



## **VETERINARY PROTOCOL**

**Established protocol for examining and using therapy to treat  
injured or dead birds of prey**



**Compiled by:**

**Dr. Endre Sós, Budapest Zoo and Botanical Garden**



**Budapest, 2014**

**Last update: 23 October, 2017**

---

**Prepared within the framework of the *HELICON – Conservation of Imperial Eagles  
in Hungary (LIFE10NAT/HU/019)* project funded by the European Union -**

***[www.imperialeagle.hu](http://www.imperialeagle.hu)***



This protocol is part of the Procedure Protocol Package of the Anti-Poisoning Working Group. It is complemented by the “Field Investigation Protocol – if bird crime is suspected (part 3/1)” (available at: [parlagisas.hu](http://parlagisas.hu)) and the “Police Protocol - if bird crime is suspected (part 3/3)” (available only for the police on the [police.hu](http://police.hu) intranet)

## I. Searching for birds and providing first-aid

1. “Field Investigation Protocol – Procedure Protocol Package of the Anti-Poisoning Working Group of the Hungarian Raptor Conservation Council (part 3/1)” should be followed during searching for birds and documenting the crime scene.
2. Should suspicion of crime committed against birds or the involvement of strictly protected species arise –if not done yet- the competent national park directorate (contacts can be found in the Field Protocol) and/or the hotline of the Hungarian Ornithological and Nature Conservation Society has to be informed (20/251-4404, [mergezsas@mme.hu](mailto:mergezsas@mme.hu)).
3. Nature Conservation and Veterinary Directorate of the Budapest ZOO coordinates the veterinary tasks within the programme, and if needed, it also follows the pre-set steps of the protocol adopted by the whole programme. Consultation with the veterinarians of the Budapest ZOO via phone is advised in any uncertain cases: Dr. Endre Sós (20/559-3150), Dr. Viktória Koroknai (30/504-5451), Dr. Márton Hoitsy (30/231-9022).
4. It needs to be clarified immediately what species and how many individuals (protected and/or strictly protected, hunted species) are involved, and also whether those are dead or alive.
5. In case of live birds, time is crucial; it is of high importance that birds reach one of the members of the **National Veterinary Network (NVN)** within half an hour if possible, but not later than two hours. The list of member veterinarians and rescue stations that work by uniform, technical principles is available on the [www.parlagisas.hu](http://www.parlagisas.hu) website under the „downloads” as an annex of this protocol.
6. A member of the NVN will treat the bird as necessary, and then it consults with the Budapest ZOO about the further short-term fate of it (on-site or regional accommodation/transporting to the Budapest ZOO/immediate release).

## II. Necessary actions with live birds

1. In case of a live bird, proper medical treatment within two hours should be sought, basic medical care should be performed by one of the vets of the NVN (in emergency of course, other veterinarians also can be involved if the protocol is followed).
2. During transportation it should be kept in mind that the final goal is to release the bird, therefore any potential source of danger should be avoided (primarily wings, legs, head and feathers require special care). Moreover, the transport must be implemented in a well-ventilated (but not drafty) device; keeping the bird in darkness, avoiding overheating and the as silent environment as possible are also crucial factors.
3. When a bird is accepted in the NVN or the Budapest ZOO, a uniform take-over declaration form has to be filled, including the most important information regarding the bird (species name, sex, age if known, place and date of discovery, name and contacts of the person who brought it in).
4. In case of symptoms indicating poisoning (cramped legs, eye-rolling, vomiting, greenish diarrhea, bradycardia) or it is suspected (involvement of more birds at once, prepared bait nearby) the veterinarian of the NVN must use 1mg per kg bodyweight atropine, which may be repeated in every twelve hours.
5. Stabilising the state of the bird is of utmost importance (liquid and oxygen therapy, giving 50ml per kg bodyweight dose of Ringer-lactate), liquid supplement can be done by (in any given case it is up to the competency of the veterinarian): intravenous, intraosseus, peroral and subcutaneous infusion. It is absolutely clear that the fastest and most effective routes are the intravenous and intraosseus ones. It is advised to use the medial metatarsal vein or the ulnar vein; for the intraosseal application the most suitable anatomic locations are the ulna or tibiotarsus.
6. The next step is doing diagnostic work as fast as possible, when taking VD and LL radiographs attention should be paid to the presence of metal shadows and fractures as well as to the size and density of certain internal organs (especially the kidneys and the liver). The respiratory system should be evaluated separately. Regarding eagles, it is recommended to follow this step in every case in order to diagnose former shootings or lead pellets/shrapnel trapped in the stomach, which cause poisoning.
7. When poisoning is suspected or in any other justified cases (i.e. if liver problems suspected) blood samples need to be taken for further haematological and biochemical examinations (consultation with the veterinarians of the Budapest ZOO). It is always advised in cases of eagles in order to diagnose acute lead poisoning.

8. If organophosphate or insecticide carbamate poisoning is suspected blood must be drawn, using heparinised or serum separation tubes. Within 2 hours, the samples must be sent to such laboratories, which are able to measure the cholinesterase enzyme level with the Ellman method. If the 2 hours time frame can not be kept, the serum sample can be stored at 4°C for 24 hours, which will not alter the results.
9. After that, (until test results arrive and get evaluated), the bird should be kept in a quiet and possibly dark place. Tailor-made feeding plan is required for every individual, which has to contain indication of forced feeding (if necessary) or the need for easily digestible food.
10. Budapest ZOO or any given NVN member (if it can host the sick bird for a few days or weeks) has to consult with the competent national park directorate about the future fate of the bird (it may include the length and the way of its rehabilitation, the possible location and time of its release, or even the place of its extended accommodation).
11. During the whole process, traceability is important, therefore individual marking is required (aluminium or colour ring/ microchip, even telemetric device depending on the given circumstances).

### **Necessary actions with dead birds**

1. Proper storage of the dead birds is very important in order to discover other causes of death besides poisoning. Best to cool the carcass at 4°C above zero for a short period (maximum one or two days) to avoid autolysis that would prevent further examinations otherwise.
2. Provision shall be made to mark every individual in the very beginning, preferably with a foot slip (preferred form is available at: [parlagisas.hu](http://parlagisas.hu)) or a ring. If possible, in case of strictly protected birds, microchipping should be done as well.
3. If not possible to transfer the carcass to the lab within two days, then it has to be kept in a freezer at 18°C below zero.
4. Carcasses should be checked externally looking for signs of poisoning (leg position, clenched talons, contamination around the gape or the cloaca), but attention should also be paid to traumatic injuries (bullet wounds, collision injuries) or signs of electrocution.
5. Two way (LL, VD) radiographs have to be taken to detect fractures and/or metal shadows.
6. Carcasses, possessing prior diagnosis and a detailed accompanying document, need to be taken to the Veterinary Diagnostic Directorate of the National Food Chain Office (1149 Budapest, Tábornok u. 2., Tel: 1/460-6300), where post-mortem, histopathological and toxicological examinations will be carried out.
7. In case of criminal offence, the police need to transport the carcass through the official veterinarian and order examinations from the Veterinary Diagnostic Directorate of the National Food Chain Office (the official veterinarian is the sender, the police covers the costs).

8. In other cases involving strictly protected bird species, the competent national park directorate may order examinations, therefore further consultation needs to be made with them (examination order forms can only be accepted by the Veterinary Diagnostic Directorate of the National Food Chain Office, if signed by the customer).