

Lessons Learned – Plan for co-ordinated action for disease outbreaks in waterbirds

The challenge

Wildlife diseases are a growing problem in wetlands throughout the world and can cause large-scale mortality events in wild birds. Several different causes, such as bacterial or viral infection, or poisoning from heavy metals can be the culprits for such events. Two of the major diseases affecting bird populations are avian influenza and avian botulism. The first is a highly contagious bird disease caused by viruses with a low tolerance to high temperatures, and thus avian influenza (or bird flu) diseases usually occur during the winter months. On the other hand, avian botulism is caused by a toxin produced by a bacterium that is very common in wetlands, which can be harmful only under specific conditions, with the largest outbreaks occurring during the summer, due to high temperatures.

Recently, infectious diseases, such as avian influenza, have affected the South-eastern European populations of the Dalmatian pelican (DP), whose largest colony on Earth is located at Lesser Prespa Lake, alongside significant populations of many other rare waterbirds. In March-April 2015, several cases of bird flu were recorded among DPs in breeding colonies in Bulgaria, Romania and Russia, with a total loss of 167 DPs, while in February-March 2021, deaths of DPs attributed to avian influenza were recorded for the first time in Greece, reaching 73 in the transboundary Prespa area – though almost all of these were located on and around the nesting islands in the Greek side of Lesser Prespa Lake – and a total of 183 in the country.

Despite the existing laws and regulations relating to diseases occurring in wild birds, until recently there was no adequately detailed plan defining the actions that should be taken and their sequence, as well as the necessary co-ordination between the various users of the wetland on a local level in the event of a disease outbreak, or prior to it. Moreover, the veterinary authorities are located far away from Prespa and are not adequately staffed in order to respond immediately and be physically present in cases of emergency. In addition, in the event of a disease outbreak there is always the possibility of secondary threats to pelicans or other waterbirds, such as persecution, destruction of colonies or other unpredictable actions caused by panic and confusion.

The solution

Being proactive in dealing with environmental issues that may arise in Prespa, and in the context of the LIFE Prespa Waterbirds project <https://www.prespawaterbirds.gr/>, in 2018 the SPP prepared a plan for co-ordinated action in the event of a disease outbreak in waterbirds at Prespa. The aim of the plan is to ensure effective collaboration between local agencies, to co-ordinate their efforts, and to assist local veterinary authorities in case of a zoonotic disease that may affect the populations of pelicans and/or other Prespa waterbirds. This plan includes all the actions and measures that must be taken proactively, but also in the case of a disease outbreak, taking into consideration both national and international legislation and regulations, as well as the national, regional and local particularities.

The material, produced in both electronic and printed form consists of:

1. A booklet entitled, “Plan for co-ordinated action”, namely the basic guideline document where all precautionary actions that need to be taken, as well as during the event of a disease outbreak in pelicans or other waterbirds in Prespa, are described. Amongst others, this guideline document entails a local contingency plan, a standardised protocol for the reporting of incidences and a wardening plan for the wetland.
2. A second booklet entitled, “General information and answers to Frequently Asked Questions (FAQs)”, in which a large array of information is given on the most common and severe diseases affecting waterbirds (i.e., avian influenza and avian botulism) in the form of FAQs.
3. A leaflet entitled, “What to do in cases of mass mortality of wild birds in Prespa”, in which basic but targeted information is given in a brief form suitable for a leaflet.

All three documents were compiled with contributions from the local veterinary authorities (Department of Veterinary Medicine of the Directorate of Rural Economy and Veterinary Medicine in Florina), the Prespa National Park Management Body (GR) and the Municipality of Prespa, namely the main relevant local and regional actors. The first drafts of these documents were sent to an Ornithological Expert Panel for comments and cross-checking.

The panel had been established in the earlier stages of the project and consisted of multidisciplinary experts – three researchers in avian diseases and two ornithologists/conservationists.

The material was then distributed to many local and regional stakeholders to act as an informative tool and make them aware of the steps that should be followed in the event of a wild bird disease outbreak in their area. Furthermore, it was distributed to national stakeholders, including management bodies of protected areas in other parts of Greece, as well as to other environmental NGOs, in the hope that it would serve as a useful tool for all wetlands hosting large numbers of waterbirds. In addition, the English version of the material was shared with stakeholders in the transboundary Prespa area.

A separate document was also prepared for the media: The Media Toolkit, composed of an assortment of texts with information on the importance of Prespa and pelicans, the role of SPP, the LIFE Prespa Waterbirds project, and on the two major avian diseases, was intended to serve as readily available material for the media in the event of an incident of mass mortality amongst wild birds in Prespa.

Lessons learned

The mass deaths of DPs recorded in several Greek wetlands in winter/spring 2021, which were caused by the highly pathogenic strain H5N8 of avian influenza according to laboratory analyses, highlighted the value of the aforementioned action. Furthermore, the SPP's long-established PELECANUS GROUP network, together with steady co-operation with the 12 management bodies for protected areas in Greece hosting pelicans, close relations with local and regional authorities and of course PrespaNet, all played an important catalytic role in the quick dissemination and exchange of information and eventually the effective management of the outbreak.

The phenomenon occurred in February and March 2021 in various wetlands in northern Greece, including Lesser Prespa Lake, but also the adjacent lakes of Kastoria and Cheimaditida (also a DP breeding colony), as well as Lake Kerkini in north-central Macedonia, another DP breeding colony. In total 183 DPs were found dead, with the highest numbers recorded, as expected, at the species' largest colony at Lesser Prespa Lake – 70 fatalities on and around the nesting islands in Greek Prespa and another 3 on the Albanian side of Lesser Prespa Lake, near the border with Greece.

In collaboration with the Prespa National Park Management Body and the local veterinary authorities, the SPP activated the established plan for co-ordinated action and monitored the situation closely, following the described processes. All contacts with the remote veterinary authorities were performed quickly and effectively, as the communication that had already been established facilitated the procedures, while the SPP also notified its PrespaNet partners to be vigilant.

There are some important lessons we have learned along the way:

- Taking proactive steps is crucial, especially when it comes to issues that can arise without warning. In this sense, the development of contact networks with local stakeholders and authorities in “peacetime”, i.e., before an outbreak, can ensure the effective co-operation of local actors in the event of a disease outbreak in wild birds.
- Care should be taken in the management of the public disclosure of the event, mainly to local stakeholders, to avoid possible secondary threats to waterbirds, such as persecution.
- The presentation of the plan and FAQs at a number of related workshops with key local stakeholders, regional and national authorities and NGOs, and with key transboundary stakeholders was very beneficial. This was proven in practice during the 2021 bird flu outbreak, when the exchange and sharing of news and knowledge between representatives from several wetlands in Greece and veterinarians was proven very efficient on the basis of well-established relationships and channels of communication.
- As the bird flu outbreak in 2021 took place during the breeding period, it was not possible to approach pelican colonies to record dead pelicans with accuracy, as more disturbance would be caused. The use of the SPP's drone to periodically take photos during the outbreak proved very effective, covering all the area and making accurate counts possible.

[Associated documents \(in English\)](#)

[Plan for co-ordinated action](#)

[General information and answers to Frequently Asked Questions \(FAQs\)](#)

[What to do in cases of mass mortality of wild birds in Prespa](#)