



NATIONAL ANTI-POISONING ROAD MAP FOR CROATIA

NATIONAL ANTI-POISONING WORKING GROUP



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The National Anti-poisoning Road Map of Croatia was prepared by the National Anti-poison Working Group within the framework of the Balkan Anti-Poisoning Project (BAPP), an integral part of the Mediterranean Anti-Poisoning Project – MAPP (Fighting poisoning – reducing vulture (and other scavengers and predators) mortality due to the use of poison baits and lead ammunition across the Mediterranean), funded by the MAVA Foundation and coordinated by Vulture Conservation Foundation (VCF). This Road Map is purposed to serve as a national strategy which will facilitate the struggle of reducing and preventing wildlife poisoning in Croatia, corresponding to Activity 4.5 of the MAPP project.



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INTRODUCTION

Use of poison-baits in the countryside is one of the most widely used predator eradication methods worldwide (Márquez, et al. 2012) and is a significant threat to biodiversity. The illegal use of poison in the environment is considered one of the most important issues regarding illegal killing of birds due to the serious conservation impacts it has on numerous species, especially species which primarily feed on carrion such as vultures (BirdLife, 2011). Very large numbers of birds are killed annually as a result of deliberate misuse or otherwise illegal use of poisonous substances (Brochet et al. 2015; Bodega Zugasti, D 2014; Birdcrime, RSPB). This unnecessary mortality can severely affect the conservation status of vulnerable species, including species protected under national, EU and wider international law. In addition, poison-baits suppose a serious impact on carnivore mammals (Virgós & Travaini 2005), by causing population decline and/or regional/national extinction of some species of bears, lynxes, wolves, mustelids or wild cats (Council of Europe 1993; Breitenmosser 1998; Lozano & Malo 2012; Ripple et al. 2014). Indiscriminate use of poison-baits also presents a risk to other wildlife, working animals (shepherd and hunting dogs), pets and human health, with potentially lethal consequences.

Use of poison-baits commonly involves lacing a food item in a toxic substance, normally phytosanitary products like insecticides, rodenticides, fungicides, herbicides or molluscicides. The prepared bait is left in a spot accessible to the target animals and often to numerous other non-target species, which are then victims of unintentional poisoning. The illegal use of poison baits for the extermination of vermin or pest species, i.e., those species that conflict with human activities by causing damages to crop and livestock (Howard 1962), has long been common practice in many parts of rural Europe (Graham et al. 2005; Ntemiti et al. 2018).

Poison is recognized as the single most important threat to vultures in the Balkans, and has contributed to the regional extinction or severe depletion of all the species in the region. The vulture populations of the Balkan Peninsula and surrounding regions reached a critical conservation status at the end of the 20th and beginning of the 21st century mainly because of the use of poisonous substances in the environment, despite several valiant attempts to save and protect the last remaining populations (Pantovic & Andevski 2018). At present this practice is illegal in Europe, including the Balkans, but it is still in use by local people as a quick and affordable “solution” for resolving the conflicts with predators and other wildlife.

1. BACKGROUND

1.1 History of poison use in Croatia

The first known poisoning campaigns in Croatia started after the II World War, but were present for years before, as a legal method that hunters used in order to extirpate mammalian predators, primarily wolves and foxes. Strychnine was commonly used in an attempt to resolve the issue of wolf predation on sheep and other livestock. Although the use of poison baits for predator control was banned in 1972, the practice never stopped among the local livestock breeders. The baits are usually placed in an attempt to eliminate stray dogs, wolf packs, jackals, bears or wild boars, which may inflict major damages to the shepherds and farmers.

A good example of the extent of wildlife poisoning in Croatia is Gorski kotar (small part of Croatia – 1.273 sq.km), where during the 40-year period (1946-1985) 26 brown bears and 177 wolfs were found poisoned, while during 1961- 1972 3.6 wolves/year were poisoned (Frković in Sušić 2000). These poisoning incidents were a part of the governmental sponsored poisoning campaigns, which started after the II World War, similar to other countries in the region.

1.2 Vultures

There are approximately 110 breeding pairs of griffon vultures in Croatia. Until mid-20th century Croatia, when Black Vulture went extinct in Croatia, there were three breeding vulture species in Croatia. In late 20th century Egyptian Vulture went extinct.

Griffon Vulture used to be widespread along the Croatian coast and it was also regular in some part of continental Croatia at least until end of 19th century. Throughout 20th century its breeding area in Croatia was constantly shrinking and in late 20th century it remained only in Kvarner area. Reasons behind population decline and breeding area decline are loss of traditional farming practices and widespread poisoning, especially after Second World War. Kvarner population of Griffon Vultures was spared from extinction mostly due to the fact that poisoning was not widespread there as Kvarner islands were predator free. After strong conservation effort started in late 1980s Griffon Vulture population was increasing till 2013 when 140 breeding pairs were recorded. Since then there is decline and currently there is approximately 110 breeding pairs in Kvarner area.

1.3 Aim and objectives

This document aims to be the baseline for the official Croatian National Anti-poisoning Plan, which will further be developed by National Anti-poisoning Working Group. Currently, there is no any legal obligation, either through national legal acts or international multi-lateral environmental agreements, to officially endorse National Anti-Poisoning Action Plan, but this document also will give potential paths for that.

This document will serve to all included stakeholders for their own future strategies, plans and programs, in order to give their contribution towards preventing and fight against wildlife poisoning.

Overall aim of the document is to structure future activities to reach tangible and measurable results in decrease of wildlife poisoning.

1.4 Methods

National Meeting of relevant stakeholders

On May 29th 2018 in Forum Zagreb in Zagreb, the Association Biom organized the first national meeting of relevant stakeholders to address poisoning incidents in the country within the Balkan Anti-Poisoning Project. This meeting was the first activity towards the implementation of the project which aims to combat the illegal use of poison, strengthen the capacities of relevant institutions, and raise the public awareness on this topic. Poisoning is recognized as one of the main threats for the survival of the vultures in Croatia, and potentially for other important birds and other animals, so the need for this kind of project was essential.

National Anti-Poisoning Working Group (NAWG)

- describe the purpose, function, structure and details related to work dynamics of the NAWG in the country; has the participation in the group been officially formalized and endorsed by the government – if not, what are the plans; describe the main responsibilities of each organization in the group (division of labor);

Coordination

- describe in short the coordination process of the NAWG – which entity/entities (governmental institution, NGO) coordinated the work and how; role of VCF in the process;

2. LEGAL FRAMEWORK

2.1 National legislation

Nature Protection Act

General framework for the protection of wild birds in Croatia is established through the provisions of the Nature Protection Act Official Gazette of the Republic of Croatia (hereinafter: OG) 80/13, 15/18. Nature Protection Act transposes the Birds Directive into Croatian legal system.

Nature Protection Act prohibits use of all means, arrangements or methods that can cause the local disappearance or a significant decline in population numbers of a species.

In particular, use of poisons and poisoned baits is prohibited (Article 66) and is an infraction punishable by fine not to exceed 500,000.00 HRK for legal entity or 50,000.00 HRK for natural persons (Article 227).

Deliberate killing or capture by any method, if not in accordance with the Nature protection Act, is also an infraction punishable by fine not to exceed 200,000.00 HRK for legal entity or 30,000.00 HRK for natural persons (Article 228).

Croatian Agency for the Environment and Nature operates "Injury and Mortality reporting system for the strictly protected species". Agency is responsible for the development of reporting protocols. (Article 7 of the Ordinance on Strictly Protected Species OG 144/13, 73/16).

Implementation bodies: Ministry of Environment and Energy (Directorate for Nature protection and Directorate for Inspectional Affairs), Croatian Agency for the Environment and Nature

Hunting Act

Hunting Act OG 140/05, 75/09, 153/09, 14/14, 21/16, 41/16, 67/16, 62/17 prohibits large-scale or non-selective means and methods, including poison, for hunting game (Article 64) which are punishable by fine not to exceed 100,000.00 HRK (Article 96).

Use of lead shot in wetlands is banned (Article 10 of the Ordinance on the use of hunting weapons and charges OG 68/06, 66/10.). However, there is no penalty laid down for contravention of the ban (perfunctory provision).

Implementation bodies: Ministry of Agriculture (Directorate for Forestry, Hunting and Wood Industry)

Criminal Code

Destruction of protected natural values, game poaching and killing or torture of animals are felonies according to the Croatian Criminal Code OG 125/11, 144/12, 56/15, 61/15, 101/17.

According to the Article 200 paragraph 1 of the Criminal Code whoever, contrary to regulations, kills or destroys a specimen of a protected species of an animal shall be punished by imprisonment not exceeding three years. According to the paragraph 2 of the same Article whoever commits the same offence against a strictly protected wild species of an animal shall be punished by imprisonment from six months to five years. However, paragraph 4 of the same Article states there is no criminal offence if the number of individuals is "insignificant". **It is not stated what is significant number so experts from former Croatian Agency for Environment and Nature acted according to good practice which states that increase in regular mortality resulting with 1% of population loss is considered as significant.**

According to the Article 204 paragraph 2 of the Criminal Code whoever hunts game in such a manner or by such means that cause their massive destruction or by using prohibited accessory equipment, shall be punished by imprisonment not exceeding three years.

According to the Article 205 of the Criminal Code whoever kills an animal without a justified reason or severely maltreats it, inflicts unnecessary pain on it or puts it through unnecessary suffering, shall be punished by imprisonment not exceeding one year, or two years if the offence is committed out of greed.

According to the Article 215 of the Criminal Code whoever endangers the life or limb or property of substantial value by fire, flood, explosive, poison or poisonous gas, ionising radiation, mechanical force, electricity or other energy or by some generally dangerous act or generally dangerous means shall be punished by imprisonment from six months to five years. It is unclear currently if poisoned baits for wildlife would be considered as poison under this article, but it is unquestionable that poison baits are dangerous for humans.

Implementation bodies: Ministry of the Interior, State's Attorney Office of the Republic of Croatia

Act on Veterinary Medicinal Products

Nonsteroidal anti-inflammatory drugs (NSAIDs) in Croatia are regulated by Act on Veterinary Medicinal Products OG 084/2008, 056/2013, 015/2015 which transpose directives 2001/82/EC and 2004/28/EC.

In early 2019 there was no Diclofenac products registered for veterinary use in Croatia.

Under current legislation, any EU Member States may authorize a veterinary medicine that has undergone the safety tests (including ecotoxicity) and that has a

favourable risk-benefit balance. Other Member States may then also authorize this medicine, under the so-called mutual recognition procedure, without further testing.

If a Member State or the Commission considers that the authorisation of a medicine poses a serious risk to the environment, they can start a referral procedure.

In response to public pressure, in August 2014, the European Commission opened a public consultation and asked the European Medicines Agency's (EMA) Committee for Medicinal Products for Veterinary Use (CVMP) to issue advice as to whether or not veterinary medicines containing diclofenac present a risk for vultures and other necrophagous birds in Europe. The Commission analysed the 'Opinion of the Committee for Medicinal Products for Veterinary Use pursuant to Article 30(3) of Regulation (EC) No 726/2004 on the risk to vultures and other necrophagous bird populations in the European Union in connection with the use of veterinary medicinal products containing the substance diclofenac' and brought this opinion for discussion at the Standing Committee on Veterinary Medicinal Products held on 9 February 2015, as all veterinary medicines containing diclofenac in the EU have been authorized through national procedures. At that meeting, it was decided not to pursue a referral under Art 35 of Directive 2001/82/EC, but to request all member states an analysis of the risk mitigation measures recommended by the EMA and subsequent implementation of those measures as appropriate. According to answer from Croatian Ministry of Agriculture (Veterinary Food and Safety Directorate) delivered to European Commission, Croatia will, in case that Diclofenac is approved, will act during authorization process:

2.2 International legislation

Convention on Wetlands of International Importance, especially as Waterfowl Habitat

(OG-IT 12/93).

Act on Ratification of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)

(OG-IT 6/00).

Act on Ratification of the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)

(OG-IT 6/00).

Act on Ratification of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA)

(OG-IT 6/00).

Act on Ratification of the Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean

(OG-IT 11/01).

Decision on publication of the Memorandum of understanding on the conservation of migratory birds of prey in Africa and Eurasia

(OG-IT 4/16).

3. CURRENT SITUATION

Although there is not much published and publicly available data on poisoning in Croatia, it is indicative that tackling poisoning was considered as one of priorities for biodiversity conservation twenty years ago. "State of nature report in Croatia (2000-2007)" among priorities lists need to develop national antipoisoning plan (Državni zavod za zaštitu prirode, 2008). National biodiversity strategy with action plan (NBSAP), from 2008, elaborates some of the reasons behind poisoning (allochthons species) and defines several actions regarding antipoisoning work (OG 143/08). Fifth National Report of the Republic of Croatia to the Convention on Biological Diversity published in 2014 mentions there was no significant improvement in tackling wildlife poisoning. Current NBSAP, developed in 2014 and 2015 for period 2017 to 2025 does not mention wildlife poisoning as issue.

Several sources have limited information on wildlife poisoning in Croatia, namely scarce science papers (Pavoković et al. 2005, Sabočanec et al. 2005, Ćurić et al. 2008) and various reports (Izvještaj HVI). Some analyses had shown that organochlorine hydrocarbon residues such as DDT and its isomers and PCB congeners were determined in muscle and liver of dead Griffon Vultures (Međugorac et al. 2001).

Potvrđeni slučajevi trovanja, te iznesene sumnje u trovanje, u Hrvatskoj od 2003.

Species	Number of individuals	Year - month	Location	Poisoning confirmed (YES, suspicion) / substance if known	Remark	Source
<i>Gyps fulvus</i>	1	2004-10	Krk	DA, metomil		Sabočanec, R., Konjević, D., Srebočan, E., & Petrinec, Z. (2005). Fatal poisoning of a Griffon vulture (<i>Gyps fulvus</i>) with methomyl. <i>European Journal of Wildlife Research</i> , 51(3), 210–212. Muzinic, J. (2007). POISONING OF SEVENTEEN EURASIAN GRIFFONS (<i>GYPVS FULVUS</i>) IN CROATIA. <i>Journal of Raptor Research</i> , 41(3), 239–242.
<i>Gyps fulvus</i>	17	2004-12	Rab	DA, karbofuran	potvrđeno trovanje	Pavokovic, G. & Susic, G. (2005). Poisoning of seventeen Eurasian Griffons by carbofuran on the Island of Rab, Croatia, in December 2004.pdf. <i>Vulture News</i> .
<i>Buteo buteo</i>	2	2004-12	Rab	DA, karbofuran	potvrđeno trovanje	Pavokovic, G. & Susic, G. (2005). Poisoning of seventeen Eurasian Griffons by carbofuran on the Island of Rab, Croatia, in December 2004.pdf. <i>Vulture News</i> .
domaća krava	5	2010-06	Koprivnica	sumnja	sumnja na trovanje pesticidima	https://www.vecernji.hr/vijesti/odbaceni-pesticidi-otrovali-pet-junica-koprivnickom-stocar-u-155544
psi, mačke, ptice		2012-03	Kučići	sumnja	karbofuran (geocid uvezen iz Bosne i Hercegovine)	https://slobodnadalmacija.hr/dalmacija/split-zupanija/clanak/id/162893/otrovne-zamke-za-lisice-ubise-nam-pse-i-macke
domaći pas	2	2013-03	Zagreb	DA, bromadiolon	Zabrinuti građani u Zagrebu	https://www.vecernji.hr/zagreb/uginula-dva-psa-a-jos-ih-se-sest-lijeci-od-trovanja-520436
domaći pas	2	2013-03	Varaždin	sumnja		https://www.vecernji.hr/vijesti/otrovao-dva-psa-pa-ih-jos-zive-bacio-na-polje-izvan-grada-520665
domaći pas	2	2014-07	Krapina	sumnja	nepoznat točan otrov	https://www.vecernji.hr/lifestyle/omiljeni-psi-atila-bigi-i-medo-otrovani-u-mirnom-naselju-950860
<i>Tyto alba</i>	1	2014-12	Nedelišće	sumnja	pretpostavka je ili sudar s vozilom ili trovanje	HAOP
<i>Canis lupus</i>	1	2014-2015	nepoznato	DA	nepoznat točan otrov	Izvešće o provedbi Sustava za dojavu i praćenje uhvaćenih, usmrćenih, ozlijeđenih i bolesnih strogo zaštićenih životinja u razdoblju 2014. – 2016. godine
<i>Lutra lutra</i>	1	2014-2016	nepoznato	DA	nepoznat točan otrov	Izvešće o provedbi Sustava za dojavu i praćenje uhvaćenih, usmrćenih, ozlijeđenih i bolesnih strogo zaštićenih životinja u razdoblju 2014. – 2016. godine
<i>Haliaeetus albicilla</i>	1	2014-nepoznato	nepoznato	DA, karbofuran		http://www.veinst.hr/godisnji-izvjestaji/doc_download/83-godinji-izvjetaj-2014

Species	Number of individuals	Year - month	Location	Poisoning confirmed (YES, suspicion) / substance if known	Remark	Source
domaći pas	3	2015-02	Požega	sumnja		https://www.vecernji.hr/vijesti/strava-kod-pozege-policija-traga-za-monstrumom-koji-truje-pse-i-macke-990597
<i>Gyps fulvus</i>	2	2016-04	Krk	DA, karbofuran		Hrvatski Veterinarski Institut, Rijeka
<i>Gyps fulvus</i>	1	2016-10	Krk	DA, karbofuran		usmeno, Hrvatski Veterinarski Institut, Rijeka
<i>Gyps fulvus</i>	1	2016-10	Krk	sumnja	ptica nađen na plaži, sumnja by Grifon	https://www.facebook.com/grifoncentar/posts/1278806948820826?_rdc=1&_rdr
<i>Gyps fulvus</i>	1	2017-01	Krk	sumnja	jedinka u ranom stadiju raspadanja	HAOP
<i>Gyps fulvus</i>	1	2017-02	Krk	sumnja	ptica nađena u visokom stadiju raspadanja, sumnja by Grifon	https://www.facebook.com/grifoncentar/posts/1401042659930587:0?_rdc=1&_rdr
<i>Gyps fulvus</i>	1	2017-10	Krk	sumnja	ptica nađena u visokom stadiju raspadanja, sumnja by Grifon	Grifon
<i>Buteo buteo</i>	9	2018-01	Lonjsko polje	DA, karbofuran		https://www.vecernji.hr/vijesti/park-prirode-lonjsko-polje-trovanje-zasticene-ptice-skanjci-caqljevi-1223114
<i>Canis aureus</i>	11	2018-01	Lonjsko polje	DA, karbofuran		https://www.vecernji.hr/vijesti/park-prirode-lonjsko-polje-trovanje-zasticene-ptice-skanjci-caqljevi-1223114
gradski golub	70	2018-02	Osijek	DA, metiokarb	Zabrinuti građani u Osijeku	https://www.vecernji.hr/vijesti/gotova-analiza-golubovi-u-osijeku-1235944
domaća mačka	2	2018-02	Popovača	sumnja		http://oslobodjenje-zivotinja.com/trovanje-macaka-i-pasa-u-krmelovcu-iznad-popovace/
psi, mačke, ptice		2018-03	Rijeka	sumnja	Zabrinuti građani u Rijeci	http://www.novolist.hr/Vijesti/Rijeka/Gradani-Rijeka-dosad-prikupili-4200-kuna-nagrade-Javite-se-ako-imate-tocnu-informaciju-ko-truje-zivotinje?meta_refresh=true
psi, mačke, ptice		2018-03	Dubrovnik	sumnja	Zabrinuti građani u Dubrovniku	https://objektivno.hr/nakon-osijeka-trovanje-zivotinja-zabiljezeno-je-i-u-dubrovniku-93842

Species	Number of individuals	Year - month	Location	Poisoning confirmed (YES, suspicion) / substance if known	Remark	Source
psi, mačke, ptice		2018-03	Zadar	sumnja	organofosfati?	https://zadarski.slobodnadalmacija.hr/4-kantuna/clanak/id/538652/trovanje-zivotinja-po-gradu-ne-prestaje
domaći pas	1	2018-04	Vodice	DA	nepoznat točan otrov	https://www.tportal.hr/vijesti/clanak/otrovani-pas-hgss-a-se-oporavlja-no-jos-uvijek-nije-poznato-hoce-li-moci-nastaviti-spasavati-foto-20180430
<i>Haliaeetus albicilla</i>	1	2018-?	Istočna Slavonija	sumnja	Nepoznat otrov, nije bilo postupanja	Usmeno, od članova grupe.

3.1 Types of poisoning present in the country

Except occasional, infrequent but regular, cases of intentional poisoning of predators, mostly jackals, which result in unintentional poisoning of other wildlife, mostly birds, there are no official records of other poisoning incidents. According to available literature, there is no record of lead poisoning, or poisoning due to the use of veterinary Non-Steroidal Anti-Inflammatory Drugs.

Regarding causes of these poisoning, it is mostly predator control (human - wildlife conflict) although there are indications of other reasons, namely human-human conflict.

Case from early 2018 was typical example of human wildlife conflict. Farmer, frustrated with jackals and damages caused by them, used the predated calf covered in an "unknown" substance to bait for jackals. Except 9 jackals, 10 Common Buzzards were poisoned. Based on the available knowledge this is the most common cause for intentional poisoning of the wildlife and should be addressed as number one priority.

This retaliatory poisonings are probably much more widespread due to the easily available insecticides and rodenticides. This type of poisoning is especially dangerous for various birds, and if it happens in large scale in Kvarner area it has potential to jeopardize vultures' population in Croatia.

In the case of mass poisoning of vultures at Island of Rab in 2004 suspected reason was neighbors' disagreement where one neighbor tried to kill other neighbor's dog. Dead sheep covered in carbofuran was used as a bait and 17 Griffon vultures were poisoned. According to locals, "human-human" conflict is cause of poisoning of dogs on some islands where locals aim to poison hunting dogs because of disagreements with hunters. Although probably rare as the main driver this could lead to occasional poisoning of wildlife across the country.

Due to the high incidence of wildlife poisoning caused by irresponsible pigeon fanciers in Serbia and game managers in Hungary, it is possible that these two scenarios are happening in Croatia.

In the case of pigeon fanciers it is retaliatory intentional poisoning of birds of the prey. It is known that birds of prey will attack trained pigeons, which are somehow oblivious to dangers in nature, during training or competition. Usually carbofuran is used, applied to live pigeon's back in a hope that bird of prey will catch it and poison on it. This type of intentional poisoning to birds is dangerous to local populations of sparrowhawks, goshawks and peregrine falcons. As it is one of important pressures on Saker falcon in Serbia and Hungary, similar case could be in Croatia.

Game managers in Hungary are responsible for the most of more than 470 recorded poisoned birds from 2000 to 2015. In 85 % percent of those cases

carbofuran was used, primarily against jackals and birds were victims of the unintentional poisoning.

3.2 Stakeholder analysis

- define, list (in a table) all the relevant stakeholders involved in wildlife poisoning and describe the drivers/root causes behind them;

Livestock owners

In several processed cases in Croatia, livestock owners were the suspects responsible for poisoning. This is common case in many areas where there are predator species which can negatively influence livestock and jeopardize subsistence. Existence of predator species increases costs of farming because of need to invest more into predator deterrence, either through increased number of shepherds, dogs or additional infrastructure like electric fences etc.

In Croatia main livestock predators are wolves, bears, jackals and feral dogs. Wolf, being strictly protected species in Croatia, is not huntable species in Croatia and there is compensation system for damages on livestock done by wolf.

Damages compensation system has its flaws so livestock owners sometimes reach to predator poisoning in order to avoid future conflicts.

3.3 GAP Analysis

- define and describe the most important gaps relevant to wildlife poisoning;

Detection and reporting

Detection of wildlife poisoning cases in Croatia is probably quite low. There was never systematic effort to determine poisoning prevalence so only confirmed cases are those which were remarkable in one way or another, e.g. poisoning of 17 vultures in Rab in 2004 or poisoning of 10 buzzards and 9 jackals within borders of Lonjsko polje nature park. Capacities for detection and reporting are quite low – there is approximately 20 nature protection inspectors in Croatia, 150 protected areas rangers and there are none special capacities within police for wildlife crime, including poisoning.

General public is not familiar with poisoning as threat for wildlife and usually members of public do not know to whom report any wildlife crime.

There is no adequate communication between institutions and it is evident that some cases are reported to one institution but not forwarded to competent inspections or other enforcement bodies.

Sampling, investigation and analysis

There is no clear procedure for suspected wildlife poisoning. Even when relevant enforcement bodies are involved, e.g. nature protection inspectors or rangers, it is unclear to involved sides how to proceed. There is protocol for sampling poisoned animals and baits although members of the NAWG are not familiar with it.

In order to have valid proof for legal prosecution, all samples from suspected cases should be analysed by authorized laboratory. There is only one authorized laboratory - Forensic Science Centre Ivan Vucetic (FSCIV), part of the Ministry of the Interior. Only "official" samples can be sent to FSCIV meaning that only state attorney office can send samples and it is to their discretion to do that. In practice this means that there is no way for interested public (e.g. public institutions, NGOs, etc.) to analyse samples. There is only one known private laboratory, which will accept wildlife samples, ship them to Germany, and return results of toxicological analyses within 24 hours. This can be done by interested public, however, in case of positive results this is not valid proof for court and it is grey area for most of involved (e.g. only veterinarian can take animal samples, shipping across border of potentially CITES regulated samples, etc.).

Law enforcement and legal proceedings

In the current legal settings, police, protected area rangers, hunting inspectors and nature conservation inspectors are primary responsible for poisoning cases with use of poison baits. However, it is often expected from police to have the leading role in initiating criminal charges although it is probably not realistic due to the variety of misdemeanours and crimes for which police is responsible. In light of that it is necessary for rangers and inspectors to take proactive role in fighting wildlife poisoning.

All Croatian citizens are allowed (and obliged) to report criminal acts. It is up to State's Attorney office to act upon this charges. It is important to realize that State's Attorney Office process approximately 70.000 new criminal charges per year with total number of 1754 employees, what makes approximately 40 new cases per year per employee (izvještaj državnog odvjetništva za 2017., 2018.). With that in mind it is unrealistic to expect that State's Attorney office will have leading role in combating wildlife poisoning. Generally, unless there is a public pressure present, wildlife poisoning nor wildlife crime in general will not be priority for State's Attorney office. Still, according to yearly reports issued by State's Attorney office it is necessary to increase efforts from competent authorities in initiating criminal charges, in order to increase both the number and quality of criminal charges.

4. CONCLUSIONS

- describe the individual conclusions agreed within the NAWG;

Conclusion 1:

Conclusion 2:

.....

5. FRAMEWORK OF ACTIONS

- list and prioritize in a table the actions agreed within the NAWG, include relevant stakeholders, referent implementation bodies and proposed period of implementation; describe each action;

Table...Proposed Actions to combat wildlife poisoning in the country

Objective 1: Increase and improve information and knowledge on wildlife poisoning						
Action	Possible implementation body	Main recipient	Execution time-frame	Scope	Priority	Comment
Identification of toxic substances used (legally and illegally)	CFSIV, NPI, MZOE, BIOM	CFSIV, NPI, MZOE, BIOM	Short-term	National	High	
Conduct research projects related to effects of lead and other heavy metals, veterinary medicinal products and substances used in agriculture.	HVI, VF, HLS, Biom	Scientific and nature conservation community	Long-term	National	High	
Establish a clear scheme on division of processing poisoning incidents among police, Ministry of Environment and Energy, Ministry of Agriculture, Inspectorates and rangers	Biom, external experts	All mentioned	Short-term	National	High	
Develop database of poisoning cases	Biom, MZOE	Scientific and nature conservation community	Short-term	National	High	
Develop protocols for information exchange within governmental institutions	Biom, MZOE, external experts	MZOE, MP, HVI	Mid-term	National	High	

Develop protocols for Wildlife recovery centers	MZOE, external experts	Wildlife recovery centers	Mid-term	National	High	
Develop protocols for Agroproteinka	Biom, MZOE, external experts	Agroproteinka	Mid-term	National	Medium	
Include 112 in Anti-poisoning work	MZOE	MUP	Mid-term	National	High	
Develop specialized training on poisoning necropsy	HVI, VF	VF, local veterinaries	Mid-term	National	Medium	
Equip wildlife recovery centers with lead analysis kits	MZOE, recovery centers	Recovery centers	Mid-term	National	Medium	
Adapt and implement intensive GPS tracking for poisoning detection	MZOE, Biom	Scientific and nature conservation community	Long-term	National	Medium	

Objective 2 : Strengthen prevention and deterrence

Action	Possible implementation body	Main recipient	Execution time-frame	Scope	Priority	
Large and intensive public awareness campaigns	Biom, NGOs, MZOE	General public	Mid-term	National	High	
Establish trans-boundary cooperation (regional and international) and use best practice experience and know-how	Biom, MZOE, MUP	Biom, MZOE, MUP	Mid-term	National	High	
Include herbicides/pesticides retail places in anti-poisoning work through joint raising awareness initiatives	MZOE, MP		Long-term	National	Medium	
Improve wild beasts' damages compensation system in order to prevent poisoning	MZOE	Livestock owners	Mid-term	National	Medium	

Closely follow NSAIDs registrations and act appropriately	MZOE, Biom	Recovery centers, feeding stations managers	Short-term	National	High	
Advocate European best practices regarding NSAIDs	MZOE, Biom	MP, HVI	Long-term	National	Medium	
Promote use of non-lead ammunition in Kvarner region	Biom	Hunting community	Short-term	Kvarner/Griff on vulture	High	
Promote use of non-lead ammunition on national level	Biom, MZOE	Hunting community	Long-term	National	Low	

Objective 3: Increase prosecution efficacy

Action	Possible implementation body	Main recipient	Execution time-frame	Scope	Priority	
Secure funding and suitable laboratories for toxicological analysis needed for cases processed by competent ministry or other interested institutions			Short-term	National	High	
Organize training for Nature protection inspectorate	Biom, external experts	NPI	Short-term	National	High	
Organize training for PA rangers	NPI,	State and county governed public institutions	Short-term	National	High	
Organize training for hunting managers	NPI, Biom	County level hunting associations	Mid-term	National	Medium	
Organize training for police officers	NPI, Biom, MUP	County police administrations,	Mid-term	National	High	
Organize training for prosecutors	ENPE, DORH, NPI, CFSIV, MUP		Mid-term	National	Medium	

Organize training for judges on poisoning issues	ENPE, ENJU, Nature protection inspectorate (NPI)		Mid-term	National	Medium	
Develop protocol for reporting of poisoned wild animals		PA Rangers, NPI, Police officers, Public, Veterinary Inspection				

Governmental commitment and coordination of the Plan

- describe the formal commitment of the government to develop, coordinate and implement this plan;

REFERENCES

Izvešće državnog odvjetništva za 2017. (a može I za prijašnje godine)

Stoynov E., Peshev H., Grozdanov A. 2018. Early warning system for wildlife poisoning, using intensive GPS tracked vultures as detectives. Fund for Wild Flora and Fauna. Blagoevgrad. DOI: 10.13140/RG.2.2.28251.41760

Međugorec

Ćurić

Pavoković 1, 2 I 3, možda I veterinarski dani njeni

Svi izvještaji o stanju prirode I izvještji za CBD

Izvještji Hrvatskog veterinarskog instituta

Reporting baza

Lana I Josip, KRIMINALISTIČKA METODOLOGIJA U FUNKCIJI ZAŠTITE PRIRODE I OKOLIŠA

Izještaji o stanju vuka

Usmeno (trovanja Krk, Lonjsko polje)

BAPP study

Sušićevi radovi

EMA CVMP
Birdlife interni dokumenti

Mađarska trovanja

Srbska trovanja

Knjige sve