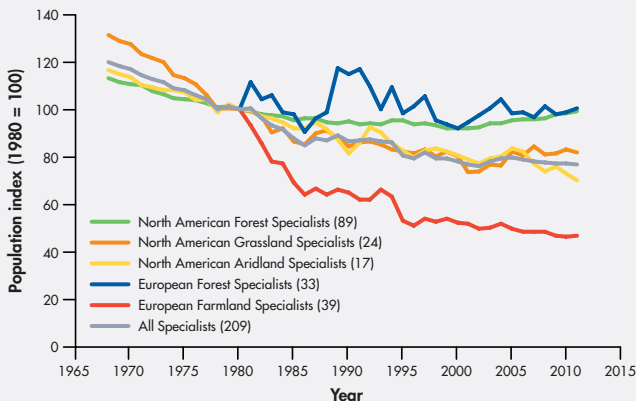
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For further information on the *Extent of Forests and Forest Types* indicator visit <http://www.bipindicators.net/forestextent>

## Indicator: Global Wild Bird Index



*Long-term population data is currently only available for North America and Europe, but the aggregation of these wild bird indices shows that habitat specialist birds have declined by more than 20% since 1980.*



### Wild Bird Index for North America (1968-2011) and Europe (1980-2011)

Source: North American Breeding Bird Survey 2013 and European Bird Census Council/RSPB/Birdlife International/Statistics Netherlands, and State of the Birds 2011

### The full story

Long-term bird population indices are currently only available from North America (from 1968) and Europe (from 1980), but a wild bird index combining these data shows that habitat specialist birds have declined by more than 20% since 1980. The largest population declines have occurred in grasslands and arid lands in North America and in farmed lands in Europe, whereas widespread specialists of forests show fluctuating but

stable trends in both North America and Europe. There is the suggestion that North American forest and grassland specialists and European forest specialists have been recovering in recent years, but we do not know if that trend will continue.

The Global Wild Bird Index will continue to expand, hopefully into a truly global indicator, and will soon include data from several African countries, such as Uganda and Botswana. The latest data used in this storyline is from 2011; the next data update is due in 2014.

## Indicator relationship to Aichi Target 5

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*Target 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.*

Wild bird indices deliver scientifically robust and representative indicators for birds, to support formal measurement and interpretation of national, regional and global targets to reduce, or halt, the rate of biodiversity loss. Wild bird indices measure extinction and colonisation processes at a local scale among widespread and familiar birds in the environment (the survey methods count all bird species detected). In doing so, they shed light on the sustainability of the human use of that environment and how human impact is changing. By grouping species tied to particular habitats, it is also possible to create habitat-based indices, hence providing an insight into the health of those habitats and an indication of the sustainability of human use.

## Indicator Partners

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Royal Society for the Protection of Birds



BirdLife International

## Further Information

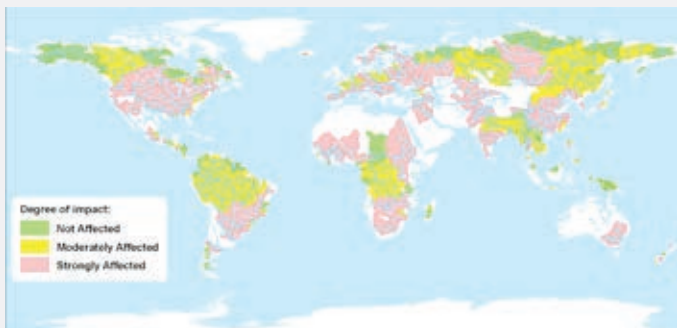
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For further information on the *Global Wild Bird Index* indicator visit <http://www.bipindicators.net/wbi>

## Indicator: River fragmentation and flow regulation



*Globally, two-thirds of all large river systems are moderately to highly fragmented by dams and reservoirs, causing disruption to the natural biophysical and ecological processes essential for maintaining life in freshwaters.*



**Impact classification based on river channel fragmentation and water flow regulation by dams on 292 of the world's large river systems.**

Source: Nilsson *et al.* 2005.

### The full story

Globally, two-thirds of all large river systems are moderately to highly fragmented by dams and reservoirs. Industrialized regions such as the United States and Europe and heavily populated countries like China and India encompass the most fragmented rivers. Arid regions also tend to have some of the highest levels of river fragmentation, since people in these regions have managed scarce water resources by building dams and reservoirs. Free flowing rivers only remain in the world's most remote and less-populated regions of Alaska, Canada, and Russia, and in small coastal basins in Africa and Asia.

This storyline is based on 2008 baseline data; the next update for this indicator will hopefully be available by the end of 2013 based on a new methodology.

## Indicator relationship to Aichi Target 5

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*Target 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.*

River fragmentation disrupts the natural biophysical and ecological processes essential for maintaining life in freshwaters. In highly fragmented rivers the diversity of life is likely to have been reduced and the adaptive capacity of native species impacted. *The River Fragmentation and Flow Regulation* indicator measures the rate of loss and fragmentation of freshwater habitats due to the development of dams and reservoirs.

## Indicator Partners

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The Nature Conservancy



Umeå University

## Further Information

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For further information on the *River Fragmentation and Flow Regulation* indicator visit <http://www.bipindicators.net/riverfragmentation>



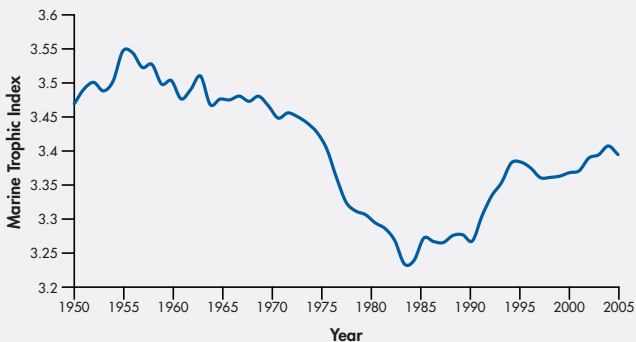
## Aichi Target 6: Sustainable fisheries

### Indicator: Marine Trophic Index

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*The Marine Trophic Index is a measure of mean trophic level for all Large Marine Ecosystems and hence indicates the extent of 'fishing down the food webs'. The mean trophic level has increased since the mid 1980s, but this is likely to be due to expansion of fisheries rather than improved fishery practice.*



### Global Marine Trophic Index

Source: Sea Around Us Project, 2013

## The full story

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Between the mid 1950s and mid 1980s, the mean trophic level for all Large Marine Ecosystems (LMEs) combined declined overall. A decrease in mean trophic level represents a decline in the abundance and diversity of fish species high in the food chain, such as cod, tuna and shark. This process is also termed 'fishing down marine food webs' meaning that fish stocks are being overexploited and fisheries are not being sustainably managed, as fisheries catches increasingly consist of smaller fish and invertebrates lower in the food web.

From the mid 1980s the global mean trophic level for all Large Marine Ecosystems increases. This increase does not necessarily represent improvements in the global sustainability of fisheries and in turn an increase in the abundance of higher trophic level species. In fact data from the complementary Fishing-in-Balance index, a measure of the 'balance' between catches and trophic level, indicates that this increase is the result of offshore expansion of the fisheries into deeper and more pelagic waters where there were still healthier stocks of large predatory fish such as tuna, swordfish, and marlins. These stocks have since also declined over time.

This storyline is based on data up to 2006; the next data update is due in 2014 for which effect of spatial expansion of fisheries will be incorporated into the indicator.

## Indicator relationship to Aichi Target 6

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*Target 6: By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe biological limits.*

The *Marine Trophic Index* indicator measures the mean trophic level for all Large Marine Ecosystems and hence indicates the extent of 'fishing down the food webs'. This provides a measure of whether fish stocks, especially of large bodied fish, are being overexploited and fisheries are being sustainably managed.



## Indicator Partner

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Sea Around Us Project, University of British Columbia

## Further Information

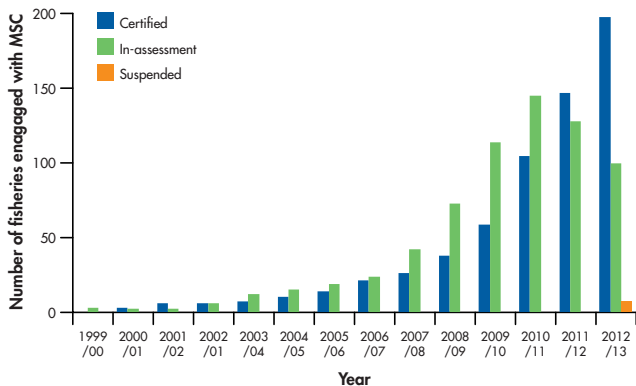
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For further information on the *Marine Trophic Index* indicator visit  
<http://www.bipindicators.net/mti>

## Indicator: Number of MSC certified fisheries

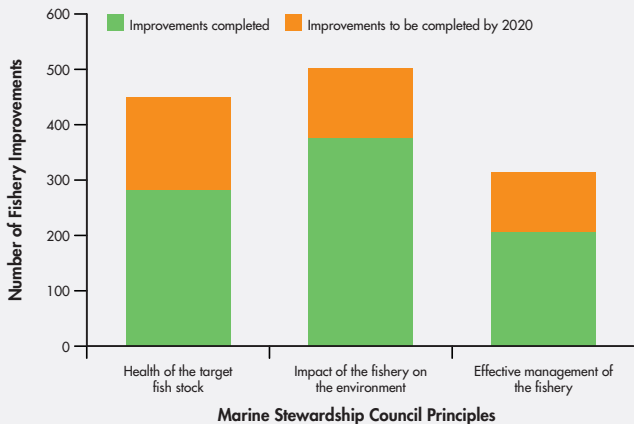


*Since 2008, the number of MSC certified fisheries has increased by over 400%, representing around ca. 7% of global wild-capture, and around 400 fishery improvements have been completed.*



### Number of MSC Certified Fisheries

Source: MSC, 2013



## Number of fishery improvements completed and to be completed by Marine Stewardship Council certified fisheries by 2020 (as of December 2012)

Source: MSC, 2013

### The full story

Since 2008, the number of Marine Stewardship Council certified fisheries has increased by over 400%. MSC certified fish now represent around ca. 7% of the global wild-capture (FAO 2012), thus 7% of catch is extracted within sustainable limits and with minimised impacts on marine ecosystems.

So far around 400 fishery improvements have been completed across the three MSC principles: (1) Health of the target fish stock; (2) Impact of the fishery on the environment; and (3) Effective management of the fishery. A higher number of improvements are expected to be completed by 2020. This increase in the number of Marine Stewardship Council certified fisheries and improvements made highlights the continued commitment from fishers, seafood companies, scientists, conservation groups and the public to promote fisheries best practices through the MSC certification program and seafood eco-label.

## Indicator relationship to Aichi Target 6

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*Target 6: By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.*

The Marine Stewardship Council's standard for sustainable fishing is comprised of three core principles that every fishery in the program must meet: (1) Health of the target fish stock; (2) Impact of the fishery on the environment; and (3) Effective management of the fishery. In addition, measurable environmental improvements need to be demonstrated for a fishery to keep the MSC certificate as sustainable. Therefore, an increase in the number of MSC certified fisheries and in the fishery improvements made to date indicates an increased commitment of fisheries management systems globally to attain sustainable practices.

## Indicator Partner

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Marine Stewardship Council

## Further Information

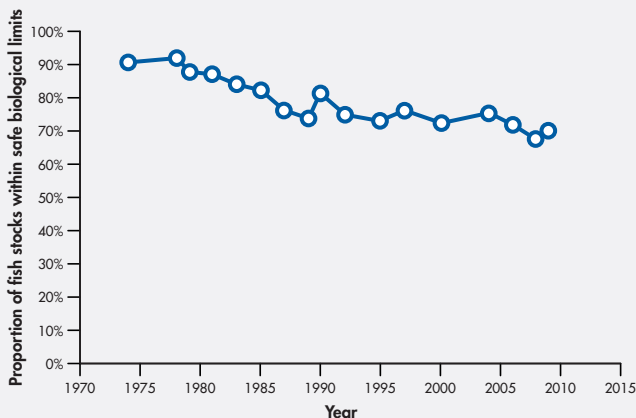
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For further information on the *Number of MSC Certified Fisheries* indicator visit <http://www.bipindicators.net/certifiedfisheries>

## Indicator: Proportion of fish stocks within safe biological limits



At the global level, the proportion of stocks within safe biological limits has decreased from 90% in 1974 to 70.1% in 2009, with overexploited stocks reaching 29.9%.



### Proportion of fish stocks within safe biological limits

Source: FAO, 2012

## The full story

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At the global level, the proportion of fish stocks within safe biological limits, classified as fully or under-exploited by the FAO, has decreased continuously from 90% in 1974 to 70.1% in 2009. Of the fish stocks within safe biological limits, the proportion of fully exploited stocks was 57.4%, while the proportion of under-exploited stocks was just 12.7%.

The proportion of fish stocks outside safe biological limits has been increasing since the start of the FAO monitoring assessment in 1974, reaching 29.1% in 2009. The overall stock status of the world's marine fishery resources has deteriorated over time. However, this increase has decelerated after 1989. Fish stock status differs among species groups and among regions. Demersal species had only 62% within biological safe limits in 2009 whereas pelagic species had 78%. Western and Eastern Central Atlantic had the lowest proportion of stocks within safe limits, about 46 % in 2009. Southeast, Southwest Atlantic, and Mediterranean and Black Sea had about 50% of fish stocks. The highest proportion of stock within safe biological limits was about 90 %, seen in Eastern Central Pacific, Northeast Pacific and Southwest Pacific.

This storyline is based on data from 2009, provided by the 2012 State of the World's Fisheries and Aquaculture (SOFIA) reporting by the FAO. The next data update is due in 2014, with the next round of SOFIA reporting.

## Indicator relationship to Aichi Target 6

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*Target 6: By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.*

The *Proportion of fish stocks in safe biological limits* indicator encompasses information on the proportion of overexploited, fully exploited and non-fully exploited fish stocks. This directly indicates level of progress towards sustainable management of fish stocks, in which overfishing is avoided and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

## Indicator Partner

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Food and Agriculture Organization of the United Nations

## Further Information

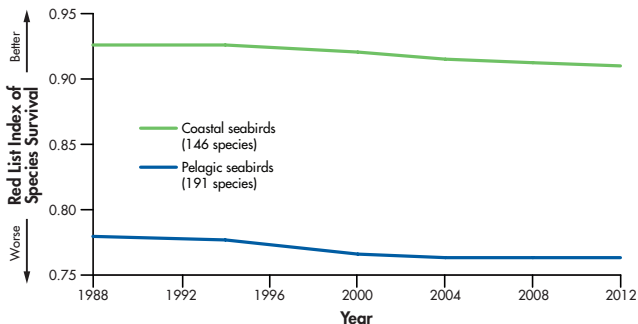
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For further information on the indicator *Proportion of fish stocks in safe biological limits* visit <http://www.bipindicators.net/fishstocksinsafebiologicallimits>

## Indicator: The Red List Index for seabirds



*The Red List Index for seabirds shows significant declines in the status of both coastal and pelagic species over the last 20 years, but the latter are on average much more highly threatened, in large part owing to fisheries impacts.*



### An indicator of fisheries by catch impacts: the Red List Index for seabirds

Source: BirdLife International, 2013

## The full story

Many fisheries impact non-target species (including other fish species, cetaceans, turtles and seabirds) through bycatch. The sustainability of fisheries in terms of their seabird bycatch impacts can be monitored by the *Red List Index for seabirds*. This indicator illustrates trends in the extinction risk of the world's seabirds. It shows significant declines in the status of both coastal and pelagic species over the last 20 years, but the latter are on average much more highly threatened, largely owing to the impacts of long-line fisheries.



For more information on the *Red List Index* visit the *Red List Index* indicator page under Aichi Target 12.

## Indicator relationship to Aichi Target 6

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*Target 6: By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.*

Aichi Target 6 explicitly states “fisheries have no significant adverse impacts on threatened species”. The *Red List Index for seabirds* is an indicator of the status of one group of species most directly impacted by fisheries, in particular through bycatch (in long-line, gill-net and trawl fisheries). Declines in the *Red List Index* suggest that fisheries are continuing to have unsustainable impacts on this sensitive group of species, which is one of the most threatened groups of birds.

## Indicator Partner

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BirdLife International

## Further Information

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For further information on the indicator visit

<http://www.birdlife.org/datazone/sowb/sowbpubs#NBSAP2012>

<http://www.birdlife.org/datazone/sowb/spotseabirds>

<http://www.birdlife.org/datazone/sowb/indicators>



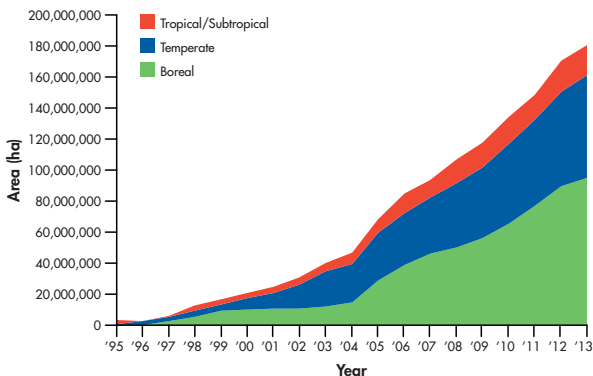
## Aichi Target 7: Areas under sustainable management

*Indicator: Area of forest under sustainable management: certification*

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*The area of FSC certified forest has increased from 3.24 million hectares in 1995 to 180.44 million hectares as of July 2013, with an annual growth rate of around 10 million hectares per year.*



### Total FSC certified forest area (ha)

Source: FSC, 2013

### The full story

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The area of FSC certified forest has increased from 3.24 million hectares in 1995 to 180.44 million hectares as of July 2013. The annual growth rate

has been relatively constant since 2005, only once falling below 10 million hectares per year.

After a first peak in 1999 of >50%, the share of boreal forest area dropped to 30% in 2003, but since then has increased and stabilised at the 50% level. The share of sub-tropical forest area has been fairly stable since 2003, fluctuating between 11% and 15%.

Nearly two thirds of the certified forest area is within natural forests (65%), more than a quarter (28%) has been issued for semi-natural and mixed (plantation and natural) forests and less than a tenth for plantations (8%).

At present, this indicator only utilised data from the FSC certification scheme, but the BIP is investigating the potential to include other certification schemes, which also have a biodiversity component.

## Indicator relationship to Aichi Target 7

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*Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.*

The forest certification indicator measures the area of responsibly managed forests, including natural or semi-natural forests that are used to produce timber and non-timber forest products, and forest plantations. An increase in the area FSC certified forest represents an increase in the area of commercial forest managed responsibly with respect to biodiversity conservation, such as establishment of set-aside areas, protection of rare, threatened and endangered species and their habitats, identification and preservation of High Conservation Values, as well as exclusion of forest conversion to plantations or non-forest land uses.

## Indicator Partner

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**FSC** Forest Stewardship Council

## Further Information

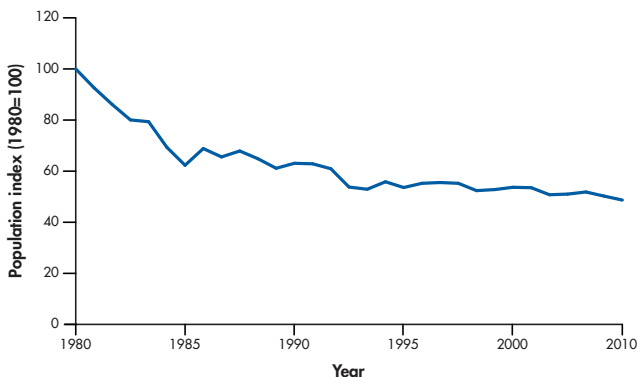
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For further information on the *Area of forest under sustainable management: certification* indicator visit <http://www.bipindicators.net/forestcertification>

## Indicator: Wild Bird Index for farmland birds



*The Wild Bird Index – showing the average population trends of species characteristic of farmland – is a useful metric of the degree to which agriculture is sustainable. Currently available for Europe only, the index shows declining trends, indicating that farming practices are negatively impacting wildlife.*



### **Trends in population of agriculture-dependent species: the Wild Bird Index for farmland birds in the European Union**

Source: EBCC/RSPB/BirdLife International/Statistics Netherlands. N=37 species.

## The full story

Birds are useful indicators of the state of the environment as they are sensitive to environmental change, their ecology is largely well-known and they are relatively easy to survey and count.

The *Wild Bird Index for farmland birds* has declined by over 50% since 1980, indicating that those species characteristic of agricultural landscapes

in the region for which data are available – the EU – have declined in abundance by half in three decades. There is good evidence that these declines have been driven by the impacts of increasing agricultural intensification. It is clear therefore that areas under agriculture in the EU are not managed sustainably. Trends are not available for other parts of the world yet, but the overall direction of trends – declining – is likely to be similar. Fortunately, many solutions have been identified, and practical measures can be taken to ensure both productive agriculture and sustainable wildlife populations.

## Indicator relationship to Aichi Target 7

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*Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.*

Target 7 calls for areas under agriculture to be managed sustainably. Farmland birds are useful indicators of the condition of agricultural habitats: their declining trends suggest that current agricultural practices are unsustainable for wildlife within the region for which data are available.

## Indicator Partners

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BirdLife International



Royal Society for the Protection of Birds



European Bird Census Council

## Further Information

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For further information on the indicator visit

<http://www.birdlife.org/datazone/sowb/indicators>

<http://www.rspb.org.uk/ourwork/projects/details/192786-global-wild-bird-indicators>

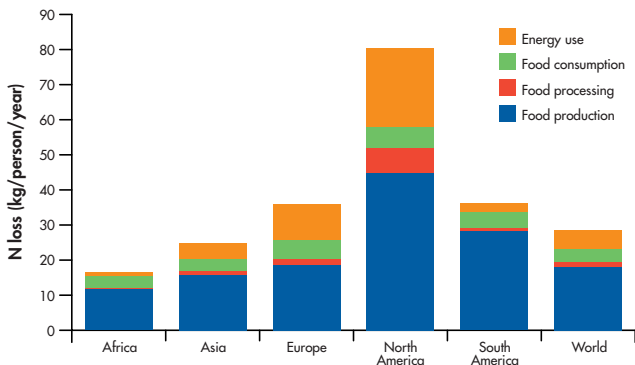


## Aichi Target 8: Pollution

### Indicator: Loss of reactive nitrogen to the environment



The global average reactive nitrogen loss per person in 2008 was 29kg. In Africa the loss per person was 0.6 times the global average, while in North America it was 2.8 times the global average.



### Average loss of nitrogen to the environment per inhabitant in 2008

Source: INI, 2013

### The full story

Reactive nitrogen is chemically and biologically active, and is formed via the conversion of non-reactive atmospheric nitrogen ( $N_2$ ) through

artificial fertilizer production and/or fossil fuel burning. Inefficient use of fertilizer and/or fossil fuels results in loss of reactive nitrogen to the environment, which contributes to climate change, the formation of high ozone concentrations in the lower atmosphere, eutrophication of coastal ecosystems, nitrification of forests, soils, freshwater streams and lakes, and loss of biodiversity.

In 2008, the global production and consumption of food and energy resulted in an average reactive nitrogen loss of 29 kg of nitrogen per inhabitant per year. Of the total loss, 5 kg is the result of energy use, 18 kg is from food production (agriculture), 1 kg due to food processing and 4 kg is released during food consumption.

The European reactive nitrogen loss per person is almost half of that in North America, but still about 10 kg higher than the global loss and twice as high as in Africa. The energy component is relatively large in industrialized countries, while the contribution of food production and consumption is large in countries with an extensive livestock sector and high levels of meat consumption.

This storyline is based on 2008 baseline data; next data update is due in 2013.

## Indicator relationship to Aichi Target 8

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*Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.*

The *Loss of reactive nitrogen to the environment* indicator measures the potential level of nitrogen pollution released to the land, air and water; the actual pollution depends on environmental factors and the extent to which the waste flows at production and consumption of food and energy are being reused. Eventually, most of the lost reactive nitrogen to the environment will end up close to the sources or in remote areas (e.g. through transport of this nitrogen via air or water) located far from human activities, where it is often the dominant source of reactive nitrogen in nitrogen-limited systems. Once introduced to these systems, the increased reactive nitrogen levels can severely impact the associated biodiversity.

## Indicator Partners

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International Nitrogen Initiative

International Nitrogen Initiative



Nitrogen Footprint

## Further Information

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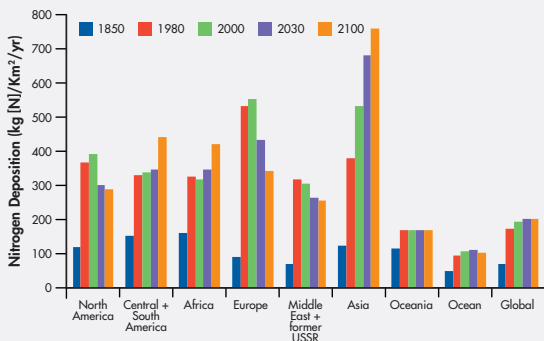
For further information on the *Loss of reactive nitrogen to the environment* indicator visit <http://www.bipindicators.net/nitrogenloss>



## Indicator: Nitrogen deposition



The global Nitrogen (N) deposition rate per km<sup>2</sup> is projected to continue to increase by 2030 and 2100. Increases in N deposition are projected to across Asia, Africa, and Central and South America, while decreases are projected in North America, Europe and the Middle East.



**Reactive Nitrogen (NH<sub>x</sub> and NO<sub>y</sub>) deposition [kg N km<sup>-2</sup> yr<sup>-1</sup>] in selected world regions and 5 timeslices. Future scenarios (2030-2100) are based on the RCP2.6 climate mitigation scenario.**

Source: INI, adapted from Lamarque *et al.* 2013.

## The full story

Energy and food production have resulted in large increases in ammonia and nitrogen oxide emissions to the atmosphere on a global and regional basis, with subsequent increases in Nitrogen (N) deposition. The results of the Atmospheric Chemistry and Climate Model Intercomparison Project (ACCMIP) show that in 2000 N deposition rates per km<sup>2</sup> were highest in Europe and Asia, closely followed by North America. By 2030, the model projects an increase in N deposition rates in Asia, Africa and Central and

South America, while decreases in N deposition are projected for North America, Europe and the Middle East. By 2100 particularly large increases are projected for South Asia, with 2100 values more than double their 2000 counterpart in some model scenarios.

Changing populations and lifestyles are likely to be the main driver behind N deposition increases, while stringent policies on emissions from agriculture, traffic and industry may play a part in decreasing local N deposition.

This storyline is based on model projections from Lamarque et al. 2013; the next data update is due by the end of 2013.

## Indicator relationship to Aichi Target 8

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*Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.*

The *Nitrogen Deposition* indicator shows the spatial distribution of the amount of nitrogen that is removed from the atmosphere and deposited in terrestrial or aquatic ecosystems. This nitrogen pollution can have detrimental effects on the receiving ecosystems and their biodiversity, especially in remote areas where it is likely to be the only source of nitrogen (besides biological nitrogen fixation). For example, nitrogen deposition is implicated in eutrophication of aquatic systems and nitrification of soils, forests and freshwater lakes.

## Indicator Partner

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International Nitrogen Initiative

## Further Information

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The data for this indicator is from the supplement to a publication by Lamarque *et al.* (2013) Multi-model mean nitrogen and sulphur deposition from the Atmospheric Chemistry and Climate Model Intercomparison Project (ACCMIP) - evaluation and historical and projected changes. *Atmos. Chem. Phys.*, 13, 7997-8018.

For further information on the *Nitrogen Deposition* indicator visit <http://www.bipindicators.net/nitrogendeposition>

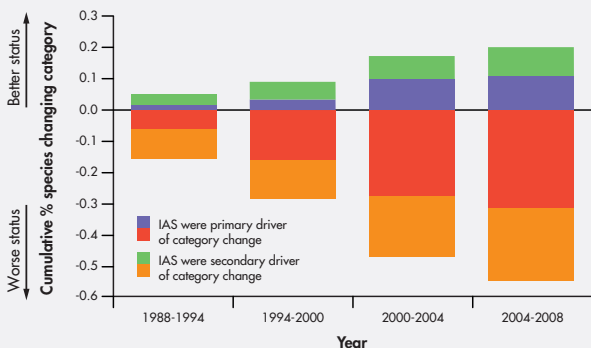


## Aichi Target 9: Invasive Alien Species

### Indicator: Trends in invasive alien species



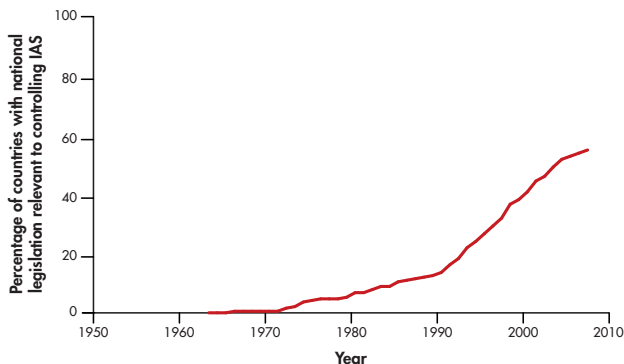
The mean number of invasive alien species per country is 50 for the 57 countries assessed, and they are driving an increase in the extinction risk of birds, mammals and amphibians. 55% of UN countries have overarching national legislation to manage, control and/or limit the spread and impact of invasive alien species.



### Cumulative percentage of bird species undergoing genuine IUCN Red List category changes driven by impacts of invasive alien species.

Bars below the X axis represent species deteriorating in status owing to negative impacts of invasive alien species. Bars above the X axis represent species improving in status owing to measures to control or eradicate invasive alien species.

Source: BirdLife International, 2010



## Adoption of national legislation relevant to the prevention or control of invasive alien species

Source: McGeoch *et al.* 2010.

### The full story

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The *Trends in Invasive Alien Species* indicator consists of three sub-indicators: Pressure, as measured by number of documented invasive alien species; State, as measured by the decline in the Red List Index driven by invasive alien species; and Response, as measured by the adoption of invasive alien species prevention or control legislation.

For the Pressure sub-indicator, the number of invasive alien species is higher on islands and in countries that are more developed and have more information available on them. The mean number of invasive alien species per country is 50 for the 57 countries assessed.

For the State sub-indicator, Red List Indices show that the extinction risk of birds, mammals and amphibians is increasing over time. Analyses of the drivers of these shifts in status show that for all three groups, invasive alien species were having a net negative impact. Although some threatened species have improved in status (as a result of successful control or eradication of invasive alien species), more have been uplisted to higher threat categories owing to the negative impacts of increasing spread and threats from invasives.

For the Response sub-indicator, there are 10 international agreements with provisions for tackling invasive alien species that have been ratified by a cumulative total of 1,434 signatories (82% of the maximum possible number). All countries are signatory to at least two invasive alien species relevant international conventions; more than 90% are signatory to at least half, and 8% of countries are signatory to all 10. 55% of countries have overarching national legislation to manage, control and/or limit the spread and impact of invasive alien species.

This storyline is based on data from 2008, 2009 and 2010; the next data update is due in 2014.

## Indicator relationship to Aichi Target 9

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*Target 9: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.*

The indicator identifies invasive alien species and their pathways by tracking their number and location, and the impact they have on the threat status of species groups as measured by the *Red List Index*. The indicator also measures the management response globally, by tracking invasive alien species legislation for control and prevention at national and international levels.

## Indicator Partners

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IUCN Invasive Species  
Specialist Group (ISSG)



Monash  
University



BirdLife International

## Further Information

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For further information on *Trends in Invasive Alien Species* indicator visit:  
<http://www.bipindicators.net/invasivealienspecies>

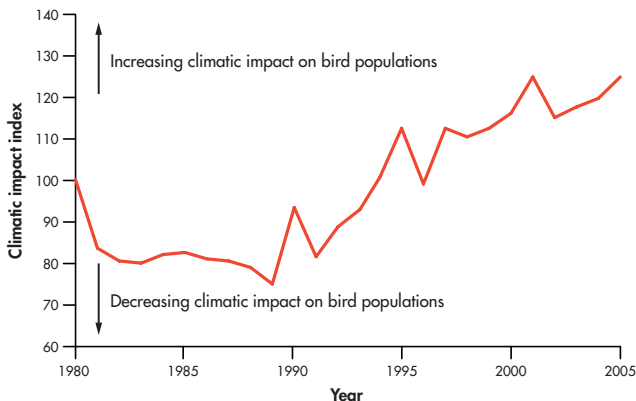


## Aichi Target 10: Vulnerable Ecosystems

### Indicator: Climatic impacts on european birds



*The number of bird species whose populations are observed to be negatively impacted by climatic change is three times larger than those observed to be positively affected by climate warming in this set of widespread European land birds.*



**An indicator of the impact of climatic change on European bird populations**

Source: Gregory *et al.* 2009.

## The full story

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The Climatic Impact Indicator (CII) measures the divergence between the population trends of bird species projected to expand their range, and those predicted to shrink their range due to climatic change. The indicator is based on a combination of observed population trends monitored from 122 common bird species in 20 European countries over 26 years, and projected potential shrinkage, or expansion, of range size for each of these species at the end of this century, derived from climatic envelope models based on six differing future scenarios.

The general trend of the CII is clearly upwards indicating that there is an increasing impact of climatic change on bird populations. Where the trend is downwards, this means that the impact of climate warming on bird populations is being overridden by other pressures in the environment; these could be manmade pressures, or natural ones, such as cold winter weather.

The number of bird species whose populations are observed to be negatively impacted by climatic change is three times larger than those observed to be positively affected by climate warming in this set of widespread European land birds. CII has increased rapidly in the past twenty years, coinciding with a period recognised by climatologists as a time of rapid observed climatic warming in Europe.

## Indicator relationship to Aichi Target 10

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*Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.*

Rapid climatic change poses a threat to global biodiversity. The Climatic Impact Indicator for European birds demonstrates that climatic change is affecting bird populations at a European scale. This suggests that climate change may be impacting the functioning and resilience of the ecosystems upon which these bird populations depend.

## Indicator Partners

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BirdLife International



Royal Society for the Protection of Birds



European Bird Consensus Council

## Further Information

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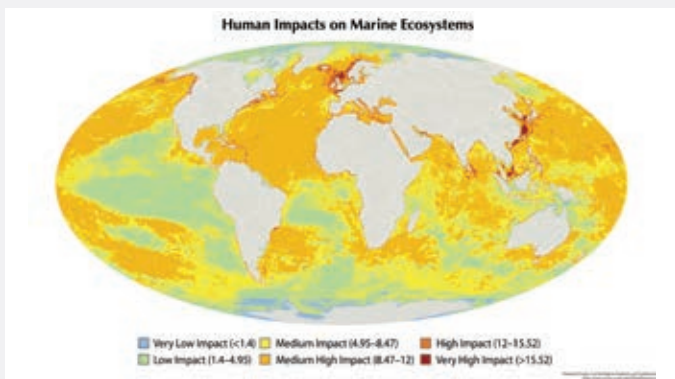
The information for this indicator is largely taken from Gregory RD, Willis SG, Jiguet F, Voříšek P, Klvaňová A, *et al.* (2009) An Indicator of the Impact of Climatic Change on European Bird Populations. *PLoS ONE* **4**(3): e4678. doi:10.1371/journal.pone.0004678



## Indicator: Cumulative human impact on marine ecosystems



*The Cumulative Human Impact on Marine Ecosystems indicator predicts the impact on marine biodiversity and ecosystems from multiple anthropogenic stressors. Cumulative impact scores are high for much of the world's ocean, but coastal areas, where most human uses of the ocean are concentrated, are particularly heavily impacted.*



### Global map of impact of anthropogenic stressors on marine biodiversity

Source: Halpern *et al.* 2008.

## The full story

Cumulative impact assessments model, or predict, the overall impact from a suite of stressors based on the unique and cumulative vulnerability of biodiversity to anthropogenic stressors such as pollution, climate change and fishing. An increase in the cumulative impact score indicates that a stressor or suite of stressors is having an increased impact on biodiversity.

As cumulative impact scores approach zero, biodiversity is decreasingly threatened by human activities.

Cumulative impact scores are surprisingly high for much of the world's ocean in part because climate change, commercial fishing, and commercial shipping have a truly global reach and impact on marine systems. Coastal areas, where most human uses of the ocean are concentrated, are particularly heavily impacted.

This storyline is based on baseline data from 2008; the next data update in 2014 will provide a temporal storyline for this indicator.

## Indicator relationship to Aichi Target 10

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*Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.*

Cumulative impact assessments identify the most vulnerable species and habitats across marine ecosystems, and which anthropogenic pressures are most impacting biodiversity. The impacts of both climate change and ocean acidification are modelled, alongside other anthropogenic stressors including different forms of pollution and fishing practice. This allows targeting of actions to minimize the most damaging anthropogenic pressures.

## Indicator Partners

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National Centre for  
Ecological Analysis and  
Synthesis



Centre for Marine  
Assessment and Planning

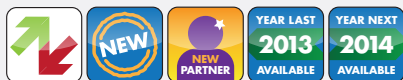
## Further Information

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Much of the information for this indicator is taken from:  
Halpern *et al*, 2008. A Global Map of human Impact on Marine  
Ecosystems. *Science* **319**: 948-952

For further information on the *Cumulative Human Impact on  
Marine Ecosystems* indicator, visit [http://www.bipindicators.net/  
newindicatorspage/cumulativeimpactassessment](http://www.bipindicators.net/newindicatorspage/cumulativeimpactassessment)

## Indicator: Ocean Health Index



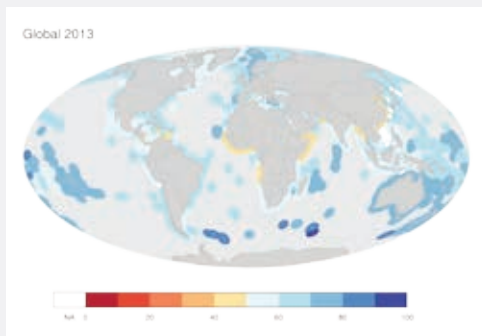
The Ocean Health Index indicator measures the current status and likely future state of ten public goals for marine ecosystems. The index score for 2013 is 60, remaining the same as the global score for 2012, with small increases from sense of place (cultural values) and coastal livelihoods and economies globally.



**Index scores (inside circle) and individual goal scores (coloured petals) for global area-weighted average of all countries.**

The outer ring is the maximum possible score for each goal, and a goals score and weight (relative contribution) are represented by the petals length and width, except for 'food provision' sub-goals, which are weighted by relative actual yield despite equal width of petals.

Source: NCEAS, 2013



**Map of index and individual goal scores per country**

All waters within 221 exclusive economic zones (EEZs), were assessed and are represented on the map

Source: NCEAS, 2013

## The full story

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The *Ocean Health Index* indicator measures the current status and likely future state of ten public goals for marine ecosystems. For each goal the index assesses the current state relative to a reference point, recent trends in the current status, cumulative negative pressures on the goal, and existing ecological and social attributes and institutions that provide resilience.

In 2013, the global ocean scored 60 out of 100, remaining constant from the first-ever global assessment of the index for the ocean within EEZ (Exclusive Economic Zone) boundaries in 2012. The full set of results for which countries saw increases and declines in ocean health can be explored at [www.oceanhealthindex.org](http://www.oceanhealthindex.org).

## Indicator relationship to Aichi Target 10

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*Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.*

The Ocean Health Index indicator measures the current status and likely future state of ten public goals for marine ecosystems: the species goal tracks the extinction risk of coral species; the habitats sub-goal tracks changes in coral reef condition; the biodiversity goal tracks assessed species and mapped habitats; the food provision goal monitors the condition of fisheries and their role in providing food; the sense of place goal tracks sustainable management of marine and coastal areas. Progress towards these 10 public goals indicates progress towards the marine aspects of Aichi Target 10.

## Indicator Partners

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National Centre for  
Ecological Analysis and  
Synthesis



Centre for Marine  
Assessment and Planning

## Further Information

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For further information on the *Ocean Health Index* visit  
<http://www.bipindicators.net/oceanhealthindex>

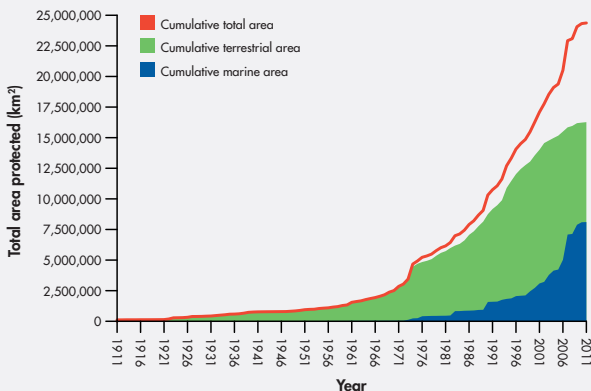


## Aichi Target 11: Protected Areas

### Indicator: Coverage of protected areas



Coverage of protected areas has increased from 12.6% in 2010 to 14.6% in 2012 for terrestrial and inland waters. Marine coastal area reached 9.7% in 2012 but global ocean coverage remains low at only 2.2%.



### Growth in nationally designated protected areas (1911 - 2012)

Source: IUCN and UNEP-WCMC, The World Database on Protected Areas (WDPA): October 2012.

## The full story

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The global number and extent of protected areas has increased dramatically over the past century. By 2012, the protected areas listed in the World Database on Protected Areas covered 14.6% of the Earth's land area and 9.7% of the Earth's coastal waters (0-12 nautical miles from the coast), but only 2.2% of the global ocean area. Coverage has improved markedly since 2010, when only 12.6% of terrestrial and 4% of marine area was designated as protected. This is particularly true of coastal marine areas, but the coverage of the global ocean is still low and will require significant attention if the 10% marine target is to be met by 2020.

## Indicator relationship to Aichi Target 11

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*Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.*

This indicator directly measures the extent of protected areas across the globe, and hence tracks progress towards the 17% terrestrial and 10% marine coverage targets.

## Indicator Partner

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**UNEP WCMC** UNEP World Conservation Monitoring Centre

## Further Information

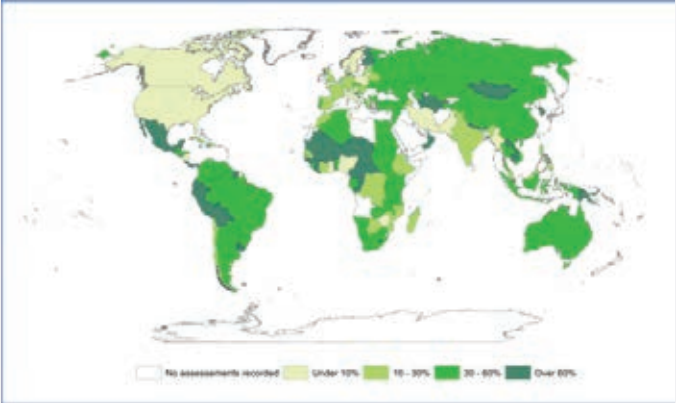
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For further information on the *Coverage of Protected Areas* indicator visit <http://www.bipindicators.net/pacoverage>

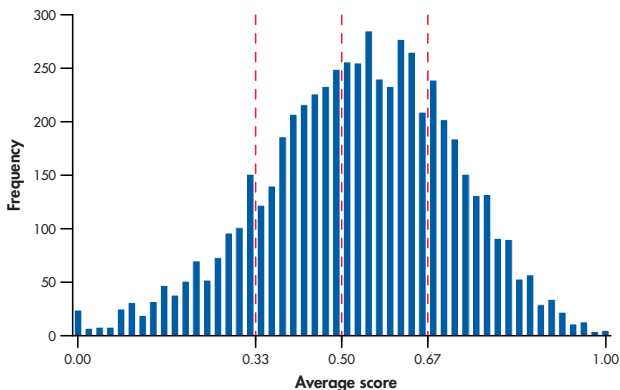
# Indicator: Management effectiveness of protected areas



The number and area of protected areas assessed for management effectiveness has increased significantly, while protected area management on average is just reaching a basic standard with an overall mean score of 0.53 out of a maximum of one.



Proportion (by area) of protected areas of each country where assessments have been recorded



## Distribution of average management effectiveness scores for most recent assessments

Source: University of Queensland, 2013

## The full story

Good progress is being made towards meeting the Aichi Target for assessing management effectiveness; 35 countries have assessed at least 30% of their protected areas and 63 countries have assessed more than 15%. On an area basis progress is even more impressive with 67 countries assessing more than 30% of the area under protection and 99 countries assessing more than 15%. This represents significant progress over the position of just a few years ago.

Protected area management on average is just reaching a basic standard with an overall mean score of 0.53 out of a maximum of 1 for the 4151 most recent assessments for which averages could be obtained. Only 13% of those assessed are in the 'clearly inadequate management' score range, while 24% are in the 'management sound' range. Most protected areas are clustered in the 'basic management' range, with 27% of the total in this range scoring below 0.5, demonstrating basic management but with major deficiencies, and 35% scoring above 0.5.

The five management aspects assessed as strongest overall (scoring over 0.6) are gazettal and legal status, marking of protected area boundaries,



tenure issues, design of protected areas, and governance and leadership. The six aspects of management on average assessed as most unsatisfactory (scoring below 0.45) are funding adequacy, funding security, staff numbers, community assistance programs, management effectiveness evaluation, and building and maintenance.

This storyline is based on data from 2010; the next data update is hopefully due in 2013, which will provide a stronger temporal story for this indicator.

## Indicator relationship to Aichi Target 11

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*Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.*

The *Management Effectiveness of Protected Areas* indicator records the number and area of assessments of management effectiveness completed by countries, the overall management effectiveness score for each assessed protected area, and the effectiveness score for each aspect of management. The indicator therefore measures how effectively and equitably managed protected areas are, which is of critical importance in meeting Aichi Target 11 as the declaration of a protected area does not always result in adequate protection.

## Indicator Partners

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UNEP WCMC



UNEP World Conservation Monitoring Centre



THE UNIVERSITY  
OF QUEENSLAND  
AUSTRALIA

The University of Queensland

## Further Information

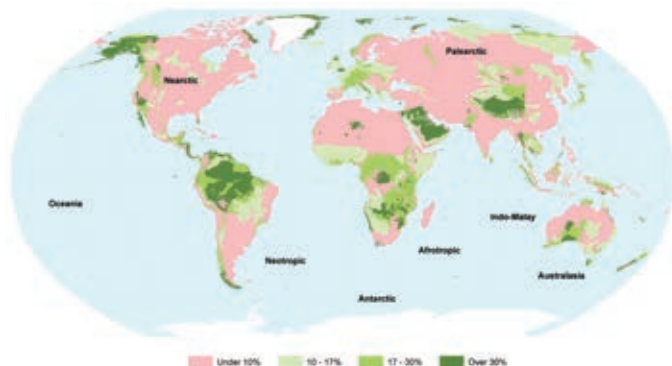
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For further information on the *Management Effectiveness of Protected Areas* indicator visit <http://www.bipindicators.net/pamanagement>

## Indicator: Protected area overlays with biodiversity

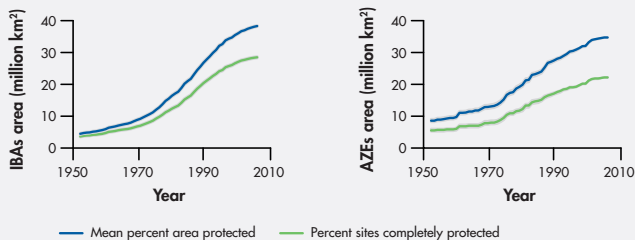


84 terrestrial eco-regions and 137 marine eco-regions still had less than 1% protection in 2010, while more than two thirds of Alliance for Zero Extinction sites and Important Bird Areas are still unprotected or only partially protected.



**Percentage of each terrestrial eco-region covered by nationally designated protected areas in 2010 (Antarctic and Greenland ice sheets shown in white).**

Source: Bertzky *et al.* 2012.



## Trends in mean % area protected and % sites completely protected for Important Bird Areas (IBAs) and Alliance for Zero Extinction sites (AZEs).

Source: Butchart SHM *et al.* 2012.

## The full story

Applying the global coverage targets of Aichi Biodiversity Target 11 at the eco-region level, by 2010, a third of the world's 823 terrestrial eco-regions met the 17% target, and only 13% of the world's 232 marine eco-regions met the 10% target. 84 terrestrial eco-regions and 137 marine eco-regions still had less than 1% protection, indicating significant gaps in the ecological representativeness of protected areas.

Areas of particular importance for biodiversity can be classified in multiple ways, which are all brought together under the term Key Biodiversity Areas (KBAs). Two types of KBAs which approach global coverage are Important Bird Areas (IBAs; <http://www.birdlife.org/action/science/sites/>) and Alliance for Zero Extinction sites (AZEs; <http://www.zeroextinction.org/>).

Protection of these two KBA types has increased since 1990, from 17% to 22% coverage of AZEs and from 21% to 28% coverage of IBAs. However, there is still progress to be made, as more than two thirds of AZEs and IBAs are still unprotected or only partially protected.

This storyline is based on data from 2010; the next data update is due in 2014.

## Indicator relationship to Aichi Target 11

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*Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.*

By monitoring the percentage of eco-regions meeting the area targets set out by Aichi Target 11 this indicator tracks the progress towards ensuring that protected areas are ecologically representative. Furthermore, tracking the percentage coverage of Alliance for Zero Extinction sites and Important Bird Areas gives an indication of coverage of areas of particular importance for biodiversity.

## Indicator Partner

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UNEP



WCMC

UNEP World Conservation Monitoring Centre



BirdLife International



Alliance for Zero Extinction

## Further Information

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For further information on the *Protected Area Overlays with Biodiversity* indicator visit <http://www.bipindicators.net/paoverlays>

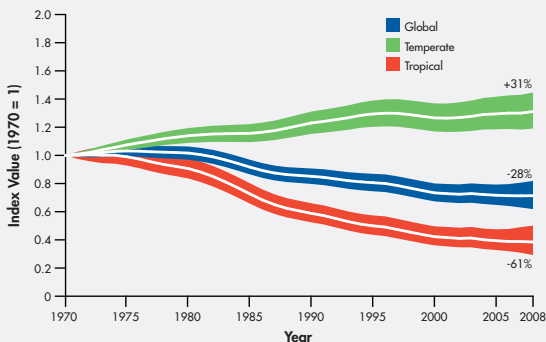


## Aichi Target 12: Preventing extinctions

### Indicator: Living Planet Index



The global Living Planet Index has declined by 28% since 1970, with a 61% decrease in tropical vertebrate populations and a 31% increase in temperate vertebrate populations.



### Global, Temperate and Tropical Living Planet Index, 1970-2008

Source: WWF & ZSL, 2013

### The full story

The *Living Planet Index* is calculated using time-series data on more than 9000 populations of over 2,600 species of mammal, bird, reptile, amphibian and fish from all around the globe. The changes in the population of each species are aggregated and shown as an index relative to 1970, which is given a value of 1.

The current global *Living Planet Index* shows a 28% decline from 1970 to 2008 meaning that on average, vertebrate populations have declined in abundance over this 38 year period.

The Global *Living Planet Index* is the aggregate of two equally-weighted indices of vertebrate populations - the temperate and the tropical *Living Planet Indices*, which show contrasting results. The tropical index shows that vertebrate populations have declined markedly (61%) since 1970 whereas temperate populations have increased by an average of 31%. Although the tropical index reveals a more negative trend than the temperate index, it does not necessarily imply that tropical biodiversity is in a worse state as temperate populations may have undergone similar declines before 1970 when pressures were already high in many temperate regions.

This storyline is based on data from 2008; the next data update is due in 2014.

## Indicator relationship to Aichi Target 12

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*Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.*

The *Living Planet Index* measures trends in the size of populations of threatened and non-threatened vertebrate species to assess if conservation actions are successful and if the conservation risk status of species has changed.

## Indicator Partners

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WWF



Zoological Society of London

## Further Information

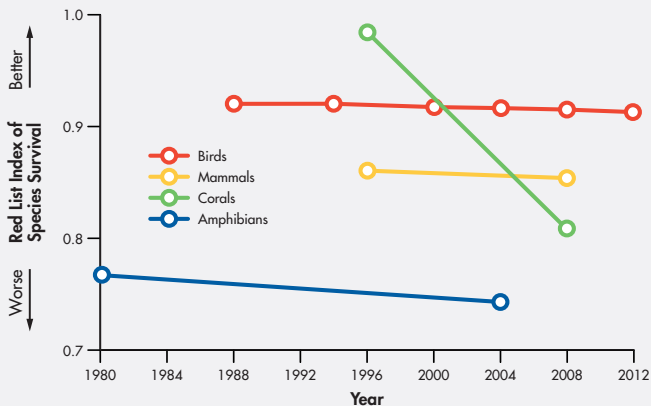
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For further information on the *Living Planet Index* indicator visit <http://www.bipindicators.net/lpi>

## Indicator: Red List Index



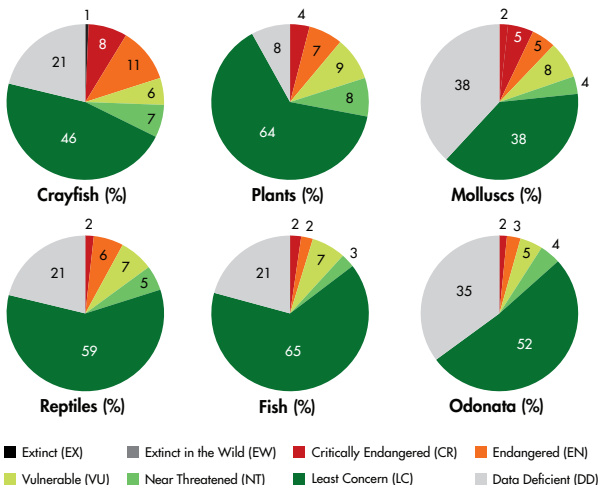
*The status of the world's mammals, birds, amphibians and corals has continued to decline as more species move towards extinction. The status of corals is declining fastest, while amphibians are the most threatened group assessed to date.*



### **Red List Index for the world's mammals, birds, amphibians and corals.**

*A Red List Index value of 1 equates to all species being categorized as Least Concern, and hence that none are expected to go extinct in the near future; a value of zero indicates that all species have gone Extinct.*

Source: IUCN & BirdLife International, 2013



## Red List Assessment for Crayfish (n=590) and Sampled Red List Assessments for Plants (n=4,581), Molluscs (n=1,479), Reptiles (1,500), Marine Fish (n=1,495) and Odonata\* (n=1,500)

*\*Odonata is an order of carnivorous insects, encompassing dragonflies and damselflies*

Source: Kew and ZSL, 2013

## The full story

The *Red List Index* shows that all species groups with known trends are deteriorating in status, as more species move towards extinction than away from it. Amphibians are most threatened but corals are deteriorating in status fastest, owing to increased frequency of 'bleaching events' brought about by climate change. South-East Asia is the region in which mammals are most threatened while birds are most threatened in Oceania. The fungal disease chytridiomycosis is the major driver of declines in amphibians.



Baseline data-points are available for several other groups, such as sharks, conifers, cycads, freshwater crabs and crayfish. However, a challenge in expanding the taxonomic coverage of the *Red List Index* is that repeated Red List assessments of all species in poorly known, species-rich groups (e.g. insects, fungi, plants, etc) would be extremely costly. As a result, a sampled approach to Red Listing has been developed to assess the relative extinction risk of such groups. For example, collaborative work by the Royal Botanic Gardens Kew and Natural History Museum, London shows that one in five plants are threatened with extinction, with gymnosperms (including conifers and cycads) being the most threatened group.

The data for each group in the *Red List Index* are updated periodically, most recently for birds in 2012, while new data-points for amphibians and mammals are due in 2015.

## Indicator relationship to Aichi Target 12

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*Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly to those most in decline, has been improved and sustained.*

The *Red List Index* shows changes in the overall extinction risk of sets of species over time. It measures the overall rate at which species move through IUCN Red List categories towards or away from extinction. It is calculated from the number of species in each category (Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct), and the number changing categories between assessments as a result of genuine improvement or deterioration in status (category changes owing to improved knowledge or revised taxonomy are excluded). A decrease in the *Red List Index* means that the expected rate of species extinctions is increasing.

## Indicator Partners

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SSC

Species Survival Commission

IUCN Species Survival Commission



BirdLife International



Royal Botanic Gardens Kew



LIVING CONSERVATION

Zoological Society of London



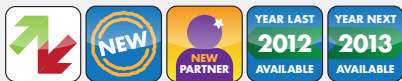
Natural History Museum, London

## Further Information

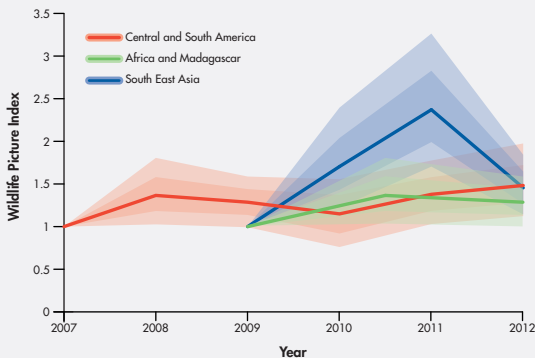
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For further information on the *Red List Index* indicator visit <http://www.bipindicators.net/rli>

## Indicator: Wildlife Picture Index



*In 2012 the Wildlife Picture Index had a median value of 1.40 meaning that on average there had been an increase of 40% in the diversity of these communities compared to the first year of data in 2007. However, this apparent increase is not statistically significant.*



The median of the Wildlife Picture Index distribution is shown by the thick black line; the 50% (dark grey) and 80% (light grey) confidence limits of the WPI distribution are also shown. The first year of data collection (2007) is given a value of 1. All subsequent changes are calculated relative to this starting point.

Source: TEAM Network, 2013

## The full story

The first assessment of the *Wildlife Picture Index* (WPI) includes data for 278 species of tropical forest mammals and birds, sampled at 16 TEAM sites in 15 countries over the last 6 years. The WPI is derived from annual camera trap monitoring using standardized methods (TEAM 2011) to

determine the change in diversity of tropical forest mammal and bird communities. In 2012 the index had a median value of 1.40 meaning that on average there had been an increase of 40% in the diversity of these communities compared to the first year of data in 2007. However, this apparent increase is not significant because the confidence limit of the WPI is between 1.01 and 1.96.

The WPI calculated separately for birds and mammals is also stable through time, although the WPI for birds is more variable than the WPI for mammals (due in part to the lower number of bird species assessed). The WPI calculated separately for each continent (Latin America, Africa/Madagascar, South East Asia) shows no clear trend by continent, although it is still very early for the assessments in Africa and SE Asia as there are only 3-4 years of data available.

This storyline is based on data from 2012 from 16 TEAM sites; the next data update is due by the end of 2013.

## Indicator relationship to Aichi Target 12

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*Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.*

The *Wildlife Picture Index* aggregates biodiversity camera trap data for ~300 species of tropical terrestrial mammals and birds to assess species trends and extinction risks. This data is useful in assessing the effectiveness of conservation actions and whether the conservation status of species has been improved or sustained.

## Indicator Partner

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TEAM Network

## Further Information

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For further information on the *Wildlife Picture Index* indicator visit <http://www.bipindicators.net/wildlifepictureindex>

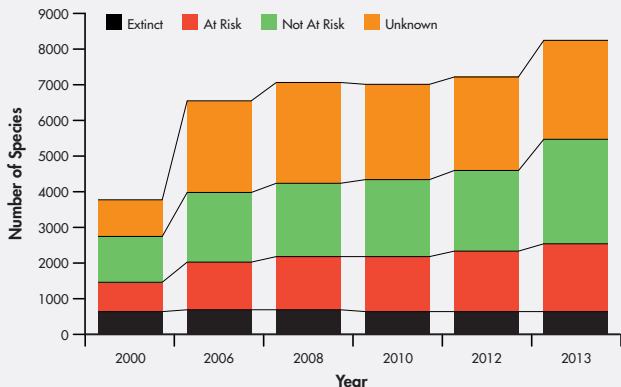


## Aichi Target 13: Genetic Diversity

### Indicator: Genetic diversity of terrestrial domesticated animals



Currently 23% of the approximately 8,000 terrestrial domestic breeds that have been reported to the FAO are classified as being at risk of extinction, while 8% are already extinct.



### Proportion of the world's breeds reported to the FAO by risk status (2013)

Source: FAO, 2013

## The full story

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The full indicator consists of three elements: number of locally adapted breeds; proportion of breeds classified as at risk, not at risk and unknown; and proportion of the total population accounted for by locally adapted and exotic breeds. Elements one and three have not yet been fully calculated, because countries have not yet classified their breeds as locally adapted or exotic.

For element two, an increase in the percentage of breeds reported to the FAO categorized as at risk or extinct and a decrease in the percentage categorized as not at risk indicate a decline in livestock diversity. In interpreting this element it is important to bear in mind that breed diversity does not fully reflect genetic diversity, because it does not account for within-breed diversity or for how closely breeds are related to each other.

About 23% of the approximately 8,000 breeds that have been reported to FAO as of July 2013 are classified as being at risk of extinction based on the most recently available population figures - 8% are already extinct. For another 33%, no population data are available and therefore risk status is unknown. Data updates are insufficiently regular at present to allow for an accurate assessment of trends. However, many individual breeds continue to decline in numbers.

## Indicator relationship to Aichi Target 13

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*Target 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.*

The *Genetic diversity of terrestrial domesticated animals* indicator is intended to show whether or not the objective of maintaining the genetic diversity of farmed and domesticated animals has been met, using three indicators of genetic diversity: number of locally adapted breeds, breed extinction risk status, and the proportion of exotic breeds present.

## Indicator Partners

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Food and Agricultural Organisation of the United Nations

**ILRI**

INTERNATIONAL  
LIVESTOCK RESEARCH  
INSTITUTE

International Livestock Research Institute

## Further Information

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For further information on the *Genetic Diversity of Terrestrial Domesticated Animals* indicator visit [www.bipindicators.net/domesticatedanimals](http://www.bipindicators.net/domesticatedanimals)

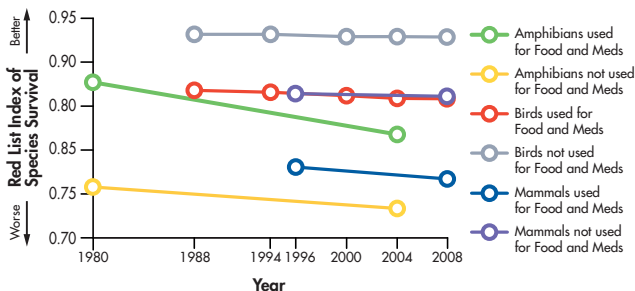


## Aichi Target 14: Essential Ecosystem Services

### Indicator: Biodiversity for food and medicine



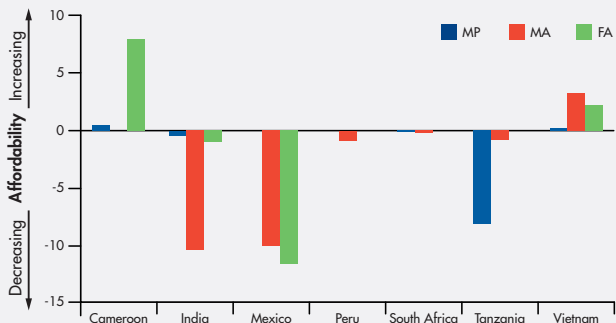
For both birds and mammals, species used for food and medicine are on average more threatened than those who are not, while in 5 of the 7 countries sampled wild products are becoming more affordable to the poorest 10% of the population.



**Red List Indices showing the proportion of species expected to remain extant in the near future without additional conservation action for amphibians, birds and mammals.**

Source: IUCN & BirdLife International, 2008





**Change in percentage of GDP per capita for 10% poorest used to purchase baskets of goods (medicinal plants (MP), medicinal animals (MA) and food animals (FA)), 2000–2010. This index indicates affordability of MP, MA and FA.**

Source: TRAFFIC, 2010

## The full story

The indicator comprises two elements: the *Red List Index* for amphibians, birds and mammals used for food and medicine; and an *Accessibility Index* to track the changes in affordability of wild sourced products compared with generic/staple products.

For both birds and mammals, species used for food and medicine are on average more threatened than those who are not utilised in this way. 12% of all bird species are classified as threatened, rising to 23% for those used for food and medicinal purposes. In contrast to the birds and mammals, amphibians used for food and medicine appear overall to be less threatened than amphibians not used for these purposes. However, *Red List Index* trends for all groups used for food and medicine for which data are available indicate that they are deteriorating in status overall.

Whether people are able to access wild foods and medicines is a function of their price and affordability. All but two of the sampled countries' wild products are becoming increasingly affordable to the poorest 10% of the population, even though global indicators show that in general

animal species that are used for food and medicine are becoming more threatened. Particular increases in affordability were seen for animal products in Mexico, medicinal animals in India, and medicinal plants in Tanzania. However, wild food animals have decreased in affordability in Cameroon, despite wild meat remaining cheaper than domestic meat, and also in Viet Nam, where wild meat is considered more of a luxury product and its sale is illegal.

## Indicator relationship to Aichi Target 14

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*Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.*

The biodiversity harvested for food and medicine contributes to health, livelihoods and well-being, which is particularly important for the poor and vulnerable who may have no alternatives for their primary food security and health care. The *Biodiversity for food and medicine* indicator tracks the conservation status of groups utilised in food and medicine through the *Red List Index*, and also tracks how affordable, and hence accessible, these services are for the poor and vulnerable in society.

As food and medicine are only examples of a particular service provided by biodiversity, there is potential to bring in additional indicators for Target 14 which speak to the other ecosystem services that biodiversity provides.

## Indicator Partners

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**TRAFFIC**  
the wildlife trade monitoring network

TRAFFIC

  
**BirdLife**  
INTERNATIONAL

BirdLife International



**SSC**

Species Survival Commission

IUCN SSC Medicinal Plant  
Specialist Group

## Further Information

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For further information on the *Biodiversity for food and medicine* indicator visit <http://www.bipindicators.net/foodandmedicine>



## Aichi Target 15: Ecosystem resilience

### *No global indicators yet available*

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Though global indicators for this target have yet to be developed or identified, there are a number of possible national indicators that could be used by countries to assess progress. Examples of these are noted in CBD decision XI/3 and include:

- Population trends of forest-dependent species in forests under restoration

For more information on national indicator development go to <http://www.bipindicators.net/>



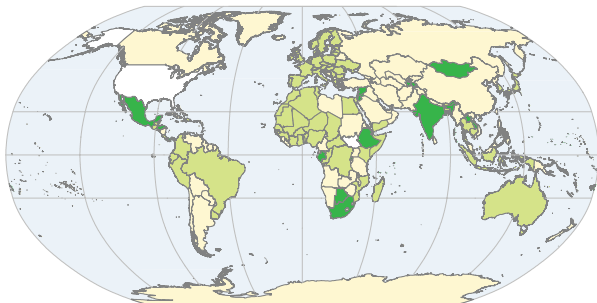
## Aichi Target 16: Nagoya Protocol on Access and Benefit-sharing

### *Indicator: Ratification status of the Nagoya Protocol*



The Ratification Status of the Nagoya Protocol indicator measures progress towards the entry in force of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization by 2015. As of September 2013, 92 (48%) of CBD Parties have signed the Protocol and 20 have deposited their instruments of ratification, acceptance, approval or accession.

Nagoya Protocol - Status of Signature, and ratification, acceptance, approval or accession



- Parties to the CBD having ratified, accepted, approved or accessed the Protocol: 19
- Parties to the CBD having signed the Protocol by the closing date for signature on February 2012
- Parties to the CBD that did not sign and have not yet acceded to the Protocol
- Countries that are not Parties to the CBD

Parties to the CBD having ratified, accepted, approved or accessed the Protocol: 19 :  
Albania, Botswana, Comoros, Ethiopia, Fiji, Gabon, Honduras, India, Jordan, Laos, Mauritius, Mexico, Micronesia, Mongolia, Panama, Rwanda, Seychelles, South Africa, Syria, Tajikistan.

### **Number of CBD Parties signing and ratifying the Nagoya Protocol, as of September 2013**

Source: CBD Secretariat, 2013

## The full story

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During the period 1 February 2011 – 2 February 2012 when the Protocol was open for signature, 92 (48%) of CBD Parties signed the Nagoya Protocol. As of September 2013, 20 Parties to the CBD have deposited their instruments of ratification, acceptance, approval or accession: Albania, Botswana, Comoros, Ethiopia, Fiji, Gabon, Honduras, India, Jordan, Lao People's Democratic Republic, Mauritius, Mexico, Mongolia, the Federated States of Micronesia, Panama, Rwanda, Syrian Arab Republic, the Seychelles, South Africa and Tajikistan. A number of countries are in the process of completing their internal procedures towards ratification.

Fifty ratifications are required for the entry into force of the Protocol. It is expected that it will enter into force before the twelfth meeting of the Conference of the Parties, to be held in fourth quarter of 2014, 90 days after the fiftieth instrument for ratification is deposited.

Data updates for this indicator can be provided at any time, but the next data update for the BIP will be in 2014.

## Indicator relationship to Aichi Target 16

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*Target 16: By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.*

This target addresses two issues: entry into force of the Nagoya Protocol by 2015; and ensuring that the Nagoya Protocol is operational, consistent with national legislation. The Ratification status of the Nagoya Protocol indicator directly measures progress towards the first of the target issues, by monitoring how many countries have ratified or acceded the Nagoya Protocol and thereby committed to meet the obligations set out in the Protocol.

## Indicator Partner

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Convention on  
Biological Diversity

Convention on Biological Diversity

## Further Information

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For further information on the *Ratification Status of the Nagoya Protocol* indicator visit <http://www.bipindicators.net/NagoyaProtocolratification> or <http://www.cbd.int/abs/nagoya-protocol/signatories/default.shtml>

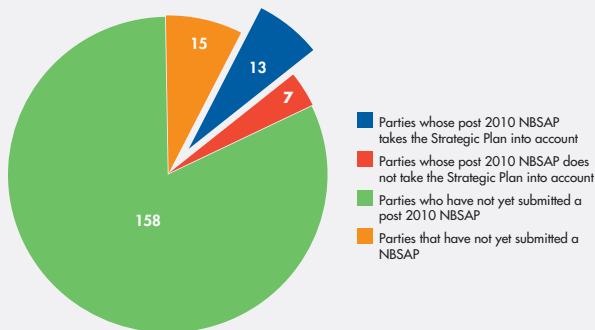


## Aichi Target 17: National Biodiversity Strategies and Action Plans

### Indicator: *Status of NBSAPs*



All Parties to the CBD are required to develop National Biodiversity Strategies and Action Plans (NBSAPs) in line with Article 6 of the Convention. Since 2010, Parties have been required to revise their NBSAP in line with the Strategic Plan 2011-2020. As of July 2013, 178 out of 193 Parties have submitted an NBSAP, 20 of those are post-2010 and 13 of those take the Strategic Plan into account.



### Submission of NBSAPs by Parties to the Convention on Biological Diversity

Source: CBD Secretariat, 2013

### The full story

The *Status of NBSAPs* indicator measures how many CBD Parties have developed and revised their NBSAPs in line with Article 6 of the

Convention. It also measures those that have been revised in light of the Strategic Plan for Biodiversity 2011-2020. Parties are classified into four groups.

As of July 2013, 178 out of 193 Parties to the CBD have submitted an NBSAP. Of those, 20 have been submitted post-2010, 13 of which take the Strategic Plan into account. 15 Parties have not yet submitted a first NBSAP. While the number of Parties that have submitted revised NBSAPs in response to Aichi Biodiversity Target 17 is still low, more than 130 GEF-eligible countries have received funds for revising their NBSAPs and have begun their processes to do so in order to meet the 2015 deadline. It is expected that many will adopt their revised NBSAPs taking the Strategic Plan 2011-2020 into account by the twelfth meeting of the CBD Conference of the Parties in 2014, or 2015.

The data for this indicator is foreseen to evolve substantially in the coming months, however the next data update for the BIP will be in 2014.

## Indicator relationship to Aichi Target 17

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*Target 17: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.*

The *Status of NBSAPs* indicator directly monitors progress towards Aichi Target 17, by measuring how many CBD Parties have developed and revised their NBSAPs in line with Article 6 and the Strategic Plan for Biodiversity 2011-2020.

## Indicator Partner

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Convention on  
Biological Diversity

Convention on Biological Diversity

## Further Information

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For further information on the *Status of NBSAPs* indicator visit <http://www.bipindicators.net/statusofNBSAPs>



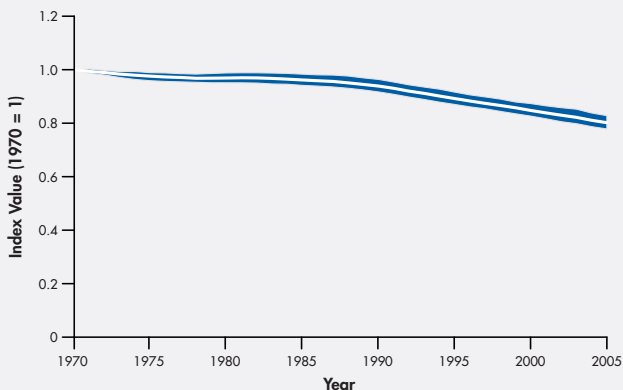


## Aichi Target 18: Traditional Knowledge

### Indicator: Index of Linguistic Diversity

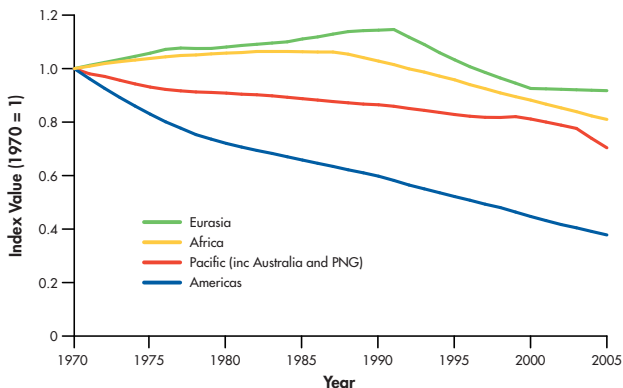


*The Index of Linguistic Diversity shows that global linguistic diversity has declined 20% in just 35 years, between 1970 and 2005, with indigenous languages being particularly affected. The top 16 languages spoken worldwide have increased their share of the global population from 45% in 1970 to 55% in 2005.*



#### Global Index of Linguistic Diversity

Source: Harmon and Loh, 2010



## Regional indigenous Indexes of Linguistic Diversity

Source: Harmon and Loh, 2010

### The full story

The *Index of Linguistic Diversity* shows that global linguistic diversity has declined 20% in just 35 years, between 1970 and 2005. Languages spoken by indigenous peoples, which make up 80-85% of the world's languages, have been especially affected. The global rate of decline for indigenous languages is slightly faster (21%) than the global average for all languages, with enormous variations between different regions of the world. Between 1970 and 2005, indigenous linguistic diversity declined by about 60% in the Americas, 30% in the Pacific, and 20% in Africa.

The dramatic decline in linguistic diversity is due to ever-growing social and economic pressures that are inducing or even forcing the speakers of smaller, more geographically restricted languages (most of which are indigenous) to larger languages, especially global languages like Mandarin Chinese, Hindi, English, and Spanish, or regionally dominant languages like Swahili. The top 16 languages spoken worldwide increased their share of the global population from 45% in 1970 to 55% in 2005.

This storyline is based on data from 2005; the next data update is hoping to incorporate data from additional sources as well as including some methodological refinements.

## Indicator relationship to Aichi Target 18

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*Target 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.*

Traditional environmental knowledge is expressed and transmitted largely through language. If a language is in decline that generally means that the knowledge it conveys is also in decline. The downward trend in the level of linguistic diversity and in particular indigenous languages, therefore suggests that the “traditional knowledge, innovations and practices of indigenous and local communities” are also declining, with detrimental consequences for the conservation and sustainable use of biodiversity.

## Indicator Partner

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Terralingua

## Further Information

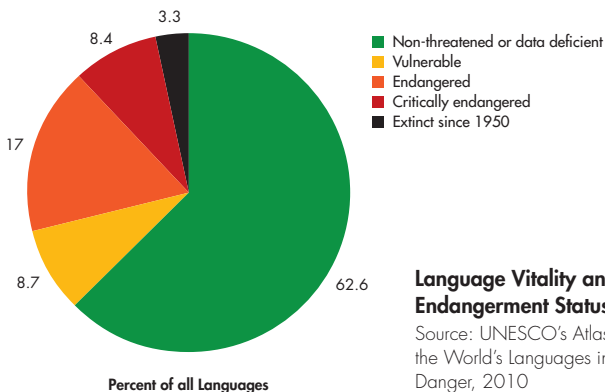
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The data analysis for this indicator comes from Harmon, D and Loh, J. 2010. *Language Documentation and Conservation*. Vol. 4. pp 97-151. For further information on the *Index of Linguistic Diversity* visit <http://www.bipindicators.net/ild>

## Indicator: Status and trends of linguistic diversity and numbers of speakers of indigenous languages



Languages spoken by fewer than 10,000 people (51% of the current 6,900 languages) have lost speakers over the past forty years and many of them are in danger of disappearing within this century.



### The full story

Preliminary analysis of the data suggests that languages spoken by fewer than 10,000 people (51% of the current 6,900 languages) have lost speakers over the past forty years and many of them are in danger of disappearing within this century. Languages of small indigenous groups living in biodiversity-rich areas are more likely to lose speakers over time compared to larger indigenous languages whose dynamics bear some similarities to that of majority and/or dominant languages such as English, Mandarin Chinese, Hindi, Spanish and French.

Further analyses of the collected data is needed to account for ethnic group population trends, overall population trends, migration flows, linguistic policies at various levels, as well as changes in attitudes both among governments and the speakers of indigenous languages.

Further development of consistent and homogenous language data collection methodologies at the global scale will permit the international comparison of language data, which will facilitate the task of constructing an indicator on numbers of speakers of indigenous languages at the global scale.

This storyline is based on data from 2010; the next data update is not fixed.

## Indicator relationship to Aichi Target 18

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*Target 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.*

The level of linguistic diversity reflects the level of traditional knowledge transmission, as environmental knowledge is embedded in indigenous names, oral traditions and taxonomies, and can be lost when a community shifts to another language. The *Status and trends of linguistic diversity and numbers of speakers of indigenous languages* indicator therefore provides insight into the status of traditional environmental knowledge transmission.

## Indicator Partner

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UNESCO

## Further Information

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For further information on the *Status and trends of linguistic diversity and numbers of speakers of indigenous languages* indicator visit <http://www.bipindicators.net/linguisticdiversity>



## Aichi Target 19: Biodiversity Knowledge

### *No global indicators yet available*

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Though global indicators for this target have yet to be developed or identified, there are a number of possible national indicators that could be used by countries to assess progress. Examples of these are noted in CBD decision XI/3 and include:

- Number of maintained species inventories being used to implement the Convention on Biological Diversity.

For more information on national indicator development go to <http://www.bipindicators.net/>

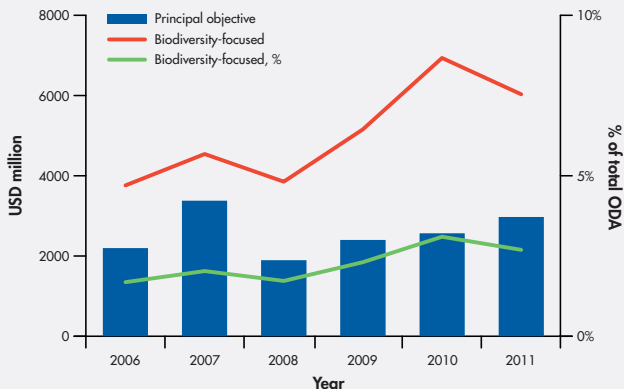


## Aichi Target 20: Resource Mobilization

*Indicator: Official Development Assistance in support of the CBD*



*Biodiversity-focused aid has continued to increase since 2006, although the level of aid in which biodiversity conservation is the principle objective has not increased significantly.*



**Biodiversity-focused aid, USD Million, 2011 constant prices**

Source: OECD, 2013

## The full story

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The current indicator shows biodiversity-related aid to be of the order of USD 6 billion in 2011 which represents 3% of total Official Development Assistance. Japan is the greatest donor, contributing 24% (\$1.5 billion) of the total biodiversity-related aid in 2011, while Germany and the European Institutions are the second and third highest donors respectively, contributing 20% and 9%. India and Brazil were some of the greatest recipients of biodiversity-related aid in 2011 receiving 12.5% and 12% of the total respectively.

This storyline is based on data from 2011; 2012 data will be provided by the end of 2013, as permitted by national reporting schedules.

## Indicator relationship to Aichi Target 20

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*Target 20: By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties.*

The Official Development Assistance in support of the CBD indicator tracks the transfer of financial resources to developing countries for the effective implementation of their commitments under the Convention, thus monitoring the level of resource mobilization for the Strategic Plan 2011-2020.

## Indicator Partner

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Organisation for Economic Co-operation and Development

## Further Information

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For further information on the *Official Development Assistance in support of the CBD* visit <http://www.bipindicators.net/oda>





## Indicator Projections and Future Scenarios

*Partners are also working to use their indicators in novel ways to predict future trends or project the results of different policy scenarios. Here are some examples of this new and exciting work:*

### Projecting the Ecological Footprint to 2050

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The Ecological Footprint Scenario calculator can be used to project the footprint in 2015, 2030 and 2050.



## Using indicators to project outcomes of future biodiversity policies

*Indicators can serve as strong predictive tools in decision making for the Aichi Targets.*



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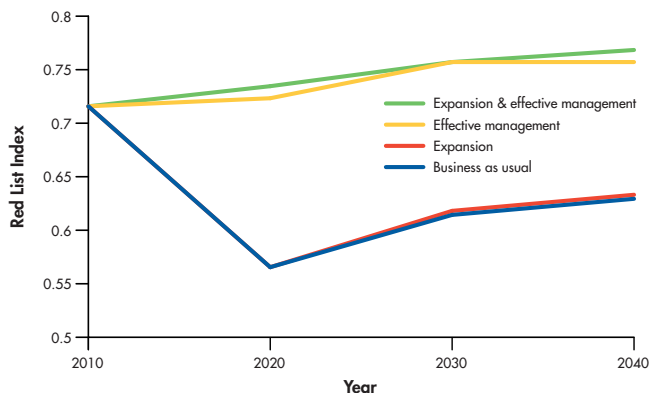
Imperial College  
London

Currently, global biodiversity indicators are used to report on the present trends and status of biodiversity; however they could also potentially aid decision making by being projected forwards and predicting the outcomes of different biodiversity policies and evaluating their actions. This approach has been tested using the IUCN *Red List Index* and the *Living Planet Index* for two Aichi target relevant case studies, and revealed the potential of indicators as a strong predictive tool in decision making.



## Case study 1: Performance of protected areas in sub-Saharan Africa

Results showed that increasing effective management of existing protected area benefitted biodiversity more than if protected areas were simply expanded, and that expansion without improvements in management provided little benefit over a business as usual scenario. This is important because Aichi Target 11 calls for protection of at least 17% of terrestrial areas.





## Case study 2: Reducing bottom trawling

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The results were not so simple. The impacts of either halving or eliminating bottom trawling were modelled across six ocean ecosystems. These are potential policy scenarios in reaching Aichi Target 6 which calls for sustainable harvest and management of fish and invertebrate stocks. Projections of the Living Planet Index did not reflect the anticipated increases in vertebrate biomass. Monitoring data are biased towards such groups as seabirds, which declined in the model due to a fall in discarded fish, and a shortage of data for some of the groups which improved, such as rays.

### Further information

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Further information on projecting the IUCN *Red List Index* and *Living Planet Index* to assess the impacts of different biodiversity policies be found in the recent article: Nicholson E *et al.* (2012) Making Robust Policy Decisions Using Global Biodiversity Indicators. *PLoS ONE* 7(7): e41128. doi:10.1371/journal.pone.0041128

For more information on the IUCN *Red List Index* visit: [www.bipindicators.net/rli](http://www.bipindicators.net/rli)

For more information on the *Living Planet Index* visit: [www.bipindicators.net/lpi](http://www.bipindicators.net/lpi)



## Projecting the Ecological Footprint to 2050

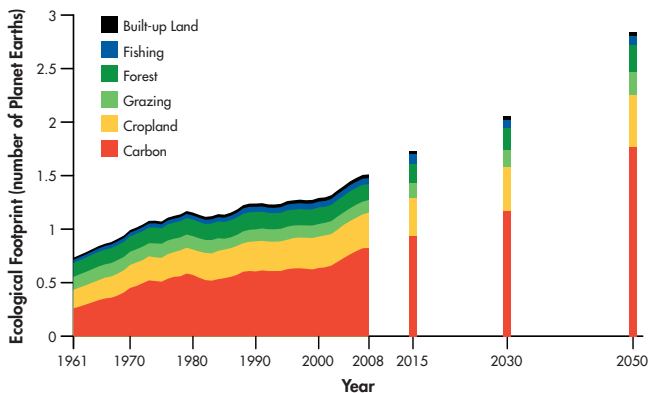


Global Footprint Network  
Advancing the Science of Sustainability

*The Ecological Footprint Scenario Calculator reveals that if a “business as usual” pathway is followed, by 2050 humanity would require 2.9 planets to support its needs.*

The world’s population and per capita consumption are predicted to increase rapidly over the next half century. This will have a considerable impact on humanity’s demand for natural resources.

The *Ecological Footprint Scenario Calculator* utilises existing Footprint data (1961-2008) in conjunction with data from other scenario models (population, land use, land productivity, energy use, diet and climate change) to project the Ecological Footprint to 2015, 2030 and 2050.



**“Business as usual” scenario of the Ecological Footprint from 2009 to 2050**

Source: Global Footprint Network, 2012

The projected results show that the “business as usual” scenario will dramatically increase humanity’s Ecological Footprint, placing more and more pressure on the planet. By 2050 humanity would require an equivalent of 2.9 planets to support the “business as usual” assumptions.

## Further information

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Further information on the *Ecological Footprint Scenario calculator* can be found in the recent article: Moore, D., Cranston, G., Reed, A. and Galli, A. (2012) Projecting future human demand on the Earth’s regenerative capacity. *Ecological Indicators*. **16**:3-10.

For more information on the Ecological Footprint indicator:  
[www.bipindicators.net/ecologicalfootprint](http://www.bipindicators.net/ecologicalfootprint)

## Additional BIP Indicators

The Aichi Passport aims to report on progress towards the Aichi Biodiversity Targets by presenting a list of indicators which are as far as possible, global in their coverage, scientifically valid and peer reviewed, and relevant to the Aichi Targets. The Passport is not an exhaustive list of all indicators within the BIP Partnership. Additional indicators within the BIP Partnership that were not included in the Passport are listed below and can all be viewed on the BIP website at <http://www.bipindicators.net/indicators>

<b>Indicator</b>	<b>Partner</b>	<b>URL</b>
Area of agricultural ecosystems under sustainable management	FAO	<a href="http://www.bipindicators.net/sustainableagriculture">http://www.bipindicators.net/sustainableagriculture</a>
Area of forest under sustainable management: degradation & deforestation	FAO	<a href="http://www.bipindicators.net/forestdegradation">http://www.bipindicators.net/forestdegradation</a>
Wild Commodities Index	UNEP-WCMC	<a href="http://www.bipindicators.net/wildcommoditiesindex">http://www.bipindicators.net/wildcommoditiesindex</a>
Ex-situ crop collections	FAO	<a href="http://www.bipindicators.net/cropcollections">http://www.bipindicators.net/cropcollections</a>
Extent of Marine Habitats	UNEP-WCMC, FAO	<a href="http://www.bipindicators.net/marinehabitats">http://www.bipindicators.net/marinehabitats</a>
Forest fragmentation	UNEP-WCMC	<a href="http://www.bipindicators.net/forestfragmentation">http://www.bipindicators.net/forestfragmentation</a>
Health & well-being of communities directly dependant on ecosystem goods and services	UNEP-WCMC	<a href="http://www.bipindicators.net/healthofcommunities">http://www.bipindicators.net/healthofcommunities</a>
Number of maintained species inventories being used to implement the CBD	Global Taxonomy Initiative	<a href="http://www.bipindicators.net/speciesinventories">http://www.bipindicators.net/speciesinventories</a>
Nutritional indicators for biodiversity	FAO	<a href="http://www.bipindicators.net/nutritionindicators">http://www.bipindicators.net/nutritionindicators</a>
Water Quality Index	UNEP/GEMS programme	<a href="http://www.bipindicators.net/wqib">http://www.bipindicators.net/wqib</a>
Vitality Index of Traditional Environmental Knowledge	Terralingua	<a href="http://www.bipindicators.net/vitek">http://www.bipindicators.net/vitek</a>

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United Nations Environment Programme  
P.O.Box 30552 - 00100 Nairobi, Kenya  
Tel: +254 20 762 1234  
Fax: +254 20 762 3927  
e-mail: [unepubb@unep.org](mailto:unepubb@unep.org)  
[www.unep.org](http://www.unep.org)



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