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MINIMIZING THE RISK OF POISONING TO MIGRATORY BIRDS

(Submitted by BirdLife International)

This document highlights the urgent need for guidance from CMS on minimizing poisoning of birds

Background

Poisoning of wildlife is a significant and avoidable cause of mortality for a variety of wildlife across a range of taxa and geographic areas. Species affected include a significant number listed in the Appendices to the Convention on Migratory Species. A selection of examples of poisoning follows.

Poison baits associated with predator control

In Europe, poisoning, particularly of birds of prey, is considered the most important issue regarding illegal killing of birds due to its high conservation impact on a number of threatened species[i]. There are serious concerns that following a decrease in the last decades, poison use as an illegal method of predator control is increasing in at least nine European countries and already has a negative impact on the populations of a number of threatened migratory bird species.

Illegal poisoning is confirmed to be among the most important direct threats in Europe to the Spanish imperial eagle *Aquila adalbertii*, Eastern imperial eagle *Aquila heliaca*[ii], red kite *Milvus milvus*[iii], and Egyptian vulture *Neophron percnopterus*[iv]. Poison baits have been identified as the primary limiting factor in the reintroduced populations of red kites in northern Scotland[v] and of the UK golden eagle population[vi].

In Africa, poisoning is also a major concern. In April 2004, 187 vultures died as a result of Furadan (carbofuran) poisoning near Athi River, Kenya. The hardest hit species were White-backed vultures *Gyps africanus*, but Rueppell's *Gyps rueppellii* and Lappet-faced vultures *Torgos tracheliotos* were also killed. The targets were believed to be lions which had killed cattle, not vultures, but this graphically illustrates the dangerously non-specific nature of such poisons. Vultures in particular can be attracted over long distances by the sight of others descending on carcasses, which may explain why a recent survey found that numbers of

African White-backed, Rueppell's and Hooded Vultures *Necrosyrtes monachus* within Kenya's Masai Mara National Park had fallen by up to 60 percent over recent decades.

Deliberate poisoning of birds as a method of harvesting for human consumption

Poisoned baits are used in some areas (e.g. Kenya) as a means to harvest waterbirds for consumption. A study in Kenya found use of carbofuran (Furadan) baits resulted in the deliberate poisoning of over 8,000 birds, more than 3,000 of which, of 32 species were killed by the poison, including significant numbers of black-tailed godwit *Limosa limosa*, wood sandpiper *Tringa glareola*, African Openbill *Anastomous lamelligerus*, Abdim's stork *Ciconia abdimii* and glossy ibis *Plegadis falcinellus*[vii].

Secondary poisoning by veterinary products

The deleterious impacts of poisons on populations of conservation concern can extend to a wide variety of different types of poison. For example, diclofenac, used as a veterinary product in the treatment of cattle in the Indian subcontinent, has caused massive population crashes in Oriental White-backed *Gyps bengalensis*, Slender-billed and Long-billed vultures (*Gyps tenuirostris* and *Gyps indicus)* of up to 99.9 percent in just 20 years[viii]. These three formerly widespread and hugely numerous species, which feed on the carcasses of treated cattle, are now listed as Critically Endangered by IUCN.

Lead poisoning

Other more dispersive forms of poisoning have the potential to lead to deleterious impacts on a wide range of species. For example, lead poisoning as a result of hunting ammunition has been identified in at least 63 species of bird[ix].

Organochlorine pesticides

Some Black Stork *Ciconia nigra* eggs (in Latvia and Estonia) contain notable amounts of DDT residues, the origin of which is probably the African wintering grounds. Organochlorine and other chemical pollutants can be widespread within food chains, especially in environments in which there has been a long history of industrial pollution.[x] The effects of organocholorine pesticides used to be geographically more widespread, affecting a range of species, but particularly birds of prey such as the Peregrine *Falco peregrinus*. However, following effective policy responses, this issue has been addressed in North America and the UK, allowing significant recoveries of affected raptor populations[xi]. This lesson is relevant not just to organochlorine pesticides, but to all poisoning – poisoning issues are tractable if effective policy instruments are utilized.

These are only a small number of the better understood examples of the impacts of poisoning on wildlife. They provided a small snapshot of the range of substances and types of poisoning, the range of species affected and the global nature of the problem. A huge range of species are affected over every continent. Without concerted action to minimize poisoning of migratory species, many more populations and potentially species, will be severely affected and hence it will be impossible to achieve international biodiversity targets. Given the inherently non-selective nature of poisoning, in some instances there may also be significant human health concerns especially where there is sub-lethal poisoning of those species which are eaten by humans.

However, it should be noted that the use of poisons may be in some cases be necessary, and even essential, to recover natural habitats and control or eradicate invasive alien species and it is important that the use of certain chemicals, such as brodifacoum, remain permitted for these very specific cases under strict conditions.

Types of poisoning

There are a variety of different types of poisoning, each with its own distinct (but often overlapping) characteristics. Broadly, poisoning can be divided into eight main categories.

Poison baits	Primarily used illegally as a means to control predators, poison baits are also exposed to scavenging birds and cause primary (through direct consumption) or secondary poisoning.
Rodenticides	Primarily used in agricultural, industrial and domestic rodent control campaigns. Improper use or disposal of rodent carcasses may cause unintentional mortality to other wildlife.
Heavy metals, notably lead, mercury and cadmium	Heavy metals enter the food chain primarily through industrial pollution and their accumulation in sediments, water and biomass. They can both have direct toxic effects and bio-accumulate up food chains with a range of physiological consequences, especially on reproduction. Lead shot is a specific source of lead contamination associated with hunting.
Aquatic poisons	These can be very varied. Botulism and cyanobacteria toxins affect wetlands, while nitrates in ground water and irrigation have a range of ecological consequences for agricultural areas.
Agrochemicals	These can include seed-dressing pesticides, or field treatments such as organophosphates and carbamates. They are a particular concern for granivorous species, which can be unintended victims. Other chemicals which are not currently considered by the legislation as highly toxic, but may lead to collateral and yet poorly studied side effects, are included in this wide and diverse grouping.
Veterinary products	Following increased knowledge of the side effects of diclofenac (which is poisonous to vultures feeding on treated carcasses), there is a need to investigate further the potential effects of the use/misuse of veterinary products.
Environmental health and weed/pest controls	Indoor spraying of DDT and other malaria control programmes, bilharzia control, spraying of avicides for Quelea *Quelea quelea* control, control of aquatic weeds (especially invasive ones) all need further investigation.
Persistent Organic Pollutants (POPs)	These pollutants remain a significant concern in some areas. They can bio-accumulate and are a particular concern among marine species, raptors and piscivorous species.

The relative importance of each of these will vary between regions and taxa. There will also be variation in the mechanisms, underlying drivers and hence most suitable mitigating measures between each category and potentially between regions. For example, the use of poison baits generally is a deliberate, criminal action resulting in primary poisoning,

particularly of birds of prey. In contrast, while birds of prey are also a major group affected by rodenticides, this form of poisoning is more often the result of accidental misuse during legal activities, leading to secondary poisoning. Given these differences, it is therefore likely that different approaches (for example, voluntary/educational versus regulatory) will be most effective.

There have been notable past successes in restricting the use of poisons through regulation and these have lead to recovery of negatively affected species. The recovery of Peregrines in the UK and North America, and of the North American Bald Eagle *Haliaeetus leucocephalus,* from the consequences of chronic impacts of DDT poisoning have been well documented conservation success stories[xii]. They demonstrate that it is possible - through wise application of policies and other conservation measures - to restore to favourable conservation status species which have been negatively impacted as a result of poisoning[xiii].

European Conference on Illegal Killing of Birds, Larnaca, Cyprus, July 2011-09-16

The Bern Convention on the Conservation of European Wildlife and Natural Habitats held this conference on illegal killing of birds which resulted in a recommendation "to take forward the issue of poisoning of migratory species in a global context including lead poisoning, to Conferences or Meetings of Parties of CMS and respective agreements". A resolution for adoption at CMS CoP 10 is intended to fulfil this and to broaden the scope to include aspects of poisoning not directly considered during the Larnaca conference.

Recommendation

Draft Resolution UNEP/CMS/Res.10.26 suggests the establishment of a working group to assess suitable responses to address poisoning and highlight the significant remaining knowledge gaps. The intention would be for this working group to include a range of national representatives, experts and stakeholders to allow for diverse views to be discussed and the most universally accepted conclusions to be reached. The working group would ideally be given the task of bringing its conclusions and recommendation for substantive action to address poisoning to CMS COP11 in 2014.

Species of birds listed on Appendix I to Convention on Migratory Species likely to be affected by poisoning

	Poison baits	Rodenticides	Heavy metals, including lead, mercury & cadmium	Aquatic poisons	Agrochemicals	POPs
Spheniscus humboldti						**X**
Diomedea albatrus			**X**			**X**
Diomedea amsterdamensis			**X**			**X**
Pterodroma atrata						**X**
Pterodroma cahow						**X**
Pterodroma phaeopygia						**X**
Pterodroma sandwichensis						**X**
Puffinus creatopus						**X**
Puffinus mauretanicus						**X**
Pelecanoides garnotii						**X**
Pelecanus crispus				**X**		**X**
Pelecanus onocrotalus (only Palearctic populations)				**X**		**X**
Ardeola idae				**X**		**X**
Egretta eulophotes				**X**		**X**
Gorsachius goisagi				**X**		**X**
Ciconia boyciana				**X**		**X**
Geronticus eremita				**X**		
Platalea minor				**X**		
Phoenicopterus andinus				**X**		
Phoenicopterus jamesi			**X**	**X**		
Anser cygnoides			**X**	**X**		
Anser erythropus			**X**	**X**		
Branta ruficollis			**X**	**X**		
Chloephaga rubidiceps			**X**	**X**		
Anas formosa			**X**	**X**		
Marmaronetta angustirostris			**X**	**X**		
Aythya baeri			**X**	**X**		
Aythya nyroca			**X**	**X**		

	Poison baits	Rodenticides	Heavy metals, including lead, mercury & cadmium	Aquatic poisons	Agrochemicals	POPs
Polysticta stelleri			X			
Oxyura leucocephala			X	X		
Haliaeetus albicilla	X	X	X			X
Haliaeetus leucoryphus	X	X	X			X
Haliaeetus pelagicus	X	X	X			X
Aquila clanga	X	X	X			X
Aquila heliaca	X	X	X			X
Aquila adalberti	X	X	X			X
Neophron percnopterus	X	X	X			X
Falco naumanni	X	X	X		X	X
Grus japonensis			X	X	X	
Grus leucogeranus			X	X	X	
Grus monacha			X	X	X	
Grus nigricollis			X	X	X	
Grus vipio			X	X	X	
Sarothrura ayresi			X			
Chlamydotis undulata (only Northwest African populations)			X			
Otis tarda (Middle-European population)		X	X		X	
Vanellus gregarius			X	X		
Calidris canutus rufa			X	X		
Numenius borealis			X	X		
Numenius tenuirostris			X	X		
Tringa guttifer			X	X		
Eurynorhynchus pygmeus			X	X		
Tryngites subruficollis			X	X		
Larus atlanticus	X	X	X	X		X
Larus audouinii	X	X	X	X		X
Larus leucophthalmus	X	X	X	X		X
Larus relictus	X	X	X	X		X
Larus saundersi	X	X	X	X		X

	Poison baits	Rodenticides	Heavy metals, including lead, mercury & cadmium	Aquatic poisons	Agrochemicals	POPs
Sterna bernsteini			**X**	**X**		**X**
Sterna lorata			**X**	**X**		**X**
Synthliboramphus wumizusume						**X**
Brotogeris pyrrhopterus						
Alectrurus risora						
Alectrurus tricolor						
Hirundo atrocaerulea					**X**	
Acrocephalus griseldis				**X**		
Acrocephalus paludicola				**X**		
Acrocephalus sorghophilus				**X**		
Zoothera guttata				**X**	**X**	
Emberiza aureola					**X**	
Sporophila zelichi					**X**	
Sporophila cinnamomea					**X**	
Sporophila hypochroma					**X**	
Sporophila palustris					**X**	
Dendroica kirtlandii					**X**	
Dendroica cerulea					**X**	
Agelaius flavus					**X**	
Serinus syriacus					**X**	

NB. This table is based on published scientific evidence and expert opinion. It does not imply there are published scientific observations in each case, but is designed only to highlight the potential range of species impacted.

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