



Wildlife diseases

Human activities and environmental changes are resulting in new infectious disease dynamics and new patterns favourable to pathogens spreading both geographically and between species as well as new opportunities for increasing genetic variability. Wildlife, farm animals and even humans fall victim to this increasingly common pattern. The international community as a whole must consider prevention and control of animal diseases in wildlife as crucial components of safeguarding of global animal and public health as well as biodiversity, while dealing with related agriculture and trade issues.

KEY FACTS

- Wildlife disease monitoring, prevention and control are crucial factors for safeguarding biodiversity and public and animal health worldwide.
- Animals in the wild are both targets of and a reservoir for pathogens capable of infecting domestic animals and human.
- Through its mandate to protect animal health and welfare, the OIE mandate also includes the protection of wildlife and biodiversity.

INTENSIFIED MOVEMENT OF PATHOGENS

A series of factors amplify the circulation of pathogenic agents geographically, within and between animal populations and between animals and humans. Most of these factors are man-made and the trend will intensify with climate change, globalisation, demographic evolution and linked new social behaviours. With increased 'traffic' on a global scale infectious agents have more opportunities to mix, transmit between different species and exchange genetic material that could combine into new killer pathogens.

Bush meat or other wet markets products are now common commodities. These combine with the development of other new social patterns in developed countries such as the taste for exotic pets, wild animal products or ecotourism.

Environmental conditions also largely influence pathogen dynamics and the crossing of the species barrier by pathogens. Domestic animal grazing areas abut or overlap with wildlife reserves leading to more contact and natural resource competition. Farmed wildlife (such as deer and elk) and wildlife national and international relocation constitute additional issues to consider. Wildlife endangered species can fall victim and get infected with various pathogens, including domestic animal diseases. Finally the encroachment of humans in to formerly remote habitats and environments leads to contact with new pathogens and the opportunity to move these pathogens from their historical ranges.

Wildlife and Biodiversity

The OIE has been actively involved in the surveillance and protection of wildlife and biodiversity since the 1980s. To analyse the interactions between animal health, public health and the environment and to address the protection of biodiversity worldwide, the OIE organised a Global Conference on Wildlife (2011), entitled '*Animal Health and Biodiversity – Preparing for the Future*'. This event was organised with the support of the Wildlife Conservation Society (WCS), in collaboration with FAO and the WHO.

Definitions

Wildlife means feral animals, captive wild animals and wild animals. Feral animal is an animal of a domesticated species that now lives without direct human supervision or control.

Captive wild animal is an animal that has a phenotype not significantly affected by human selection but that is captive or otherwise lives under direct human supervision or control, including zoo animals and pets.

Wild animal is an animal that has a phenotype unaffected by human selection and lives independent of direct human supervision or control.

ROLE AND RESPONSIBILITY OF THE OIE

Through its mandate, the OIE focuses on safeguarding animal health as well as biodiversity worldwide.

Animals in the wild are both targets of and a reservoir for pathogens capable of infecting domestic animals and humans: they can transmit diseases but may themselves fall victim. It is vital to improve our knowledge of the diseases present in wildlife and the ways in which they can be transmitted to and from domestic animals and humans, in order to devise appropriate control measures.

OIE activities with regards to wildlife encompass:

- The development of science-based standards on disease detection, prevention, and control as well as safe trade measures to harmonise the policies related to disease risks at the interfaces between wildlife, domestic animals, and humans;
- The surveillance of wildlife diseases and the notification of animal diseases provided by its 180 Member Countries through the global OIE information systems WAHIS and WAHIS-Wild;
- The support to Member Countries to strengthen their Veterinary Services to protect animal health including aspects related to wildlife and biodiversity, using if needed the OIE PVS Pathway and capacity-building activities directed to national Delegates and wildlife national Focal Points;
- The development of strategies and policies on wildlife and biodiversity through the work of the Scientific Commission, its Working Group on Wildlife as well as its network of Reference Centres.
- Each OIE Member Country nominates a national Focal Point for Wildlife under the responsibility of the national Delegate in order to support him on any action related to wildlife with OIE, including wildlife disease information, participation in OIE standard-setting activities and implementation of OIE standards. The OIE provides to all national Focal Points with permanent information on standard-setting and organises for them face to face seminars in all regions.



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IMPROVING KNOWLEDGE PROTECTION OF WILDLIFE

The same importance and thoroughness given to the surveillance and control of diseases in farm animals must apply to wildlife as global movements and exchange of pathogens within and between the two populations are increasing. Moreover, wild animals frequently serve as sentinels for diseases of domestic animals, and can play an important role in the control policies.

Surveillance and transparency: WAHIS and WAHIS-Wild



On becoming members of the OIE, countries undertake to declare their animal health situation. With the launching of the second version of **WAHIS** (World Animal Health Information System), the system allows Member Countries to complement compulsory information on OIE-listed diseases of wildlife, but also to notify, on a voluntary basis, specific non OIE-listed diseases in wildlife on the basis of a list of priority wildlife diseases and on a taxonomy of wildlife species based on universal latin names. The information collected on non OIE-listed disease is publicly accessible from **WAHIS-Wild** Interface.

AN INTERNATIONAL NETWORK OF EXPERTISE ON WILDLIFE

In response to the need for improved knowledge of diseases in wildlife as well as in domestic animals, the OIE is introducing wildlife species of epidemiological significance in each of the disease specific chapters in the *Terrestrial Code*.

To enable this effort, the OIE's information network is supported since 1994 by its international OIE *Working Group on Wildlife* composed of high level scientists with an expertise in this field.

The Group reviews wildlife disease occurrences in free living, farmed, rached and captive wildlife, which can have a significant impact on these populations as well as on domestic animals, including poultry and also on public health.

The network also relies on national Wildlife Focal Points appointed by Member Country Delegates for relaying information to the Working Group and to the OIE.

Several *Reference Laboratories* and *Collaborating Centres* spread across the globe make up part of the OIE global scientific expertise in Wildlife.

Cartography.

THE CHALLENGES FOR NATIONAL VETERINARY SERVICES

The national Veterinary Services have a crucial role to play in managing the problems associated with wildlife. However, since wildlife species span a broad taxonomic diversity and are generally free roaming, monitoring wild animal populations poses several challenges. National Veterinary Services, which are responsible for disease prevention and control measures need to evaluate their financial, human and infrastructure needs to meet this challenge.

- One priority is to focus on zones where the interface between wildlife and farm animals occurs and where as a result, risks of increased pathogen exchanges are high.
- A second priority could include geographic areas where important wildlife populations occur.

These goals can only be achieved through a global coordinated effort with countries supporting each other in strengthening their national Veterinary Services.

At the national level, agreements and information exchange between the national Veterinary Services and the managers of protected areas, as well as hunting and fishing associations, have proved very effective for early detection of diseases in wildlife.

Animals, humans and diseases

Over 60% of pathogens responsible of human diseases are of animal origin.

A majority of these pathogens are coming from wildlife.

West Nile Fever, Hendra and Nipah virus and many more diseases, including many zoonoses such as Ebola, are originally found in wildlife. All diseases for which wildlife act as a reservoir and have an impact on animal populations (wild and domestic) and humans or a combination of all, need extra attention from the international community.

Rabies

Rabies is a viral disease that affects the central nervous system of mammals, including humans. The rabies virus is present on all continents except Antarctica and some countries that meet the OIE requirements for rabies free status. In some areas, the disease is endemic with rabies present mainly in wild animal hosts, while in others, domestic animals still play a major role in rabies persistence:

- West European countries implementing effective wildlife rabies control programs that include oral vaccination campaigns using recombinant vaccines eliminated the disease in wildlife (e.g. Switzerland 1999; France 2000; Belgium and Luxembourg 2001 and the Czech Republic 2004);
- population control and/or oral vaccination programmes for feral and stray animals are being implemented in several countries where rabies is endemic in wildlife;
- efficient control is underway in North-American countries.

Ebola

Ebola hemorrhagic fever is a severe, often-fatal disease in humans and nonhuman primates (some monkeys, gorillas, and chimpanzees). Ebola is considered to be a zoonosis. The main natural reservoir is thought to be some species of bats native to tropical forests. Large die-offs of endangered species of non-human primates have been linked to infection with Ebola and infected animals can then serve as a source of infection of Ebola in humans. Human outbreaks of Ebola virus are most likely linked to hunting and handling of infected wildlife.

Wild Boar

Wild boar can serve as a reservoir for a number of diseases, including foot and mouth disease, pseudorabies, classical swine fever, African swine fever and brucellosis. These diseases can have a critical impact on the domestic swine sector and result in heavy production losses due to high mortality and slaughter for disease control purposes. Also, outbreaks in domestic pigs usually lead to the establishing of trade bans between partners.

See OIE video: Large game diseases

Fungus infection and ranaviruses in amphibians

Two types of amphibian diseases are of particular international importance – the fungal disease chytridiomycosis and diseases caused by ranaviruses. Both are associated with the critical decline of amphibian populations that is occurring globally. Chytridiomycosis has become epizootic in wild amphibians, resulting in loss of amphibian populations across the five continents. The scale of the international trade in amphibians is considerable – animals are transported as a food source, for the pet, for additions to zoological institutions and for bio-control purposes – and this trade constitutes a predisposing factor to unchecked spread of diseases.

In 2008, the OIE World Assembly of Delegates decided that these two amphibian diseases should be listed compelling Members to notify outbreaks to the OIE. Standards for international trade in amphibians were included to the 2008 OIE *Aquatic Code*, regarding these two diseases.

For more information

- [OIE Portal on Biodiversity](#)
- [Training Manual on wildlife diseases and surveillance](#)
- [Health Risk Analysis in Wild Animal Translocations](#)
- [WAHIS-Wild](#)



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