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STUDY ON THE ORIGIN AND MOTIVATION OF ENVIRONMENTAL CRIME

JANUARY 2023



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Referencing this document is allowed and encouraged, as long as the source is correctly cited.
Suggested citation: *Study on the Origin and Motivation of Environmental Crime* LIFE Nature Guardians. SEO/BirdLife. Madrid, 2023.

Publication date:
January 2023

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TABLE OF CONTENTS

TABLE OF CONTENTS	2
GENERAL INTRODUCTION	4
CHAPTER 1 ANALYSIS OF THE LITERATURE ON THE MOTIVATIONS OF ENVIRONMENTAL OFFENDERS	6
SECTION 1.1 INTRODUCTION	6
SECTION 1.2 GENERAL CONSIDERATIONS ON ENVIRONMENTAL VIOLATIONS	8
SECTION 1.3 ILLEGAL TRAFFICKING IN WASTE	11
SECTION 1.4 FOREST FIRES	14
SECTION 1.5 ILLEGAL LOGGING	18
SECTION 1.6 ILLEGAL HUNTING AND FISHING	22
SECTION 1.7 SMUGGLING OF WILD FAUNA AND FLORA SPECIES	34
SECTION 1.8 PURCHASE OF PRODUCTS FROM ENDANGERED SPECIES	39
SECTION 1.9 POSSESSION OF WILDLIFE SPECIMENS	43
SECTION 1.10 RELEASE OF INVASIVE ALIEN SPECIES	54
CHAPTER 2 ANALYSIS OF SOCIAL PERCEPTION OF WILDLIFE AND ENVIRONMENTAL CRIMES IN SPAIN AND PORTUGAL	57
INTRODUCTION	57
METHODOLOGY, PROCEDURE AND SAMPLE	57
RESULTS OF THE ANALYSIS	61
CHAPTER 3 ANALYSIS OF CRIMINAL MOTIVATION BASED ON WILDLIFE CRIME CASES	63
INTRODUCTION	63
METHODOLOGY	63
DETAILED DESCRIPTION OF THE ANALYSED RULINGS	64
ANALYSIS OF RULINGS ACCORDING TO THEIR EFFECT	64
ANALYSIS OF THE OFFENDERS	65
ANALYSIS OF THE CRIME LOCATIONS	65
ANALYSIS OF THE METHOD USED	65
ANALYSIS OF RULINGS ACCORDING TO THE DATE AND SPECIES	66
CHAPTER 4 STUDY OF CRIMINAL MOTIVATION ACCORDING TO INVESTIGATING OFFICIALS	68
INTRODUCTION	68
METHODOLOGY AND PROCEDURE	68
RESPONDENTS	69
PROFILES	69
EFFECTIVENESS OF THE LAW AND PENALTIES. PROPOSALS FOR IMPROVEMENT	71

PROCEDURES AND APPLICATION OF CRIMINAL PROFILING IN THESE CASES	74
CHAPTER 5 CONCLUSIONS	75
CHAPTER 6 PROPOSED LINES OF ACTION	79
INTRODUCTION	79
REDUCING OPPORTUNITIES FOR CRIME	79
MORE SPECIFIC INVESTIGATION LINES	81
MORE EFFICIENT REPORTING, INVESTIGATION AND JUDICIAL SYSTEMS	82
IMPLEMENTING INTERVENTION PROJECTS WITH PRIMARY AND SECONDARY POPULATIONS	82
DEVELOPING VARIOUS AWARENESS-RAISING AND ENGAGEMENT STRATEGIES FOR THE GENERAL POPULATION	83
BIBLIOGRAPHY	85

GENERAL INTRODUCTION

Environmental crimes refer to those behaviours that put natural resources and the environment at risk and which, due to their particular seriousness, are subject to the greatest social and legal reproach, and have therefore been included in national criminal legislations, being the most severe penalties, such as imprisonment, applied for some of these behaviours. These measures are intended to restore the damage caused, to deter potential offenders and to protect the legal asset at stake.

However, this reactive approach cannot be considered in isolation and needs to be accompanied by awareness-raising and communication measures to promote understanding and compliance with the rules, as well as measures to reintegrate offenders. The comprehensive prevention of environmental crime ultimately aims to reduce or eliminate the likelihood of the criminal act being committed. Thus, to ensure the success of any preventive measure, it is necessary to start gaining a detailed knowledge of the problem, i.e., the causes and circumstances that give rise to it. This is the main objective of this paper – analysing the motivations that lead to committing environmental crimes. It is focused on Spain and Portugal, although some of the chapters provide a universal analysis of the motivation for environmental crime.

The first chapter explores the published scientific literature on the subject, with a special focus on crimes against wildlife, such as illegal hunting and trade in protected species, possession and release into the wild of alien species, illegal waste management and habitat destruction, in particular through forest fires (issues such as illegal urban development, which is mainly economically motivated and has not been the subject of any scientific study, are not analysed here). Therefore, this is an unprecedented summary of information collected on the environmental problems caused, the cultural origin of the offences, if applicable, and the common motivations for committing them after depersonalising the events.

The second chapter analyses, through a general population survey, the social perception in Spain and Portugal of wildlife and environmental crimes and their different elements (subject, object and context), as well as the actions taken by different entities and organisations to detect, prevent and respond to them.

The third chapter presents the results of the analysis of more than 250 judgments given for environmental crimes in Spain. The main connections found between the species concerned, the methods used in the crimes, the geographical location, the general profile of the offenders who committed the crimes using the available data and the decisions taken are presented.

In the fourth chapter, we surveyed law enforcement officers in charge of investigating several of these crimes (illegal hunting, illegal buying and selling of species and destruction of nests of protected species), both in Spain and Portugal. The motivations these officers attribute to offenders are shown in the results, as well as their views and experiences regarding the effectiveness of the legal system and penalties and the changes they would propose to make it more effective.

After presenting some conclusions on all the above in chapter five, the last chapter contains some final considerations and proposes future lines of action based on the findings of this analysis as a whole. These lines of action follow two fundamental approaches, which must necessarily be interconnected: research of the various psychological, social and legal factors that interact with each other and intervention, both for specific populations and for the general population.

In order to make reading and understanding easier, the information in each of these chapters will be structured according to the specific table of contents at the beginning of each chapter, with an initial summary and final conclusions.

This report was prepared within the framework of LIFE Nature Guardians (Action A4), a project funded by the European Union's LIFE programme, which aims to improve the effectiveness and efficiency of actions aimed at fighting crimes against nature. It is coordinated by SEO/BirdLife and its beneficiary partners are the Agriculture, Livestock, Fisheries and Sustainable Development Department of the Autonomous Government of Andalusia, the Sociedade Portuguesa para o Estudo das Aves (SPEA) and the Nature Protection Service (SEPRONA) of the General Directorate of the Civil Guard.

We would like to thank Captain Andrés Sotoca Plaza and Sergeant Manuel Ramos Romero with the *Guardia Civil's* Judicial Police Technical Unit for their guidance on criminal profiling in environmental crimes.

We are also grateful to José Joaquín Aniceto del Castillo, Cádiz Provincial Coordinator of the *Agentes de Medio Ambiente* of the Autonomous Government of Andalusia, to Íñigo Fajardo López-Cuervo, Regional Coordinator of the Andalusian Strategy to Fight Poisoning, to Miguel Higuera Ortega, Operational Head of the CAF of the Community of Madrid, to Jordi Pont Rendé, Member of the *Cos d'Agents Rurals* of the Autonomous Government of Catalonia and to Alejandro Rodríguez Pazos, National Coordinator of Forest Rangers, FSC-CCOO, for their support in the distribution of the questionnaires.

Last but not least, we would like to thank David Miqueleiz, Corporal of the Environmental Investigation Group of the Navarre Regional Police, Alejandro Rodríguez, ranger, César Giraldo, Head of the CAF Unit, and all the other people and representatives who also anonymously provided us with their valuable experience in their daily work involving wildlife and environmental offences, for taking the time to answer our questions.

CHAPTER 1 ANALYSIS OF THE LITERATURE ON THE MOTIVATIONS OF ENVIRONMENTAL OFFENDERS

SECTION 1.1 INTRODUCTION

In this first chapter, an assessment will be made of the motivation for environmental crime depending on the type of crime committed. All the behaviours referred to in this section are considered criminal throughout the EU by Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law and, in some cases, illegal at international level through the application of Multilateral Environmental Agreements.

However, as discussed below, illegal acts do not necessarily imply that they are perceived as unlawful. While environmental crime is generally condemned by society, its significance has been downplayed and offenders often use neutralisation techniques to justify their actions, thereby reducing their possible feelings of guilt or remorse. Therefore, the first section will summarise some of the psychological and socio-cultural factors that contribute to the commission and subsistence of environmental crime. Without addressing these factors, neither the understanding of the problems analysed in later sections nor the proposals for their resolution would be feasible or effective.

In the second section we will focus on illegal trafficking in waste. Primarily economically motivated – to save management costs – illegal trafficking in waste is nevertheless an example of territorial inequality in legislation and in the authorities' capacity to enforce it. In many cases, it is linked to corruption or to the need of certain groups to finance their activities in conflict areas, which, in similar ways, is seen in other criminal activities.

Probably the most widely rejected environmental crime by society are intentional forest fires, which will be discussed in the third section. Although the range of circumstances is diverse, even including factors of social protest, in most cases the fires are set to clear farmland and pastures of vegetation; by contrast, the general population perceives that there is either speculation behind it or that the fires are caused by sick people or vandals who act with no other objective than to cause the fire or to cause damage.

Illegal logging has a primarily economic rationale, although patterns of social cohesion in relation to it have been identified in certain contexts. Violence against law enforcement officers is also common in this activity. These and other particularities can be found in the fourth section.

The fifth section deals with the illegal killing of wild animals, which is generally materially motivated, either to claim the prey or to keep it from becoming a predator on livestock or game. In addition to the benefit gained, motives of sociological (tradition, spending time with friends or keeping young people away from the danger of drugs, for example) and psychological nature (the thrill of doing something illegal or the boast of outsmarting authority) are often involved. It is very common for offenders to consider that the legislation is not fair, which is a neutralisation technique. Offenders can range from individuals to international criminal organisations and their crimes have sometimes served to sustain and finance armed groups.

The sixth section deals with illegal animal smuggling. This crime has various motives, from selling live animals as pets, to using animal parts in superstitious practices and considering their meat or materials as luxury goods. It is probably, after drugs, the most profitable illegal trade in the world,

and the criminal organisations driving it often use the same channels in both activities, so the degree of overlap is very large. Corruption is associated with both criminal groups.

The seventh section covers the reasons behind the illegal acquisition of products derived from protected species. Some so-called "traditional medicines", more recent superstitions and unfounded beliefs are the reason why far-fetched properties are attributed to certain materials of animal origin. This is the case of hair, bones, horns or bile from certain mammals, or vulture brains, for example. Other products are considered luxury items, such as ivory (from some mammals or the fake ivory of the helmeted hornbill's beak), foodstuffs such as caviar, perfume, fur, feathers, etc., the demand for which usually depends heavily on consumption trends.

The eighth section reveals that exotic pets are subject to legal and standardised trade that sometimes serves to channel illegal trade. The reasons behind the demand for these animals are diverse and can be linked to fashion, mechanisms of imitation or efforts to highlight personality traits, among others. Sometimes the motivation for keeping these animals goes beyond aesthetic reasons, as they are part of recreational activities such as falconry and the breeding of songbirds, which are mostly carried out legally, but also have an important illegal component. At other times, animals are simply used as a publicity stunt at tourist sites.

One of the consequences of keeping exotic animals is that they are sometimes released into the environment and become invasive species. However, there are many other scenarios in which species are released into the wild, such as when specimens are freed with the intention of hunting or fishing them. At times, these introductions into the environment were encouraged or facilitated by the government, which created a climate of normalisation of such practices, making it difficult to fight them later on. Because of these particularities, we thought it appropriate to devote a final section, the ninth section, to these behaviours.

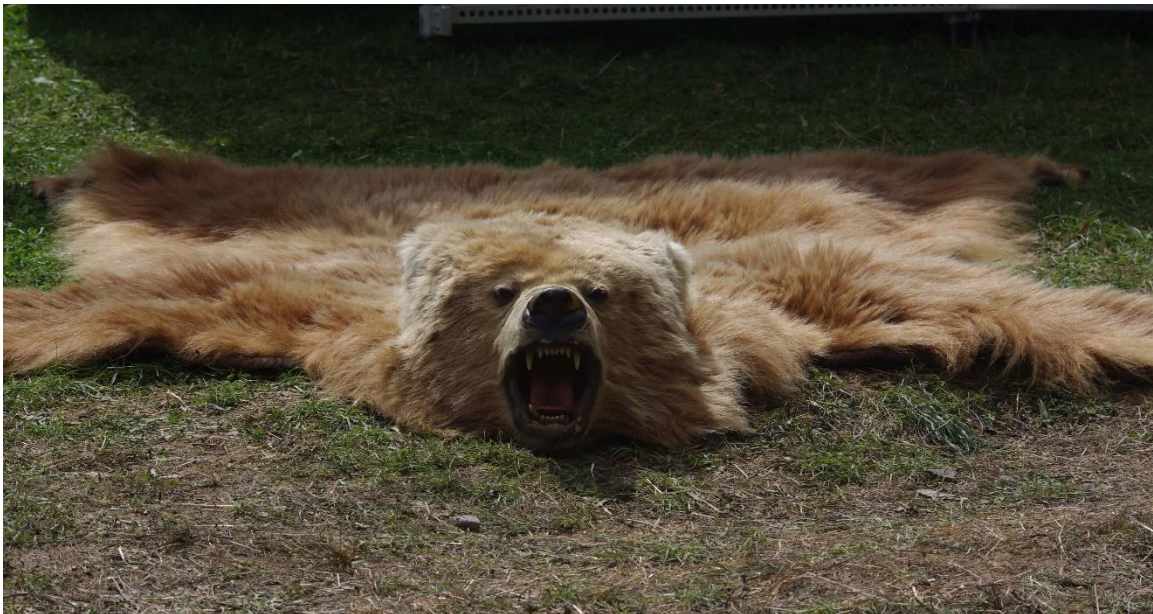


Figure 1. Brown bear skin used as a rug and seized by police in the UK. The motivations for the illegal acquisition and possession of parts of wild animals are diverse and complex. (Photo: JFO-SEO/BirdLife).

SECTION 1.2 GENERAL CONSIDERATIONS ON ENVIRONMENTAL VIOLATIONS

1.2.1 PSYCHOSOCIAL ASPECTS FOR UNDERSTANDING CRIMINAL BEHAVIOUR

Violations of environmental laws are actions that are not always perceived as objectionable. There are behaviours that are considered serious if they affect third parties or the common good, if "wickedness" or lack of environmental awareness is observed, but there are others that, if they do not meet these characteristics, do not qualify as objectionable, even if they are equally prohibited. Underlying this are the ideas that people are more important than animals and that *no one* has been harmed, even in violations such as shooting protected raptors (Martín et al., 2013a). In many cases, society prefers to call environmental crimes or illegalities "accidents" or "human errors", which is after all a sign of the lack of social reproach for these actions (Mårald, 2001); in other contexts, society attributes environmental crime to an intrinsic evil in the offender, although they admit exceptions in which non-evil individuals may commit environmental violations (Martín et al., 2013b). Martín and Hernández (2010) identify several factors that lead to this:

1. The consequences of these behaviours are often neither immediate, obvious nor predictable, especially when it is the risk of harm rather than the harm already done that is valued (Mårald, 2001)
2. Penalties, created for one-off, extreme and infrequent events (Korsell, 2001), are very harsh, but they are rarely applied, which also leads to an underestimation of the risk of repetition and therefore to a less strict vigilance. Most penalties are financial (Korsell, 2001; Mårald, 2001; Watson, 2005) and, where the fine is no higher than the cost of legally carrying out the same activity, they may be financially favourable to the offending party (Wilson, 1986)
3. Victims are often non-specific, scattered and may be a long-term matter. They can even be abstract concepts such as biodiversity. This leads to the fact that no one feels compelled to report the crime and that there is no feeling of compassion or responsibility towards the victim, which is the basis used by the media for the moral assessment of crime (Korsell, 2001)
4. The profile of the environmental offender, be it an individual, an organisation or a government body, is very different from the profile in any other type of crime. Environmental offenders generally find it difficult to see the legal boundaries of anti-environmental behaviour and, when they are aware of its illegality, they do not agree with the criterion (Situ, 1998)

In this regard, people who violate environmental rules often use neutralisation techniques, i.e., they reinterpret the situation to self-annul their responsibility for the action or possible associated feelings (e.g., to cancel the feelings of guilt; Sykes and Matza, 1957). These techniques are based on either justification or excuse (Martín et al., 2013a). Justification means that a person recognises his or her intentions, but denies that the action is wrong or that the rule is fair. Excuse, on the other hand, means that they acknowledge that the action is inappropriate, but they seek reasons to deny responsibility, arguing that external and uncontrollable factors have led to its execution. Therefore, they can convince themselves that they are unaware that their behaviour was illegal, they deny having done harm or the existence of victims, they argue that there are errors in the case or in the presentation of the facts, that the administrative and criminal rules are inconsistent or that the legal and social norms contradict each other, i.e. that laws have no social legitimacy ("everybody does it").

Enforcers of environmental protection laws can also use these techniques to justify not overcoming difficulties in establishing criminal intent and proving the consequences of crimes.

They find excuses in the distrust of the legal system or in the need to safeguard their relationship with the offending parties or local authorities. In fact, the defendant's willingness to cooperate with the authorities is the most important factor taken into account both in deciding whether to impose a penalty (Hawkins, 1984; in Alonso, 2014) and in setting the length of the sentence (Taylor and Mason, 2002), rather than the seriousness of the incident or the individual's background.

In addition, the general population inflicts a harsher social punishment if they consider that the offender did it because he/she is a "bad person", because he/she does not care about the environment or because he/she is looking for economic benefits (thus, the most serious offender would be a municipality that allows the dumping of sewage or the hunting of a protected species). When a resource perceived as scarce is altered, disapproval is also higher, as well as when it directly affects endangered living beings or those that are considered a common heritage. Conversely, punishment is less harsh if compensatory actions are taken to repair the environmental damage caused, if the prohibition was not known and if it is believed that the action does not harm anyone (Hernández et al., 2005; Martín et al., 2005; in Martín and Hernández, 2010).

Regarding the inconsistency between social and legal norms, the various cognitive, emotional and behavioural processes that come into play must be taken into account. For social norms to actually influence behaviour, they need to be salient and accessible (Kallgren et al., 2000), i.e., in a situation where the action may be committed, the norm that prevents the action – e.g., legal prohibition or social rejection – must come to mind quickly and not compete with opposing norms, such as that it is traditional to carry out the action or that it is done despite being prohibited (Vaske & Manfredo, 2012). These – so to speak – rewards and punishments are externally determined, so that compliance with these norms works through social pressure (Thøgersen, 2006). The greater the identification with the group, the greater the social pressure (Hernández et al., 2010), as these external norms, whether prescriptive (establishing what to do or not to do) or descriptive (showing what people do or do not do), can become internalised and part of the self-concept – the relatively stable set of characteristics each person uses to define him or herself (Turner, 1991).

At this point, external norms may merge with personal norms, i.e. the expectations that the person has about his or her own behaviour for that particular situation, feeling a certain moral obligation (Schwartz, 1977). Rewards and punishments can also be self-administered (e.g. in the form of guilt or shame if the rule is broken; or in the form of increased self-esteem and pride, if obeyed). In this way, cognitive processes such as reasoning and morality help to understand and anticipate the consequences of the behaviour (driving the decision to carry it out or not); and empathy (as the basic affective process of morality) anticipates the experience of guilt or lack thereof (again triggering or inhibiting the final behaviour).

1.2.2 THE ECONOMIC PARADIGM AS A REFERENCE FRAMEWORK

Understanding that environmental violations are a response, like many other behaviours, to the social and personal norms that exist about them (among other psychosocial factors), these norms are framed within a set of macro-social structures and ideologies.

Although it is now widely challenged and giving way to alternative functioning models, such as sustainable development or deep ecology, the frontier economy paradigm still seems to influence environmental crime (Boulding, 1966). According to this paradigm, nature is an infinite source of physical resources that can be exploited for human benefit, as well as a sewer that can assimilate any waste from human activity. Anthropocentrism led to the belief that nature could be manipulated, transformed and plundered according to the needs and desires of human beings,

leading to extractivist practices and mentalities. The state of nature, ecosystems and biodiversity was secondary to the idea of economic progress, but with no practical connection to it: in the event of problems (scarcity, degradation, etc.), there was faith in people's intelligence and ingenuity to solve them. For example, the 'tall chimney' strategy was based on the belief that dispersing the waste would make the pollution go unnoticed by people or nature; instead, it led to the problem of acid rain by not solving the real issue (Colby, 1991). Both this and other illegal practices of greater evidence appear to be an alternative, in this case, to proper waste treatment, seeking to circumvent the high cost that this can entail.

Thus, from this perspective, economic criteria become really important, either in the perception of criminal actions or in the social and administrative interest in them. Illegal exploitation of forest resources, smuggling of endangered species or abuse of urban planning regulations, for example, are primarily profit-driven.

In fact, this economic dimension has an impact on all levels, given that there is a loss of income for the government or for the legitimate holders of the sustainable exploitation rights, in addition to the State's loss of income from taxes and the depreciation of legal products due to unfair competition with those obtained illegally (Reboredo, 2013; Wyatt, 2013). Moreover, the destruction of a resource has immediate consequences on the conservation of other associated resources – dependent on food webs, soil conservation, water quality – and on the climate crisis. Therefore, the negative impact of environmental crime not only affects biodiversity conservation, but also the economy, without even taking into account the investment needed to fight this crime.

1.2.3 SOCIO-CULTURAL DIMENSIONS, THE EXTRACTIVIST CONCEPTION OF THE ENVIRONMENT AND BIODIVERSITY

Extractivism is a way of thinking and acting characterised by the acquisition of as many resources as possible in the shortest possible time – and their subsequent disposal through waste storage. It results in a dependence on commodities and in an export market orientation, but also in unequal concentrations of wealth and, therefore, high poverty rates (Willow, 2019).

The nature of environmental crime is embedded to varying degrees in the culture of violence and intimidation (Castañeda-Camey et al., 2020). Environmental crime has a major impact on health and human rights. The weakening of the legal system contributes to and feeds back into the violation of the labour rights of workers, who are often abusively exploited, as well as the vitality and integrity of local communities and isolated native peoples (Bedoya & Bedoya, 2005; Napolitano, 2007; Hussein, 2010; Reboredo, 2013). It should also be mentioned that in many environmental crime contexts, environmental crime is associated with gender-based violence operating at multiple levels (Castañeda-Camey et al., 2020).

These socio-cultural factors are particularly relevant, as will be seen in their corresponding sections, to the crimes of poaching, illegal logging and species smuggling, where geopolitics and systemic corruption are key to their development and, therefore, to reacting to and preventing them.

SECTION 1.3 ILLEGAL TRAFFICKING IN WASTE

1.3.1 INTRODUCTION

One of the key factors of a globalised economy is the ability to transport large quantities of goods over long distances. Barge transport in the 1950s and container transport in the 1960s made it easier to load and unload materials. The transport of materials for recycling represents a large volume globally and includes everything from electronic components (Illés & Geeraerts, 2016) to tyres (Reiter, 1998). The risk that certain countries with lower economic capacity could become recipients of polluting materials led to the development of several international conventions strictly regulating such traffic:

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1989)
- Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (1991)
- Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste

There are considerable differences in the transposition of the Basel Convention into national legislations (Ghosh et al. 2016). Other tools were therefore developed to strengthen legislation to prevent the export of toxic waste from the European Union (EU) and other territories with a more advanced implementation of the Basel Convention to countries with less stringent regulations on waste treatment (Bisschop, 2016). This situation allows for the emergence of a clandestine economy linked to these processes. Thus, Bisschop (2016) reports that about one third of the containers exported from the EU that are inspected are in breach of the ban: large quantities of electronic waste are exported from the EU to China, where they enter the informal processing and recycling economy. This is much more rudimentary compared to the formal economy, not complying with adequate environmental and health standards and employing unskilled staff (Illés & Geeraerts, 2016).

Lastly, illegal dumping of waste remains a problem even after regulatory measures are in place. The construction and demolition industry is possibly the main source of illegal dumping (Villoria, Del Río and Porrás-Amores, 2011). Despite the monitoring of this type of violations, this activity has sometimes appeared incidentally in scavenger bird monitoring studies (Navarro et al., 2016). In the Canary Islands, for example, the illegal dumping of different types of waste is the most frequent environmental offence (Santamarta et al., 2014) and socially it is also more frowned upon than other violations due to the particular conditions of living on an island and the implicit permissiveness of the authorities in the eyes of respondents (Martín et al., 2013).

1.3.2 INEQUALITY, CONFLICT AND CORRUPTION – THE DRIVERS OF WASTE SMUGGLING

The high cost of proper waste management is the root cause that motivates violations, resulting both in the clandestine dumping of those substances that are more difficult to trace (whose origin is more difficult to find out) and in the smuggling of more toxic substances (whose origin can be more easily detected due to the paperwork associated with their management). The difference in costs for waste management can be very significant, even within the EU itself (Villoria et al., 2011).

A historical case of criminal behaviour associated with illegal waste trafficking happened following the collapse of the USSR with the trafficking in nuclear substances, which led to the creation of

chains of smuggling of radioactive elements. These practices, aside from the threat caused by criminals (extortion, murder), insurgent groups and terrorists, have led to the appearance of large quantities of abandoned highly radioactive material (Zaitseva & Hand, 2003).

The regulation of waste management by States and regional governments, coupled with inequalities in labour and technological costs between economic blocs, has led to the emergence of a very lucrative business associated with the trafficking in industrial waste. Less restrictive legislations and laxer monitoring systems, combined with the potential corruption of officers, lead to some of this international trafficking being illegal (Liddick, 2010). Even such important tools to prevent the trafficking in toxic and hazardous substances as the Basel and Bamako Conventions (Eze, 2007; Sonia & Sunyowati, 2020) are ineffective given the lack of or their poor transposition into national legislations due to economic problems, including the potential source of foreign exchange provided by the recycling industry, and the mismanagement of natural resources. The lack of ratification by signatory countries means that regulatory frameworks such as this one remain an empty gesture (Agbor, 2016; Saleh & Abene, 2016; ; Sonia & Sunyowati, 2020).

The intensive use of plastics in agriculture requires that they are specifically treated due to the presence of plant protection products in them. The subsequent reduction in profits has encouraged an intense trafficking in these materials between agricultural countries that have a strict regulation and monitoring of these processes and countries with less capacity to control them. China's ban on the import of plastic waste in 2018 led to the emergence of other destinations; the Malaysian government returned five containers of Spanish agricultural plastics in 2019, and in 2021 an organisation involved in the illegal transport of greenhouse waste was dismantled in Spain (*Guardia Civil*, 2021).



Figure 2. Intervention by the Spanish *Guardia Civil* of an illegal network exporting greenhouse plastics from Spain to Asia (Photo, *Guardia Civil*).

Similarly, as a consequence of the mass production of low-cost, low-quality clothing, landfill sites for new or used clothing have started to appear in countries such as Chile and Ghana, as effective recycling and reuse is very rare (PSF, 2022).

The ban on ozone-depleting substances has led to an increase in the trafficking in products containing these substances to countries that are less able to implement international treaties (Elliott, 2016).

Possible causes of poor monitoring of waste imports include armed conflicts. A prime example of this is the civil strife in Somalia since 1991, where the various factions in the conflict agreed to receive toxic waste in exchange for resources to purchase weapons. In addition, taking advantage of the absence of authority, many countries used the Somali coast for the dumping of radioactive and hazardous waste for years, as evidenced by the surfacing of containers on the shores after the 2004 Indian Ocean tsunami (Hussein, 2010; Collins, 2016).

Technological and social progress and improvements in waste collection and management systems should lead to a reduction of waste at source, contributing to a progressive elimination of such offences.

SECTION 1.4 FOREST FIRES

1.4.1 INTRODUCTION

Forest fires are one of the main causes of habitat destruction in the world. Their geographical distribution in Europe is clearly predominant around the Mediterranean, and disproportionate in Portugal (San-Miguel & Camia, 2009; Sotoca, 2016). The seriousness of this phenomenon and the fact that most forest fires are intentional and their cases remain unsolved are a cause of public concern (Aniceto, 2008; Sotoca et al., 2013; Sotoca, 2016). The situation is the same in Mediterranean ecosystems around the globe, although the social factors associated with fires are very important (San-Miguel & Camia, 2009), varying even within the same country (Molinero, Cascos, García & Baraja, 2008a).

Therefore, studies conducted on cases solved by the police are unbalanced, since convicted people are often caught precisely because of their psychological and social characteristics, leaving other profiles out of the study (Sotoca et al., 2013; Álvarez et al., 2017).

Moreover, even in countries with a high rate of fire investigation, between one-third and one-half of fires remain unsolved (Aniceto, 2008; Garrido, 2016), so information on solved cases cannot be directly extrapolated.

Forest fires have evolved following social, political and economic changes, such as rural exodus and investment in fire-fighting resources. The exploitation of forests in many cases has shifted from predominantly extractive to mostly recreational (Molinero et al., 2008a; Pezzatt et al., 2013; Moreno et al., 2014). However, paradoxically, as fire suppression becomes more effective, more fuel accumulates, increasing the risk of serious fires in the future (Fernandes et al., 2011; Calkin et al., 2015).

1.4.2 WHY ARE FOREST FIRES CAUSED? THE SITUATION IN SPAIN

Forest fires are possibly the most easily detected environmental crimes and receive the most media coverage. In addition, the existence of specialised law enforcement bodies means that the investigation of their causes is carried out systematically in the whole country. There are, therefore, a number of studies devoted to the solving of these causes.

The higher number of fires in Spain is not correlated with weather conditions but with socio-cultural factors, as can be seen in the fire distribution maps in comparison with meteorological variables (Figure 2).

PROFILE OF THE FIRE STARTER

Even though the causes of about two thirds of the fires get discovered, there is another unbalancing factor when it comes to identifying the profile of the offender, as pointed out by different authors. In fact, judicial statistics only show prosecuted fire starters, which represent a small fraction of them, i.e. approx. 1.5 - 2% of the total (Sotoca et al., 2013; Sotoca, 2016), a pattern which is very similar in different studies (Soeiro & Guerra, 2014).

Soeiro & Guerra (2014) describe four different profiles: retaliatory (41.5% of cases), instrumental (only 3%), expressive with a clinical history (depression, alcoholism, dementia or other mental condition; 55%) and expressive with fire attraction. Other classifications of fire starters propose other categories: negligence (which includes inadequate traditional practices), impulsiveness, profit and revenge (Sotoca et al., 2013; Delgado et al., 2018).

MOTIVATIONS OF THE FIRE STARTER

Studies based on civilian population surveys in Spain show a perception that arson is behind around 50-63% of cases (Aniceto, 2008) and expert data broadly match this perception (55% to 63%) (Aniceto, 2008; Garrido, 2016). However, in certain districts, the certainty that almost all fires are intentional is widespread according to the surveys (Molinero et al., 2008a), possibly evidencing a social bias in both the perception and intent of fires. This is because fire has traditionally been used as a management tool, both to clear up areas for grazing or crops and to avoid the presence of animals considered harmful (Molinero et al., 2008b); however, the removal of brushland to avoid the presence of wild boar or wolves is statistically no higher than 1% at the national level (Garrido, 2016). In a situation where the traditional use of fire were predominant, fire would have a limited impact, since the abundance of livestock would keep the vegetation at bay. However, in the present situation, where a progressive reduction of extensive livestock farming has been observed, the use of fire as the main element of brush control brings disproportionate impacts (Molinero et al., 2008b).

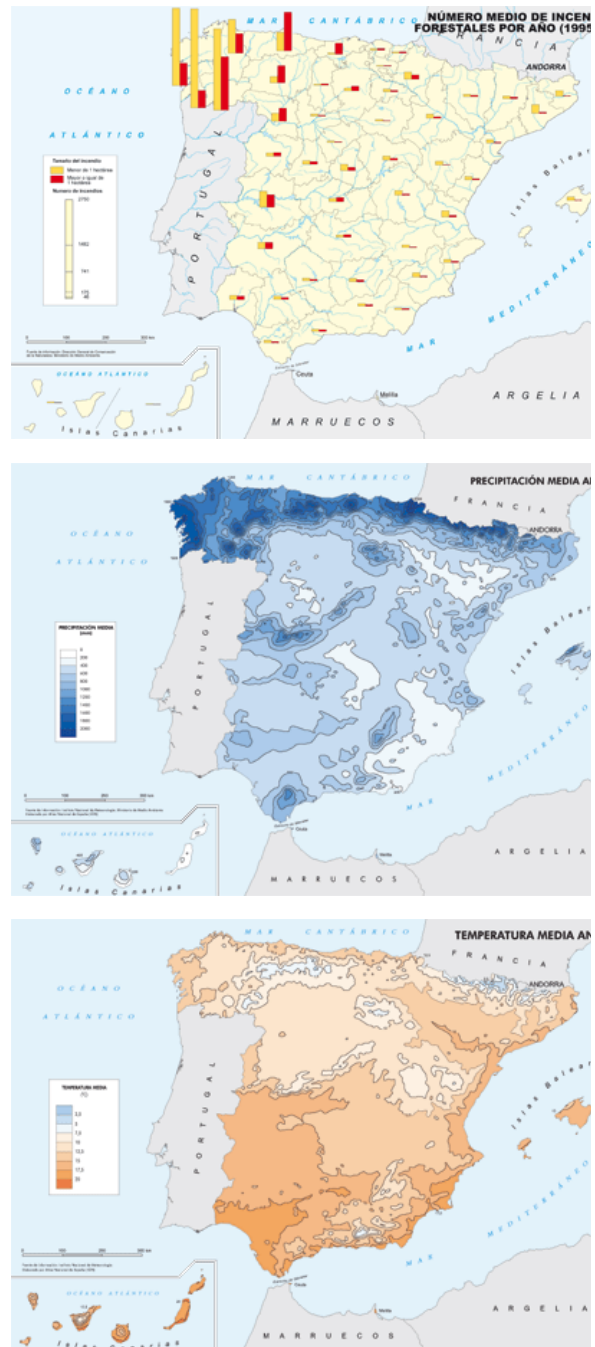


Figure 3. Distribution of forest fires compared to rainfall and temperature averages (IGN). It can be seen that the most humid and coolest areas paradoxically coincide with the areas with the highest incidence of fires. Thus, there is a negative correlation between the variables unfavourable to fires (high humidity and cool temperatures) and the abundance of fires in the Northwest of the Iberian Peninsula.

A summary of the motivations for intentional fires between 2011 and 2015 (Garrido, 2016) shows that intentionally set fires constitute 55% in number and 58% in area of the total number of fires in Spain. Among the intentional fires, more than two thirds of the fires identified as having been set are caused by reasons linked to the removal of brush or the creation of pastureland. There are clear geographical differences between provinces in the number of forest fires that seem to be a reflection of the different degree of attachment of rural populations to forests, depending on their productivity and, therefore, on their economic value (Rodríguez-Hierro, 1998), so that in forest areas where forest use is common and the attachment of the inhabitants is greater due to the benefits obtained, fires are practically non-existent (Molinero et al., 2008a). This degree of attachment decreases as the loss of direct economic value and the subjective perception of uselessness increase, influenced by the changes in land use that have occurred throughout the 20th century and which, in addition, have led to a forest structure that is more sensitive to fires (Molinero et al., 2008a).

This evolution is seen, for example, in areas such as Galicia, where communal lands have been reforested with fast-growing species since the mid-20th century to meet the demand for cellulose, to the detriment of one part of the population – the residents of less populated parishes (affected by the loss of access to common lands) – and benefiting local towns (more privileged by the increase in income). The situation described above could be the origin of a confrontation that could be, at least in part, the cause of the abundance of intentional fires in Northwest Spain (Serrano, 1990; Molina, 1997; Seijo, 2005, 2009).

In cases where there is dissatisfaction with the declaration of protected areas that could actually or subjectively undermine land use rights, it has been proposed that fire is used as an element of protest (Molina, 1997). However, statistically and in Spain as a whole, retaliatory or ideological motivations are practically negligible (Garrido, 2016).

This protection of the territory creates a conflict between the foreign perception (authorities, urban population) of the forest as a landscape and biodiversity reserve, whose use should be aimed at conservation, and the local point of view, which sees it as something utilitarian and subject to traditional practices (Molinero et al., 2008a). The reforestation of the upper reaches of river basins where reservoirs were built is also an example of the imposition of policies based (in theory and with greater or lesser success) on a well-intentioned common benefit (hydroelectric production, irrigation, reduction of unemployment, self-sufficiency in timber products) that led to the forced abandonment of vast swathes of land, expropriated by the forestry management agencies (Acín Fanlo, 2001; García et al., 2017).

This imposition of external points of view contributes to the aforementioned process of disaffection of the rural population from forests (Molinero et al., 2008a). Moreover, the loss of wages due to the outsourcing of cleaning and maintenance work also undermines local people's sense of ownership of the forest (Molinero et al., 2008b).

SOCIAL PERCEPTION OF INTENT

Probably because of media coverage, fires are perceived by the public as one of the most serious environmental crimes. However, both the general population and experts consider that the seriousness of forest fires as a crime is moderate compared to crime in general, which is consistent with what prison sentences in the Criminal Code establish in relation to other crimes (De la Fuente et al., 2002; García-Cueto et al., 2003).

The general population tends to think that it is largely (20%) "mentally ill" people (suffering from a pyromania disorder) who set fires, although the real figure is four times lower. This is followed, in order of public perception, by motivations such as the rezoning of land for development, vandalism and speculation to reduce the price of timber (Aniceto, 2008), all of which, according to research data, are very much in the minority.

However, public opinion is reluctant to believe that the farming and livestock sector may cause forest fires (between 2% and 4% approximately), despite the fact that it is the main objective cause (Aniceto, 2008). It can be said that, when perceiving the seriousness of forest fires, one tends to associate it with intrinsic evil, mental imbalance or greed. In some districts there is a widespread belief that the fire-fighting companies or personnel themselves cause fires (Molinero et al., 2008b), although this does not seem to have a high level of perception at the national level (Aniceto, 2008). In this regard, several studies have highlighted the presence of a certain number of firefighters and fire-fighting personnel in convictions (Soeiro & Guerra, 2014). However, once again and despite clear geographical differences, the statistics show that this motivation is merely anecdotal throughout Spain (Aniceto, 2008; Garrido, 2016) and it may well be the case that this type of offender is more easily identifiable given their proximity to fire-fighting or fire investigation professionals.

Land rezoning for economic gain (Europa Agroforestal, 2006; De Castro et al., 2007; Molinero et al., 2008b; Rivera, 2009) and the sale of burnt timber (Aniceto, 2008) are perceived by the population as an important factor in certain areas, but statistics show that these motivations are also negligible (Garrido, 2016). Furthermore, both speculation in land rezoning and collusion to lower the price of timber for industrial use can be effectively fought off through sufficiently restrictive legislative tools (Suárez de Lezo, 2017).

Additionally, the connection between the declaration of protected natural areas and forest fires is also perceived as relatively important by experts (Europa Agroforestal, 2006), although the general population does not perceive it as an important motive (Aniceto, 2008), nor is it significant in general forest fire statistics.

Finally, at least in certain regions, and always linked to conspiratorial attitudes, there is a belief, which is difficult to verify, that fires are set to damage the livestock sector. The reasoning behind this perception is that, given that legislation prevents grazing in burned areas to avoid fire being used for clearing land (Molinero et al., 2008b), livestock farmers would be the target of collusion to harm their interests. The chances of this happening are minimal, but they show the degree of tension that exists between social groups.

SECTION 1.5 ILLEGAL LOGGING

1.5.1 INTRODUCTION

Illegal use of forest resources has been defined simply as timber extraction in contravention of national laws, although factors such as exploitation of protected areas, extraction of resources in excess of quotas, incomplete or fraudulent reporting to avoid paying fees or contravention of international laws come into play. In addition, there is the possibility that even if logging is technically legal, it may cause damage to ecosystems (Wyatt, 2016). According to this author, it is also considered illegal when there is no legislation in place and the timber is harvested arbitrarily.

In many cases, but not exclusively, illegal logging is linked to the trafficking and consumption of precious woods, such as ebony or rosewood (Innes, 2010; Jahanbanifard et al., 2019). Illegal trade and consumption of flora and fauna are dealt with in general terms in SECTION 1.7 and SECTION 1.8 of this chapter, respectively.

Apart from habitat destruction, increased erosion and decreased greenhouse gas fixation, illegal logging has many other social effects. This practice is linked to the abuse of human rights, mistreatment and loss of labour rights, corruption, organised crime, money laundering, economic loss for land holders (private and public, either in the form of lost profits or lost taxes) and overexploitation (Bedoya & Bedoya, 2005; Lawson & MacFaul, 2010; Reboredo, 2013; Sundström, 2016). The ban on illegal timber imports yields positive results, but it must be global and address these social variables to ensure its effectiveness (Lawson & MacFaul, 2010).

As with other criminal activities, there is a close connection between the illegal sale of timber and the legitimate market. This can occur through falsified permits, mixing legally harvested timber with illegally harvested timber, or facilitating activities through bribes, either to enable illegal actions or to avoid criminalisation (Sundström, 2016).

Illegal timber may represent around 30% of the total global trade in timber (Reboredo, 2013; Wyatt, 2016), but in some countries it is estimated to be over 80% (Bedoya & Bedoya, 2005). In addition to wood, charcoal is also the subject of a black market that endangers forests in tropical countries (Wyatt, 2013).



Figure 4. The global demand for wood is growing, be it for construction, furniture or heating. As a result, illegal logging persists in many countries. (Photo: JFO-SEO/BirdLife).

PANDEMICS ASSOCIATED WITH BIODIVERSITY LOSS

Many of the pathogens afflicting humans, such as smallpox, influenza and tuberculosis, were zoonoses thousands of years ago – pathogens native to other animals that were passed on to our species through close co-existence – and this process still exists (Steinfeld et al., 2007).

Without downplaying the importance of zoonoses originating in livestock, most of the viruses arising as emerging diseases in recent decades are zoonoses originating in wildlife. Zika, dengue or Chikungunya and other arthropod-borne arboviruses have their natural reservoir in different primates, rodents or birds (Mayer et al., 2017). Viral zoonoses transmissible from wildlife also occur in cold regions of Eurasia or North America. (ECDC, 2019). Pathologies such as AIDS, Ebola fever, SARS, MERS, etc. find their wild hosts among bats, civets and other mammals (Reperant & Osterhaus, 2017) and are passed on to humans who handle these animals or their carcasses. Numerous species in street markets carry viruses that are potentially pathogenic to humans (Guan et al., 2003). Rabies transmission is more likely in mining-related settlements than in other locations (Chome et al., 2007).

The destruction of habitats previously sparsely or not at all populated by humans and the use of wildlife for food or other purposes increase the potential for contact between humans and vector species. This is also often the case in situations where different species are mixed, thereby increasing the likelihood of specific barriers being breached. Besides, new settlements often take place in overcrowded and unsanitary circumstances. Increasing urbanisation means that, once the barriers to cross-species transmission are broken, the potential for human-to-human transmission increases and epidemics occur. The speed of international transport makes it easier for these to become pandemics.

In addition, the establishment of farms for breeding certain wild species is a further potential risk of zoonoses. For example, civet farms, established in Asia to meet the demand for civet meat, civet musk for perfumery and the gourmet coffee known as kopi luwak, pose a significant zoonotic risk (Clark, 2012).

Contact with new pathogens is not only possible through wildlife markets or haematophagous arthropods, but can also occur through accidental contact with faeces, saliva, etc. of these animals by humans occupying previously unoccupied territory (Minhas, 2020).

The Covid-19 pandemic, the immediate source of which is a wild mammal (Lau et al., 2020; Zhang et al., 2020), is a recent example of the impact of both the destruction of previously undisturbed habitats and the use of wild animals for food and other purposes (Contini et al., 2020; Trilla, 2020).

1.5.2 REASONS FOR ILLEGAL LOGGING

As with other environmental crimes, the root causes of illegal logging are in most cases related to poverty and lack of governance, including a lack of sustainable resource management (Reboredo, 2013). Some authors theorise, however, that the persistence of illegal logging in certain countries may have a stabilising role in the social order of forest-connected communities and that, given that its disappearance could alter the shared identity of those communities, it is bound to be maintained (Pendleton, 1998).

Regardless of the legal definition level of activities (from the total absence of a legal framework to its abuse), illegal logging has been linked to conflict zones. Thus, in addition to being related to other extractive activities such as mining, deforestation is regarded as a method of financing, as a strategic way to achieve objectives, or as a consequence of these conflicts (Wyatt, 2016).

With regard to economic motivation, as with trafficking in wild animal parts, particularly ivory and rhino horn, illegal logging has been linked to financing the purchase of weapons and the logistics of groups in conflict. Armed groups themselves may directly use forest resources illegally or impose fees on shipments by providing false permits to logging companies. It may even happen that, after a conflict ends, companies continue operating illegally (Wyatt, 2016). Regardless of the existence of criminal organisations, the existence of poverty and marginalisation is a driver for illegal logging (Ikuomola et al., 2016).

CASE STUDY 1. ILLEGAL LOGGING IN ROMANIA

Criminal actions are often linked to other types of offences and even involve personal injury against law enforcement officers who report offenders. In Romania, illegal logging has been associated with the murder of at least two forest rangers, but attacks on employees of the state company responsible for the management and conservation of Romania's public forests number 185 in five years^{1,2,3}.

As a strategy during conflict, moreover, mass logging eliminates prevents opponents from taking cover (Wyatt, 2016). Thus, the destruction of the environment used by indigenous peoples and communities stimulates their exodus, so there is a circular relationship between economic interest and the tactic of harming the interests of the opponent.

Lastly, illegal logging can also occur as a consequence of conflict. Thus, when significant population movements occur, they can lead to the illegal destruction of forest resources for their survival (Milburn, 2016); the same applies to combatants (Wyatt, 2016).

¹ France24 (29/10/2019): <https://www.france24.com/en/20191029-romanian-rangers-protest-deaths-of-colleagues-fighting-illegal-logging>

² Romania Insider (17/10/2019): <https://www.romania-insider.com/romania-forest-ranger-killed>

³ Romania Insider (23/10/2019): <https://www.romania-insider.com/romania-ranger-murder-accident-lumber-mafia>

CASE STUDY 2. ILLEGAL HARVESTING OF TIMBER PRODUCTS IN LA VISITE NATIONAL PARK, HAITI

The extreme poverty of Haiti's rural population has led to the illegal occupation of large areas of forest, which are cut down to plant crops or used as building materials, charcoal or *bwa-gra* (fatwood, used to light domestic fires). This involves both personal consumption and trade with urban markets. Deforestation in Haiti is one of the highest in the world and the country keeps only 1% of its original forest cover (Hedges et al., 2018).



Fatwood (*bwa-gra*) cutting, charcoal selling, wood panelling and firewood collection, all of which are prohibited in La Visite National Park, Haiti.

SECTION 1.6 ILLEGAL HUNTING AND FISHING

1.6.1 INTRODUCTION

We define illegal hunting and fishing as follows:

- The unauthorised capture or killing of animals, protected or not
- The capture or killing of animals that can be legally hunted or fished, but at times or on land where this is not authorised
- The capture or killing of animals using prohibited hunting methods, mainly those that are massive and non-selective (e.g. poison, explosives, traps, etc.)

Although illegal hunting is often part of a more complex context ranging from, e.g., the illegal capture of species to be sold as pets (endangered or invasive alien species) to the illegal trade in animals and their parts, this section focuses only on the capture or killing of individual specimens. Other aspects of illegal hunting and fishing will be discussed in SECTION 1.7, SECTION 1.8 and SECTION 1.9 of this chapter, due to the fact that motivations are different. Similarly, it should be noted that we make a distinction between illegal hunting/fishing and poaching, the latter term being the appropriation of game on someone else's land, while the unauthorised killing of wildlife is a much broader concept.

Terminology in different languages implies different aspects of the activity. For instance, 'poaching' in English refers to the action of 'enclosing something in a bag', from *poche* (bag, pocket); in French and Italian the term comes from the leader of a pack of *braques* (pointers); in Spanish and Portuguese, the word '*furtivismo*' refers to doing something on the sly, etc. Therefore, word equivalences are often not exact, so the term 'illegal killing' is preferred in technical literature.

Historically, poaching is associated with the process of appropriation by a dominant class of a resource traditionally accessible to the poorer classes (as a source of animal protein), who become legally excluded from using it, very often through the application of harsh laws. Among the first species protected in Europe for privileged use by the upper classes were falcons in Sardinia in 1392 (Lalli, 2014) and the northern bald ibis in Salzburg in 1504 (Kumerloeve, 1984), and the first laws severely punishing deer poaching were introduced in the UK in 1079 (Stover, 1985).

Later, restrictions on captures began to be applied in order to allow for the recovery of populations of hunted species (quota restrictions, seasonal bans). Only more recently has protection been applied to species of no interest to hunters or whose conservation status was worrying for other reasons.

The fact that some countries or territories authorise hunting and trapping methods that are prohibited by conventions or directives of a higher order than national regulations has been a problem since the beginning of the 20th century. Ferrero-García (2017) reports that there were already complaints about the authorisation of methods for capturing migratory birds prohibited by the International Convention for the Protection of Birds (1902). In Spain, this situation has persisted until recently, since massive and non-selective methods were authorised by regional legislation, even though they were in contravention of European directives and national laws, such as the *parany* hunting system (Murgui, 2014). Similarly, some practices, such as the control of animals considered harmful by government-funded hunters, went from being legal and promoted to being

prohibited and prosecuted, creating resentment on the part of those to whom predator control was socially respected and profitable.

Although its incidence is much lower in other European regions, amounting probably up to one million birds in non-Mediterranean Europe, illegal hunting in the Mediterranean kills tens of millions of birds, many of them protected, every year (Brochet et al., 2016). This activity is concentrated in certain regions, such as the Caucasus and the Middle East (Arabian Peninsula, Iran, Iraq), crossed by most of the birds of the entire Palearctic in their migration (Brochet et al., 2017, 2019).

Illegal hunting can have a significant impact on the conservation of species. Thus, illegal hunting by shooting and trapping was the main cause of Iberian lynx mortality in Doñana and Sierra Morena (Rodríguez, 2012) until the early 1990s (when the proportion, rather than the incidence, of killings was reduced due to an increase in the population and the number of roadkill occurrences). In the Canary Islands and other islands of Macaronesia, as well as in the Balearic Islands, shearwater nest plundering has a significant impact on the population dynamics of shearwaters (Fontaine et al., 2011; López-Darias et al., 2011). The killing of raptors impacts whole regions, as a sink effect is created in areas where illegal control takes place, affecting populations over a much larger territory (Amar et al., 2012).

For the hunting sector, illegal hunting is generally not perceived as a priority threat that can significantly harm their activity. For example, hunters and hunting societies in Cordova have a negative perception of illegal hunting, but they do not consider it a priority in the management of hunting reserves (González Arenas, 2000).

Marine poaching has been particularly studied in Galicia (González Arias et al., 2011; Martínez-Ballesteros, 2018), but also in the Canary Islands (Pascual Fernández, 2004; De Nicasio, 2012; China, 2017).

Blast fishing developed throughout the 20th century (Piñero, 2010) and not only causes irreparable damage to the habitat and to non-target species, but also has a very low yield, as most of the dead fish sink and are not recovered. Although its use has been heavily prosecuted and has virtually disappeared, at least several court cases were reported in northern Spain (Rodríguez-Somoza, 2010; Lois, 2014), as well as in Southeast Asian countries (Dunning, 2015) and East Africa (Wells, 2009) at the beginning of the 21st century. In addition, fishing using products that are toxic to wildlife is also prohibited, although cases are still present in river environments, in particular in connection with trout fishing by illegally discharging toxic or harmful substances, such as bleach, and causing serious damage to other species (Visa, 2010).

1.6.2 WHAT ARE THE REASONS BEHIND ILLEGAL HUNTING AND FISHING?

The criminology related to illegal hunting in the broadest sense has traditionally analysed law enforcement issues and has been studied for at least half a century in Spain and considerably longer in other European countries (Martínez-Pereda, 1968). As a result, there is a relatively good classification of illegal hunters.

The origin of the prosecution of poaching in Europe dates back to the loss of the ancestral right of the peasantry to use game and the right to protect crops from damage by ungulates. This was especially the case with the establishment of feudal states in Europe. The imposition of feudalism in regions where communal property was deeply rooted was accompanied by a draconian repression, as in England (Stover, 1985). Although the prohibition in the different Iberian kingdoms

was relatively less severe than in other regions where feudal systems dominated, the differentiation by social classes created a feeling of animosity on account of hunting rights (Martínez-Pereda, 1968).

Similarly, the confiscation of communal lands deprived the impoverished peasantry of access to sufficient resources, which led many day labourers to engage in poaching on land that had gone from collective to private ownership (Cruz, Cobo & González, 1992). In the mid-20th century, poaching in Spain continued to be mainly carried out by day labourers and farmers, although the incidence of the former seems to have increased over time (Martínez-Pereda, 1968).



Figure 5. The capture of wildlife for consumption or for sale is still common in many countries. On the left, *Crocodylus niloticus* for sale (live, to ensure longer freshness); on the right, fresh blue duiker (*Philantomba monticola*) and porcupines (*Atherurus africanus*), as well as porcupine carcasses smoked for preservation (Photos: JFO-SEO/BirdLife).

Despite the different geographical, cultural and social contexts, Muth and Bowe (1998) describe the motivations behind illegal fishing and hunting:

1. Commercial gain through illegal trade, often for enrichment, although in many cases it only guarantees subsistence, since most of the profit goes to the intermediaries
2. Domestic consumption, usually associated with consumption by the local population
3. Recreational satisfactions, usually linked to abuse of legal hunting (exceeding quotas, hours, etc.)
4. Trophy poaching out of ostentation or pride
5. Thrill killing and the passion of casting the line, common to legitimate hunting, but in an illegal context
6. Protection of self and property (e.g. crops, livestock, game)
7. Rebellion against authority, linked to other attitudes against the system or the State
8. Traditional right, continuation of traditional trapping of animals in contexts where it could be considered a survival resource
9. Disagreement with specific regulations, such as regulations on protected areas limiting hunting activities; this differs from item (7) in that it is more specific
10. Gamesmanship - meaning that the trigger is the very act of poaching, the thrill of confrontation with authority and with the gamekeeper, and the chance to boast about it

The term 'gamesmanship' by Muth and Bowe (1998) conveys the idea that the act itself and the pleasure and thrill of doing it are the triggers of the action. Components such as boasting are involved, due to the connotations of defiance, bravery and boasting that the authors attribute to the action, together with the pleasant sensation of victory and the displays of cunning and skill associated with it. This aspect is analysed and broken down into several elements by Forsyth and Marckese (1993). These authors review the motivations described for other types of criminal activity as applied to illegal killing. Thus, they analyse factors such as trouble (prohibition makes poaching attractive), excitement (the challenge of not being caught), smartness (when they escape from the guards, they consider themselves smarter than them, and if caught they often blame someone else), toughness (poachers and illegal fishers often brag about their actions) and autonomy (actors apply their own rules), typical of the characterisation of crimes; the authors do not find a positive value to fate in their study.

In an analysis of the interaction between tigers and people, for example, there are several situations that trigger tiger kills: villagers' self-defence parties when a tiger raids a village; poachers who initially target herbivores, but do not hesitate to shoot a tiger if it is seen stalking; people who have licensed weapons for self-defence, but actually use them for poaching; trappers who accidentally catch a tiger; and pirates who extort and kidnap local fishermen, but apparently also kill tigers. All of these can contribute to the use or sale of corpse parts for magical and pseudo-medicinal use (Saif & MacMillan, 2016).

It should also be borne in mind that there may be significant variations within a region or between adjacent regions. Thus, for example, in the Mediterranean region, while the main motivation for illegal bird hunting is food in all sub-regions, in North Africa the sporting aspect is much less important (Broset et al., 2016); however, in Central Europe and the Caucasus the main drive is sporting, while in Northern Europe it is predator control (Broset et al., 2017); in the Arabian Peninsula the motivation is basically sport (Broset et al., 2019).

ECONOMIC BENEFIT AND SELF-CONSUMPTION

The economic benefit (both for consumption and commercial gain) has been probably more extensively analysed in the literature (Von Essen et al., 2014). It should be made clear that, despite the economic motivations for poaching - including live capture - (South & Wyatt, 2011; Knapp, 2012), the relationship between poverty and poaching is not linear and causality is not immediate; it is a complex relationship that needs to be properly analysed from a point of view that is sensitive to the reality of communities (Duffy et al., 2016). In fact, for example, an increase in financial standing may lead to a higher demand for animal protein, with a strong preference for bush meat (Knapp, 2012) or products such as sea turtle meat, which is perceived as a status symbol (Mancini et al., 2011).

One of the traditional and most obvious motivations is direct benefit in the form of appropriation, either to provide protein for the household or for economic gain. Generally speaking, poachers practice a subsistence economy, which means that illegal killing is sometimes also associated with the protection of crops or livestock. Thus, several motivations occur simultaneously (Saif & MacMillan, 2016). Game consumption may actually be for subsistence reasons as a source of protein, or as a gourmet or traditionally important product (Brochet et al., 2016, 2017, 2019). Smuggling bushmeat from Africa to Europe occurs both as self-consumption by African expatriates and illegal trade, culturally driven by the will to remain connected to their homelands (Gombeer et al., 2021).

GPS tracking of several species of raptors has also detected the death of vultures and other raptors in African countries for the sole purpose of obtaining protein. This use may coexist with others, such as the use of vulture parts in witchcraft, as explained below.



Figure 6. Carcasses of several Rüppell's vultures (*Gyps rueppelli*) shot to obtain protein for self-consumption in The Gambia (photo by Fagimba Camara - WABSA).

Despite the risks taken by poachers, the chances of capture and conviction are slim. For example, the probability of being caught and sentenced for hunting sea turtles in Baja California is less than 15% and the severity of sentences is also 15% of the maximum penalty (Mancini et al., 2011). In the Serengeti, the probability of being caught in a bushmeat hunting operation is 0.07%; over large areas, the vast majority of poachers have only been caught once, since they have adapted to surveillance patrols (Knapp, 2012). In the case of more closely monitored species, such as elephants or rhinos, both the risk and the benefit increase. Thus, the analysis of the distribution of elephant poaching shows that it correlates with both the international price of ivory and the rates of poverty and corruption (Hauenstein et al., 2019).

Several types of illegal marine fishing have also been defined: from those who harvest for self-consumption to professional poachers who normally alternate this with other illegal activities, and from socially excluded people to those who misuse their licence (González-Arias et al., 2011; De Nicasio, 2012; Martínez-Ballesteros, 2018). Support and counter-surveillance networks against law enforcement officers exist among the organised groups. Blast fishing provides a quick access of the resource, without contemplating the sustainability for future harvesting, and the easy commercialisation of the product encourages significantly this illegal practice (Martínez-Ballesteros et al., 2017).

The consumption of bush meat, particularly but not only when sold at live markets, is a source of disease (Chomel et al., 2007). The main reason for this is contact with pathogens that are new to humans in circumstances favourable to cross-species transmission and in crowded and unsanitary conditions (see

Box 1).

DEFIANCE, BOAST AND TRADITION AS MOTIVATIONS

Of course, it is undeniable that different motivations can go hand in hand (Muth & Bowe, 1998; Mancini et al., 2011; Kahler & Gore, 2012). For example, a study carried out in Georgia (Sándor et al., 2017) basically points out that *fun* is the main cause of the illegal shooting of raptors (associated with point 5, *thrill*), but also tradition and boasting. Thus, tradition, defiance and boasting are often combined (Verissimo & Campbell, 2015), although these motivations have a strong cultural and social component, so that some of them may not be relevant at all in certain contexts (Kahler and Gore, 2012).

The traditional aspect may be too vague and may include social and family events. A study in Cyprus found that there is a social motivation to passerine trapping, including that it is a family bonding activity that keeps young people out of harm's way and away from the influence of drugs (Jenkins et al., 2017). The social component has also been detected in spring turtle dove hunting in Greece (Karris et al., 2018). Therefore, the attitude towards poaching is different depending on the local or foreign origin of the poachers, as foreign poachers would not follow a tradition when carrying out the same activity (Sándor & Anthony, 2018).



Figure 7. *The End of the Poacher*, based on a painting by A. Dieffenbacher (1894), depicts the confrontation between gamekeepers and poachers, which, in literature and folklore, is shrouded in romanticism.

It is considered that there is a cultural or political motivation when there is a perception that regulation is externally imposed and alien to local idiosyncrasies; local offenders often perceive and argue that it is external impacts that may be threatening the conservation of game or any other natural resource. Traditional uses are often perceived to have a lower incidence (Bell et al., 2007).

CASE STUDY 3. SHEARWATER POACHING IN ALEGRANZA, OFF THE LANZAROTE COAST

In September 2015, a shearwater feast was found to have been held for 19 men, 10 of whom were sentenced to fines after the trial. The rest were acquitted as it was not proven that they had participated in the meal. The accused included both people with a certain prestige in Lanzarote society and criminals involved in other types of crimes. In various statements during the trial, the custom was described as common and generally unpunished⁴.



Earlier, in 1996, the permissiveness with which shearwater poaching was treated in Lanzarote had led to the resignation of several officers. In 1993, even high-ranking environmental officials had been caught in what, according to press reports, has become a habit of the ruling class in the archipelago, hence the sense of impunity shown⁵.



Despite that poaching served originally to obtain a supplementary source of food, in Spain and other similar countries, the economic context of subsistence decreased throughout the 20th century, and nowadays the motivation is almost purely cultural. This is the case of *parany* hunting system (Murgui, 2014), illegal hunting in Doñana (González-Faraco & Murphy, 1998) and shearwater nest plundering on Spanish islands (the capture of shearwater chicks, traditionally used to help domestic economies and supplement the diet in times of famine). Although the cultural motivation is the prevailing factor, shearwater nest plundering is also about outdoor fun, resistance and defiance to an imposition by the authorities and the exercise of alleged traditional

⁴ La Voz de Lanzarote (08/05/2019): <https://www.lavozdelanzarote.com/articulo/tribunales/acusacion-habla-exhibicion-impunidad-agentes-confirman-conocian-cacerias-pardelas-anos/20190508210901138321.html>.

La Voz de Lanzarote (08/05/2019): <https://www.lavozdelanzarote.com/articulo/tribunales/juicio-pardelas-queda-visto-sentencia-19-acusados-niegan-responder-fiscalia-acusacion-popular/20190508174313138315.html>.

La Voz de Lanzarote (16/05/2019): <https://www.lavozdelanzarote.com/articulo/tribunales/condenados-diez-acusados-asadero-pardelas-alegranza/20190516100754138558.html>.

⁵ El País (03/07/2019): https://elpais.com/politica/2018/06/30/actualidad/1530355692_964041.html.

rights (López-Darias et al., 2011). In 2019 there was a landmark ruling about shearwater nest plundering in the Canary Islands, setting a precedent for combating these attitudes that normally go unpunished (SEO/BirdLife, 2019).

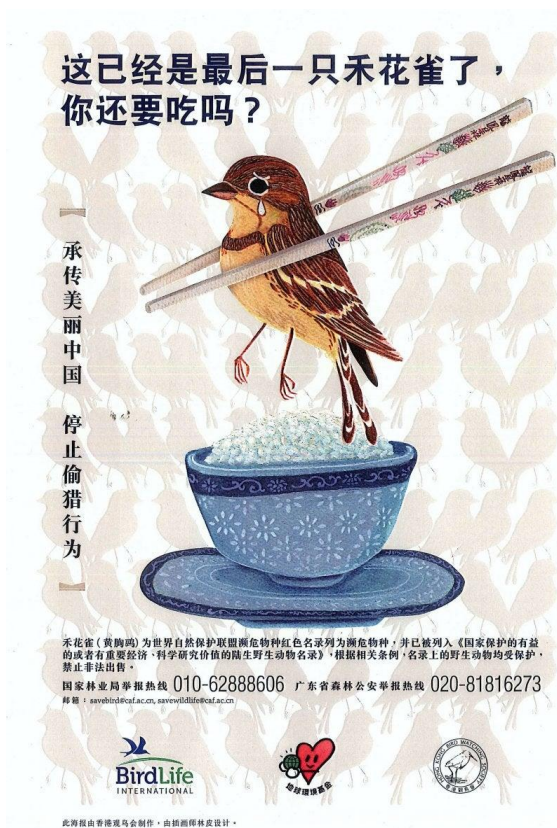


Figure 8. Poster urging people not to eat Critically endangered Yellow-breasted bunting distributed by Hong Kong Birdwatching Society in southern China.

The capture of passerines for consumption (not to meet the basic nutritional requirements, but as a fancy dish, illegal in China since 1997) has brought the yellow-breasted bunting (*Emberiza aureola*), once one of the world's most abundant birds, to the brink of extinction (Kamp et al., 2015). In Cyprus, on the pretext of tradition, millions of passerines are killed to be served in restaurants (Jenkins et al., 2019; Nurse &). In France, ortolans (*Emberiza hortulana*) are caught alive (this activity being banned by EU directives), crammed in captivity for some weeks in darkness and finally drowned in Armagnac (Jiguet et al., 2019; Nurse & Wyatt, 2020). In total around 20 million passerines lose their lives annually in their migration across the Mediterranean due to illegal, massive and non-selective devices (Brochet et al., 2016; BirdLife, 2017).

For several reasons, poaching has traditionally been less socially criticised than other types of crime. Among others, the ancestral spirit of rebellion against the dominant class (Martínez-Pereda, 1968; Cruz et al., 1992), the fight for survival in times of

crisis (Prieto, 2006; Martínez-Ballesteros, 2018) and the lack of awareness of the damage to common goods in the appropriation of resources (Pires & Moreto, 2011; Jenkins et al., 2017; Karris et al., 2018) stand out. As regards fishing, retired fishermen engaging in fishing without a licence is not considered wrong by society (De Nicasio, 2012; Martínez-Ballesteros et al., 2017).

Another variant, associated with types (7), (9) and (10) above, has been reported in Malta (Verissimo & Campbell, 2015), where the confrontation with conservation groups leads to intentional and preferential shooting of protected species. In this context, revenge and affront may be the consequence to coercive measures, as mentioned by Lemieux & Eloff (2014). These authors describe poachers going so far as to shoot rhinos that have been pre-emptively stripped of their horn as a deterrent to hunting, to demonstrate that such measures are not a valid conservation measure, as the animal dies anyway⁶.

The relative social support that poaching has traditionally enjoyed lies in a certain romantic vision, a Robin Hood syndrome (Muth & Bowe, 1998), considering the poacher as a rebel to the new aristocratic impositions against the ancestral rights of the peasantry (Girtler, 1998). Forsyth et al.

⁶ Specifically for this case, this lack of deterrence, coupled with the fact that rhino horns grow in a relatively short period of time and that the risk of death of the animal during anaesthesia is high, makes dehorning inadvisable as a hunting prevention measure (Milner-Gulland, Beddington & Leader-Williams, 1992).

(1998) also refer to poaching as folk crime, i.e. crimes that do not imply a loss of respectability for the offender, but may actually command respect in his or her community. The sense of loss of traditional territories to the creation of protected areas and the alienation of inhabitants' ancestral rights both contribute to the general population's view of poaching as a legitimate activity (Hübschle, 2017).

Illegal shell-fishing and fishing are often indulged by the population when they involve retired fishermen, domestic self-consumption or supplementary income. However, when this activity is carried out for profit, exceeding quotas and harming legal professionals, social conflicts arise (González-Arias et al., 2011; De Nicasio, 2012; Martínez-Ballesteros, 2018).

FINANCING OF ORGANISED NETWORKS

In the context of illegal hunting associated with legal extractive activities, it has been reported that purchasers of products resulting from the prohibited activity can keep up appearances of legality through a legal purchase that accounts for a small part of the final product. For example, restaurants may be using the legality of some of the produce they offer to hide a larger quantity of illegal origin (Chinea, 2017; Martínez-Ballesteros, 2018); similarly, legal trophy poaching may be feeding illegal trafficking networks (Lemieux & Eloff, 2014; Hübschle, 2017; Nuber, 2018). The legal ivory trade is said to have served as a cover for the illegal harvesting of ivory by paramilitary groups (Duffy, 1999).

In a related vein, the link between armed conflict and illegal capture of species is not new, although it has received less attention than the extraction of other non-renewable natural resources (Milburn, 2016). Thus, revenues from the illegal trade in poaching products were used to finance from Rhodesia and apartheid South Africa to armed conflicts in the 1980s and early 1990s (Unita in Angola and Renamo in Mozambique, so-called Frontline States) (Duffy, 1999). More recently, a shift in the source of funding for terrorist and insurgent groups has been identified, with poaching joining the traditional drug trade (Haukvik, 2018; Behera, 2019). The connection between insurgency / armed conflict and poaching is partly related to the demobilisation of troops and the increase in available weapons (Martin, 2004; Poudyal, 2005; Stubblefield & Shrestha, 2007). The escalation of armed conflicts in the Sahara and Sahel in recent decades has gone hand in hand with the loss of wildlife in the region, particularly the largest fauna (Brito et al., 2018). At least in some cases, the relationship between increased terrorist activity and illegal hunting and trapping of wildlife may not necessarily be causal (Haenlein et al., 2016).

The dynamics of international trafficking has come to be described as that of a cartel in which different suppliers organise themselves in oligopolistic collusion, not as a mere juxtaposition of unconnected actors (Lopes, 2019).

In situations of armed conflict, hunting to feed the troops is common, as well as a source of funding through the trafficking of materials such as ivory (Milburn, 2016).

ILLEGAL PREDATOR CONTROL BY MASSIVE AND NON-SELECTIVE METHODS

One of the most relevant reasons for chasing after wildlife today is the protection of profitable operations, eliminating those species that would prey on game, domestic livestock (including bees) or crops. This activity can be carried out legally, through administrative authorisation, but,

on other occasions, it is carried out illegally without such authorisation and affecting protected species.

In a study carried out in central Spain (Delibes-Mateos et al., 2013), the vast majority and managers or owners of small game hunting reserves perceive that small predators negatively affect the abundance of species that can be hunted, although this belief is based almost exclusively on the fact that small predator species are observed with some frequency but with no supporting evidence on the causes. These results can probably be transposed not only to the rest of Spain but also to other countries.

In the UK, hen harriers are chased after because they prey on red grouse chicks in industrial hunting areas (Redpath & Thirgood, 1999; Murgatroyd et al., 2019) and peregrine falcons for potential consumption of adults of the same species (Amar et al., 2012). This constitutes an ongoing conflict between those who advocate for species protection and those who promote an intensive use of resources, including the imposition of a limit on raptor populations (Thirgood & Redpath, 2008; Sotherton et al., 2009).

This conflict between game managers and raptors, which is usually triggered as densities of small game species⁷ begin to thin out, seems to be recurrent. Thus, since the collapse of the rabbit population in Spain, there has apparently been an escalation of the illegal hunting of predators, which was especially evident for the red kite, as this bird is particularly vulnerable to poisoning and shooting (Villafuerte et al., 1998). Here, an occasional impact has served as a justification for an illegal persecution. In fact, predator elimination in relation to small game hunting is the main cause of poisoning cases in Spain, three quarters of which end up in convictions (Cano et al., 2016).

Illegal predator control is most prevalent in commercially-exploited small game hunting estates, where there is also a strong belief that hunting is not possible without predator control; there is, therefore, an underlying economic motivation for the use of illegal and non-selective predator control methods (Delibes-Mateos & Delibes, 2013). The same phenomenon occurs in other areas where commercial hunting is practised in Europe, such as the case of intensive red grouse hunting in the UK (Whitfield et al., 2003).

In fact, the modelling of the illegal use of poisoned bait in Andalusia shows that small game hunting is the main cause of poisonings and that this activity is positively correlated with rabbit density and predator species abundance (Márquez et al., 2013). The highest incidence of shooting of protected species, particularly birds of prey, is associated with hunting reserves and the hunting season (Arizaga & Laso, 2015). The type of bait (e.g. pieces of meat or fish, sausages and other processed food, eggs) that is distributed for opportunistic predators to find is particularly attractive for certain species of raptors, such as Egyptian vultures (Hernández & Margalida, 2009) and red kites (Villafuerte et al., 1998).

The use of massive, non-selective methods in sub-Saharan Africa is of particular relevance globally, as they have brought several species that were abundant only a few years ago to the brink of extinction. One of these methods is the intentional poisoning of carrion by poachers to prevent vultures from signalling the presence of carrion and alerting the gamekeeper (Ogada et al., 2016). Similarly, traditional medicine (see SECTION 1.8 in this chapter) is a motive for killing vultures in several African countries (Nikolaus, 2011; Ogada & Buij, 2011; Roxburgh & Mcdougall, 2012;

⁷ The impact of raptors on game species appears to be minor, except when prey are already at low population levels (Park et al., 2008).

McKean et al., 2013; Beilis & Esterhuizen, 2005). This can lead to a significant number of deaths not only among resident species but also among migratory European species.

It should be noted that local predator control can have a sink effect and affect a population over a much wider area (Woodroffe & Frank, 2005; Amar et al., 2012), even at the continental level in the case of migration routes (Arizaga & Laso, 2015).

In addition to the illegal control of raptors and other predators to improve hunting yields, the most important justification for illegal predator control is the intention to reduce damage to livestock. Where carnivore control is legal and even subsidised, it has been found to be ineffective and, in fact, livestock may ultimately be more affected by the market than by wild carnivore predators (Berger, 2006). However, it is, once again, an activity that is widely spread throughout the world. It is legal in some places, but it is mostly carried out illegally and, in particular, through the use of poison (Ogada, 2014; Cano et al., 2016).

CASE STUDY 4. MULTIPLE POISONING IN NAVARRE, SPAIN

In 2012 there was a mass poisoning of at least 138 specimens of several species of raptors, endangered to varying degrees. The NGOs *Ecologistas en Acción*, SEO/BirdLife and WWF acted as private prosecutors in the case⁸. The judgment given was the most severe to date in a wildlife crime case, with prison sentences of more than two years that should have been served⁹, but which, following an appeal, were reduced to a heavy fine that was judged insufficient by the organisations that took over the prosecution¹⁰.



(Photo: Navarre Government).

⁸ SEO/BirdLife (05/10/2019): <https://www.seo.org/2018/10/05/comienza-el-juicio-por-el-mayor-caso-de-envenenamiento-de-fauna-en-espana/>

⁹ SEO/BirdLife (15/05/2019): <https://www.seo.org/2019/05/15/la-sentencia-mas-contundente-contra-el-veneno-en-espana/>

¹⁰ SEO/BirdLife (18/02/2020): <https://www.seo.org/2020/02/18/ecologistas-en-accion-seobirdlife-y-wwf-pedimos-al-gobierno-sanciones-mas-efectivas-por-el-uso-de-veneno/>

In some African countries, the carcasses of cattle attacked by lions get poisoned so that when they return to feed – as is their custom – they are poisoned to death. Along with the big cats, dozens of vultures feeding on carrion are often killed too (Ogada, 2014).

Other less frequent reasons for the illegal killing of different species are hive and crop protection and pigeon breeding (Cano et al., 2016). Beekeepers sometimes poison bee-eaters to prevent them from potentially preying on queen bees on nuptial flights, but generally to reduce bee-eater pressure on their hives. Cases of pigeon breeders convicted for poisoning raptors or even pets in order to prevent them from preying on pigeons have also been reported.

1.6.3 TECHNIQUES TO NEUTRALISE CRIMINAL LIABILITY

Eliason & Dodder (1999) identified the most prominent neutralisation¹¹ techniques used by poachers. Considering that poachers respect the law in general, they acknowledge that poaching is wrong, but can argue that it was an isolated mistake or accident, that they were doing it to feed their family and not to get a trophy, or even rationalise that the rangers who reported them are corrupt and they are the ones who are really responsible for what happened.

The literature on neutralisation techniques also supports the classification used for the analysis of judgments, cases and key informant interviews: After interviewing poachers, Forsyth & Marckese (1993) and Forsyth et al. (1998) concluded that their motives focus on obtaining food, money, pleasure and maintaining tradition. The first reason results in a more lenient treatment by law enforcement officers. "The authors explain this result by saying that rural populations have decreased compared to urban populations and that, in urban societies, defending animal rights has become a moral crusade, so that the view on poachers has become more negative" (Alonso, 2014, p.22).

Offences or crimes involving the death of an animal are perceived by the public as more serious than others, particularly if they are considered to have some symbolic value (Martín et al. 2013).

¹¹ Neutralisation techniques are used by offenders to justify their violation to themselves or to others, as introduced in Section 1.2.1.

SECTION 1.7 SMUGGLING OF WILD FAUNA AND FLORA SPECIES

1.7.1 INTRODUCTION

Trafficking in wild species of fauna and flora and their products is in principle legal and internationally regulated through the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which aims to ensure sustainable trade and the survival of species while legitimising trade in species as human consumer goods (Sollund, 2011). However, there is significant illegal activity in this trade, in terms of the species concerned, their origin, transport conditions, etc.

Several types of environmental impacts have been identified as arising specifically from illegal trafficking in species (UNEP, 2016):

- Impacts on target species. It is the best documented for iconic species whose main threat is trade. Even for species where habitat destruction is a major threat, the removal of specimens from the population cannot generally be sustainable, as it entails an additional loss of individuals (Wright et al., 2001)
- Impacts on non-target species. Impacts on target species can cause a cascading effect leading to the reduction or elimination of populations of these species in the rest of the ecosystem. In addition, there are other collateral damages related to this activity; for example, the harvesting of ivory or rhino horns often involves the use of poison to intentionally eliminate necrophagous birds, which are considered sentinels that give poachers away (Ogada, 2014; Ogada et al., 2016; for more information on the use of poison, see SECTION 1.6)
- Expansion of invasive species. Some exotic species eventually prove to be unsuitable for being kept in captivity. Either because of this or because of changes in the owner's lifestyle, they often end up being abandoned, released or, in the case of fish tanks, dumped directly into the environment. This is one of the sources of invasive alien species, which is discussed in SECTION 1.10
- Spread of diseases. Illegal – or even legal – trafficking in alien species can lead to the spread of pathogens that affect native fauna (see below) and even humans (see also
- Box 1 in SECTION 1.5)

Traffic targets can be classified as follows:

- Live animals for the pet market, for exotic animal collections and, to a lesser extent, for exotic gardening
- Wild fauna and flora products and parts, such as hides, ivory, skin appendages (hair, horns, scales, etc.), wood, etc., and intended for multiple purposes:
 - Decoration (fur, precious woods, etc.);
 - Fashion and jewellery (coral, elephant hair, ivory, feline and reptile hides, feathers, etc.);
 - Cosmetics and perfumes (agalloch);
 - Pseudo-medicine, magic or ritual uses (rhino horns, pangolin scales, bear gall bladder, vulture brains, etc.);
 - Food (caviar, glass eels, bats, birds such as the ortolan bunting, etc.);
 - Collecting.

When these products are considered luxury items, their protection can have a prestige-enhancing effect, in what is known as the Anthropogenic Allee Effect (Courchamp et al., 2006). Thus, the more restricted the trade is and the more threatened the species is, the more difficult it is to obtain it and the greater prestige its possession grants the owner. This leads to an increased incentive and pressure for its capture, regardless of the risk, physical effort and time spent obtaining it, given that the price increases and the benefits from trade are higher (Courchamp et al., 2006; Hall et al., 2008; UNODC, 2016). The same is true for traditional medicine products in local markets – as species become rarer, their price increases and, along with it, the pressure from poachers (Nikolaus, 2011).



Figure 9. The retail sale of caviar in tourist spots (Egyptian bazaar in Istanbul) is difficult to control and sometimes constitutes not only an illegal trafficking crime, but also food fraud. (Photo: JFO-SEO/BirdLife).

1.7.2 MOTIVATIONS FOR SMUGGLING

The value of wildlife and its products, whether as collectibles, pets, pseudo-medicines or gourmet foods, is a social construct that has evolved throughout history, depending to some extent on fashion. The same is true for the types of species trafficking (Van Uhm, 2018a).

Regardless of the motives of the final recipients of the smuggled animals and plants, the main motivation of smugglers and traffickers in these products is primarily economic in nature. Wildlife trafficking is considered one of the three major international illegal businesses, along with drug trafficking and arms trafficking (South & Wyatt, 2011; UNODC, 2016; Van Uhm, 2017), also involving corruption, counterfeiting and money laundering (South & Wyatt, 2011; Van Uhm & Moreto, 2017).

The relationship between the various illegal businesses mentioned is not only opportunistic. It has been reported that the links between trafficking in species and trafficking in other goods, especially narcotics, occur at three different levels (Lin, 2005). First, organisations use the same channels for trafficking in drugs and species, sometimes also because the production areas of the former

are rich in biodiversity. In addition, animals are sometimes used to camouflage narcotics, which constitutes animal abuse. Lastly, wildlife trafficking is used to launder drug money.

In general, in a changing environment in terms of prosecution and severity of sentences, illegal wildlife trafficking is seen by organised networks as a mechanism for diversifying business opportunities (South & Wyatt, 2011).

Despite the apparent diversity of products, illegal international trade is heavily oriented towards certain species. In seizures carried out in the European Union there is a clear over-representation of a rather small group of species (Vah Uhm, 2016). Thus, the Barbary macaque (*Macaca sylvana*) makes up a quarter of all living mammals; the grey parrot (*Psittacus erithacus*), 15% of all birds; the Greek tortoise (*Testudo graeca*), half of all reptiles; and seahorses (*Hippocampus* spp.), half of all living fish. As for derived products, almost half of the mammal derived products come from elephants and half of the seizures are caviar among fish. Among invertebrates, the conch *Lobatus gigas* accounts for most of the seizures of both live and dead specimens. Among the plants that are subject to illegal international trade, the main affected group are orchids (Hinsley et al., 2018).



Figure 10. Demand for shark fins is driving local fishers to target sharks, even in protected areas where only fishing for consumption is allowed. Fishers justify it saying that this is bycatch and proving otherwise is a difficult task. (Photo: JFO-SEO/BirdLife).

In recent years, this is the environmental crime that has most radically experienced the effects of the revolution in trade patterns (according to the routine activity theory (Cabezas, 2017), which suggests that changes in social behavioural patterns dramatically affect criminal opportunities). The rise of e-commerce and private couriers, the containerisation of long-distance transport and the doubling of the number of air travellers in less than a decade have made clandestine trade in wildlife and wildlife parts much easier (Duffy, 2016a, b; Petrossian et al., 2016). In addition, as with other types of smuggling, the use of middlemen and mules is common (Petrossian et al., 2016; Van Uhm, 2018b) and bribery of customs officials is a common practice in several countries (Van Uhm & Moreto, 2017; Van Uhm, 2018b).

Legal and illegal trafficking in wildlife products are interconnected, since criminal organisations trafficking in these goods can often be registered as legal companies, allowing for the concealment and laundering of the illegal part of the trade (Van Uhm, 2016). Trafficking networks are organised on an international level (*Guardia Civil*, 2018).

While it has often been suggested that poaching, and associated trafficking, is a source of funding for armed and terrorist groups, some evidence suggests that corruption, rather than insurgency, is more related to trafficking in, for example, ivory (UNODC, 2016; Van Uhm & Moreto, 2017). Corruption, along with poverty and the international price of ivory, are the main drivers of elephant poaching (Hauenstein et al., 2019).

Efforts to enforce international conventions and legislation have been proportionately low in relation to other types of crime, which is incomprehensible given the high level of damage to heritage and to communities' livelihoods and subsistence smuggling causes (Van Uhm, 2016; Van Uhm & Moreto, 2017).

An appropriate regulation of wildlife trafficking, e.g. by banning the import of birds not bred in captivity, resulted in a reduction in the number of species established in the wild in importing countries, which reduces the risks of biological invasion (Carrete & Tella, 2008). In captivity, the cessation of selective pressure favours a rapid loss of the ability to escape from predators and also of escape skills (Carrete & Tella, 2015). However, these regulations need to be harmonised at international, regional and local levels to have a clear impact on populations (Lemieux & Clarke, 2009). Increasing vigilance and international cooperation (*Guardia Civil*, 2018) as well as promoting scientific progress aimed at identifying the origin and purpose of smuggled goods (Stein et al., 2016) are essential elements to increase the risk for traffickers and thus reduce their opportunity to commit crimes. Social awareness of the reality of species smuggling is essential to reduce the demand and thus the market value of biodiversity.

1.7.3 CHARACTERISTICS OF THE ILLEGAL TRAFFICKING IN LIVE ANIMALS

In the case of live animals to be sold as pets, for exhibition, falconry, etc., their intrinsic value depends on their good condition, which entails important constraints in transport, distribution, etc. However, transport conditions are often so poor that they claim the lives of most of the animals (75-90%) (Restrepo-Rodas & Pulgarín-Restrepo, 2017). For example, a recent study shows that most of the mammals and reptiles displayed for sale in Moroccan souks did not have any minimum animal welfare measures in place (Bergin & Nijman, 2018). Poor capturing, transport and selling conditions mean that the impact on wild stocks is dozens of times greater than what market availability would suggest.



Figure 11. Transport conditions of animals for the pet trade often result in the death of the individuals.

Lastly, given the high mortality rate of animals and the increased customs control, smuggling of fertilised eggs is becoming an alternative to smuggling young and adult individuals of certain species. Eggs can be more easily hidden and hatching can be completed later in order to sell the young specimens without the risk associated with customs control and at a higher economic profit (Coghlan et al., 2012).



Figure 12. Wildlife is often sold irregularly in precarious conditions. In the first image, sale of African grey parrots in El Rastro (flea market in Madrid, Spain). In the second image, sale of Greek tortoises and Mediterranean chameleons in a souk in Rabat. The animals are frequently exhibited crowded together and with inadequate food, without access to water or shade. (Photos: JFO-SEO/BirdLife).

SECTION 1.8 PURCHASE OF PRODUCTS FROM ENDANGERED SPECIES

1.8.1 INTRODUCTION

The link between legal and illegal trafficking is sometimes close, making control difficult. The absence of robust systems to control the legal trade in these products makes the potential for an illegal market much greater. Some authors such as Sadovy et al. (2018) claim that, in the absence of effective institutional tools, legal trade in these products should cease in order to simplify the fight against illegal trafficking. The illegal trafficking in products from endangered fauna (fur, ivory, skin appendages – hair, horns, scales, etc.) and flora (precious woods, agalloch, orchids, etc.) is fundamentally economically motivated, attracting complex criminal organisations (UNODC, 2016; Van Uhm, 2017; Van Uhm & Moreto, 2017), as has been described in SECTION 1.7

However, apart from the purely financial gain for the smuggler and the middlemen, we have not yet analysed why there is a demand for these products in this illegal trade. Whether as ornaments, as fashion and jewellery, as cosmetics and perfumery, as ingredients in pseudo-medicine and magic, or as food, all possible uses are surrounded by a common aura of exclusivity (luxury or refinement, for example).

1.8.2 LUXURY AND SUPERSTITION

The value of wildlife, whether as a traditional Chinese medicine product, a delicacy or a luxury item, is a social construct (Van Uhm, 2018a) and, as such, it means that there is an evolution in its supply and demand that is entirely independent of the objective value of the commodity. An example of how a social trend can create a biodiversity conservation crisis only to disappear a few decades later can be seen in the craze for feather ornaments throughout the 19th century.

The rise of the bourgeoisie and the middle classes in countries such as the United States and the United Kingdom in the second half of the century brought with it a growing interest in the use of extravagant ornaments, especially in the form of headdresses, muffs or stoles, mainly made up of feathers, but also of whole birds or their parts. This fashion had an impact on a considerable number of birds: in 1886, an estimate by naturalist Frank Chapman shows that 77% of the hats worn by women in New York had bird feathers or parts (Merchant, 2010). Thus, considering only the trade in aigrettes (egret nuptial feathers) during a single auction in the London market in 1902, almost one and a half tons of feathers were sold, which amounts to almost 200,000 specimens (Doughty, 1975); besides, since the adults were caught in their colonies, it is assumed that the nestlings were also killed while still in the nest. Doughty (1975) estimates that 200 million birds were killed each year just for the sake of fashion.

It is believed that many bird populations suffered a sharp decline due to this practice. The value of the feathers doubled or even quadrupled the price of gold in weight. The number of associated jobs was very considerable. Social changes like the first wave of feminism and the civic movements against cruelty to animals (the National Audubon Society was born in 1905 and the Society for the Protection of Birds in 1889–becoming RSPB in 1904– both funded by women) and the increase in the prices of raw materials due to the depletion of wild bird populations contributed to the disappearance of this fashion (Ehrlich et al., 1988).



Figure 13. Models of feathered hats in the 1910s. Source: The Art of Dress¹².

Today, a few particularly iconic wildlife products (elephant ivory, rhino horn and various parts of the tiger, considered luxury items either for their supposed magical power or their ornamental value) dominate the international media and attention. By contrast, the number of species affected by poaching in the broadest sense and illegal trade is much higher (Duffy, 2016a).

For example, several species of elasmobranchs are threatened by the shark fin trade. The practice of shark finning on fishing vessels and dumping the carcasses in the sea (so as to optimise storage in the hold) has been illegal in Europe since 2013. However, the fins from captured animals can be cut off at port and sold, because in this way the animal carcasses can be used. Spain has long been one of the world's leading suppliers of this product (Fowler et al., 2010). However, even in periods when shark finning was allowed, the export records showed inconsistencies when comparing exports recorded with imports into other countries (Shea & To, 2017). Thus, regulation may not be sufficient to prevent fraud.

In addition, caviar and glass eels have always been considered luxury items. The progressive depletion, resulting, among other causes, from overexploitation, and the subsequent protection of the species have led to an increase in prices and fuelled illegal trafficking through organised criminal networks (Van Uhm & Siegel, 2016; Sadovy et al., 2018). Glass eels are exported live from European countries to Asia (Stein et al., 2016) and have been the subject of coordinated Europol operations led by the *Guardia Civil*, which have resulted in the dismantling of branched networks involving several EU countries and Morocco (Guardia Civil, 2018; 2019). The purpose of this illegal export is the rearing of glass eels to produce adult eels in farms, as reproduction in captivity is not possible.

The traditional medicine practices of different peoples include the use of parts of endangered animals. Some African (Soewu & Sodeinde, 2015) and Asian (Xu & Yang, 2008) countries integrate traditional medicine into mainstream health systems, resulting in an increased demand. Although

¹² "Murderous Millinery: A brief look at the fashion for feathered hats in the early 20th century": <https://theartofdress.org/2015/06/24/murderous-millinery-a-brief-look-at-the-fashion-for-feathered-hats-in-the-early-20th-century/>

in many cases the conservation status of the species being exploited is ignored, in those cases where it is not ignored by the users, exploitation prevails over conservation (Soewu & Sodeinde, 2015).

Again, the impact is much greater on some species than on others. In markets in 12 West and Central African countries, only two species (black kite and hooded vulture) account for almost half of the victims out of the total 52 species of raptors traded (Buij et al., 2016), posing a serious threat to the species at regional levels (Beilis & Esterhuizen, 2005). The same is true for reptiles in Morocco (Nijman & Bergin, 2017), for example.

CASE STUDY 5. HOODED VULTURES AND WITCHCRAFT IN GUINEA BISSAU

On 23 February 2022, two traders were arrested by the local authorities for selling the body parts of vultures in Bandim market in Guinea-Bissau's capital, Bissau. The arrest was made based on information from the *Organização para a Defesa e Desenvolvimento das Zonas Húmidas* (ODZH). Investigation protocols were established in markets after several findings of dead vultures, the most relevant in February 2020, where more than 2000 hooded vultures *Necrosyrtes monachus* were found dead. The close work of ODZH with BirdLife International, IBAP (Institute of Biodiversity and Protected Areas) and the police during an undercover operation allowed for the detention of the traders.¹³



Some of the more than 2000 hooded vultures found in February 2020 (photo: ODZH)

Pangolin scales are traditionally used in several African cultures (Soewu & Ayodele, 2009; Soewu & Sodeinde, 2015). Their meat is considered a delicacy in certain countries and its consumption is reserved for wealthy people, so its price is disproportionately higher than other prey which is as difficult or as costly to capture. However, the main reason that leads to its overexploitation in many African (Soewu & Sodeinde, 2015) and Asian countries is its use in traditional medicine. The import of foreign species is not exclusive to the better-known Asian market, but also occurs in Africa (Nijman & Bergin, 2017).

¹³ <https://www.birdlife.org/news/2022/03/01/fight-against-vulture-body-part-trade-gathers-pace-in-guinea-bissau/>

Musk, obtained mainly from the glands of musk deer, is traditionally used in perfumery and traditional Chinese medicine, although nowadays it is basically limited to the latter (Jiang et al., 2002). Recently this market has also resorted to the glands of other deer species, which has led not only to legal trade, but also to smuggling and illegal hunting. Red deer are used, for example, for their penises, female tails and antlers; this has led to a very significant decline in the numbers of some populations (Zahler et al., 2004), and has also been found to be an incentive for illegal hunting in Spain.

Studies on consumers of traditional Chinese medicine found that they had a preference for products from wild animals over captive-bred ones, believing them to be more effective. However, awareness campaigns seem to have some impact on consumers' willingness to replace products from clearly endangered species with alternative products, and the authors are hopeful that such products from endangered species can be phased out of the market (Liu et al., 2016).

In addition, at much more modest levels in terms of economic scope, there is also plundering of species that can become a considerable problem due to their high demand and scarce availability, despite not being luxury items. The more or less traditional practice of collecting certain evergreen species to make Christmas decorations (yew, mistletoe and holly, as well as moss for nativity scenes) went from being a typically family custom to a lucrative business that led to the prohibition of its collection in most of Spain. The fact that many species are not specifically protected (e.g. mastic) has led to massive illegal exploitation, often for the international market.

Special mention should be made of the collection of bird and reptile eggs, particularly turtles. In many places it has been traditional to collect them and there are countries and territories where, even though regulated, it is still a legal activity. In some countries and territories, it is maintained by tradition (Iceland and the Faroe Islands), while in others licences are granted to collect and consume hundreds of thousands of eggs per year as a gourmet product.

The hobby of egg collecting, which was widespread in the 19th and 20th centuries, is generally illegal in the EU and many other countries, but is still practised (Thomas et al., 2001).

SECTION 1.9 POSSESSION OF WILDLIFE SPECIMENS

1.9.1 INTRODUCTION

The keeping of animals in captivity with no consumption or utilitarian purposes is deeply rooted in people's customs and lifestyles, from past and present hunter-gatherer societies – particularly in the form of adopted wild animals – to today's cities, far removed from nature. In nineteenth-century Europe, the keeping of terrariums, fish tanks, aviaries, greenhouses and other means of keeping exotic living creatures in the domestic environment began to be considered an expression of good taste (Hibberd, 1857). In Europe, the purchase and exhibition of exotic animals has been considered a status symbol (Alves, 2012), which, due to cultural, economic and social globalisation, has resulted in a disproportionate development of this market (Capdevila et al., 2006; Orueta, 2007). Meeting the demand for wild animals in captivity has led to the endangerment of numerous species and this, in turn, has led to the development of legal tools to prevent plundering.

There are four different legal problems linked to pets associated with different potential phases: capture, trafficking and trade, possession and keeping and abandonment. The phase corresponding to trafficking and trade is discussed in SECTION 1.7. This section will deal with the specific motivations for the capture and ownership of non-conventional pets and, in certain cases, for their abandonment, i.e. the part of the process where the consumer or end customer has a more central role. The abandonment of pets, which is a separate offence, can also be aggravated if the pet is an invasive alien species (IAS), which represents a growing problem – the keeping of alien species is one of the main causes of the introduction of IAS (this, together with other elements, is discussed in SECTION 1.10).

Access to information on this subject is not straightforward, because the number of seizures or market availability is not necessarily representative of the scale of the problem. In addition to seizure data (Restrepo-Rodas & Pulgarín-Restrepo, 2017; Sollund, 2017) and market samplings (Shanee, 2012), it is important to conduct ethnobiological studies providing insight into the interests and motivations of suppliers (Souto et al., 2017). For example, it has been noted that the trade in caged birds is increasingly using channels outside traditional markets by means of new technologies (Souto et al., 2017), making it undetectable through sampling in local markets. Equally important is the monitoring of populations to see the real impact of this activity (Wright et al., 2011).

Birds are the taxonomic group most affected by the pet trade in Latin America, both in the domestic market, which is the largest share, and in the international market (Souto et al., 2017). The domestic market for birds and primates usually absorbs most of the captured animals and has deep cultural reasons (Burivalova et al., 2017; Khelifa et al., 2017; Reuter & Schaefer, 2017; De Oliveira et al., 2018); in fact, most of the illegal pets for export seized in Colombia and Brazil are birds (Nassaro, 2017; Sollund, 2017). Traffic between neighbouring countries can reach a very significant volume (Khelifa et al., 2017). The orders Passeriformes, Anseriformes and Psittaciformes are the groups of birds that are most frequently affected by international species trafficking (Abellán et al., 2016). In particular, passerines are, due to their plumage, song or the ease with which they can be transported and kept in captivity, the group most subject to illegal trafficking (De Oliveira et al., 2018).

Considering the estimates of captive populations of certain species, the lack of captive breeding and the strong regression in distribution range, their capture may have a significant impact on their conservation, at least locally (Wright et al., 2001; Khelifa et al., 2017). Some species are very

easy to capture, which alters population structure and is likely to threaten the survival of wild populations (Kaddour et al., 2006).

1.9.2 WHAT IS BEHIND THE CAPTURE OF SPECIES FOR ILLEGAL INTERNATIONAL TRAFFICKING?

While the motivations for different types of illegal hunting and trapping are diverse (SECTION 1.6), meeting the demand for wild animals, as pets or otherwise, is primarily economically motivated in the capture and transport phases. However, there are a number of factors that define and condition the capture of these species.

Several authors have addressed the problem of the illegal capture of animal species for the pet market from a criminological perspective. The structure of animal trafficking in the countries of origin is generally complex, with a certain degree of exchange between different markets and networks of fences and receivers that, in many cases, are itinerant, which facilitates their activity and makes it difficult to control (Pires, 2014; Pires & Clarke, 2011). Although in the context of this report we are focused on international trade, the domestic market can be much more important (Pires, 2012; 2014).

The application of criminological criteria to the illegal capture of wildlife comes across the difficulty of assessing the volume of animals removed (Lemieux & Clarke, 2009; Pires & Clarke, 2012). The CRAVED model assumes that the objects of appropriation offences are Concealable, Removable, Available, Valuable, Enjoyable and Disposable and is used for situational crime prevention. In the case of species subject to pet trade, while the criteria of valuable and disposable (and probably enjoyable) were decisive in the past, the depletion of the species most coveted by the international market means that most of the trade is now directed towards easily available and removable species (Pires & Clarke, 2012). However, for certain species the opposite is true, as the ban results in a price increase that exacerbates plundering and poaching (Pires & Moreto, 2011).

The capture of wildlife to meet the international demand is far from sustainable. Thus, when trade in psittacines occurs following the plundering of nests, negative effects on populations have been demonstrated, contrary to claims by psittaculturists that such removal is sustainable (Wright et al., 2001). In those cases where assessment has been possible, bird removal is above sustainable levels for the population (González, 2003). Furthermore, the plundering of nests not only means a loss of wild specimens, but also the destruction of breeding habitat – suitable tree hollows – for the future (Pires, 2012). The capture of adults may be more common than that of chicks, which leads to an even greater impact on populations of long-lived species such as parrots (Pires et al., 2016).

1.9.3 WHY DO PEOPLE CHOOSE EXOTIC PETS?

Animals preferred as pets, in general terms, have a series of characteristics that depend on human perception (warmth, gentleness, childlike character, etc.) and, in principle, are able to adapt to their owners' lifestyles (Archer, 1997). However, the above practical considerations are often not taken into account and this can lead to animal welfare problems and pet abandonment (see SECTION 1.10).

The reasons for keeping primates in captivity are listed by Reuter and Shaefer (2017) and they can be generalised to other animal groups:

- 1) They can be considered fun;
- 2) They are indicators of wealth and status;
- 3) They are perceived as family pets for children;
- 4) For reasons of beauty;
- 5) For religious reasons;
- 6) As a tourist attraction.

Each of these reasons will be detailed below using different models and examples to illustrate them.

AS A RECREATIONAL ACTIVITY – FALCONRY AND THE BREEDING OF SONGBIRDS

Falconry was abandoned for centuries in most of Western Europe and was virtually non-existent in North America, but it was traditionally maintained in Central Asia and some Arab countries. The revival of falconry in Europe in the second half of the 20th century by naturalists such as the Terrasse brothers in France and Félix Rodríguez de la Fuente in Spain (Varillas, 2005) led to a plundering of chicks of different species due first to a legal vacuum and later to a lack of respect for the law.

Falconry is generally regulated in European countries, and it is banned, for example, in Scandinavia and Finland (Lindberg & Nesje, 2002), following the decline of many raptor species in the last third of the 20th century.

Falcons attain a very high value, especially in the Middle East and in the Gulf countries, which, coupled with the increase in the number of falconers, has led to a surge in the plundering and international trafficking in these birds (South & Wyatt, 2011; Binothman et al., 2016). Improved nest monitoring led to a reduction in the illegal capture, but a resurgence of this practice has been detected again, targeting species such as the imperial eagle (SEO/BirdLife, 2016) and the Barbary falcon (Rodríguez et al., 2019). Increased awareness on the part of a vast majority of falconers (e.g. Binothman et al., 2016) is an incentive for a more effective control of illegal trade and plundering.

In addition to the use of birds of prey for hunting, they are often kept for exhibition purposes and, in certain contexts, the possession of Falconiformes in captivity is not uncommon, with no other purpose beyond decoration or, to a certain extent, prestige.



Figure 14. Female kestrel (*Falco tinnunculus*) for sale in the souk of Rabat, Morocco, for captive keeping and not for falconry. (Photo: JF0-SEO/BirdLife).

The capture of wild birds for keeping them in captivity and their selection and training for singing competitions is more common in the Mediterranean (Atienza & Íñigo, 2011; Brochet et al., 2016; Khelifa et al., 2017) than in other regions of the Western Palaearctic (Brochet et al., 2017; Brochet et al., 2019), but also elsewhere in the world (Burivalova et al., 2017; De Oliveira et al., 2018; Nijman et al., 2018). Although breeding in captivity is a perfectly viable alternative (Magrama, 2016; Nijman et al., 2018), there is a belief that captive-born birds are less able to sing or are more expensive to purchase (Burivalova et al., 2017). In some cases, if regulation or implementation of the law is not sufficient, the availability of captive-born animals may not be enough to curb the illegal capture of these birds (Nijman et al., 2018).

At least in some specific cases, there has been evidence of a decline in the area occupied by a species subject to the pressure of capture for their song (Khelifa et al., 2017). This decline in wild bird populations is driving up the price of birds, sometimes dramatically. In Algeria, for example, the price of goldfinches has increased almost 100-fold in just 20 years, which has fuelled international trade, particularly from Morocco (Khelifa et al., 2017). In some cases, critically endangered species are projected to disappear from the wild despite the existence of very large numbers in captivity (Nijman et al., 2018).

In Spain, "captive breeding of finches for their song is not only possible but is already widespread. The techniques for training captive-born birds in singing are well known and accessible to enthusiasts of singing competitions" (Magrama, 2016, p.10). Although the songbird breeding community uses technical arguments in favour of capturing birds (Theureau de la Peña, 2017), it must be borne in mind that they justify the capture of birds not only for the sake of song training and competition according to established rules, but also for the capture process itself (López-Espí, 2014). Therefore, although the purpose of the activity is singing competitions, the personal motivation of its enthusiasts is also to capture birds. It is because of this particular reason that there continues to be pressure for legalisation.

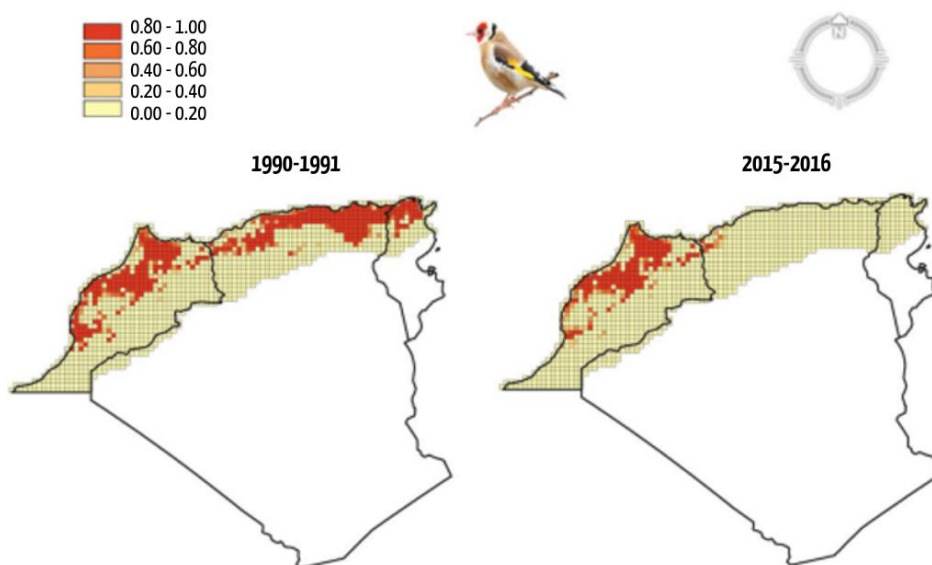


Figure 15. Goldfinch (*Carduelis carduelis*) distribution range regression in the Maghreb (Khelifa et al., 2017).

CASE STUDY 5. IMPERIAL EAGLE IN ALCÁZAR DE SAN JUAN, SPAIN

In this case of illegal possession of a specimen of a protected species, the police seized a young Iberian imperial eagle kept in captivity that had been probably plundered from its nest. It is particular because the detainee was a Moroccan national that probably kept this specimen captive unaware of the illegality of his actions.¹⁴



(Photo: *Guardia Civil*)

AS A STATUS SYMBOL AND A REFLECTION OF PERSONALITY

While animals, as pets, are used as goods and tools (similar to other consumer goods) they increasingly play a socio-emotional role (Charles & Davies, 2011) and are perceived as friendly and competent protective individuals (Sevillano & Fiske, 2016). Many people develop bonds with animals of other species that are as strong as those with other people (Sollund, 2011) or even stronger – for example, as early as the 1990s, 90% of the US population reported this (Gallup, 1997) and 38% reported feeling closer to their dog than to any other family member (Barker & Barker, 1988). They can serve as companions, receive care and provide emotionally satisfying relationships – companion animals are halfway between humans and other animals (Torres, 2007). In contrast, authors such as Shir-Vertesh (2012) warn that these relationships are inconsistent and ambivalent to the extent that these animals are considered "flexible people" and "emotional commodities", which would make them more vulnerable to obstacles that appear or to situations that arise – the relationship with the companion animal could change or simply end.

Some studies find that attachment to exotic pets tends to be lower than to conventional pets, although one variable that correlates with higher pet ownership is the trait of vulnerable narcissism (Vonk et al., 2016). Exotic pet owners may wish to stand out from the crowd, so the pet may be a symbol of the owner's self-image (Vail, 2018).

¹⁴ EuropaPress (20/08/2015): <https://www.europapress.es/castilla-lamancha/noticia-guardia-civil-recupera-aguila-imperial-cinco-casas-detiene-propietario-20150819114344.html>

Emulation is a very powerful reason encouraging the desire to purchase a particular animal as a pet (Vail, 2018), so the presence of exotic animals in the media (television, film, advertising), whether in domestic and family settings or in humorous situations, can increase demand. In the UK, the media phenomenon of the Harry Potter books and films seems not to have had a strong impact on the purchase or abandonment of owls (Megias et al., 2017). However, in Indonesia the increase in demand for nocturnal raptors as pets may be at least partly due to the book series and, especially, to the films (Nijman & Nekaris, 2017) and in India the saga is considered to have had an impact on the demand for owls to be kept in captivity (BBC, 2010), although other reasons such as street shows, pseudoscientific therapies and black magic practices seem to be more important (Ahmed, 2010). In Japan, a massive importation of raccoons occurred in the 1970s as a result of a cartoon series, which has led to a serious invasion by this species (Ikeda et al., 2004). The popularity of other wild pets has increased due to advertising campaigns – for example, meerkats through an advertisement for an insurance comparing tool (Foster, 2014) – or to social media phenomena (Vail, 2018; Harrington et al., 2019). The use of primates in films or advertisements distorts the perception of their conservation status (Schroepfer et al., 2011; Aldrich, 2018), which encourages the inclination to purchase them.



Figure 16. Salvador Dalí had several extravagant pets including a giant anteater (*Myrmecophaga tridactyla*) (Photo: Patrice Habans/ Paris Match, 1969).

“FAMILIAR” ANIMALS

Non-human animals function, in the same way as people do, as objects of social perception (Sevillano & Fiske, 2016), so that we think of them on a collective or species level (Medin & Atran, 2004) and, when perceiving them, we apply to them the perception we have of our own species groups (Franklin et al., 2013). This means that, for example, the bias towards certain species is fundamental in the definition by humans of the character of companion animals.

The Stereotype Content Model applied to non-human animals (Sevillano & Fiske, 2016) supports this idea. According to this model, people place different animal species on a plane composed of two axes: warmth (favourable or unfavourable intention that the animal has towards our in-group)

and competence (resources and capabilities they have to realise this intention). For the purposes of this text, we will only highlight that, on the one hand, species that are considered more competent and warmer, i.e. those that are intelligent and skilful but are not considered harmless, arouse protective and cooperative behaviour in humans (dogs, cats, horses...). On the other hand, animals who may be well-meaning and harmless, but have low cognitive and physical skills, have a lower status and may provoke subordinating behaviour.

The perception of turtles as tame and even as non-wild and defenceless (Pérez et al., 2011) favours their non-commercial capture for being kept in captivity, but with a serious conservation impact locally (Pérez et al., 2012). In addition to the more or less opportunistic capture of turtles by private individuals in southern Spain, they are subject to intensive trade, especially with Morocco (Nijman & Bergin, 2017).

Contemporary lifestyles may also have an impact on the keeping of less demanding pets. For this reason, the number of dogs may decline and the number of exotic pets that are kept at home not needing to be walked may increase (Chaseling, 2001).



Figure 17. Sale of *Testudo graeca* tortoises and *Chamaeleo chamaeleon* chameleons in the souk of Rabat. (Photo: JFO-SEO/BirdLife).

ANTHROPOMORPHISM AND NEOTENY

Anthropomorphism or the personification of animals is a phenomenon with a strong cultural component (Root-Bernstein et al., 2013) and has also been associated with individual needs or difficulties in interactions with other humans (Epley et al., 2008). The belief by humans that they can understand the emotions experienced by members of other species (and vice versa) is an important element of this personification (Harrison & Hall, 2010), just as neoteny (real or perceived childlikeness) enhances sympathy and positive perception of animals. It can be seen as an obstacle to species conservation (Estren, 2012), since private individuals prefer making donations (Colléony et al., 2016) for non-human animals that are more similar to humans (Plous' principle of similarity, 2003) and more charismatic (Colléony et al., 2016); they assign moral qualities to them and sometimes idealise them (Lawrence, 1989; Panter et al., 2019).

However, although the perception of child-like appearance does not influence some species groups (Stokes, 2016), these effects have been used in fictional characters (Gould, 1980) and real animals (Morris & Morris, 1966). Psittacines in particular are perceived in certain cultures as childlike beings given their ability to learn human words and sounds (Sollund, 2011), which

explains their prominence also in literature and other genres of fiction in a way that feeds back into their humanised perception. Owners of parrots and parakeets come to attribute to their pets a high degree of anthropomorphisation and infantilisation, even giving them the role of surrogates for their own offspring (Anderson, 2014). Similarly, mammals with frontal eyes capable of handling things with their hands and with any other human-like features are candidates for being perceived as closer to humans, even if expectations about their behaviour are not met (Root-Bernstein et al., 2013). The empathy and compassion of people towards other living beings seem to be closely linked to evolutionary distance, although some species such as turtles or koalas are better considered than others from closer taxa (Miralles et al., 2019); the personalisation of some animals depends on their neotenic appearance (what Lorentz, 1943, called "*Kindchenschema*" or "baby schema" – large eyes, round face, thin eyebrows, small nose...), which makes owls, among others, be perceived as childlike and vulnerable creatures (and, therefore, little short of adored) within the *kawaii* culture in Japan (Panter et al., 2019).

Phylogenetic proximity is also a very important factor in defining empathy and compassion towards different species (Miralles et al., 2019). This supports a preference for animals showing traits that can be considered "human", such as physical, cognitive or ethological characteristics (Gunnthorsdottir, 2001). Emotional responses to animals vary greatly by taxonomic group (Myers et al., 2014), with primates eliciting more positive responses (Plous, 1993) and invertebrates eliciting more fear and aversion (Kellert, 1993), which in turn is in line with what Sevillano and Fiske (2016) said in the previous section. Although mammals are generally better valued than birds (Tisdell et al., 2016), birds are the most favoured taxon in terms of available scientific knowledge, due to the enormous contribution of citizen science in the field of ornithology, which supports the fact that birds are the object of a certain preference at least by a sector of the population (Troudet et al., 2017).

The valuation of and the interest in certain species depends on their availability (Courchamp et al., 2006), but also on factors such as their colourful plumage and other appealing characteristics, both for local and international traffic, which has contributed substantially to the decline of some species in their natural distribution range (Tella & Hiraldo, 2014).

SPIRITUAL MOTIVATIONS

Some species are considered amulets and bearers of good luck. Owls are believed to be auspicious animals in Colombia (Sollund, 2017). In south-western Spain, turtles are also believed to bring good luck (Pérez et al., 2011).

The Isawiyya brotherhood in Morocco practises rituals with snakes that from a religious origin have evolved into a tourist attraction (Figure 19) (Tingle & Slimani, 2017). This same custom is considered by some among the Bedia in India to be beneficial, providing an educational value through a risk-free view of snakes that helps to avoid attacks, etc. (Modak, 2009; Konar & Modak, 2010); such educational value seems to be part of the tradition among the Isawiyya as well (Tingle & Slimani, 2017), although the capture of snakes still poses a threat to these species (Pleguezuelos et al., 2018).

TOURIST ATTRACTION

In some countries, the keeping of captive animals to attract customers to hotels or restaurants is common (Mayol et al., 2009; Shanee, 2012; Kitade & Naruse, 2018; McMillan, 2018). It is also typical to keep animals in public places as a lure for photos (Nijman et al., 2015; Bergin & Nijman, 2018). The demand for snakes for street performances increases their price due to the depletion of wild populations and the increased distances travelled and effort required to capture them (Pleguezuelos et al., 2018). Dancing bears, once common in travelling shows across Europe, persisted in the Balkans throughout the 20th century as an activity associated with the Ursari community, within the Roma people (Dumneazu, 2007); e.g. in Bulgaria and Romania they were banned upon their entry into the EU. In Asia, they have persisted illegally within the Qalandar community in India and Pakistan (D'Cruze et al., 2011).



Figure 18. It is common to have wildlife in captivity as a tourist attraction in hotels and restaurants or street shows. On the left, a Bonelli's eagle (*Aquila fasciata*) in captivity in a café in the province of Nador (Morocco); on the right, a golden eagle (*Aquila chrysaetos*) as a photographic attraction in Budapest (Hungary). (Photos: JFO-SEO/BirdLife).

Although these activities are prohibited or strictly regulated, there is often a great deal of permissiveness. In these cases, general or targeted awareness-raising campaigns can be carried out. Behavioural guidelines for responsible tourism exist to identify unethical practices (street shows using wildlife, use of wild animals as tourist attractions, humanised behaviour, wildlife farms, etc.) and unsustainable products (TourismConcern, 2017).



Figure 19. Barbary macaque (*Macaca sylvanus*), cobras (*Naja naja*) and puff adder (*Bitis arietans*) used as tourist attractions in Jemaa el-Fnaa Square, Marrakech, Morocco (Photos: JFO-SEO/BirdLife)

1.9.4 THE ROLE OF INFORMATION

One of the problems associated with keeping exotic species as pets is misinformation about the difficulty of keeping them in captivity. This is relevant in connection with animal welfare, the sale of endangered species, the rate of pet abandonment, and human (Warwick et al., 2018) and animal (Moutou & Pastoret, 2010) public health issues.

Consequently, it has been proposed that the analysis of the behaviour regarding the purchase of animals or animal parts can contribute to changes in this behaviour and that in many cases it is a matter of ignorance or lack of information, while in others there are complex political and socio-cultural contexts (Wallen & Daut, 2018).

However, informing about exotic pets does not have a great impact on purchase intention in terms of animal welfare and conservation issues, but it does have an impact in terms of legality and disease transmission; that is, people who want to purchase exotic pets avoid personal risks, but not risks related to the animal's welfare or status (Moorhouse et al., 2017). Thus, although the emergence of zoonoses continues to be associated, among others, with the trafficking in exotic species to be sold as pets (Chomel et al., 2007), the study by Moorhouse et al. (2017) seems to show that more detailed (experimentally manipulated) information on health risks can reduce the demand for these species.

Owners of wild animals may even be better informed about nature than the rest of the population, which does not prevent animals from being kept in inappropriate conditions (Drews, 2002). Indeed, the conditions of primates and psittacines that are kept in captivity are consistently inadequate (Soulsbury et al., 2009; Weston & Memon, 2009), as is also the case for carnivores such as otters (Okamoto et al., 2020).

In addition to the role of pet ownership in the decline of target species, there is also a problem associated with the abandonment of pets and their colonisation as invasive alien species. In Europe, studies show that the number of species released into the wild has changed as a result of

the import ban on wild birds in favour of captive-bred specimens (Carrete & Tella, 2008; Cardador et al., 2019). Despite legal considerations, some studies reveal that illegal trafficking in species remains a source of invasive alien species (García-Díaz et al., 2017, for Australia).

Such measures, while potentially effective regionally, can lead to a disruption of international trafficking networks, targeting emerging markets (Reino et al., 2017). In Australia, a country with a high proportion of pet-owning households, awareness of the problems associated with feral cats appears to have contributed to the declining preference for feline pets over dogs, coupled with increased responsibility regarding neutering (Chaseling, 2001).

Pet abandonment as a source of invasive alien species is discussed in Section 1.9.

1.9.5 INTRODUCTION OF PATHOGENS

Some pathogen introductions are most likely due to the importing of exotic animals, such as the case of chytridiomycosis, which affects native amphibians as a result of the pet trade (Martel et al., 2014), or American mink disease virus, which affects the critically endangered European mink and other mustelids and was introduced by fur farm animals (Mañas et al., 2016). In addition, exotic pets can be reservoirs for a large number of pathogens transmissible to humans (Chomel et al., 2007; Brown, 2008; Souza, 2009). Illegal trade increases the likelihood of the presence of these pathogens due to the lack of sanitary controls.

There have been some incidents in the exotic pet trade that are linked to the possible transmission of diseases to humans. In the European Union, the importing of wild birds was banned as a consequence of avian influenza outbreaks (Carrete & Tella, 2008; Cardador et al., 2019). It was also a potential health hazard, and not environmental considerations, that has led in the past to the ban on trade in wild birds, as was once the case with the pond slider. This trade ban in the US meant that its exports boomed in the 1970s, but it was not banned in Europe until 1997 (Hidalgo-Vila et al., 2008).

Increasing international trade in exotic reptiles increases the potential for the introduction of ticks and exotic pathogens (Pietzsch et al., 2006).

CASE STUDY 6. MONKEYPOX OUTBREAK IN THE US IN 2003

The outbreak of 47 monkeypox cases in several US states was caused by the importing of African rodents, which in turn infected prairie dogs (native to North America). These eventually transmitted the disease to humans as a result of varying degrees of contact (Reynolds et al., 2006). This case eventually led to a ban on the importation of six genera of African rodents into the US.¹⁵

¹⁵ <https://www.cdc.gov/poxvirus/monkeypox/african-ban.html>

SECTION 1.10 RELEASE OF INVASIVE ALIEN SPECIES

1.10.1 INTRODUCTION

Invasive alien species are one of the five main causes of biodiversity loss, along with habitat destruction, overexploitation, pollution and climate change (Capdevila-Argüelles et al., 2013). It is however the only one that is, in itself and in all cases, a criminal offence under the Spanish Civil Code (Article 333).

Its relative importance depends on many factors, but broadly speaking, the introduction of invasive alien species is the leading cause of extinction in isolated ecosystems (Clout & Veitch, 2002). This risk is evident through top-down processes (such as predation, parasitism and cascading effects), lateral processes (such as direct competition and apparent competition) and bottom-up processes (such as displacement of native prey by less favourable equivalents) (David et al., 2017).

The reasons for the release of invasive vertebrates have been listed by Capdevila et al. (2006) and Orueta (2007). The most relevant, in terms of illegal activities, are the following:

- Illegal hunting and fishing;
- Spiritual reasons;
- Vandalism;
- Pet abandonment;
- Closure or deliberate release from zoological facilities.

1.10.2 CAUSES OF THE RELEASE OF ALIEN SPECIES

The intentional release of fish for fishing or as bait are one of the main reasons for the colonisation by invasive alien fish species of the inland waters in the Iberian Peninsula. Currently, invasive alien species represent approximately one third of all fish species in Spain (Elvira & Almodóvar, 2001; Clavero & García-Berthou, 2006; García-Berthou et al., 2007; Ribeiro et al., 2008; Leunda, 2010).

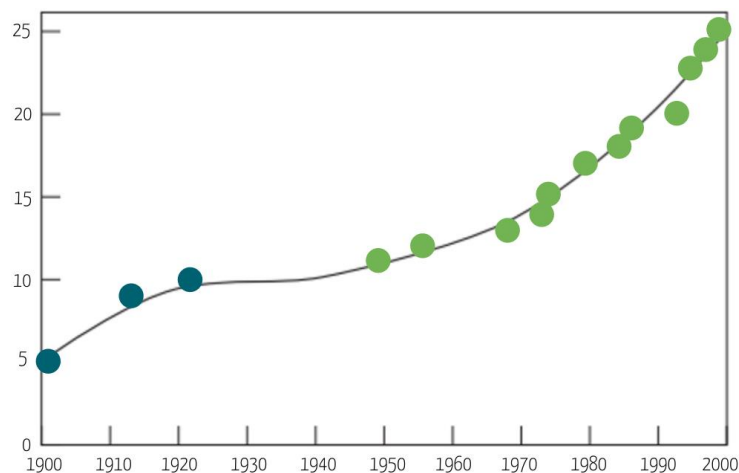


Figure 20. Evolution of the number of alien fish species established in Spain (Elvira & Almodóvar, 2001). The dark markers represent the introductions in the first half of the 20th century, when the pace was much slower.

As regards game species, the illegal release of alien species is much less frequent or their impact is more discreet or less documented. The release of birds for immediate hunting, whether for shooting, driven hunts or jump-shooting, is subject to regulation and should not, given the nature of farm birds, give rise to problems of invasive species. However, genetic introgression of Japanese quail (*Coturnix japonica*) into natural populations of European quail (*C. coturnix*) has been reported in several countries (Barilani et al., 2005; Puigcerver et al., 2007; Chazara et al., 2010), resulting from the release of pure or hybrid quail specimens from farms for hunting. As regards the red-legged partridge, the release of cross-bred partridges (mainly with chukar partridge) has resulted in a confirmed genetic introgression (Negro et al., 2001; Tejedor et al., 2007) that has a significant impact on the survival of the native species (Casas et al., 2012).

It should be also noted that in some religions such as Buddhism, among others, the ritual release of captive animals is common (Severinghaus & Chi, 1999; Liu et al., 2012; Everard et al., 2019), particularly in China, but also in Malaysia, Thailand, Cambodia, and Vietnam, although this has, in principle, hardly any impact in Europe. The release of animals (*fang sheng*) is considered a benevolent and propitiatory act for karma, leading to a trade in exotic animals for this purpose, which either die soon after release or settle the area if their release is massive (by propagule pressure).

Acts of sabotage directed at fur farms, having an ideological or philosophical component, are also a response to situations that, although legal, activists consider unjust (Liddick, 2013). However, less destructive acts are more common (releasing animals involves less violence than arson, for example), but have a greater impact. Regarding the location, it is also relevant that the actions take place in rural areas, involving less risks for the offenders (Gruenewald et al., 2015). These are, therefore, symbolic acts that aim more at raising awareness in society than at the direct impact of the release (Liebman, 2005; Ireland, 2005). Such operations are often carried out in a coordinated manner. This was the case in a chain of actions in Europe when more than 33,000 minks were released on eight farms in four countries within two weeks (Directaction, 2009), although some actions may be simple imitations.

Some actions carried out by anti-speciesist activist groups involve the release of game species from farms, such as the release of partridges (Directaction, 2009). Given that these are discreet actions, with little risk of being discovered, it is difficult to take coercive or corrective measures, given that, in addition, offenders belong to a strongly ideologised group (Directaction, 2009) and raising their awareness of the impacts caused by the specimens released, even on their individual wellbeing, has little effect.

Pet abandonment is a consequence of an irresponsible purchase, particularly in the case of animals that are not easy to keep in captivity (Warwick et al., 2018) and end up being an unacceptable nuisance (Vail, 2018). It has already been discussed how humans' emotions towards their pets are often subject to changes in attitudes, leading to the modification, redefinition or termination of the relationship with those pets (Shir-Vertesh, 2012). Abandoned pets include fish from fish tanks (Elvira & Almodóvar, 2001; Ribeiro et al., 2008; Leunda, 2010), freshwater turtles (García-Berthou et al., 2007), birds (Carrete & Tella, 2008; Cardador et al., 2019) and mammals (García et al., 2012; Delibes-Mateos & Delibes, 2013).



Figure 21. Monk parakeet (*Myiopsitta monachus*) in a park in Madrid. Their populations in the wild result from their release by owners who were annoyed by their shrill calls. (Photo: JFO-SEO/BirdLife).

The presence of raccoons in central Spain seems to originate from two different release incidents, each of them of a small number of effective founders (2-4 females) (Alda et al., 2013). The origin of the specimens, whether born in the wild or in captivity, largely determines their ability to be invasive, so responsible purchasing also helps to reduce the likelihood of the establishment of new species.

A particular case is the escape of falconry birds, which often, given that they have not lost their hunting skills, survive in the wild and, given that hybridisation between species, e.g. of the genus *Falco*, is possible, hybridisation of native with falconry specimens, often hybrids themselves, has been verified (Lindberg & Nesje, 2002; Everitt & Franklin, 2009; Dixon, 2012; Rodríguez et al., 2019).

The closure of farms and zoos is another source of invasive alien species, often leading to mass releases (Kauhala, 1996). When a farm ceases its activity, whether for economic or personal reasons, it must be ensured that its animals are relocated to similar facilities or otherwise that they do not end up in the wild, but this requirement is not always met. For example, the founding population of rose-ringed parakeet in Belgium is a group of specimens from a zoological collection that was intentionally released (Weiserbs, 2009).

In all these cases where intentional releases occur, the number of released animals is of great importance due to the so-called "propagule pressure", i.e. the number and frequency of individuals released, in the establishment of viable populations of invasive alien species (Simberloff, 2009). For example, the establishment of naturalised mink populations has occurred neither in the areas with the highest density of farms nor in those with the highest number of isolated escapes, but in those where massive escapes have occurred over a short period of time (Bravo & Bueno, 1999). Once escaped mink manage to survive during more than two months in the wild, their survival skill is similar to that of wild-born animals or native populations in North America (Hammershøj, 2004).

CHAPTER 2 ANALYSIS OF SOCIAL PERCEPTION OF WILDLIFE AND ENVIRONMENTAL CRIMES

INTRODUCTION

This chapter aims to assess the social perception of environmental crime. In other words, the aim is to delve not only into the specific motivation of the offenders, but also into the perception of criminal acts by their milieu and by society in general. This provides insight into the extent to which that social milieu favours, tolerates, motivates, or prevents the commission of environmental crime.

The survey has been implemented in Spain and Portugal, as study case.

METHODOLOGY, PROCEDURE AND SAMPLE

Based on the literature and examples of similar studies, a survey was designed measuring the importance attributed by the respondents to the performance of different entities against environmental crime (government, authorities, NGOs, environmental officials and forest rangers, justice, media, etc.), their opinion on the relevance of different types of crimes, their knowledge about them, the influence of the type of species affected or human factors on their opinion and their position in relation to various prevention and response strategies and measures.

SURVEY PARTICULARITIES

The interviews, conducted by qualified interviewers with specific training in this area, were carried out between September and October 2019. They have a confidence level of 95% ($P=0.5$) and a maximum sampling error for overall data of $\pm 4\%$. Taking the Spanish population as the universe for the first study, a total of 600 computer-assisted questionnaire interviews (CATI) were carried out. Sampling was simple, stratified and random, using a telephone directory. In Portugal, the information was collected through a computer software that could be accessed by people who wanted to collaborate with the platform, after which they were randomly selected. Access to the questionnaire was available between 18 and 24 October 2019. The sample size in Portugal, considered representative and proportional to the survey universe, was 731.

QUESTIONS

The questions were organised in several blocks:

Specific sociodemographic data

1. Postal code: in order to identify the residence as rural or urban and other demographic variables
2. Current occupation or professional activity:

Self-employed	Employee	Student	Studying and working	Unpaid domestic work	Don't know
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Retired	Pensioner	Unemployed/job seeker	Unemployed, not searching for a job	Others	No response
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3. Sector of activity

Farming	Industry	Services	Administration	Others	DK	NR
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4. How often have you gone to the countryside in the last 12 months

Never	1 to 3 times	4 to 6 times	7 to 10 times	More than 10 times	DK	NR
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5. Do you belong of collaborate with any environmental NGO?

5.1 YES → *Continue to next question.*

5.2 NO → did you in the past?

5.3 DK/NR

6. Do you consider that the society (government/administration) place value on environmental problems?

Yes	No	DK	NR
-----	----	----	----

7. Do you consider that environmental crime is more, equally, or less important than other kind of crimes?

Less important	Equally important	More important	DK	NR
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8. How do you see the role of NGOs in the fight against environmental crime? From 1, useless, to 10, very useful.

9. How do you see the role of forest rangers in the fight against environmental crime? From 1, useless, to 10, very useful.

10. How do you see the role of justice (judges and prosecutors) in the fight against environmental crime? From 1, useless, to 10, very useful.

11. How do you see the role of police in the fight against environmental crime? From 1, useless, to 10, very useful.

12. Do you consider that the work done by justice/police/rangers/NGOs is enough to prosecute environmental crime? From 1, inefficient, to 10, very sufficient.

Knowledge on environmental crimes, penalties and sanctions

13. How good is your knowledge on the crimes against the environment? From 1, very few, to 10, a lot.

14. What is your perception of the effectivity of the current legislation on environment protection? From 1, very inefficient, to 10 very efficient.

15. What would be the priority that you would give to each one of the following measures to reduce the number of crimes? From 1, none, to 10, maximal priority.

Increase penalties for criminals
Improve justice functioning
Increase the number of environment law enforcement officials (police, rangers)
Improve the techniques used to investigate crimes
Raise awareness among judges, prosecutors, and police
Raise awareness among sectors more prone to commit crimes
Raise awareness on the value of natural heritage in the population
Support environmental NGOs

Human factors and crime perception

16. Tell which of the following actions should carry a prison penalty for offenders.

Intentionally killing a lynx (protected species)
Intentionally killing a shallow (protected species)
Intentionally killing a lizard (protected species)
Intentionally killing a butterfly (protected species)

17. Tell which of the following actions should carry a prison penalty for offenders.

Intentionally setting a wildfire
Intentionally setting a wildfire, causing human casualties
Intentionally setting a wildfire, causing real estate damages
Intentionally setting a wildfire, killing protected species
Unintentionally causing a wildfire

18. Do you consider any reason that could justify or reduce the responsibility in case of an offense of environmental laws?

- To avoid an economical damage or risk.
- For public health reasons.
- To avoid important prejudices to cultures, livestock, forests, fishing, or waters.
- Because of unawareness of the value of the protected natural heritage
- Because of the offender mental health condition
- Others: _____
- No reason
- DK/NR

19. Through what means do you have knowledge about environmental crime?

- TV.
- Press.
- Radio.
- Online media.
- Social networks.
- Acquaintances and colleagues.

Other: _____

20. Do you think that the traditional media (news and press) give importance to environmental crimes? Yes/No

21. Would you watch a program or read a specific section of news about the environment? Yes/No

22. Do you think that enough information is provided in the media about:

Legal consequences of committing environmental crimes	Yes	No	DK	NR
Information on the value of species and protected areas	Yes	No	DK	NR
Work of NGOs and environmental associations	Yes	No	DK	NR

23. Do you think that, at present, it is considered a crime...?

Trade or kill protected species	Yes	No	DK	NR
Set a wildfire	Yes	No	DK	NR
Dump waste into the sea	Yes	No	DK	NR
Use poison or traps to hunt	Yes	No	DK	NR
Prevarication of environmental official	Yes	No	DK	NR
Wildlife abuse	Yes	No	DK	NR
Destroy nests of swallows or storks	Yes	No	DK	NR

24. Do you think it should be considered a crime...?

Trade or kill protected species	Yes	No	DK	NR
Set a wildfire	Yes	No	DK	NR
Dump waste into the sea	Yes	No	DK	NR
Use poison or traps to hunt	Yes	No	DK	NR
Prevarication of environmental official	Yes	No	DK	NR
Wildlife abuse	Yes	No	DK	NR
Destroy nests of swallows or storks	Yes	No	DK	NR

General sociodemographic data

25. Age.

26. Gender.

27. Educational level

Without studies	Primary	Secondary	Baccalaureate	Vocational education	Graduate	Postgraduate	PhD
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28. What is your political ideology? 1 far left, 10, far right.

RESULTS OF THE ANALYSIS

Importance of environmental problems and crimes

In both countries the population considers that society is not sufficiently aware of environmental problems, but the majority of those interviewed think that they personally are, showing a potential *illusory superiority* bias. The proportion of the population that considers environmental crimes to be equally or more important than other crimes is also very high, although this proportion is much lower in rural areas.

Taking these results as a whole, it can be concluded that there is a widespread social rejection of the different criminal behaviours described in CHAPTER 1. It is even more interesting if one takes into account that, as described in section 1.2.1 of the same chapter, this type of crime has characteristics that make it difficult to be perceived as such.

Assessment of the performance of different entities

The best rated organisations in both countries are law enforcement officers and NGOs, having the justice system the lowest score, two points less than the rest.

Knowledge and perception of environmental crime

The population was asked what level of knowledge they thought they had about environmental crime: the result (5.37 points in Spain and 5.20 in Portugal, on a scale of 1 to 10) indicates that the population considers that they have a generally low level of knowledge.

When asked whether given actions, presented in a random order, were currently considered crimes and whether or not they *should be* considered crimes in order to close the gap between social legitimacy and regulations, starting a forest fire is generally considered a crime in both countries with almost no room for doubt, while the criminality of releasing an alien pet into the wild is the most dubious. The actions they consider to be most likely criminal offences are starting a forest fire, mistreating wild animals and dumping waste into the sea.

These results seem to strengthen the point made in section 1.9.4 (CHAPTER 1) on the role of information. It also supports the idea of a generally high awareness of forest fires, although when asked about the motivations and profiles of fire starters, as discussed in section 1.4.2 of the same chapter, there may be confusion.

Assessment of the measures

The Spanish population rates the effectiveness of current environmental protection regulations at 5.24 points. In Portugal, its effectiveness score is even lower, at 4.1 points. In contrast, virtually all measures against environmental crime are highly valued and their implementation is perceived as a high priority.

Joining an environmental NGO is the measure considered least important in both countries, and it is noteworthy that public administration officials gave it 4 points less than the overall average.

Determining factors for the valuation of penalties

In the questions on which actions would, in their opinion, merit imprisonment for offenders, actions were divided into two types: the killing of different protected animal species and the setting of fires with consequences of various kinds. The aim of these questions was to find what contextual factors might condition the social significance attributed to environmental crimes. In the first block, it is worth noting that, although all the species in the survey have the same category of protection, the more iconic the animal is, the more the prison sentence is justified: the lynx shows the highest percentage, and reptiles and butterflies, the lowest. These results are apparent in both the Portuguese and the Spanish sample and are in line with the discussed premises in SECTION 1.9, according to which certain species are considered more important than others on the basis of physical characteristics (such as size or facial features) and their social perception (e.g. associated stereotypes).

Regarding intentionally set fires, no major differences are found between respondents' answers. Imprisonment would be justified in all the cases. Although the differences are minimal, cases with human components show slightly higher percentages, such as when there are human victims. If the fire was accidental, the proportion of those who consider that it would merit imprisonment is much lower. Therefore, intent seems to be a very important factor to perceive whether an action harmful to the environment or wildlife is a crime or not.

The latter is consistent with the results of the last of the questions in this block, which explored the possible reasons that would make society justify criminal action, as they only find extenuating circumstances in cases of ignorance, accident or mental health problems.

The media and environmental crime

The media that the populations of Spain and Portugal use to learn about environmental crime is mostly television, followed by social media and the written press.

The perception about the information received is different in the two countries, but it is close to 50%. In addition, the vast majority of citizens say they would watch a programme or read a specific news section on the environment.

More specific questions were asked to delve further into the first issue suggesting that certain aspects do not receive sufficient attention.

Observation

The survey has been implemented in Spain and Portugal, as study case. As both countries sharing similar environmental and social background, it is possible that the similarities in the response to the questions are related to those common features. That makes interesting to develop analogous analysis in other regions in order to compare different attitudes.

CHAPTER 3 ANALYSIS OF CRIMINAL MOTIVATION BASED ON WILDLIFE CRIME CASES

INTRODUCTION

This chapter presents the results of the content analysis of court rulings on wildlife offences in Spain from 1998 to 2019. The aim is to understand, based on the rulings applied by the courts, the motivations behind wildlife and habitat-related violations, as well as the criminal and socio-cultural profile of the offenders.

METHODOLOGY

The total number of sentences studied was 258, taken from the database of the Judicial Documentation Centre (CENDOJ)¹⁶, by means of a search of cases relative to the articles of the Spanish Criminal Code referring to crimes against wildlife (Art. 334 to 337).

In the first phase, the qualitative information was classified according to whether it came from the ruling itself or from the facts described in it, thus shaping the variables that would be of interest for the study of the offences (see Figure 22). In the second phase, we searched for relevant connections between these elements.

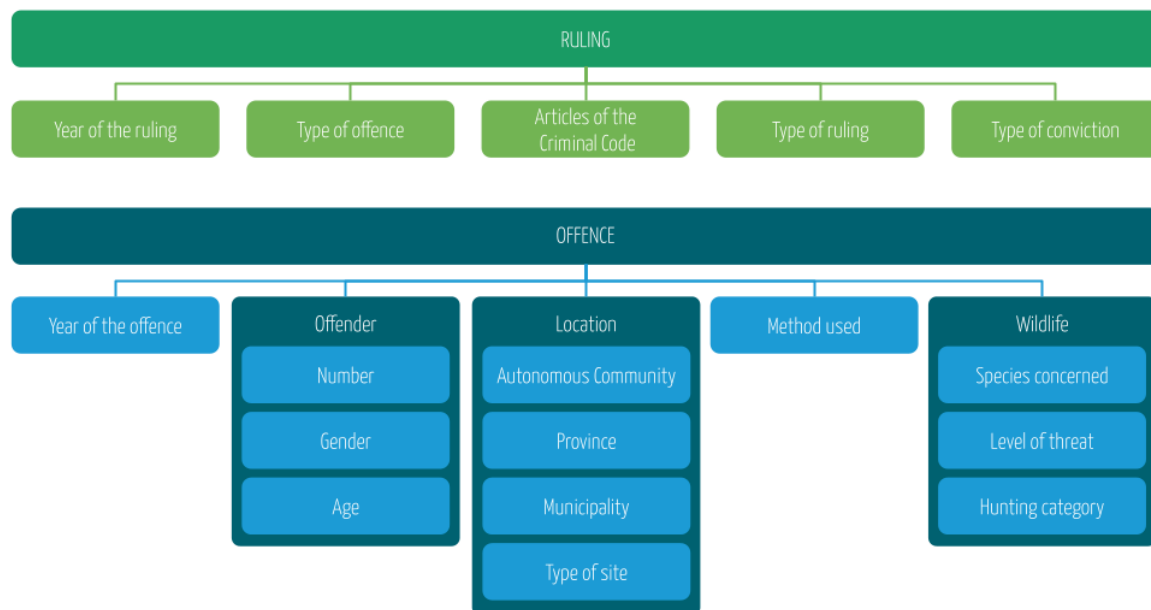


Figure 22. Variables considered in the analysis.

¹⁶ Judicial Documentation Centre of the General Council of the Judiciary. Website: <http://www.poderjudicial.es/search/indexAN.jsp>

DETAILED DESCRIPTION OF THE ANALYSED RULINGS

Dates of the rulings

The year with the highest number of rulings is 2009 (17.4%), followed by 2014, with 8.9% of cases. The year with the lowest number of rulings is 2003, which only accounted for 0.8% of the total .

Bodies delivering rulings

Almost all the rulings analysed were handed down on appeal and delivered by Provincial Courts (95.7%). Other bodies were the Criminal Courts (2.7%) and the Criminal Chamber of the Supreme Court (1.6%).

In particular, the provinces with the highest number of rulings were Tarragona (32.9%), Barcelona (7.0%), Madrid (7.0%) and Seville (6.2%); combined, they account for 53.1% of the rulings.

Articles of the Spanish criminal code covered

The rulings handed down are for wildlife offences, as set out in articles 334 to 337 of Chapter 4 (Offences relating to the protection of flora, fauna and domestic animals) of Title 16 of the Spanish Criminal Code, which deals with environmental offences. These articles criminalise the hunting, capture, trafficking or possession of wildlife species – divided into protected (Art. 334) and non-protected (Art. 335) species (accounting for 10.5 and 38.5% of cases) –, hunting and fishing with massive and non-selective methods (Art. 336, the main offense considered with 49% of cases) and animal abuse (Art. 337, less than 2%).

ANALYSIS OF RULINGS ACCORDING TO THEIR EFFECT

General description of the effect

Of all the rulings analysed, acquittals accounted for more than half of them (51.6%), as opposed to 47.3% of convictions.

Connection between general rulings and applied articles

Notwithstanding that the same ruling can involve more than one article of the Criminal Code, 34.9% of the total rulings were acquittals under article 336, followed by 26.2% acquittals under article 335.

Analysis by type of conviction

Based on the total of convictions, the following proportion of conviction types was identified: fine (93.3% of cases), payment of legal costs (93.3%), withdrawal of hunting or fishing licence (90.0%), subsidiary criminal liability (71.7%), compensation (25.8%), professional disqualification (9.2%) and imprisonment (8.3%).

ANALYSIS OF THE OFFENDERS

In terms of the number of offenders, 69.4% of the total number of rulings accounts for acts committed by only one offender and 17.4% involved two offenders.

In terms of gender, in 100% of the rulings analysed, the acts were committed by men. Only five women were involved in five different cases out of 258 rulings (1.9% of the total number of cases), and always together with men. Regarding the age at the time of committing the crimes, 80.8% of the total number of offenders involved in the rulings analysed had no indication of age or date of birth. The average age was 41.75 years old.

ANALYSIS OF THE CRIME LOCATIONS

Autonomous communities and provinces

The distribution was very biased: Tarragona (32.6%), Barcelona (7.0%), Seville (6.2%) and Madrid (5.4%) were the provinces where more than half of the crimes were judged.

Analysis of the crime location context

29.8% of crimes were committed in municipalities with less than 435 inhabitants across Spain, although some regions recorded more crimes in medium-sized and large municipalities. Given this geographical distribution of offences, it is logical that most of the convictions were concentrated in smaller municipalities. Up to 75% of the prison sentences were handed down for actions that were committed in municipalities of approx. 3,000 inhabitants or less. By contrast, it is noteworthy that 66.7% of the cases in which the accused was professionally disqualified took place in municipalities from 15,600 to 56,100 inhabitants, approximately.

In 36.8% of the rulings analysed, events take place in a hunting reserve, followed by 20.3% in a natural site. 15.1% of the rulings did not specify the type of site where the events took place. Regarding the location, 71.6% of the cases that took place in hunting reserves ended in acquittals. In natural sites there was a small majority of acquittals (52.8%). As for the third most numerous crime location, private properties, 60.7% of the rulings were convictions.

ANALYSIS OF THE METHOD USED

Frequency according to the type of method used

Almost half of the rulings analysed were grouped together into just three methods: glue traps (accounting for 36.8% of the total, of which 29.8% were glue traps with decoy), guns (11.6%, including shotgun 43.3%, rifle 26.7%, carbine 3.3% and unspecified weapon 26.7%) and nets (11.6%, including mist nets 36.7%, floor nets 13.3%, invisible nets 10.0%, vertical nets 6.7%, collapsible nets 3.3%, double floor nets 3.3% and unspecified nets 26.7%). After these, it is worth noting that 7.8% of the rulings did not specify the type of method used.

The number of people involved varies, of course, depending on the method. There were more cases than expected involving only one author in the use of glue traps with decoy, representing 34.6% of the total number of cases. In addition, despite not being so numerous, cases involving hunting dogs or greyhounds with 3 and 4 offenders (36.4% and 27.3% of all cases involving hunting dogs or greyhounds, respectively) stood out, compared to those involving only one person (18.2%), being statistically higher than expected.

Connection between general rulings and methods used

Regarding the method, glue traps with decoy showed the highest dependence on the effect of the ruling. 83.1% of the cases where glue traps with decoy were used ended in acquittal, a much higher percentage than statistically expected. In contrast, 70.0% of the rulings involving nets were convictions, which is higher than statistically expected. As for the second most used method – guns – there was a 56.7% conviction rate, although this was not statistically significant. Likewise, despite the lower number of cases, the clear trend towards convictions for the use of poisoned bait (71.4%) and steel snares (70.6%) was also significant.

Based on the ruling, 17.2% of the convictions were handed down for the use of nets, followed by 13.9% for the use of guns and 10.7% for the use of glued traps with a decoy. 48.1% of acquittals appeared in rulings involving the use of glued traps with a decoy, while in 9% of acquittals the method was not specified.

ANALYSIS OF RULINGS ACCORDING TO THE DATE AND SPECIES

Species concerned

The most impacted taxon was birds, which appeared in 70.80% of the rulings. Within this category, 84.50% of the cases were passerines (compared to only 7.0% of raptors in this sample). The second most impacted taxon was mammals, representing 33.90% of the rulings, with deer and wild boar accounting for 12.80% of cases each.



Figure 23. Bag with illegally killed song thrushes (Photo AEAFFMA).

Dates of the violations

As for the year in which the events in the rulings took place, these range from 1995 to 2017. 30.1% of all cases occurred between 2005 and 2006, although in 16.3% of cases the year was not specified in the ruling.

Connection between violation dates and methods used

Rulings for the use of glued traps are especially numerous from 2004 to 2006; both guns and nets were much used from 1995 to 1997. However, the only method among these that continued to be used in the last two years of the rulings analysed (from 2016 to 2017) was nets.

This could suggest that a very effective job was done in terms of monitoring the use of glued traps, that this method was no longer used or that the monitoring that was carried out from 2004 to 2006 no longer existed. These data also direct the focus of future interventions towards primary awareness raising, monitoring and surveillance against the use of nets.

CHAPTER 4 STUDY OF CRIMINAL MOTIVATION ACCORDING TO INVESTIGATING OFFICIALS

INTRODUCTION

This section analyses the motivation of environmental criminals in actions directed at protected species of wildlife according to the perception of law enforcement officers in charge of investigating and prosecuting this type of crime, being qualified for this evaluation and close to the geographical and socio-cultural environments where crimes are committed.

METHODOLOGY AND PROCEDURE

Following the literature review and the results of the studies presented in the above chapters, an interview was designed by means of a questionnaire including three blocks of questions (Figure 55):

- Data on the respondent (organisation, province and experience with different types of illicit activities)
- Opinion on the prototype of person who commits each of the three following types of wildlife crime: illegal hunting, illegal purchase/sale of animal species or derived products and destruction of nests. Each of these offences had a specific section and several questions about the psychosocial profile of offenders, about some legal aspects, about the motivations that led them to commit the action and, finally, about the law and the current penalties for the crimes and the changes they propose to improve their effectiveness
- In the third part, they were asked to assess the usefulness of having a profile of the people who commit these types of crimes in order to focus the investigation of the cases, as well as other possible applications it could have in their work



Figure 24. Structure of the questionnaire.

The questionnaire was sent through Google Forms to environmental law enforcement agencies, ranger associations, to regional police forces with environmental responsibilities and to *Guardia Civil* officers, through their coordination structures. Entries were recorded from 03/02/2020 to 05/03/2020. Quantitative and qualitative data have been triangulated to obtain the results discussed below.

RESPONDENTS

A total of 51 people responded to this questionnaire, belonging to national and regional police forces, public administration investigation teams, as well as forest rangers, totalling a wide territorial coverage.

The respondents were asked about their experience in investigating wildlife and environmental crime. As a means to control the analysis of subsequent responses, it was taken into account that the majority of the sample had extensive experience (more than 50 cases) in damage to habitats and protected natural spaces; followed by considerable experience (10 to 50 cases) in matters related to protected species, such as their killing, possession or trade.

PROFILES

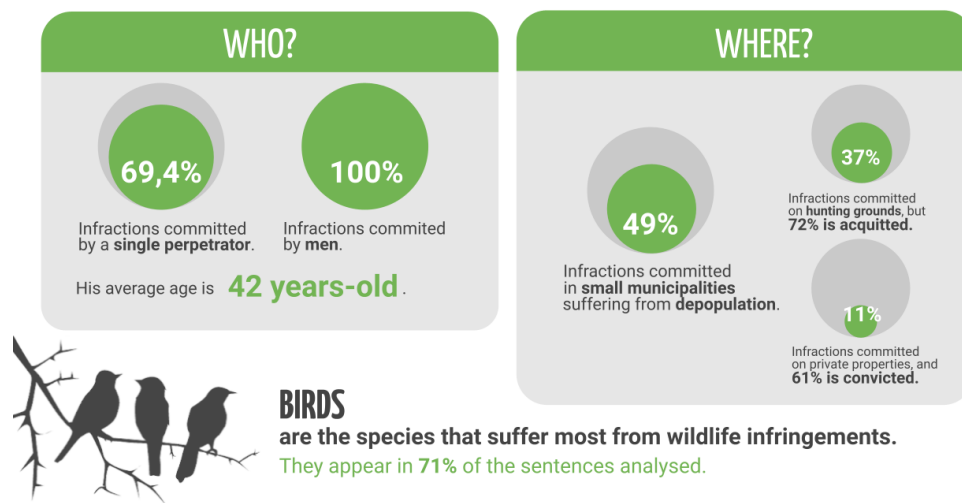


Figure 25. Summary of the profiles perceived by the law enforcement agents of wildlife offenders. *Infographics: Loubé.*

Following the answers given by the respondents, a prototypical poacher¹⁷ largely matches the data resulting from the analysis of rulings in CHAPTER 3. A summary of the complete profiling appraisal can be found in figure 23. Although the analysis is very simple, this methodology could lead to deeper conclusions.

Motivations of poaching

Following Muth and Bowe's typology (1998) (see 1.6.2 in CHAPTER 1), respondents were asked to rank the ten given statements according to the importance they believed they actually had as a motivation. Analysing the most numerous motivations in the first, second and third positions, the main motivations of the prototypical poacher were identified: domestic consumption, tradition and commercial gain. Analysing the most numerous motivations in the last three positions (eighth, ninth and tenth), we have identified the less relevant statements among those collected by the authors: professional occupation, crop protection and tradition.

However, a different classification was drawn from the qualitative analysis. When respondents were asked the open question "*What motivations do you think drove the offender to commit the crime?*", the main motivation was leisure or overcoming personal challenges (19.1%), followed by economic reasons (17.0%) and protection of property (14.9%). These categories are most frequent in people who have more experience in investigating crimes affecting *protected species* and *habitats*.

Regarding the question "*What motivations does the offender claim to have for committing the offence?*", it was found that (although the differences were not statistically significant) people who had committed poaching offences tended to claim that their two main motivations were leisure or overcoming personal challenges (21.7%) and economic reasons (17.4%), while the third was environmental reasons (10.9%). In this case, for the more experienced people, the category of leisure is not so important, while the category of being unaware of the law or the impact of the law (26.7% for this group only) is more important.

Motivations of illegal trade in species and derived products

A qualitative analysis of the motivations of prototypical traffickers shows that, from the perspective of the respondents, the main motivation is economic (86.4%), which coincides with what is generally claimed by traffickers (64.1%).

In terms of the buyer's motivations, the responses show that they have selected the product for a specific use (40.5%), or also for leisure or overcoming personal challenges (21.6%), coinciding with what is usually reported by this type of offenders (41.7% and 16.7%, respectively) and by respondents of all experience levels, but mainly by those with the most experience in crime against protected species.

¹⁷ All data provided in this report are statistically significant under the chi-squared test with a confidence level of 0.95, unless otherwise specified in the text.

Motivations for nest destruction

A qualitative analysis of the motivations of people who commit this type of offences shows that, from the perspective of the respondents, the main motivation is protection of property (47.4%), which coincides with what is generally claimed by offenders (48.5%). In both cases it is accompanied by economic reasons (18.4% and 12.1%, respectively).

However, it is important to point out a couple of things. It seems that the destruction of nests is differently perceived when it takes place in a home (to avoid damage and irritation from droppings or noise) and when hunting, buying, selling or plundering them (e.g. to improve the breeding of birds or for profit). In addition, the percentage of respondents choosing “*Don't know*” for this offence is apparent: 25.5% in questions from the respondent's perspective and 35.3% from the offender's alleged perspective.

EFFECTIVENESS OF THE LAW AND PENALTIES. PROPOSALS FOR IMPROVEMENT

Regarding illegal hunting

They were asked whether they thought the law and penalties were effective in these cases of illegal hunting and whether they would propose any changes. The majority of respondents answered that they were not effective (62.5%), followed by those who thought they were partially effective but needed some changes (20.8%) and finally those who thought they were effective (16.7%). It is worth noting that, although statistically not significant due to the low number of individuals in this category, 100% of the most experienced respondents in crimes against *protected species* holds the view that laws and penalties are not effective.

It has been proved very helpful the analysis of open questions. In terms of the modifications or measures that respondents would propose, they emphasise the need to increase the amount of the economic penalties, even though they are more effective than criminal penalties, which should also be toughened (“Tougher economic penalties and sentences” [S17]). In general, greater severity is demanded in cases of repeated offences (“Punish repeat offenders more rigorously” [S41]) and in cases where knowledge of the environment favours illegal activities (“The offender's knowledge of the environment and surroundings [...] allows for impunity and makes identification more difficult, so I consider that the penalties for this type of offence are very light” [S18]).

Likewise, there are those who, while defending the correctness and adequacy of the law and penalties, add that the technical resources to enforce them should be increased (“The law and penalties are effective, but there is a need for more technical resources to prosecute offenders” [S5]), and that judicial processes should be sped up so that the statute of limitations does not prevent from reaching a resolution (“In Castile and Leon, the majority of cases end up time barred without resolution or penalty” [S35], “It would be necessary to make both criminal and administrative penalties more effective” [S53]).

Awareness-raising measures are also important, not only to increase environmental awareness in court rulings (“There is still a lack of environmental awareness in court rulings” [S21]), but also to call attention to the legal and environmental consequences of illegal hunting, targeting the groups most involved (“More information on the consequences of the illegal activity is needed focusing on hunters and farmers” [S22]).

Biodiversity restoration and recovery activities are also suggested (“Adoption, at the offender's expense, of measures aimed at restoring the disrupted ecological balance” [S26]).

There are two different perspectives on financial aid: some support its withdrawal ("Withdrawal of subsidies/grants" [S9]), but there are also respondents who defend it ("Aid to minimise damage caused by wildlife" [S3]).

Of particular relevance are measures concerning disqualification from jobs related to the environment ("I would propose longer disqualifications" [S42]), the withdrawal of gun licences ("The measures of gun withdrawal should be tougher, so that hunting with a borrowed gun after the licence has been withdrawn is considered an offence" [S27], "[Offenders] value the loss of gun licences, for example, more than the penalties themselves" [S43]) and hunting licences and the seizure of gear.

Lastly, it is worth mentioning that there are proposals to regulate several ideas: the delivery of illegal catches to food banks or soup kitchens (for fishing violations, "I would regulate the delivery of illegal catches to food banks or soup kitchens with 24-hour daily collection" [S35]), the closure of hunting reserves ("In Madrid I would propose that hunting reserves where illegal gear is used be closed" [S46]), the imposition of restraining orders from hunting reserves ("A 'restraining order' should be established as an accessory penalty to keep convicted offenders away from hunting areas" [S26]) or the prohibition of hunting ("Hunting should be prohibited" [S20], "Prohibition of hunting" [S28]).

Regarding illegal trade

They were asked whether they thought the law and penalties were effective in these cases of illegal hunting and whether they would propose any changes. Most respondents answered that they were not effective (63.4%), followed by those who thought they were partially effective but needed some changes (19.5%) and finally those who thought they were effective (17.1%).

As in the previous case, analysing the answers to open questions is very enlightening. The proposals for change follow the lines of those described above for illegal hunting. In general, there are calls to "toughen the law and penalties" (S11, S29, S33...), given that "penalties do not even come close to those that exist for other crimes of trafficking in other substances" (S18). This is particularly noteworthy for repeat offenders or for the most serious cases ("Toughen penalties for repeated offences" [S41]). However, there are also respondents who say that, although the law and the penalties may be adequate, they need to be properly enforced ("In general, yes [they are effective], if they were applied rigorously" [S6], "The system would be effective if penalties were fully enforced in all cases" [S53]), encouraging inspection and control of the authorities that should be in charge ("force the authorities in charge to comply with them" [S33]). Again, this includes faster procedures ("Faster investigation procedures and faster preparation of reports by SOIVRE (Official Customs Inspection, Surveillance and Regulation Service)" [S24]).

In terms of economic measures, some respondents suggested increasing the number of penalties ("Higher economic penalties" [S17]), as well as withdrawing social subsidies and public grants from offenders ("Restrict or terminate public subsidies" [S35]) and seizing the "economic benefits derived from criminal activities, especially when the offender belongs to an organised group" (S3). They also proposed toughening sentences ("I would toughen sentences in the most serious cases" [S2]) and increasing the imprisonment rate ("Toughen sentences to achieve more imprisonments" [S15]), as well as applying criminal accountability to offenders who fail to comply with disqualifications or penalties ("compliance with disqualifications and, in the event of non-compliance, criminal accountability for the actions" [S37]).

There was talk of making it compulsory for convicted offenders to attend awareness-raising courses ("I would add as an accessory penalty for convicted offenders the compulsory attendance of [sic] awareness-raising courses on the sustainability of species" [S26]).

As restorative measures, it was suggested that illegal buyers should perform community service related to the environment ("Community service [for] buyers related to the environment" [S39], "Community service in favour of wildlife" [S48]) or pay the cost to restore the specimen to the environment ("Restitution to the environment (cost of specimen)" [S19]).

Lastly, in addition to the restriction or prohibition of trade ("I would prohibit trade in species that are protected under CITES or restrict it further" [S20]), the regulation of alternative measures was suggested. One proposal is that the possession of parts or derived products of animals is also classed as a crime ("Article 334 of the Spanish Criminal Code should be rewritten so that possession of, and not only trade in parts or derived products of animals is also classed as a crime" [S27]). Another proposal is the creation of warehouses for confiscated live specimens ("Many specimens are seized, but when they are live, there are big storage problems. This should be addressed" [S27]) and seized gear ("It is necessary to seize more fishing gear, even if it is legal, including boats, and to have an administrative depot for it" [S35]). Lastly, the destruction or auctioning of seized products and instruments should be expedited ("Expediting the auction of seized gear and vessels or their destruction" [S35]).

Regarding destruction of nests of protected species

When asked whether they thought the law was effective against this type of crime, the majority of respondents answered that it was not effective (43.6%). Although 23.5% of respondents chose "*Don't know*" for this question, the proportion of affirmative answers was twice as high as for other crimes discussed here (38.5%), prevailing as well among the most experienced respondents in crimes against *protected species* (66.7%), although this is not statistically significant. Here, as in previous sections, the answers include statements such as "In these cases, both criminal and administrative law seems to be sufficient. It should simply be applied" (S27) and "In these cases, penalties are usually effective if they are applied in full" (S53). To this end, it is suggested to better control and speed up processes ("More inspections and faster administrative and judicial processes are proposed" [S24]).

Higher economic penalties and criminal law enforcement rates are proposed ("Lack of higher penalties" [S9], "Higher economic penalties and sentences" [S17], "More severe penalties" [S20]), tied to the level of protection of the species ("More severe sentences depending on the protection of the species concerned" [S42]). The importance of professional disqualifications is highlighted ("Disqualifications from activities that relate to or have an impact on wildlife" [S3]).

There are calls for speeding up administrative and judicial processes (S24). In terms of preventive measures, emphasis is placed on training and awareness-raising initiatives for the population ("More education on environmental issues is needed" [S5]) and greater investment in the inspection and surveillance of natural areas ("More resources for the surveillance of natural areas" [S33]). Restorative measures are also proposed ("Community service, collaboration in a recovery centre in the rearing of chicks that fell out of their nests in summer" [S48]).

PROCEDURES AND APPLICATION OF CRIMINAL PROFILING IN THESE CASES

Usefulness of criminal profiling

On a scale from 0 to 5, where 0 means *useless* and 5 means *essential*, respondents rate the usefulness of having profiles of the three types of crimes studied (illegal hunting, illegal trafficking and destruction of nests of protected species) at 3.96 (mean) or 4 (median). These scores, instead of fitting the normal curve, are significantly shifted toward higher values (with $p=0.000$ for Kolmogorov-Smirnov test statistic 0.229).

Applications of criminal profiling

Based on the respondents' answers, two main lines of criminal profiling applications for this type of crimes against wildlife have been identified: investigation and prevention.

- Investigation. Being familiar with the characteristics offenders tend to have makes it possible "to carry out activities focused on reaction: identification of criminal offences, building of scenarios and lines of investigation" (S3). According to this sample, profiling is useful to guide (S4), help (S13) and improve (S46) the investigation, establish links with suspects (S39) and ultimately identify the offender (S8, S25, S26, S52...)
- Prevention. The availability of criminal profiling is also useful for prevention (S7). In addition to "prevention policies" (S9), there are measures involving training for risk groups and work incentives (S3), campaigns "targeted to these profiles" (S48, similar to S47) and the application of these campaigns "in protected nature reserves" (S20)

However, respondents point out several things: although profiles provide *guidance* and *help*, they are not decisive and there are many other elements, such as possible mental health problems of the subject (S22), which vary in each case. For this reason, it is necessary to constantly update the information, recalculating new statistics and building increasingly comprehensive and reliable profiles that do not stigmatise and condition, but support the teams' decision-making.

Observation

This survey has been completed considering the whole experience of the interviewees. That intended to obtain a general overview of the amount of events that the law enforcement officer had witnessed. Nevertheless, there is potentially a lack of perspective on individual cases. It would be advisable to consider, in future studies, the possibility of asking the expert to focus just on one concrete case and repeat the form as many times as the respondent considers. This would also have as an advantage to get more answers from officials with more experience and reduce the biases associated to generalisation.

CHAPTER 5 CONCLUSIONS

The motivations for environmental crimes are complex and multiple, so that there is hardly ever a single, isolated motive behind a criminal action. Therefore, it is also difficult to disentangle the different motives from each other, so there is significant overlap. In addition, several environmental crimes can be linked, such as the capture of protected species, their trafficking and trade, their possession, and their abandonment. Motivations must therefore be seen as superimposing layers that affect different material and subjective aspects of the offender. It should be noted, as was also identified in the expert surveys, that there is a very significant male bias among environmental offenders in the cases that have been analysed.

According to the bibliography, motivations can be grouped in the following categories:

- **Economic reasons** – Closely linked to illegal commercial activities (illegal waste trafficking, illegal trafficking in endangered species or their parts) or to the possible economic benefits received by the offender (fires to create pastureland, illegal hunting to obtain meat supplies, etc.). Contrary to public perception, speculation on land or burnt timber is exceptionally rare as a motivation for fires.
- **Corruption** – Closely linked to the economic motives of the offender there is usually a network of corruption, especially in crimes of greater economic relevance, in particular illegal trafficking in waste, trafficking in alien wildlife or its parts, trafficking in rare woods, illegal logging and poaching.
- **Conflicts** – Less relevant in numbers but linked to the two motivations above, the financing of conflicting groups in areas affected by insurgent or terrorist movements can commonly come from the trafficking in species, so that social and political instability in these areas triggers and boosts illicit activities. In addition, the lack of control by the authorities over the use of weapons makes crime easier in such situations. Lastly, armed groups often resort to bush meat as a source of food.
- **Beliefs** – Superstition and false beliefs are one of the main drivers of the trade in endangered species parts (pangolin scales, tiger bones, rhino horns, vulture brains, etc.), which are used both in pseudo-medicine and in magical practices, although sometimes boundaries between these aspects are blurred. Somewhat related to the above, the trade in meat and other edible parts of animals is often based on the often-unsubstantiated belief that these products are healthier in some way. In some areas, forest fires have been associated with Satanism, and in some faiths the release of animals (often invasive species) is considered a propitiatory act.
- **Tradition** – Several types of illegal hunting and fishing are considered traditional, from hunting varieties that are prohibited because of its massive scale and non-selective nature to hunting and fishing at times that are advantageous for the capture but too damaging to the species, as well as the use of fire as an element of weed control
- **Social cohesion** – Related to tradition, socialisation has been identified in several crimes as a means of justification. Illegal logging in some countries can have a social bonding factor, while illegal hunting is often justified as a way to have a family experience and to keep young people away from drugs.
- **Elitism** – The consumption of food products from endangered species (sturgeon caviar or pangolin meat, depending on the culture), the possession of parts of these species (ivory, fur, rare woods, musk or agalloch for perfumery) and their keeping as pets (parrots, felines, etc.) may simply be induced by the fact that their possession requires a high purchasing power, due to the high price on the market.

- **Dissent** – There are criminal behaviours that are justified as a response to regulations that are considered unjust, either socially or because of a personal perception (real or not) of a restriction of rights. This results into the release of animals from fur farms, illegal hunting in protected areas and arson as a means of protest against regulations which, in the offenders' opinion, are detrimental to them. The illegal prosecution of predators has a strong component of dissent from the protection of predators as opposed to a perceived lack of protection of offenders and their property.
- **Indifference** – On several occasions it has been identified that offenders are in a way dissociated from the natural resources that are affected by their actions. Fire setters may think that forests do not bring any benefit to them and illegal hunters and fishermen that are foreign to an area may have no attachment to the local environment.

A recurrent factor in environmental crime is a lack of awareness and a poor understanding of the real scope of the actions. Improving the participation of the parties concerned in finding solutions can be useful in many contexts. Anyway, judging by the bibliography consulted, in most cases mere repression is not enough and must be accompanied by awareness-raising measures and by the search for economic alternatives.

The survey of the general population shows a very high level of awareness in connection with crimes against wildlife and habitats. According to this survey of the general population in Spain and Portugal:

- Over 80% of the population believes that society does not give enough importance to environmental issues.
- Over half of the population thinks that the media do not give enough importance to environmental issues – neither to environmental crimes nor to their consequences, the value of species or protected areas and the work of environmental NGOs or organisations.
- 90% of the population would like to see specific programmes or content on the environment.
- Almost 90% of the population believes that environmental crime is equally or more important than other types of crime.
- 62% of the Spanish population and 87% of the Portuguese population consider that committing an environmental crime is unjustifiable. Only on grounds of mental health or as a result of an accident could liability be reduced.
- Almost 100% of the population knows that starting a forest fire is a criminal offence. However, almost half of the population is unaware that releasing alien species into the wild is also a crime. There is a need to raise awareness about the crime of releasing alien species – its legal and environmental consequences.
- Almost 100% of the population is aware of the seriousness of killing Iberian lynxes. However, they do not attach so much importance to killing a protected species of lizard, butterfly or snake. There is a need to raise awareness about crimes committed against non-iconic species.

Besides, in addition to the reports published on the motivations of environmental crimes, in which the profiles of some offenders are analysed, past cases on crimes against wildlife were also studied. According to this study:

- Almost 70% of wildlife offences were carried out by a single offender.
- 100% of wildlife offences were carried out by males.

- The average age of the people committing wildlife offences is 42 (although 80.8% of the rulings analysed did not specify age).
- Almost half of the wildlife offences (49%) took place in small municipalities of only a few hundred inhabitants which are currently suffering from depopulation.
- The place with the highest number of wildlife offences is hunting reserves (37%) and most offenders are acquitted (72%).
- By contrast, the place with the third highest number of wildlife offences is private properties (11%) and, in this case, most offenders are convicted (61%).
- The three most commonly used methods in the wildlife offences analysed were glued traps (37%), guns (12%) and nets (12%).
- Glued traps with decoy are the most commonly used method in the wildlife offences (30%) analysed. However, 83% of the cases end up in acquittal.
- Nets are the third most commonly used method in wildlife offences (12%). 70% of the cases end up in conviction.
- Birds are the species most targeted in wildlife offences (71% of the rulings analysed), especially passerines. The three species most impacted by wildlife offences are thrush, blackcap and goldfinch.

Lastly, law enforcement officers survey data allow for progress in profiling offenders. According to the law enforcement officers surveyed:

- The prototype of poacher is a man, aged between 46 and 55, of a medium-low socio-cultural level, of right-wing or extreme right-wing political ideology, who works in rural areas (mainly as a farmer) or who is unemployed or retired. He tends to be defiant. He hunts regularly legally, but also illegally. He is usually local. He is quite familiar with the law, but does not consider it very legitimate. He does not usually feel guilty about transgressing it. Penalties do not usually change his behaviour.
- The prototype of poacher breaks the law for domestic consumption, tradition, commercial gain or the thrill of taking a risk. He often claims to be unaware of the law or the impact of his actions.
- The prototype of illegal seller is a man, between 36 and 45 years old, of a medium socio-cultural level. He tends to be extrovert and defiant. He does not often trade legally, but he does trade illegally. He is not previously known. He is aware of the law, but does not consider it legitimate and does not feel guilty about breaking it. Penalties are not effective for this type of offender. His motivation is often purely economic.
- The prototype of illegal buyer is a man, aged between 40 and 60 years old, of a high socio-cultural level, mainly of right-wing ideology, working as an antiques dealer or collector, but also as a businessman or in hospitality. He often acts confused, indifferent and extrovert. He has no criminal record, although he often tends to buy illegally. He is quite familiar with the law, but does not feel very guilty about transgressing it. Penalties do usually help change his behaviour. His motivation for the illegal purchase is to have the item for a specific use, for his hobby or for the personal satisfaction of obtaining it.
- The prototype of person who destroys nests of protected species is a man, between 56 and 65 years old, of a low/medium socio-cultural level. He works in the primary sector, is unemployed or retired. He can often also be a student. He acts confused, sometimes defiant and sometimes cooperative. He does not have a criminal record, but he is a frequent offender. The penalty is often quite effective in some cases. He may destroy

nests at home to avoid unpleasant droppings and noise or he may do it when hunting, trafficking or plundering nests to improve bird breeding or for profit.

- In general, laws and penalties are not effective against illegal hunting, illegal buying and selling and destruction of nests of protected species, although for the latter case they are more effective.
- Laws and penalties should be tougher, especially in cases of repeat offences.
- One of the main problems is that administrative and judicial procedures are slow. More technical resources are needed to enforce penalties, speed up procedures, encourage inspection and increase control over the authorities in charge.
- There is little knowledge in general about the consequences of these environmental actions and their importance. More awareness-raising measures are needed: for the general public (so that they are aware of the legal and environmental consequences of the offences), for the specific sectors which, depending on their profile, might carry out the offences, and also for the judicial authorities.
- Among the measures proposed individually by respondents, biodiversity restoration and recovery activities, community service and, in some cases, a ban on hunting and a ban on species trafficking are proposed.
- Approximately 70% of the expert officers surveyed consider environmental offender profiling to be a very important or even essential tool.



Figure 26. Law enforcement officials are essential for the investigation and prevention of crimes against fauna, as well as the awareness of stakeholders. Continuing education is an essential part of this work. In the image, training of rangers from different regions within the LIFE project Nature Guardians against environmental crime. (Photo: JFO-SEO/BirdLife).

CHAPTER 6 PROPOSED LINES OF ACTION

INTRODUCTION

As mentioned in the first chapter, the aim of this report was to delve into the motivations of criminal behaviour in connection with the environment and biodiversity. But this objective is part of an even broader aim: to help lay the groundwork for more effective action to reduce environmental crime.

Analysing motivations means analysing the internal variables and the contextual variables that trigger behaviour. Taking this into account makes us realise that the reactive approach – the penalties established in national criminal legislation – cannot be the only one used, nor can it be carried out alone. First, if it is applied incorrectly and there is no reaction to minor infractions, it can lead to a series of escalating offences, since there would be a sense of impunity (Cabezas, 2017). Second, at the very least, it must be complemented with awareness-raising measures and sympathetic communication with the actors involved, the promotion of knowledge and understanding of the rules and the social implications of their transgression and the reintegration of the offenders.

That is why the last chapter of this report intends to serve as a starting point for more specific lines of investigation; for greater efficiency of the police reporting, investigation and judicial systems; for the implementation of intervention projects with primary and secondary populations, and for the development of various strategies to raise awareness among the general population. In the following pages we will outline some proposals and approaches to explore these new avenues.

REDUCING OPPORTUNITIES FOR CRIME

In the analysis of environmental crime, various analytical techniques that are used in the situational prevention of other types of crime are successfully applied. Their knowledge provides access to prevention tools at multiple levels, not merely repressive ones, in line with the spirit of this report.

The criminological study of environmental crime has been widely developed in recent times, covering topics such as forest fires (Sotoca et al., 2013; Soeiro & Guerra, 2015), poaching (among others, Martínez-Pereda, 1968; Pires & Guerette, 2014; Pires & Moreto, 2011; Márquez et al., 2013), vandalism or "eco-terrorism" (Gruenewald et al., 2015).

Criminology offers several explanations that identify opportunity as the main element that allows crime to be committed. To eliminate this opportunity, it would be necessary to combine the approaches of two different theories: criminal opportunity and rational choice (Lemieux, 2014).

- The theory of criminal opportunity is based on the idea that it is necessary to identify when there is a coincidence in space and time between a motivated potential offender, a suitable victim/target and inefficient or absent guardians, as well as each element individually. Poaching and intentional fires can be used to illustrate this. In these cases, the target of the offence would be a protected species or a forest, the place would be a natural area, and the offender, a poacher or a fire starter. As regards external actors,

the manager would be the director of the protected natural area, the handler would be a person with influence over the offender – e.g. a mayor, a teacher, the president of the local hunting association – and the guardian would be a park ranger or environmental policeperson. The interaction of these circumstances can be seen in Figure 24, together with a specific example for poaching.

- Rational choice theories emphasise that crime is a rational behaviour of the individual and that it follows a sequence of steps and decisions (Cabezas, 2017). When the offender considers the chances of success, the balance between risks and benefits changes and this influences decision-making and the final choice (Cabezas, 2017)



Figure 27. Extended crime triangle and example about poaching (Lemieux, 2014).

As discussed in SECTION 1.2 of CHAPTER 1, and confirming the crime pattern theory, this type of people are not usually full-time offenders, but lead a normal life while taking advantage of favourable circumstances within the space they control (Cabezas, 2017). This has been seen, for example, among psittacine collectors, who usually work in agriculture and only opportunistically plunder nests or capture adult parrots and parakeets (Pires & Guerette, 2014), but it may be the most common situation (see SECTION 1.9).

With this in mind, Lemieux (2014) develops five main strategies in connection with this section:

1. Increasing the effort needed to commit the crime
2. Increasing the risk faced by offenders
3. Reducing the benefits of committing the crime
4. Reducing any temptation to commit the crime
5. Eliminating any excuse for committing the crime

Each of these strategies is actually a category that encompasses five other techniques, as listed in Table 1, followed by an example.

Table 1. The 25 techniques of situational crime prevention with examples about ivory, rhino horn and bush meat poaching (Lemieux, 2014).

INCREASING EFFORTS	INCREASING RISKS	REDUCING REWARDS	REDUCING TEMPTATIONS	ELIMINATING EXCUSES
1. Hinder objectives	6. Increase surveillance	11. Hide objectives	16. Reduce frustrations	21. Establish rules
GPS transmitters in vulnerable animals	Shooting detectors	Keep animals away from villages	Strengthen community outreach activities	Memoranda of understanding on wildlife use
2. Control access	7. Facilitate surveillance	12. Divert objectives	17. Avoid conflicts	22. Establish instructions
Fences around protected areas	Rewards for community informants	Remove horns from rhinos	Ditches against elephants	Prohibition signs
3. Control exits	8. Reduce anonymity	11. Identify objectives	18. Reduce temptations	23. Raise awareness
Canine patrols at airports	Automatic number plate reading at the entrance of protected areas	Radio frequency identification chips requirement for legal exports	Provide with alternative sources of income or protein	Clearly marked protected area boundaries
4. Divert transgressors	9. Use site managers	14. Disrupt criminal markets	19. Neutralise peer pressure	24. Assist compliance
Checkpoints in protected areas	Encourage reporting of suspicious activities	Ban international trade	Conservation education	Allow regulated hunting
5. Control gear	10. Strengthen formal surveillance	15. Eliminate benefits	20. Discourage imitation	25. Control drugs and alcohol
Limit trade in traps/snares/nets	More foot patrols	Dye rhino horns	Prevent the sharing of profits in poachers' communities	Community programs against drug abuse

MORE SPECIFIC INVESTIGATION LINES

Based on this analysis, issues have been raised that could be interesting in terms of increasing scientific and social knowledge about environmental crime, its perception and the social and legal response associated with it.

From the socio-educational and cultural aspects that lead a person to break the law in environmental matters, specifically against wildlife, to the conviction (or not) of that person by the courts, there are many phases in which psychosocial elements operate. Among all those elements, the following are highlighted:

- The motivations that drive these acts differentially between species and specimens, the decisions taken with more or less planning, the group identity and the feeling of belonging to different communities and social groups (hunting societies, forest rangers, etc.), etc.
- The perception of the act (and its commission) by society and by the local community and their reaction of denunciation, concealment, or indifference, as well as the factors that lead offenders to maintain this behaviour on the long run or not, as the case may be

- The perception and knowledge of law enforcement and environmental protection bodies and other groups involved at a technical (judges, prosecutors) or social level (environmental organisations, animal welfare movements, etc.)
- The non-legal circumstances leading to convictions or acquittals and to impose one type of ruling or another: particular characteristics of the case, behaviour of the accused, contextual legal motives in place and time, cognitive biases, etc.

However, special attention should be paid to the sample in connection with investigations directly involving offenders. Lemieux and Eloff (2004), for example, consider that there is an age-related bias in the skill of poachers, and it is possible that the more skilled poachers are caught less often. Álvarez et al. conclude that the fact that many convicted criminals share a particular psychological condition is due rather to their higher likelihood of being arrested and convicted because of their condition than to their criminal activity.

MORE EFFICIENT REPORTING, INVESTIGATION AND JUDICIAL SYSTEMS

The accurate collection of information on offences and offenders is essential to be able to analyse the range of circumstances and seek solutions. For example, Lemieux and Eloff (2014) find that information on rhino carcass finds may not be accurate and that the failure to register age data of a large proportion of detainees prevents proper analysis of the information.

Therefore, as a complement to the investigation questions listed in the above section, it is proposed that forest rangers and SEPRONA officials who detect infractions fill a specific questionnaire. Some of the areas that should be interesting to explore are the neutralisation techniques used (i.e. the allegations made by detainees that, psychologically, could serve as justification) and the motivations (showing contextual factors that may have had an impact on behaviour), as well as socio-demographic variables at different scales.

The aim would be to collect information that is not present in the rulings (CHAPTER 3), supporting and expanding the data gathered in the court reports. With this, more specific and specialised analyses could be carried out to help clarify cases, inferring (and simultaneously contrasting) the psychological and criminological characteristics of the subjects.

This is of great importance, as the lack of information may not allow the application of the 25 techniques mentioned in 0 of this chapter. The absence of the necessary elements for discouraging or raising awareness could easily result in action being directed exclusively towards repression. For instance, Lemieux and Eloff (2014) find an example of this in poaching: the lack of knowledge about temptations and excuses meant that only coercive rather than social measures could be planned.

IMPLEMENTING INTERVENTION PROJECTS WITH PRIMARY AND SECONDARY POPULATIONS

Despite the methodological problems encountered in the description of environmental offenders discussed in this study (CHAPTER 3 and CHAPTER 4), relevant data have been obtained that support previous literature (CHAPTER 1). Thus, we can really define the target groups for

psychosocial intervention efforts, for training in the prevention of unintentional offences or for changing the attitudes of individuals and groups who commit offences intentionally or with more specific motivations.

This is of particular importance in some types of crime, since although proximity – and therefore opportunity (as discussed in 0 of this chapter) – is often a common factor in some crimes such as intentional fires (Soeiro & Guerra, 2015; Sotoca, 2016; see0) and poaching (Lemieux, 2014; SECTION 1.6), they sometimes respond to a complex system of redistribution (Pires & Guerette, 2014).

It should be noted that, in other crimes, thrill and risk are important, if not essential, motivations for transgression (Burt & Simons, 2013), contrary to self-control theory (Gottfredson & Hirschi, 1990). In cases of poaching, it can contribute to triggering certain circumstances in which defiance or rebellion are important (Muth & Bowe, 1998); political motives, insubordination against authority per se or due to the enforcement of specific regulations or initiatives (Serrano, 1990; Molina, 1997; Muth & Bowe, 1998; Seijo, 2005; Bell et al., 2007; Seijo, 2009; Lemieux & Eloff, 2014).

In fact, a particularity of incorrect animal welfare activism (we mentioned some actions regarding this in SECTION 1.10) is a clear stance against legislation, which is considered unjust (Liddick, 2013). This contributes to give this activism a subversive and insubordinate profile, among other characteristics, which is also found in certain motivations for other environmental crimes such as intentional fires (Serrano, 1990; Molina, 1997; Seijo, 200; Molinero et al., 2008a; Seijo, 2009) and poaching (e.g. Forsyth & Marckese, 1993; Muth & Bowe, 1998; Hübschle, 2017).

For these purposes, participatory and horizontal methodologies are recommended so that we can blur technical roles and work horizontally and through community involvement processes, such as participatory action research, as developed below.

DEVELOPING VARIOUS AWARENESS-RAISING AND ENGAGEMENT STRATEGIES FOR THE GENERAL POPULATION

Awareness-raising among actors is crucial at multiple levels. At the most accessible level, it is desirable to improve information efforts for groups that may act as facilitators of biodiversity crime, especially in circumstances where they are in a social, legal and natural environment of which they are unaware and therefore do not act maliciously. This is the case, for example, of tourists who, as a result of some of their attitudes and behaviours, unconsciously encourage the acquisition of exotic animals for captive keeping and public display (TourismConcern, 2017; see SECTION 1.9).

However, there are other levels. Following the approach of the above section, techniques such as participatory action research are proposed, a methodology that we think would be suitable for several reasons.

Firstly, it acts at the local level. As was seen in CHAPTER 3, more offences are recorded in municipalities with a smaller number of inhabitants. This, together with additional information contained in CHAPTER 2 and some of the statements expressed in CHAPTER 4, confirms that they are associated to specific local contexts (belief systems, values, traditions, structures and organisations) that cannot be addressed on a large scale with solely national or international strategies.

Secondly, it allows for participatory scientific production. The collective generation of knowledge during the intervention would provide answers to the questions suggested for future or new investigations (0). It highlights and takes into account popular knowledge and beliefs, which are essential in activities as traditional and deep-rooted as illegal hunting, and which are necessary to transform the immediate reality and environment.

Thirdly, it helps to raise awareness among the population of their active role. It highlights the importance of democracy and education, empowering society and making it aware of its role and responsibility, in this case, in the conservation of biodiversity and the rejection of criminal behaviour. It can be focused on improving governance by increasingly involving local communities in wildlife management, in order that they have a stake in wildlife conservation so that an increase in purchasing power does not lead to an increase in demand (Mancini et al., 2011; Knapp, 2012), consequently having a rebound effect, which is not the case if the benefit comes from the conservation itself of the resource. The involvement of local communities needs to go beyond benefit sharing and deepen the co-management of natural resources (Morais, Bunn, Hoogendoorn & Birendra, 2018).

Moreover, it constitutes a sustained intervention over time. By encouraging the active and committed role of people in their local context, they obtain the necessary tools to make the intervention autonomous and self-managed. This, together with an appropriate follow-up, implies a type of intervention that is sustainable in terms of resources and sustained over time, as well as respectful (and therefore more adapted and effective) to the diversity of each community.

Another reason is that they make it possible to work cooperatively – and inevitably do so – on other related social and environmental issues. This methodology can benefit the communication, organisation and cooperation skills of the participants, promoting healthy conflict management and offering a space for social decategorisation that is fundamental for achieving common objectives, such as the fight against the poisoning of wildlife and illegal logging. There may be underlying issues related to age, gender and socio-economic class, informally helping to reduce discrimination that for these or other reasons intersect with environmental degradation and biodiversity loss. For example, fighting poverty and corruption is necessary to reduce poaching, alongside with cracking down on it through legislation and reducing illegal and unsustainable demand for products through education (Hauenstein et al., 2019). This is also a key factor in species trafficking, and its complexity requires policies improving the living conditions in the countries of origin, including facilitating measures to enhance legal and sustainable trafficking (Duffy, 2016b).

The basic objectives of the intervention would be, broadly speaking, to prevent the general population from becoming a population at risk, to increase the level of social reproach towards the behaviour and attitudes of risk groups, and to protect the territory and biodiversity of their local environment.

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