

Invasive Alien Species



White-headed duck © Joe Blossom/WWT

There are a number of natural ways in which a species can extend its range; seeds carried by currents or by birds for instance. The human contribution to the process, both by accident and design, has dramatically increased the number of instances and the consequences of some introductions have been devastating for native wildlife.

Rabbits introduced onto Laysan and Lisianski Islands in the Pacific during the early 1900s denuded the islands of vegetation and fierce sand storms buried nests and filled burrows. Within two decades populations of Black-footed Albatross (*Diomedea nigripes*) collapsed and three endemic land birds went extinct before the rabbits finally ate themselves to near extinction and the remaining few were killed.

Red deer (*Cervus elaphus*) were introduced to Patagonia, and proved to be aggressively competitive. They were able to supplant the Chilean Huemul (*Hippocamelus bisulcus*) in areas where the two species lived side by side because of their greater tolerance of disturbances and adaptability regarding the use they made of the habitat.

Before they were eradicated between 1977 and 1980, feral cats (*Felis catus*) on Little Barrier Island (New Zealand) severely reduced numbers of the Black Petrel (*Procellaria parkinsoni*).

Alien species can also threaten native biodiversity through hybridization. A lack of reproductive isolation between alien and



native species can cause genetic swamping, loss of native genetic diversity and extirpation. The introduction of the North American Ruddy Duck (*Oxyura jamaicensis*) into Europe by collectors of exotic waterfowl led to one of the best-known cases of concern about an alien species in relation to conservation of a globally threatened native species, the White-Headed Duck (*Oxyura leucocephala*).

Plants too can cause ecological problems. Rampant plants like the Japanese Knotweed (*Fallopia japonica*) can take over swathes of land literally strangling out all competition depriving animals of habitat and food. Like the Ruddy Duck, Japanese Knotweed was deliberately introduced to Europe because of its ornamental qualities.

CMS has undertaken a study based on, but not limited to, an analysis of threats posed by invasive alien species to migratory animals listed on the Convention's annexes and the effects, real and potential that they have. The study also examined prevention and control mechanisms including measures already being implemented and others under consideration.

Membership of the Convention commits Parties to taking measures to prevent exotic species, as alien and invasive species can also be described, from endangering the migratory species listed on Appendix I.

While the best guard against alien species is to maintain vigilance to prevent their introduction, this is often easier said than done. Effective control and eradication programmes have proved possible in a number of instances.

Key facts:

The main threats posed by invasive alien species:

- Competition with native species
- Detrimental impacts on habitat
- Direct predation on adults, young and/or eggs
- Hybridization with the native species
- Diseases by pathogens and parasites

By-catch



Marine Turtle by-catch © Thomas Dillinger

By-catch, the accidental capture of a non-target species in fisheries, is both a common and universal phenomenon. Between a quarter and a fifth of all fish caught across the world is simply thrown overboard—that is the equivalent of 20 million tonnes of marine life discarded every year. Trawls, seines, hooks and lines, gillnets and driftnets and even lines of pots and creels take their toll on all sorts of animals—marine mammals, sea birds, turtles and sharks. Worst affected are long-lived, slow breeding species such as cetaceans, seals, turtles and albatrosses. Indeed 19 of 21 species of albatross are threatened with extinction, and the primary threat they face comes from longline fisheries.

Moreover, it is not just the species that suffer; entire marine ecosystems are damaged as they lose an important element of their structure. In the face of this serious threat, CMS has taken a lead and its Parties have endorsed resolutions and recommendations at their Conferences (Cape Town 1999, Bonn 2002, Nairobi 2005, Rome, 2008 and Bergen 2011) calling for immediate action by the international community to address the problem and improve fishing practices to reduce the unnecessary death of so many non-target species. In addition, there are several CMS-related Agreements and Memoranda of Understanding dedicated to species for which by-catch is a major issue.

It is only recently that the extent of the problem of by-catch has become apparent. Our knowledge is improving as more data are collected and analyzed and coverage by observers of fishing fleets increases. But the data obtained paints a gloomy picture as the conservation status of key species such as the Macquarie Island Wandering Albatross (*Diomedea exulans*) and

Amsterdam Albatross (*Diomedea amsterdamensis*) remains alarming—both are near extinction. Another cause for concern is the fate of marine turtles. Across their entire migratory range by-catch is a problem but at least global action is now being taken. It is estimated that an annual average of 6,000 Harbour Porpoises (*Phocoena phocoena*) have died as a result of by-catch over the past decade in North Sea fisheries alone. Losses of this magnitude are unsustainable and populations will only recover when by-catch levels fall drastically.

Further species face similar threats, but have yet to attract the same level of attention to their plight. The total annual of marine mammal by-catch is thought to be in excess of 300,000 individuals. For some species, like the Vaquita (*Phocoena sinus*) which is only found in the Gulf of California, extinction looms; for others, like the Irrawaddy Dolphin (*Orcaella brevirostris*), the extent of by-catch has yet to be ascertained and no remedial actions are being taken.

The Food and Agriculture Organization (FAO) has been instrumental in negotiating International Plans of Action aiming to reduce by-catch levels of sharks and sea birds. Innovative fishing techniques are subject of trials in the Southern Hemisphere to reduce albatross and petrel losses. In several fisheries in the Indian Ocean and South Pacific it is now required to fit turtle excluder devices. A start is being made to addressing by-catch with stricter regulations being enforced in many regions, but still more needs to be done. The CMS Recommendation 7.2 adopted in 2002 calls on Parties to compile information to assess the impact of by-catch on migratory species and take action regarding fishing activities within their control.



Key facts:

- A dedicated expert on by-catch was appointed to the CMS Scientific Council in 2006.
- The second winner of the CMS Thesis Award was Dr Samantha Petersen of South Africa for her work entitled 'Understanding and Mitigating Vulnerable By-catch in southern African Trawl and Longline Fisheries'

Habitat Loss



Forest fire and egrets © D. Juntawonsup/UNEP/Still Pictures

One of the main threats facing endangered migratory animals is habitat loss. This problem manifests itself in a number of ways:

- **direct loss of habitat and species** – from agricultural improvements, urban development, mineral extraction and afforestation
- **fragmentation** – the splitting up of continuous blocks of habitat and species into disconnected pockets.
- **degradation** – occurs when a habitat is no longer managed in an appropriate manner, for example: overgrazing on upland moors, undergrazing on lowland heaths and draining of wetlands.

Global Warming – the Arctic hunting grounds of the polar bear are melting. Warmer waters away from the Tropics mean that cold-water species face more competition for food as their own preferred habitat becomes scarcer, the range of other species spreads. The loss of the tundra habitat in Siberia as a result of the northward shift of forests is having a severe impact on many species which rely on the Arctic tundra for breeding. One example of such a species is the Spoon-billed Sandpiper (*Eurynorhynchus pygmeus*), which is listed on Appendix I of CMS and has been identified for concerted action.

Desertification – the expansion of deserts such as the Sahara is making them far more formidable barriers for migratory species; some birds have difficulty building up sufficient food reserves to make a successful crossing.



Deforestation – we often hear that an area of pristine forest the size of hundreds of sports fields or a small country has been destroyed by fire (accidental or intentional) or felling. Many rare species have been lost before scientists have had the chance to record them.

Urbanization – the world's urban population exceeded 50 per cent for the first time in 2007 and is projected to reach 5 billion or 61 per cent by 2030. Cities are encroaching on the countryside. While some species can adapt and thrive, others are displaced and their numbers decline.

Agriculture – habitats are lost as land is converted to agricultural use, often with increased use of chemical fertilizers and pesticides. With less natural habitat to meet their needs, animals seek alternatives, often leading to conflicts with people.

Irrigation – flood defences aimed at protecting human settlements and agricultural land damage some natural habitats which require periodic flooding to retain the features required by some species. The habitat favoured by the Bukhara Deer (*Cervus elaphus yarkandensis*) was affected by artificial irrigation.

Pollution – the use of pesticides and chemical fertilizers has had an adverse effect on many species. Rain washes these pollutants into aquatic habitats poisoning the animals or the prey or plants upon which they feed. Industrial waste, discharges from ships and oil spills add to the problem. Autopsies of stranded cetaceans often reveal high levels of heavy metal contamination.

Key facts:

- An area of unspoilt land larger than North America is likely to be damaged by human activity in the next 30 years.
- Logging and mining each affect one in six endangered species, grazing one in five, water development nearly a third, recreation affects about a quarter.
- For migrant bird populations, a decline of close to 40 per cent is directly linked to habitat destruction.

Turbines



Wind farm, Tarifa, Spain © Manfred Werner

Electricity generation by wind turbines is controversial and objective assessments of this technology's impact on migratory species are rare. Recently, the Bern Convention (the Council of Europe) commissioned a report from BirdLife International on how wind turbines affect birds and how to minimize the risks. The principal dangers for birds are collision, disturbance leading to birds leaving otherwise ideal habitat and some loss of land needed to build and service the wind farms. Noise pollution is the main problem arising from coastal turbines for cetaceans.

There have been well publicized examples of collisions with wind turbines leading to horrific numbers of deaths of birds. Even small increases in mortality rates due to wind farms can have significant impacts on the population of large, long-lived species which reach breeding age later and rear small clutches.

Collisions with turbines are more likely to occur during abnormal wind conditions, rain and fog. The often remote and inaccessible location of many wind farms makes it difficult to record true mortality rates, but thermal imagery devices can help.

The extent of disturbance caused to birds depends on a number of factors. The size of the wind farm, the amount of habitat lost to construction and service infrastructure, the noise of the rotating blades and increased human presence during maintenance. The impact is less where adequate alternative habitat is within easy reach. The size and design of the installation (i.e. the spacing between each turbine) is important. Where ecological corri-

dors between feeding, breeding and roosting sites are left intact, bird populations are generally not adversely affected.

On the basis of the precautionary principle, conservationists advocate that wind farm development should not be permitted in or near nationally or internationally designated sites (e.g. Special Protection Areas in the EU's Natura 2000 network). Close monitoring before, during and after construction of pilot projects and dialogue between conservation interests and developers should contribute to solutions that provide clean energy without demanding too high a cost from wildlife and precious natural habitats.

In conjunction with the European Cetacean Society, CMS convened a workshop to discuss the impacts of wind farms on cetaceans. The disturbance caused by turbines in operation was thought to be less of a problem than noise during construction. Another factor was the increased shipping traffic necessitated by maintenance work. The workshop considered best practice guidance for the construction period, including conducting visual and acoustic surveys to ensure that no cetaceans were present during noisy activities. Studies are needed to establish baseline data and to monitor the longer-term effects of wind farms on cetacean populations.

Key facts:

- A resolution sponsored by the German Government at the CMS COP7 in Bonn in 2002 called for an evaluation of the threat posed by turbines to migratory species, especially birds, and for environmental impact assessments to be carried out before permitting construction of wind farms in sensitive areas.
- The local authority in Altamont, California negotiated a deal with energy providers and conservationists under which wind farm operators agreed to introduce measures to cut raptor collisions including the removal of some of the deadliest turbines and painting some blades as a deterrent.
- CMS COP11 in 2014 established through Resolution 11.27 "Renewable Energy and Migratory Species" a multi-stakeholder Task Force charged with reconciling selected energy sector developments with the conservation of migratory species.



Oil Spills



Oiled Cormorant © Still Pictures

Of all man-made disasters, oil spills are among the most common and can, over localized areas, be one of the most destructive to wildlife, killing the animals and poisoning their habitats. Here is a list of some of the most recent major incidents.

August 2011: a leak of crude oil from the *Gannet Alpha* platform in the North Sea off Aberdeen, Scotland, UK potentially endangers young auks, razorbills, puffins and guillemots

May 2010: BP's *Deepwater Horizon* oil platform explodes and oil leaks for weeks from the well into the Gulf of Mexico off Louisiana and Florida

March 2009: The *Pacific Adventurer* runs aground off the coast of Queensland, Australia affecting 60 km of beaches.

December 2007: The *Hebei Spirit* spills 10,000 tons off South Korea's west coast.

November 2007: a storm in the Strait of Kerch between the Sea of Azov and the Black Sea damaged two tankers and sank four other vessels

July 2006: the oil storage unit at Jiyeh, 30 km south of Beirut damaged in hostilities causing spillage affecting the coasts of Lebanon and the Syrian Arab Republic.

November 2002: the vessel *Prestige* carrying 20 million gallons (70,000 metric tons) of fuel oil broke up off the Spanish coast.

January 2001: the vessel *Jessica* spilled 175,000 gallons of diesel and bunker oil into the sea off the Galapagos Islands.

June 2000: 1,400 tonnes of heavy fuel oil leaked from the bulk carrier *Treasure* off Cape Town, affecting penguins on Dassen and Robben Islands.

January 2000: A ruptured pipeline spewed about 340,000 gallons of heavy oil into Guanabara Bay, Rio de Janeiro.

February 1996: The *Sea Empress* hit rocks near Milford Haven, Wales, spilling 72,000 tonnes of oil.

January 1993: The *Braer* sank off the Shetland Islands spilling 85,000 tonnes of light crude oil.

Despite greater vigilance, faster and better equipped response teams, tougher regulations and improved ship design, the threat of oil pollution from accidents or deliberate discharge cannot be ignored.

The 20,000 birds found dead or dying on the Spanish coast after the *Prestige* disaster 2002 were just the start. The final toll from this one incident was more likely to have been counted in the 100,000s. Shipping accidents leading to high losses among wildlife are still a regular occurrence across the world and Europe's busy sea lanes are no exception. Deliberate discharges of noxious waste from ships account for the deaths of yet more birds, sea mammals, fish and reptiles.

Waders and seabirds like auks, sea ducks and other diving birds which feed in the sea are worst affected. When oil sticks to birds' plumage, the feathers lose their insulating properties and the birds die of cold. Marine mammals are susceptible to oil contamination too. One problem is that the animals try to clean themselves and ingest the oil which poisons them. Unable to stay in the water, they move onto land where they succumb to poisoning or hypothermia.

Although rescue efforts save some oiled birds, most unfortunately die. Insufficient baseline data makes it difficult to assess long term effects of oil spills, but accidents occurring at sensitive times of year could claim large numbers of adult birds and have devastating effects on local populations. An accident in the mouth of northern Germany's River Elbe, a busy shipping lane, in the late summer is a particularly alarming prospect as the mudflats in the area support virtually the entire north west European Shelduck (*Tadorna tadorna*) population. On the other hand, research into breeding responses after the *Braer* oil spill in 1993 tended to indicate that some bird populations made a swift recovery.



Key facts:

- After the oil storage depot at Jiyeh was damaged in the conflict of summer 2006, CMS offered its expert advice to the Lebanese and Syrian authorities. This was part of a wider UN effort to mitigate the environmental effects of the spillage.

Climate Change



Seal on ice floe © Richard Reid UNEP/Still Pictures

Our climate is changing – The Earth’s temperature and sea levels are rising, rain patterns are altering, and extreme weather is occurring more often. Conservationists are facing new challenges. In conjunction with the UK’s Defra, CMS has produced a publication entitled: “Migratory Species and Climate Change: impacts of a changing environment on wild animals” explaining the problems before us.

Migration – Abnormal storms have blown Monarch Butterflies (*Danaus plexippus*) across the Atlantic from America to the UK. Weaker tailwinds in Siberia result in fewer Bewick’s Swans (*Cygnus columbianus*) reaching traditional wintering grounds in Europe. Winters are often so mild that cranes delay their south-bound flight by weeks and sometimes do not migrate at all.

Habitat – The range of species is moving towards the poles and higher elevations. Cold-water species are facing increased competition as the seas nearer the poles warm up. Exotic fish such as the anchovy are now found in the North Sea, while bird species once confined to the arid Sahara are finding suitable conditions on the northern Mediterranean.

Feeding – Polar Bears (*Ursus maritimus*) may not adapt fast enough to changing conditions affecting the habitat of their prey species. The growth of deserts is making it more difficult for migratory species to cross these barriers, as the animals must eat more food to survive the journey but have fewer opportunities to do so.



Breeding & Nesting – All the Galapagos Fur Seal pups (*Arctocephalus galapagoensis*) born in 1982 were lost as a result of the El Niño Southern Oscillation. The same phenomenon has affected Green Turtles (*Chelonia mydas*) migrating to their breeding grounds. Higher sea levels will also erode breeding beaches. Bats are waking from hibernation early affecting the females’ reproductive cycle.

Resting – Loss of sea ice is affecting the Ringed Seals (*Pusa hispida*), Bearded Seals (*Erignathus barbatus*) and Walruses (*Odobenus rosmarus*) that use ice floes to rest, moult and give birth. The Lesser White-fronted Goose (*Anser erythropus*) is a particularly vulnerable as it relies on a small number of discrete stopover sites.

Disease – Tumours in Green Turtles (*Chelonia mydas*) grow faster in warmer waters. Other diseases and parasites thrive in higher temperatures. Algal blooms contribute to epizootic episodes, while viral outbreaks have reduced the effectiveness of animals’ immune systems, leading to mass die-offs

Feminization – Hotter nesting beaches are affecting both the survival of turtle eggs and the gender ratios of hatchlings. Eggs need temperatures of 25-32°C to incubate successfully. At the lower end of the range, predominantly male hatchlings are produced; at the higher end mainly female. With ratios of one male to four females adverse effects on populations arise.

Key facts:

COP5 passed a Recommendation and COPs 8-11 all passed Resolutions on the impacts of Climate Change on migratory species. The COP11 Resolution:

- adopted a Programme of Work (POW) on Climate Change and Migratory Species and urged Parties to implement the POW as a matter of urgency;
- proposed that the Climate Change Working Group established at COP10 should be continued;
- requested that the Secretariat liaise with relevant MEAs (CBD, UNFCCC, UNCCD, Ramsar and the World Heritage Convention) to promote synergies and coordinate activities.

Wildlife Watching



Watching Seals © Reiner Heubeck/Still Pictures

CMS has produced an illustrated publication in conjunction with the German travel firm TUI: “Wildlife Watching and Tourism: a study on the benefits and risks of a fast growing tourism activity and its impacts on species”.

However, to achieve these benefits, tourism based on wildlife watching tourism needs to be carefully planned and managed by government agencies, the tourism sector and conservation managers. With rapidly growing demand from tourists for wildlife watching activities, controls are also needed to prevent adverse effects on wildlife and local communities.

Economic and Social Benefits – It is estimated that in the USA the direct expenditure on wildlife watching was US\$32 billion in 2001, including US\$7.5 billion on food, transport and accommodation. One in five US citizens lists bird watching as one of their pastimes. Between 20 and 40 per cent of international tourists have some interest in wildlife watching, from casual observation through going on a specific wildlife-related excursion to an entire trip dedicated to wildlife watching.

Conservation Benefits – As the actual revenues from wildlife watching are large, there is considerable potential to channel some of this money towards the conservation of the species being observed. For example, the “Projeto Tamar” in Brazil has promoted the conservation of turtles along the coast, and by

protecting hatcheries, the number of young turtles reaching the sea reached 600,000 in 2003 alone. Mountain Gorilla numbers are rising fastest in those populations in the Democratic Republic of Congo, Rwanda and Uganda where tourists visit most regularly. The picture is similar with the whale populations off the Valdes Peninsula in Argentina.

Examples of Wildlife Watching – Monarch Butterflies (USA, Canada and Mexico); snorkelling with sharks (Indonesia, Seychelles, Red Sea and Caribbean); observing turtles in Brazil, Mexico, Cabo Verde, South Africa, Sri Lanka and Indonesia; albatrosses—visiting breeding colonies in New Zealand; cranes—observing birds in Germany and the USA; penguins (Antarctica, Argentina, South Africa, Australia); gorillas (national parks on the borders of the Democratic Republic of the Congo, Uganda and Rwanda).

Risks – stress to animals (some like cranes do not adapt well to human presence); disease—great apes can catch human illnesses; habitat degradation and disturbance to natural habitats by human activity and building tourist infrastructure; economic overdependence on tourism and “Boom and Bust” leading to superfluous facilities.

Copies of the brochure are available from the UNEP/CMS Secretariat, Platz der Vereinten Nationen 1, 53113 Bonn, Germany.



Key facts:

- In the year 2000 alone, 1.5 million visitors to Kenya, Uganda and the United Republic of Tanzania spent over US\$1,000 million.
- The number of international tourists is projected to reach 1,600,000,000 in the year 2020.
- Key questions in Wildlife Watching Tourism are: Can tourism be managed in a way which is compatible with the needs of the species and their habitats? Is there a market for such tourism? How would local communities benefit?

Avian Influenza



Avian Influenza Leaflet

In 2005 concerns arose about the Highly Pathogenic Avian Influenza virus H5N1 and the role of migratory birds in spreading it. The Scientific Task Force on Avian Influenza and Wild Birds was established to advise on the conservation impact of the disease and to develop an early warning system. The Task Force members are: the African-Eurasian Waterbird Agreement, BirdLife International, the Convention on Biological Diversity, the International Council for Game and Wildlife Conservation, Convention on Migratory Species, the Ramsar Convention on Wetlands, Wetlands International, the Wildlife Conservation Society and the Zoological Society of London. The observers are: the Food and Agriculture Organization, the World Organization for Animal Health, the United Nations Environment Programme and the World Health Organization.

Risk of Misinformation – Although trade in poultry and caged birds and human movements are the main vectors spreading the virus, pressure grows for ill-advised culling of wild birds. Humans who have caught the disease were exposed to farmed birds, not wild ones. In Indonesia, wild birds do not spread the disease, and the 2006 spring migration from Africa resulted in no outbreaks in Europe.

Action to Reduce the Risk of Spread and Infection – Veterinary services to adopt the standards of the World Organization for Animal Health; Early detection and reporting essential for the

control of H5N1; Surveillance programmes needed to understand the disease; Enhanced bio-security to reduce the risks of transmission between poultry and wild birds; When warranted, human activities causing disturbance to waterbirds to be controlled; Destruction of wetlands and culling of waterbirds to be avoided.

Early Warning System (EWS) – The development of an EWS, which incorporates the results of national and international surveillance programmes, is a top priority.

Minimizing Wild Birds' Role in Spreading the Virus – Poultry farms and wetlands used by wild birds should be separated to reduce the risk of contamination. Run-off from domestic poultry farms must not pollute natural habitats. Bio-safety standards in keeping and transporting farmed birds must be improved and wild birds must have plentiful natural habitats.

What conservation scientists are already doing – Countries have started surveillance programmes to ascertain the presence of the virus in wild birds. Data on movements of wild birds are being analysed and telemetry, ringing and census operations extended, especially for species most likely to catch the virus. More information is needed on H5N1, its prevalence in wild bird populations and ecology in the environment, natural mortality rates in wild bird populations and the identification of species most likely to catch and spread the virus.



Key facts:

- CMS COP9 passed a Resolution calling for the CMS Secretariat and the FAO Animal Health Service to co-convene a new task force, the Scientific Task Force on Wildlife Disease, to work in conjunction with the existing Scientific Task Force on Avian Influenza and Wild Birds;
- A leaflet, "Avian Influenza and Wild Birds", has been produced in the six official UN languages plus German
- A booklet on the practical lessons learned identified at a workshop in Scotland held in June 2007 has also been published

Electrocution



Stork landing on pylon © Manfred Loeffler

Recent figures compiled by experts for NABU (Naturschutzbund, the leading German conservation NGO) show how great the risk of bird electrocution is in Central and Eastern European countries. Looking at Estonia, Poland, the Czech Republic, Hungary, Slovenia and Croatia, as many as 42 bird species listed in Appendices I and II of CMS are threatened due to power poles that have yet to be fitted with the latest safety devices. Twenty-two of the affected species are already classified as critically endangered.

When a bird's wings bridge the gap between wires carrying different voltages, a short circuit occurs. Electricity passes through the bird's body, causing severe burns and in the worst cases fatal paralysis. More common are ground faults, when the bird bridges the gap between the wire carrying the electric current and the pole supporting the wire. In humid weather conditions the risk of electric sparks or electric arcs increases. Birds can also injure or kill themselves when they collide with power masts or overhead cables.

Further examples from Kazakhstan in Central Asia show the horrendous effects that poorly designed power poles can have. In a nature reserve on Lake Tengiz, numerous birds, including 200 kestrels, 48 Steppe Eagles (*Aquila nipalensis*), two Eastern Imperial Eagles (*Aquila imperialis*), one White-tailed Eagle (*Haliaeetus albicilla*) and one Black Vulture (*Aegypius monachus*) were recorded killed by electrocution along an eleven-kilometre medium voltage overhead power-line in the month of October 2000 alone.

Studies show that in many regions, electrocution poses one of the greatest risks to large birds and their populations. This is the case for the Eagle Owl (*Bubo bubo*) in Norway and for Bonelli's Eagle (*Hieraaetus fasciatus*) in Spain.

As long ago as 1913 at the Third German Bird Conservation Conference, an engineer, Hermann Hähnle, gave a talk entitled "Electricity and Bird Protection", pointing out the disastrous consequences even then of electrocution of birds. He concluded that "electricity utility companies should be required to provide comprehensive protection for wild birds so that, if accidents occur, mitigation measures can be put to work at once".

There is no good reason why any birds should be killed or injured due to electrical structures. Medium voltage power lines can be laid underground, and some German power companies such as Schleswig AG in Schleswig-Holstein and Energieversorgung Weser-Ems in Lower Saxony are now implementing this policy.

Regulations and guidelines have been drawn up to ensure safer design of structures. Germany's Federal Nature Conservation Act of April 2002 requires newly erected power poles and technical hardware to be constructed to exclude the possibility of bird electrocution. Mitigating measures are to be undertaken on existing power poles and technical hardware in the medium voltage range within the next ten years. CMS is undertaking a project with NABU aimed at disseminating guidelines on the construction of safe poles.



Key facts:

In November 2010 the African-Eurasian Migratory Waterbird Agreement and RWE Rhein-Ruhr Netzservice signed a historic Cooperation Agreement to support an independent review and the development of guidelines for mitigating and avoiding the conflict between migratory birds and electricity power grids in the African-Eurasian region.

Unsustainable Hunting and Poaching



Bird trapped in net © Holger Schulz

Poaching, illegal trade and unsustainable hunting are among the most serious threats to the survival of wild species (migratory and sedentary) alongside habitat loss and degradation.

TRAFFIC, the wildlife trade monitoring organization, calculated the value of legal imports of wildlife products worldwide to be US\$323 billion and at €100 billion within Europe alone. It is difficult to provide accurate assessments of the value of illegal trade in wildlife, but it probably runs into hundreds of millions of dollars, with only drug trafficking being more lucrative. Illegal trade in caviar was thought to amount to US\$244 million, many times more than legitimate commerce.

Regional Fisheries Management Organizations (RFMOs) are responsible for managing fish stocks on the high seas and those that migrate through the waters of more than one country. In 2008, MRAG & Fisheries Ecosystems Restoration Research estimated that the value of illegal, unreported and unregulated fisheries (IUU) at up to US\$23 billion per year. In fisheries studied, IUU were highest in the Eastern Central Atlantic and lowest in the Southwest Pacific.

The IUCN's first comprehensive study of 64 open sea species of sharks and rays showed that almost a third was threatened with extinction, the main reason being overfishing. Some studies indicate that over 70 million sharks are caught each year to meet demand for fins to be made into soup, considered a delicacy in some Asian countries. This is as much as three times the level recorded in official statistics compiled from regulated fisheries by the Food and Agriculture Organization (FAO) of the UN.



Elephants and rhinos are subject to poaching as their tusks and horns are in great demand for use in ornaments and traditional medicine. In a single operation in 2009, Kenyan authorities seized a consignment of 700kg of ivory valued at US\$750,000, thought to be destined for the Thai market.

The International Consortium on Combating Wildlife Crime (ICCWC) comprising the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), INTERPOL, the United Nations Office on Drugs and Crime (UNODC), the World Bank and the World Customs Organization (WCO) has been established to coordinate efforts to tackle wildlife crime.

Park rangers in Cameroon were helpless in the face of well-armed raiders from neighbouring Chad who killed 400 elephants in the N'djida Boubou National Park in a series of raids in early 2012. In 2011 over 400 rhinos were killed for their horns, and in the Kruger National Park, 11 animals were poached with the collusion of some Park staff. There have also been several instances of the rare Mountain gorillas being slaughtered during the unrest in the DRC, with militias killing the animals not only for their meat but possibly as an act of wanton vandalism.

In 1979, EU Member States unanimously adopted the EC Birds Directive as a response to concerns over the decline in bird populations resulting from pollution and loss of habitats as well as unsustainable use. Breaches of the Directive including the failure of some Member States to implement it properly have been raised in the European Parliament and cases have been referred to the European Court of Justice.

Key facts:

- CITES regulates international trade in specimens of wild animals. It was concluded in Washington D.C. in March 1973 and entered into force on 1 July 1975.
- INTERPOL, the International Criminal Police Organization was established in 1923. It has 190 member countries and its headquarters are in Lyon, France.

Wildlife Crime



Customs Officer with confiscated items © USFWS

Wildlife crime ranks alongside drug smuggling, human trafficking and illegal arms trade as one of the most lucrative activities funding organized crime and terrorism. It undermines legitimate activities such as eco-tourism or sustainable hunting, which provide long-term livelihoods and generate foreign exchange income.

Wildlife crime refers to acts committed contrary to national and international laws and regulations intended to protect natural resources and to manage their sustainable use. It poses a serious threat to the survival of migratory animals such as birds, elephants, big cats, antelopes, cetaceans, fish and marine turtles.

At the international level, wildlife crime involves violations of intergovernmental treaties such as the Convention on the Conservation of Migratory Species of Wild Animals (CMS) as well as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which regulates exports and imports of wildlife.

CMS COP Resolution 10.26 on minimizing the risk of poisoning to migratory birds established a Working Group to assess the extent of the problem and recommend actions to address it. Resolution 11.16 on the illegal killing, taking and trade of migratory birds established an intergovernmental task force to review existing guidelines and propose new ones if necessary. Resolution 11.24 adopted the Central Asian Mammal Initiative and its associated programme of work covering the

15 species. CMS also has a joint work programme with CITES, the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

African Elephants (*Loxodonta spp.*) In 2012, over 300 elephants were killed by poachers in a single incident for the illegal ivory trade. Overall, populations more than halved from 1980 to 1990, from 1.3 million to around 600,000.

Possibly tens of millions of individual birds are killed or trapped illegally across Mediterranean countries every year.

Saiga antelope (*Saiga spp.*) The population plummeted by more than 95 per cent from 1 million to 50,000 animals in the decade after the dissolution of the Soviet Union. Poaching for meat and horns has brought the Saiga closer to extinction.

In at least six of the eleven South American coastal countries, numerous communities regularly consume cetacean and sea turtle products, which is illegal in many of them.

Six species of sea turtle, numerous small cetacean species, dugongs and manatees are used illegally as 'marine bushmeat', threatening their long-term survival.

As part of its contribution to World Wildlife Day 2015, CMS produced a Fact Sheet on wildlife crime.



Key Examples of Wildlife Crime:

- Poaching, such as sport hunting of a fully protected species.
- Unauthorized netting or trapping of protected bird species for consumption or for illegal trade.
- Trade in fully protected species.
- Poisoning, illegal trade and hunting either outside the legal season or within protected areas.