

UN 
environment



eurac
research



COMBATING WILDLIFE AND FOREST CRIME IN THE DANUBE-CARPATHIAN REGION



COMBATING WILDLIFE AND FOREST CRIME IN THE DANUBE-CARPATHIAN REGION



Schlingemann, L. (Editor in Chief); de Bortoli, I., Favilli F.; Egerer, H.; Musco, E.; Lucas T.; Lucius, I. (Eds). 2017. *Combating Wildlife and Forest Crime in the Danube-Carpathian Region*.

A UN Environment – Eurac Research – WWF Report.

www.unep.org

Printed by UN Environment

Disclaimer: The contents of this report do not necessarily reflect the views or policies of UN Environment or contributory organizations. The designations employed and the presentations do not imply the expression of any opinion whatsoever on the part of UN Environment or contributory organizations concerning the legal status of any country, territory, city, company or area or its authority, or concerning the delimitation of its frontiers or boundaries.

Editorial Team Lynn Schlingemann (Editor-in-Chief)
Isidoro de Bortoli
Filippo Favilli
Harald Egerer
Eleonora Musco
Thierry Lucas
Irene Lucius

Design Zijad Pekmez
Neven Šotra

FOREWORD

Environmental crime is not a niche problem. It is now the fourth largest type of criminal activity in the world, and valued at anywhere between 91 and 258 billion USD every year. This colossal sum fuels organized crime, undermines the rule of law and robs us of the natural resources and ecosystems we need to survive.

In recent years, the sheer scale of wildlife crime and illegal logging has triggered a global response, and fortunately political attention is now higher than ever before. The world, from China to the UK to Kenya, is taking action on the ivory trade.

Yet environmental crime continues to undermine the future of people around the globe. The Danube-Carpathian region of Central and Eastern Europe, one of the continent's last remaining biodiversity hotspots, is not immune.

This joint UN Environment - WWF - Eurac Research publication extends, inter alia, from UN Environment's mandated role to combat the illegal trade in wildlife and strengthen environmental governance. It is also one of the first UN publications to focus on wildlife and forest crime in the Danube-Carpathian region. The analysis highlights the findings of a 2016 legal analysis, and pays special attention to illegal logging, illegal fishing of sturgeon and the caviar trade, the illegal killing of birds and the poaching of large

carnivores. It has been produced with support from the European Union Technical Assistance Facility for Danube Region Projects, in cooperation with the Secretariat of the Carpathian Convention, WWF's Danube Carpathian Programme, the International Commission for the Protection of the Danube River and the Institute of Biology of the Romanian Academy in Bucharest.

The facts are frightening. Europe's last remaining old-growth forests and their unique biodiversity are disappearing at alarming rates. Over the past 20 years, a report estimates Romania has lost over five billion euros to their economy due to illegal logging. Furthermore, the Danube river hosts one of the most ancient and endangered species of fish: the sturgeon. They are threatened by illegal fishing to sell caviar on the black market – where the coveted delicacy can fetch 6,000 euros a kilo, the going price of impending extinction. The looting of these natural resources undermines development, depriving Governments of the money they need to promote jobs, education and health services and a solid foundation for future generations.

The purpose of this report is to strengthen awareness of the risks to biodiversity in this region, and underpin the actions of Governments, NGOs and the EU as they seek to end these crimes, revise or develop much needed legislation and promote sustainable development.



Erik Solheim

Executive Director,
UN Environment



Marco Lambertini

Director General,
WWF International

CONTENTS



Executive Summary	6
Background	8
Introduction to the four case studies	10
Illegal Logging	12
Illegal Fishing of Sturgeon and Caviar Trade	20
Illegal Killing of Wild Birds	26
Poaching of Large Carnivores	30
Conclusion	36
Acronyms	39
Contributors	40
Photo Credits	41
General References	41
Bibliography	42
Glossary	53

EXECUTIVE SUMMARY



View of Litworowy lake in High Tatra Mountains, Poland

This booklet builds on the outcomes of a legal analysis by the UN Environment with the support of the European Union Technical Assistance Facility for Danube Region Projects (TAF-DRP) on wildlife crime and illegal logging in the Danube-Carpathian region. The analysis was done in cooperation with the Secretariat of the Carpathian Convention, the World Wide Fund for Nature – Danube Carpathian Programme (WWF-DCP), the Institute of Biology Bucharest, Romanian Academy and the International Commission for the Protection of the Danube River (ICPDR).

The analysis focussed in particular on the policies and legal framework in place in the Danube-Carpathian region countries to address and combat illegal logging, illegal fishing of sturgeon and caviar trade, poaching of large carnivores and the illegal killing of wild birds.

The study revealed that, despite being protected and covered by numerous policies, conventions and organizations, the Danube-Carpathian region¹ remains under increased threat

and pressures from illegal logging and wildlife crimes. The mountainous region is furthermore known to contain environment-related illegal trafficking routes, including for wood, animals, animal parts and wastes.

Illegal logging and the misuse of permits are not being adequately addressed in many Danube-Carpathian range States. Timber is being illegally cut and transported across and beyond the borders of the mountain range States. In addition, sturgeons, iconic fish species and the most critically endangered group of species worldwide, have undergone significant declines due to illegal fishing and trade in their unfertilized roe (caviar). Furthermore, EU bird species and migratory birds are increasingly threatened by illegal killing, fuelled by the growing demand of restaurants and other consumers in Southeast and Central Europe. Finally, the poaching of large carnivores remains a major threat to the Eurasian lynx, brown bear and grey wolf populations.

It was found that the main obstacle for combating illegal

logging and wildlife crime in the Danube-Carpathian region is the lack of adequate implementation and enforcement of national legislation. Moreover, criminal law procedures to identify and address the gaps or violations of enforcement regimes, through for example sanctions, are usually lengthy and complicated, both at the national and international level.

In addition to this, the analysis found that there is not enough information or (up-to-date) studies available regarding the effects of wildlife and forest crime in the region. To effectively address wildlife and forest crimes, regular and increased monitoring and reporting on the state and trends of wildlife and forests in the region is necessary as well as studies that estimate the economic losses from forest and wildlife crimes.

The analysis concluded that national enforcement and compliance with legislation addressing and/or banning wildlife crime and illegal logging through criminal law ex post enforcement procedures needs to be complemented by

preventive measures that fill the gaps and strengthen the knowledge, capacity and cooperation between institutions and actors in the field. Not only on the level of authorities, but also action campaigns and pilot projects that raise awareness and engage local communities in the management and conservation of wildlife are needed.

This booklet supports and includes recommendations for a full and comprehensive programme to address and maximize the effectiveness and impact of the legal, institutional and technical framework, tools and collaboration in place to combat illegal logging and wildlife crime in the Danube-Carpathian region.



¹The Danube basin and Carpathian Mountains include all or part of fifteen countries of Central and Southeastern Europe that signed the Carpathian Convention and/or the Danube River Protection Convention: Austria, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, southern Germany, Hungary, Moldova, Montenegro, southern Poland, Romania, Serbia, Slovakia, Slovenia and Ukraine

BACKGROUND

A multitude of legal instruments exist to assist the Governments of the Danube-Carpathian region to protect and manage the biological and landscape diversity of the region sustainably². Some of these instruments are global, like the Convention on Biological Diversity (CBD) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), whilst others focus on transboundary movements, specific areas or aspects, such as the Convention on the Conservation of Migratory Species of Wild Animals (CMS). Other instruments focus on specific regions, such as the Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention), the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), the Danube River Protection Convention (ICPDR) and various European Union (EU) Directives and Regulations. Most, if not all, of these legal instruments translate into national policies and actions supported by transboundary networking and cooperation.

In most range countries³, national environmental policies and law enforcement are overseen by the Ministries responsible for the environment. Other Ministries (e.g. Justice, Agriculture, Interior or Foreign Affairs) play a role in aspects related to their mandate (law enforcement, rural development, policing, diplomacy, etc.). In addition, legislation and the oversight and control of implementation are in the hands of the Parliament and the Judiciary. Guidance on the implementation of regional and international legal instruments and programmes is provided in the governing bodies of these instruments, while in the case of the EU, all three layers of governance – Commission, Parliament, Court of Justice – are involved.

In the European Union, the member states are responsible for the implementation of the EU Directives. However, as the guardian of the Directives, the European Commission (EC) is in charge of overseeing how member states transpose and ultimately apply the EU laws. Non-compliance with the Directives can lead to a procedure and verdict of the European Court of Justice (ECJ).

In addition to the EU's Law Enforcement Agency EUROPOL and the European Judicial Network (Eurojust) a multitude of international and regional networks that are linked to

the EU are in place to improve exchanges and coordination of actions against environmental crime. In most cases this requires cross-border cooperation. These networks include those comprising of enforcement officers, such as the European Network against Environmental Crime (ENEC), the European Network of Prosecutors for the Environment (ENPE), the European Union of Judges for the Environment (EUJFE), the European Network for the implementation and enforcement of Environmental Law (IMPEL) and the European Union wildlife trade Enforcement Group. There are also networks comprising of NGOs/hunting organizations, such as the European Federation of Associations for Hunting and Conservation (FACE). A more political network active in this field is constituted of the Members of the European Parliament for Wildlife (MEPs for Wildlife).

In all the range countries, additional technical assistance related to combating wildlife and forest crime is provided. Public participation and awareness is generated and supported by national and international civil society movements and organizations, such as the World Wide Fund for Nature (WWF), TRAFFIC - the wildlife trade monitoring network and the International Union for Conservation of Nature (IUCN).

Despite the many international legal instruments and high-level political commitments to combat wildlife and forest crimes, the major challenge to effectively coordinate, implement and enforce these commitments remains. Prosecution cases are rare and enforcement capacity is weak due to inter alia insufficient monitoring, lack of specialists, unclear environmental legislation, problems with evidence and identification, limited resources, and the lack of progress in applying the EU environmental standards that the Environmental Crime Directive seeks to strengthen.

In general, the EC and the ECJ are limited in what they can do to force States to comply with EU Directives and rules. There is seldom consensus regarding the level of infringement or penalty to aim for in cases, and case-specific fact-finding is often complicated and expensive. Despite being available to the Courts, fines are therefore rarely applied.

The enforcement and compliance regimes of other

international legal instruments, such as CITES, are equally lengthy, and enforcement through sanctions is a difficult and often a politicized process.

In order to start addressing these anomalies, the UN Environment in cooperation with the Secretariat of the Carpathian Convention, Eurac Research, the World Wide Fund for Nature – Danube Carpathian Programme (WWF-DCP), Institute of Biology, Romanian Academy and International Commission for the Protection of the Danube River (ICPDR) decided to conduct an assessment of illegal wildlife and forest related practices and trade in the Danube-Carpathian region and the effects on the conservation status of endangered wildlife species and priority forest habitats.

In October 2015, support via the provision of expert legal services was obtained from the European Union Technical Assistance Facility for Danube Region Projects (EU TAF-DRP) under the EU Strategy for the Danube Region to start the assessment. A legal analysis and inventory of relevant national and international legal regimes and policies was

made. The analysis furthermore explored how the Danube-Carpathian range States address and transpose these regimes to combat illegal logging and wildlife crime in the region. Case studies were conducted, providing insight into four of the most urgent and prominent issues in the region (see 'Introduction to the four case studies'). The analysis was completed in May 2016.

This booklet highlights the outcomes of the legal analysis and further examines wildlife and forest crime in the Danube-Carpathian region through field interviews, questionnaires and investigations conducted in 2017. It is produced by the UN Environment, Eurac Research and the World Wide Fund for Nature – Danube Carpathian Programme.

This booklet aims to provide recommendations for a full assessment study and programme to address and help maximize the effectiveness and impact of the legal, institutional and technical arrangements and collaboration in place to combat illegal logging and wildlife crime in the Danube-Carpathian region.



Carpathian Convention, First Conference of the Parties, High Level Segment, Kyiv, Ukraine, 2006

²For more information regarding the legal and policy context, please see the Glossary

³The Danube basin and Carpathian Mountains include all or part of fifteen countries of Central and Southeastern Europe that signed the Carpathian Convention and/or the Danube River Protection Convention: Austria, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, southern Germany, Hungary, Moldova, Montenegro, southern Poland, Romania, Serbia, Slovakia, Slovenia and Ukraine

INTRODUCTION TO THE FOUR CASE STUDIES

The studies in this booklet are based on the case studies provided in the legal analysis completed in May 2016. The case studies were selected not only to investigate and raise awareness of some of the most apparent and serious wildlife and forest crimes in the Danube-Carpathian region, but also to gain insight into how range States differ in their policies and methodologies for tackling wildlife and forest crimes. The case studies in this booklet were expanded to include cross-border references as well.



Illegal Logging

Illegal logging is a major environmental and economic problem in the Danube-Carpathian region (1). Romania for example includes a major part of the Carpathians and holds some of Europe's last and most extensive old-growth primary forests (2). Romania's forests provide habitats for an exceptionally high diversity of species and is home to Europe's largest populations of large carnivores, including the brown bear, grey wolf and Eurasian lynx (3) (4). Although there is substantial uncertainty regarding the extent of illegal logging in Romania, it has been widely recognized by the government, media and environmental activists as a serious and ongoing concern over recent decades (5) (6) (7). Since 2015, Romanian authorities have stepped up action and made considerable progress with reducing illegal activities, such as the setting up of wood tracking tools or the reform of control bodies. However, more needs to be done to protect this natural wealth, as well as other forests in the Carpathian region, from illegal logging activities.

Illegal sturgeon fishing and caviar trade

Sturgeons are one of the world's most ancient living species. Some of the most important populations live in the Danube River basin (8). Sturgeons are also the most critically endangered group of species worldwide (9). Their unfertilized roe, more commonly known as caviar, is a high-priced delicacy, reaching retail prices up to 6000 euros per kilogram (9) (10). International trade in wild sturgeon (caviar and meat) from shared stock, including from the North-Western Black Sea and the Lower Danube River, is not allowed. However, illegal fishing and trade has reached alarming proportions and have become the main direct threat to the survival of the Danube sturgeons (8). These illegal activities contribute to existing pressures such as habitat loss and disruption of the spawning migration. Of the former six native species inhabiting the Danube basin, one is extinct, four are critically endangered and one is vulnerable (11). Urgent action is needed to strengthen legal enforcement capacity, promote population monitoring and protect the remaining sturgeon species in the Danube River.

Illegal Killing of Wild Birds

Bird crime is a serious threat to a relatively large number of bird species, and Southeastern Europe has been a hotspot for wild bird crimes for decades (12) (13). A 2016 BirdLife International assessment estimates that 11-36 million birds are illegally killed/taken every year in the Mediterranean region and 104,000 - 163,000 birds are illegally killed/taken every year in Serbia alone. These numbers are increasing (14). Illegally killed birds are concealed in a variety of ways, e.g. in refrigerated trucks, and smuggled across borders (15). Most commonly the birds are taken to northern Italy and Malta, where they are served in restaurants and consumed as a delicacy (16). Although the EU Birds Directive is reportedly 100% transposed in the national legislation of many south-eastern European countries, including non-EU member States, a deeper analysis shows gaps and at times poor implementation. Improved knowledge, capacities, awareness and prioritization in acting institutions responsible for tackling bird crime are needed. Knowledge exchange on methods, techniques and legal procedures for tackling bird crime, as well as on-ground capacity building around hunting hotspots should be given high priority.

Poaching of Large Carnivores

The Carpathians are one of the strongholds of large carnivore populations in Europe (17). Unfortunately, the poaching of large carnivores is a serious threat in all the Carpathian countries (18). Despite the fact that there are monitoring systems in place for most large carnivore species, information on their conservation status is limited, often based on personal opinions and rarely on scientific methods (18). The inadequate management of game species and expanding human infrastructure are increasing the pressure on large carnivore populations (19). Interviewed experts consider poaching an issue of national concern, enabled by a weak implementation of laws, economic hardship, strong hunting organisations and pressures, absence or ineffectiveness of transboundary cooperation and low awareness among judiciaries. A prioritised action plan that includes campaigns and trainings to sensitize the public and private sector, as well as law enforcement authorities, is necessary. In addition, the establishment of a common and reliable monitoring system, improved cross border cooperation and information exchange are needed to combat poaching and increase the protection of large carnivores in the region (17).



ILLEGAL LOGGING - THE EXAMPLE OF ROMANIA



Overview of situation and threats

Romania has over 6.5 million ha of forest (6.791.8 million ha according to FAO, 2014), including some of Europe's last and most extensive virgin forests (estimated 400,000 ha in 1984; in 2004 remaining 218,000 ha) (20) (2). These forests provide a habitat for two-thirds of Europe's population of large carnivores, including the largest European populations of brown bear (*Ursus arctos*), grey wolf (*Canis lupus*), and Eurasian lynx (*Lynx lynx*) (5) (3).

Romania is one of Europe's important timber producers. More Romanians work in forestry and wood processing than in most other EU states (according to Eurostat in Romania: 12.5 annual work units per 1 000 hectares in 2013) (21).

There is substantial uncertainty regarding the extent and impact of illegal logging; estimates of its scale and costs vary greatly according to the information source. A Romanian Court of Auditors study (2013), for instance, estimated that between 1990 and 2011, 80 million cubic meters of timber have been cut illegally, representing 24% of the total volume of wood cut during this period and a loss of over five billion euros to the Romanian economy (25). Another study of the National Institute for Research and Development in Forestry (2015) found that between 2008 and 2014, 26.8 million cubic meters per year was harvested whereas the legal

volume exploited was 18 million cubic meters. From that study, the competent Ministry concluded that therefore 8.8 million cubic meters must have been illegally harvested (26). Some claim, however, that the figures of the first study are not well founded, while in the case of the second study the methodology used to calculate the amount of illegal logging has been challenged (5)

All in all, however, illegal logging has been widely recognized by the government, media and environmental activists as a serious and ongoing concern over recent decades (5) (6). These claims are supported by multiple studies (7) (22) (23) (24). A survey of over 345 forest district managers in Romania reported illegal logging as one of the most frequent challenges they encounter (7). According to Cătălin Tobescu, President of Nostra Silva - Forestry and Pasture Federation of Romania, official statistics show that in 2016 around 187,000 cubic meters of timber was illegally cut (27).

Romania's forest management - A historic overview

Prior to 1948, 28% of Romania's forests belonged to the

state and the rest were in private possession, communally owned by locals and religious or educational institutions (28). However, this all changed during the communist regime in 1948 – 1989. Romania's forests became almost entirely owned by the state (29).

The collapse of the former Soviet Bloc and transition from state-owned to market economies generated drastic land use changes (30) (31) (32). This resulted in agricultural abandonment and extensification, rural depopulation and increased illegal logging of forests (33) (34). The restitution or re-privatization of former collectivized agricultural and forest land was one of the key issues many former Soviet states were facing (29). Romania's response was to start a restitution process that gives back the land to their historically (pre-1948) entitled owners (29).

This restitution process however took many years and is still ongoing, leading to numerous court cases and lawsuits over forest land property. The privatization of Romania's forests has been implemented over the course of three phases based on laws passed in 1991, 2000 and 2005 (35) (36). The first restitution law (18/1991) returned a total of 350,000 ha (37), the second law (1/2000) targeted another 2 million ha, and the third and final law (247/2005) aims to return all remaining forests that were privately owned prior to World War II (38)

The change of forest ownership structure triggered important changes, not only the reduction of the role of the state in forest administration, but also the development of non-state forest administration and changes in the institutional and regulation frameworks (35) (39) (40). However, a consequence of the privatization of forests is that there are now many more isolated and fragmented forest areas. Some studies suggest that this has a negative impact on Romania's protected area networks because forest lost close to the protected areas can affect ecosystem functions and processes, hamper species dispersal and/or induce edge effects (41) (42) (43).

A 2011 study (41), using Landsat TM/ET-M+ imagery, concluded that forest cover disturbance rates increased sharply in two waves after 1995 and 2005 (representing two phases of the restitution process). Moreover, it found particularly substantial disturbances inside protected areas and core reserve areas, even higher than outside these areas. It therefore suggests that high illegal logging rates are triggered by the ownership and institutional changes.

Implementing sustainable forest management and EU nature protection regulations in the new multi-ownership landscape has proven to be a formidable challenge (36). Much of the infrastructure for nature protection eroded (44). Multiple

studies suggest that during the period of institution reform institutions weakened, and poaching, illegal logging and forest degradation increased (45) (46) (47) (36). During a period of economic hardship and weak political institutions, there are few incentives for new owners to sustainably manage their forest land.

New owners appear to harvest much of their forests to gain short-term profits. Most of the privatized forests were immediately cleared by new owners after the first restitution law in 1991 (48). Similar trends occurred in the subsequent restitution phases following the respective laws in 2000 and 2005 (3), amplified by weakened institutions and increasing economic hardship (29). A 2001 report that was commissioned by the Ministry of Agriculture, Food and Forests (MAFF) in Romania, presenting an Environmental Assessment (EA) of the World Bank for a financed Forest Development Project for the country, stated: "previous experience in Romania and elsewhere has shown that if the restitution of forest lands takes place without adequate legal and institutional mechanisms, the almost immediate loss of forest cover is likely to result, leading to irreversible environmental degradation and significant economic losses for the country (49)." New forest owners often lack the capacity and knowledge of sustainable forest management, nature conservation principles, sustainable harvesting principles and legislation (41). In addition, new forest owners often doubt the permanence of their newly gained property rights (50).

However, despite a potential lack in capacity and knowledge on the side of the new forest owners, it must be noted that Romania's legal provisions ensure that the actual management of forests is not done directly by the forest owner, but through the forest districts. These are management structures approved by the Ministry, with specialized staff, made up of professionals, observing the forestry regime. Furthermore, there is the Forest Owners Association of Romania, the Association of Forest Administrators from Romania and the Forestry Association of Romania (bringing together the operators that perform logging and the primary processing of wood). These organizations are representative at national level and, together with others, are constantly consulted on the preparation and development of forestry legislation and addressing the major issues of the forestry sector.

Exact data on how much of Romania's forests have been restituted differs. According to some studies the Romanian government has restituted around 45% of its forests prior to 2009 (35) (41). According to data published by the National Institute of Statistics, the structure of the forest area at the end of 2009 shows that: 52.5% of forests are public property



of the state, 15.4% fall under local public ownership and 32.3% are private property of natural and legal persons and of administrative-territorial units.

According to the third and latest restitution law (2005), all remaining pre-World War II non-state-owned forest property should be returned to the rightful owners. Once all three of the restitution laws are fully implemented, various studies have estimated that around 70% of all Romanian forestland will have been transferred to non-state forest owners, increasing the number of non-state forest owners to 800,000 (a doubling since 2000) (51) (3) (52) (53).

Institutional and legal framework

Romanian forestry legislation is particularly well developed, covering a multitude of issues related to the forestry sector, including hunting and game protection and biodiversity conservation.

→ The European Union Timber Regulation (EUTR) (54)

The EUTR was created as part of the EU Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan and came into force on 3 March 2013. Its aim is to reduce illegal logging by ensuring that no illegal timber or timber products can be sold in the EU. The EUTR is the most important demand-side measure for protecting forests from illegal logging. It introduces new prohibitions and obligations

for natural and legal persons involved in timber harvesting, processing, transport, or trade operations.

The EUTR prohibits the trading of illegal timber and its derived products within the EU. It requires operators who place timber and timber products on the internal market for the first time to exercise due diligence through a precautionary risk-based approach. This system needs to include three elements: access to information, risk assessment and mitigation of the risk identified. EU timber traders are also required to keep records of their suppliers and customers (55).

In 2012, a stakeholder working group was set up to facilitate the implementation of the EUTR in Romania, but their discussions did not lead to concrete legislative outcomes. In March 2014, a second stakeholder consultation began by the Ministry of Environment, Water and Forests and a new working group was established. This led to the formulation of governmental decision HG 470/2014, the main piece of legislation formally implementing the EUTR in Romania (56). This Decision was in fact the modification, completion and adaptation of Government Decision (GD) no. 996/2008 *for the approval of the Rules on the Provenance, Circulation and Marketing of Wood Materials, the Regime of Wood Storage Facilities and Roundwood Processing Plants*, in force at that date. This Decision enabled to introduce, among others, specific EUTR issues like adoption of the due diligence system, traders' obligations, monitoring

organizations, sanctions, etc.

It should be noted that GD no. 996/2008 replaced GD no. 427/2004, which in its turn replaced the GD no. 735/1998 etc., these being normative acts that have regulated over time the instructions regarding the movement and control of the circulation of wood materials and roundwood transformers. It was GD 996/2008 that regulated the setting up of the SUMAL - wood traceability information system, preceding the EUTR since 2008. Illegal cutting of trees - forest vegetation, and the placing on the market of wood were banned in Romania before the EUTR also, the harvesting and circulation of wood materials being strictly regulated, as shown above. Decision HG 470/2014 reiterates the obligation of timber operators and traders to use the tracking system: the SUMAL application (56)

Decision HG 470/2014 is a regulatory act aiming to improve the traceability of timber in the supply chains. The regulation contains sanctions to enforce the obligation required by the EUTR. HG 470/2014 stipulates that from 1 January 2015 economic operators are obligated to use a due diligence system (DDS) in line with EUTR. From 1 January 2015 onwards, operators without a DDS in place risk fines and harvesting authorizations without a DDS are prohibited from conducting their harvesting operations

→ Forestry Certification Schemes

Apart from the EUTR, the Romanian government (Government Decision no. 1476/2002) provides a favourable background for the establishment of forest certification schemes (57). Forest certification schemes are international non-governmental mechanisms for regulating forest product exploitation and trade. As such, certification schemes act as a major driver in creating trade opportunities in sustainable forestry. Awareness of sustainably managed forests is growing and many companies in Romania obtain certification as a result of customer demand (57). A range of forest certification schemes exist, including the Programme for the Endorsement of Forest Certification (PEFC) and the Forest Stewardship Council (FSC). Both schemes offer assurance of well-managed forests, but have different processes and interpretations of forest management criteria.

In addition to sustainable forest management certification, forest certification also sets standards for Chain of Custody (CoC) certification, a mechanism to track timber through

each step in the supply chain, from harvesting material to processing, trading, and distribution (58) (59). Both PEFC and FSC require the implementation of a Due Diligence System (DDS), aligned with the EUTR requirements, as part of Chain of Custody certification. Chain of Custody certification therefore represents an efficient tool / indicator for companies to demonstrate their compliance with the EUTR. However, certification alone does not eliminate the need to complete procedures required by the EUTR (56) (60). Furthermore, if a company has a CoC certificate, it does not necessarily mean that they only deal with certified or other type of verified materials. Therefore, such a certificate does not guarantee the legality of all products a company produces.

In Romania, the FSC is more established than the PEFC certification scheme. More than 2.6 million hectares of forest in Romania are FSC certified and 612 companies have obtained FSC CoC certification (61). Romania is among countries with the highest growth of FSC certified areas and highest growth of FSC Chain of Custody certificates (62).

The Romanian PEFC Scheme exists at national level. It has recently applied for PEFC endorsement to obtain international recognition (63), a process that is expected to be finalized by the end of 2017. Therefore, there are currently no PEFC certified forests in Romania. So far, 54 companies in Romania have obtained PEFC Chain of Custody certification (64).

→ The Carpathian Convention

The Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention) was adopted and signed by the seven Parties (Czech Republic, Hungary, Poland, Romania, Serbia, Slovak Republic, Ukraine) in May 2003 in Kyiv, Ukraine, and entered into force in January 2006.

During the Third Meeting of the Conference of the Parties to the Carpathian Convention (COP3, Bratislava, May 2011), the Protocol on Sustainable Forest Management was adopted. This Protocol includes the objectives that the Parties shall carry out activities and cooperate on inter alia "strengthening the governance of the forestry sector and enforcing forest law with particular attention to combating illegal logging and associated trade". The Protocol further promotes sustainable management as well as calls to strengthen the

⁵⁴SUMAL - Sistem informațional integrat de urmărire a materialelor lemnoase - a national system for tracking timber established in 2008 and updated with GD No. 470/2014.

role, participation and cooperation of and between relevant authorities at the local and international level.

During COP4 (23 – 26 September 2014, Mikulov, Czech Republic), the Parties adopted the Strategic Action Plan for the implementation of the Protocol on Sustainable Forest Management and the Criteria and Indicators for selection of virgin forests in the Carpathians. Following this, the Secretariat of the Carpathian Convention started working with the European Environment Agency (EEA) and its European Topic Centre on Urban, Land and Soil Systems (ETC/ULS), in preparing a report aimed at identifying and assessing gaps in the availability of datasets on forests of the Carpathian region. The goal was to setup a harmonized database on Carpathian Virgin Forests, whose final aim is to support sustainable forest management in the area. The report was presented to the members of the Carpathian Convention Sustainable Forests Working Group in the first half of 2016.

At the COP5 (Hungary 10-12 October 2017), the draft map of Virgin Forests in the Carpathians was presented by the European Environment Agency. This will be the first map of Virgin Forests in the Carpathian region, with official data provided by the Governments, and may be an important tool to ensure forest protection and strengthen awareness of these areas on the international and regional level.

The criteria and indicators for identifying virgin and quasi-virgin forests in Romania have been adopted in Romania's Ministerial Order (MO) No. 3397/2012 and the National Catalogue of the virgin and quasi-virgin forests has been set up - MO no. 2525/2016, the identification and registration in the catalogue of other potential forests that could fulfil these criteria are underway.

→ The Romanian Forest Code

The Romanian Forest Code (65) was recently amended (Law no. 133/2015), establishing, among others, several limitations on the transfer of ownership of forest land, use of forest land and wood exploitation. The amendment aims to limit the theft and illegal harvesting of Romanian forests and to create more efficient regulations for the management of forest exploitation. However, substantial secondary legislation will be needed to set up a coordinated country-wide strategy for forest lands and ensure feasibility of the measures (66).

The new Forest Code brings improvements over the previous one mainly because of the limits on the maximum quantity of lumber that a company can exploit. However, opposition and debate over the new forest law remains (67).

Besides the Forest Code, there is also a special law, Law no. 171/2010 on the establishment and sanctioning of forest contraventions, which was substantially amended by Law no. 134/2017, including, among other things, sanctions for the implementation of EUTR and FLEGT.

Enforcement and Governance

Despite the significant number of FSC / PEFC certified forests and/or companies in Romania, harvesting companies are often not entirely equipped for the implementation of the “due diligence procedures” or independent verification systems (certification or other independent third party verification schemes).

The SUMAL application, an integrated information system of tracking wood materials, was developed with involvement of WWF Romania to trace timber harvested from the forests and to provide statistical information. It attests to the legal origin of the transported timber. The operator who sells and transports the wood material at the point of origin of transport has to issue a waybill. All information, including: point of origin, movement, destination, vehicle registration number, timber species, type and volume is uploaded to the SUMAL application database. SUMAL information terminals must exist at the point of origin of the transport. After uploading the information, SUMAL generates a unique code, which includes the exact date and time of the registration. This unique code attests to the legal origin of the transported timber (68). The application has become key for allowing law enforcement officers to test if the transported timber is legal.

Furthermore, to identify illegal cuts and enhance transparency of logging activities in Romania, the Ministry of Environment, Waters and Forests together with the Government of Romania implemented the “inspectorulpadurii”. This portal collects data (also using the SUMAL database), enabling users to see satellite alerts and changes in forest vegetation. Since the beginning of 2016 – March 2017, the portal has recorded 5815 alarms, 3249 checks, 3058 false alarms and 191 cases which are currently under analysis (69).

Government Decision HG 470/2014 includes administrative fines for not using or incorrectly using the SUMAL system and traceability rules (70). It also provides for the enforcement of Regulation (EU) No. 995/2010 of the European Parliament and of the Council of 20 October 2010 Forest Code - laying down the obligations of operators who place timber and timber products on the market. According to a 2015 EIA report, the SUMAL system has the capacity to be a strong tracking system yet, in practice, weak implementation

has limited its effectiveness (5). One criticism is that the SUMAL system works via a mobile device (detachable from the timber trucks), making it easy for users to fake their GPS coordinates. In other words, the SUMAL device and truck load may not necessarily be in the same place (71).

In 2015, Romania launched the “inspectorul padurii” online application available for mobile phone to facilitate the identification of illegal timber and its reporting by calling the 112-emergency hotline number. The application is an initiative of the Romanian Ministry of Environment and Climate Change. Citizens can report a truck's license plate number and check if the shipment is legal. The system can identify the exact place where the logs were loaded. The hotline also uses the electronic wood tracking system SUMAL. However, a complete tracking from the lot where trees are felled to factory door is not always possible. The fines for those failing to prove the origin of the wood they transport can reach 1,000 euros (72). In addition, the goods are confiscated.

In November 2016, Romania's Prime Minister announced the results of three months of intense inspection on illegal logging (taking place Aug. – Oct. 2016) (70). This summed up 55,000 control actions conducted by several authorized institutions, through a joint effort, including that of the Forestry Guard, Police, Border Police, Environmental Guard, Gendarmerie, etc. The outcomes of the actions included 2,500 violations of the Forest Code and the confiscation of 50,000 cubic meters of wood nationwide.

The central public authority responsible for forestry is currently undertaking joint measures in the field of forestry control and management. As these measures cannot be supported by the current level of SUMAL development, a project has been launched to improve the existing functionalities and to add new functionalities of this integrated information system, including those aimed at informing the public.

The advantages are that existing applications can add or expand new functionalities such as:

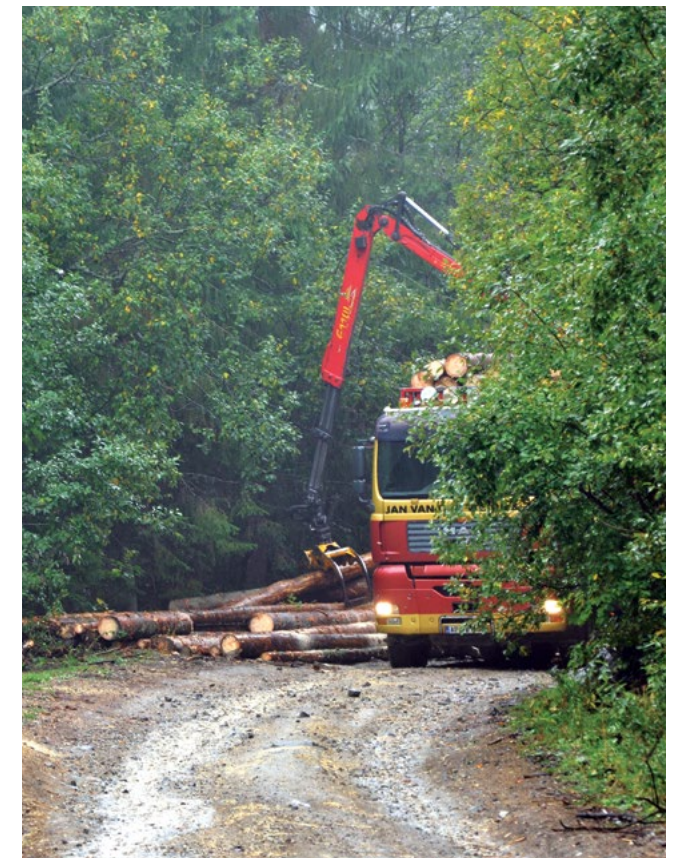
1. Geographic referencing: topological relations between the property, forest management plans, forest management structures (forest districts) and the location of the wood harvesting sites authorized for cutting;
2. Traceability of wood materials in real time, from the primary platforms of the harvesting sites to warehouses / processing centres, up to beneficiaries, including borders and customs.

Reasons for non-compliance

While progress has been made with controlling illegal logging in Romania, the issue is still not solved. Depending on the circumstances, it could be linked to corruption, economic hardship, and/or institutional and governance related changes and problems. Furthermore, the old growth forests are not yet fully mapped, which makes their full protection difficult.

The implementation of the EUTR law was described as a slow, complex and somewhat ambiguous process (75) (56). The period between implementing legislation to meet the EUTR (HG 470/2014 in October 2014) and the actual date that EUTR came into force (March 2013) created a policy vacuum in Romanian forest legislation (56).

Secondary legislation to ensure the implementation of the EUTR and the Romanian Forest Code is still under development. Local operators and authorities are not yet fully trained for effective enforcement. The EUTR implementation in the region also suffers from lack of cross-border cooperation and harmonised procedures between countries.



Conclusions & Recommendations

From the above, as well as from underlying studies and interviews, one may conclude that the main priorities for effectively preventing and addressing illegal logging are:

1. Improving sustainable forest management by providing education and information for new forest owners, including on nature conservation, as well as knowledge on forestry legislation;
2. Educating and increasing awareness of the public at large on the importance of virgin forests and consequences of illegal logging through a journalism network, seminars, social media and other outreach material;
3. Capacity building and equipping harvesting companies so that they are able to efficiently implement due diligence procedures or independent verification systems;
4. Improve and promote tracking systems such as the SUMAL application;
5. Undertaking joint / cross-border trainings of authorities and institutions within the Danube-Carpathian region and developing a platform for mutual assistance, both in terms of legislation, prosecution and enforcement;
6. Relevant authorized institutions and authorities should undertake regular intense, joint and long-term control actions and inspections;
7. Tackling corruption, lack of transparency and economic hardship by inter alia:
 - Promoting integrated rural and local development;
 - Creating and enhancing incentives for forest owners for protecting forest land and providing compensation for restriction on forest owners' logging on their own property;
 - Undertaking and publishing economic reports on the economic losses related to illegal logging;
 - Enhancing the accessibility of public information on forest management and conservation status.
8. Mapping / developing an inventory of the old growth forests;
9. Ensuring better enforcement of the EUTR requirements by building capacity of local operators and authorities;
10. Ensuring better enforcement of the EUTR requirements by i.a. bringing secondary legislation in full line with the EUTR legal provisions and the Romanian Forest Code
11. Further encouraging the uptake and enforcement of recognized forestry certification schemes and their enforcement.



ILLEGAL FISHING OF STURGEON AND CAVIAR TRADE



Introduction

Sturgeons (Acipenseridae) are one of the planet's ancient living species, originating over 200 million years ago. Sturgeons are the most critically endangered group of species worldwide (9), threatened by habitat loss and fragmentation as well as by illegal fishing for their meat and unfertilized roe, known as caviar.

Caviar is a famous traditional delicacy and one of the most valuable wildlife commodities in the world. Beluga sturgeon caviar is considered the most expensive food in the world, reaching retail prices up to 6000 Euros per kilogram (10) (77). In 2013, caviar was the fourth most important wildlife commodity by value imported in the EU and overall imports of caviar into the EU were estimated to be worth around 22.7 million euros (78).

Sturgeons are long distance migratory species and require an intact river continuum, migrating to vital spawning, nursery, feeding and wintering habitats to fulfil their life-cycle. This behaviour makes sturgeon species even more vulnerable to anthropogenic influences (79). Sturgeon populations are therefore indicators of good water and habitat quality. In addition, they are indicators from a socio-economic perspective with regard to healthy and properly managed stocks sustaining the livelihood of residents (80)

The Caspian Sea is a home to 80-85 percent of the world sturgeon (81) and the countries where illegal fishing of sturgeon and trade in caviar is most prominent are those along the Caspian Sea, including Russia and Iran. Approximately 90% of caviar trade comes from the Caspian and 5% from the Danube region (82). In 2007, Russia banned wild sturgeon harvesting as their populations had declined significantly (83). In 2014, this ban was joined by all Caspian littoral states (84).

Twenty-seven different species of sturgeon exist in the northern hemisphere of which six are native to the Danube. The Lower Danube is the habitat for the last viable sturgeon populations in Europe and sturgeon fishing and the illegal trade in caviar is the main direct threat to these sturgeon populations.

Sturgeon populations in the Danube River Basin used to be present in large numbers, contributing greatly to the stocks of the adjacent Black Sea. However, these populations have declined dramatically during the last century. Overexploitation of sturgeons, disruption of navigation pathways, flood protection, hydropower development and pollution have added to the dramatic decline of stocks of sturgeon species in the Danube. Until

recently, Bulgaria and Romania were among the world's top 10 caviar exporting countries. After the construction of the Iron Gate I dam at the border of Romania and Serbia in 1972, sturgeon populations plummeted in numbers. The geographical position of the countries further makes Romania and Bulgaria important gateways for illegal trade of caviar originating from the Caspian Sea (83).

In the mid-Danube, the annual catch of Beluga sturgeon was 23 tonnes (average between 1972-76) which dropped to 7.5 tonnes (average between 1985-89), a decline of 67% in around 12 years (85). For all these reasons Ukraine added sturgeon in the Red List, meaning these species are not allowed to be caught or sold commercially (in 2000) and a fishing ban was imposed by Romania (in 2006), Serbia (in 2009, except the Sterlet species) and Bulgaria (in 2011). However, despite the implementation of these measures, there was neither international coordination, nor social compensation for local fishermen to go alongside them. This is considered one of the main reasons why poaching and illegal trade are still ongoing.

In 2014, Romanian authorities seized around 80 kilograms of illegal caviar and four tonnes of sturgeon meat. It is clear that without firm, concerted measures to support their recovery, all sturgeons will be soon extinct in the Danube region.

Institutional and legal framework

A legal framework prohibiting sturgeon fishing exists in all the Lower Danube countries.

All species, parts and products of sturgeon and paddlefish (including meat and roe) are protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) since 1998. The European Sturgeon and Shortnose Sturgeon are listed under CITES Appendix I, which translates into a total trade ban on caviar obtained from wild-caught specimens (there is a legal commercial trade in caviar from farmed Shortnose sturgeon), while all other species are listed under Appendix II, which allows for a managed legal trade – subject to CITES-determined quotas for caviar and meat of wild-caught specimens from shared stocks (86) (87).

A CITES listing means that all international shipments of sturgeon meat and roe (caviar) must be accompanied by CITES permits issued by the relevant national CITES Management Authority.

In May 2006, the EU followed a CITES recommendation to adopt a universal labelling system to enable law enforcement agencies to track the origin and legality of caviar shipments (Commission Regulation (EC) No. 865/2006, amended by



Regulation (EC) No. 100/2008) (88). Producers label the caviar themselves after having obtained a license from the relevant CITES Management Authority. There is no unified format except for the necessary information. The labels do not require a watermark or any other anti-counterfeit measures.

EU member states such as France, Germany and Spain are the world's largest importers of caviar (89). Nowadays nearly all legal trade in caviar stems from sturgeons bred in captivity in aquaculture farms. Bulgaria and Romania were major exporters of caviar (Bulgaria exporting over 20,000 kilograms and Romania over 26,000 kilograms of caviar between 1998 and 2008 (90)). In 2006 Romania's government adopted a 10-year fishing ban, and in 2011 Bulgaria followed Romania's example. In 2016, the fishing ban on sturgeons was extended for another five years (91).

A state-of-the-art analysis of the status and threats to Danube sturgeon populations, based on a literature study (92), was provided in the "Action Plan for the Conservation of Sturgeons (Acipenseridae) in the Danube River Basin" (SAP) adopted in 2005 by the Bern Convention (93). In particular, objectives 3, 4 and 6 addressing illegal harvest and trade are still relevant today and offer a number of measures to mitigate this pressure. Since all Danube countries have signed and ratified the Bern Convention, the implementation

of the SAP should be supported by the European Union (a signatory as well) and the International Commission for the Protection of the Danube River (ICPDR).

The Danube River Protection Convention, on which the work of the ICPDR is based, was signed on 29 June 1994 in Sofia (Bulgaria) and entered into force in 1998. The Convention forms the overall legal instrument for co-operation on transboundary water management in the Danube River Basin. The Convention contracting Parties consist of the 14 Danube riparian states and the EU.

ICPDR aims to ensure that surface waters and groundwater within the Danube River Basin are managed and used sustainably and equitably. Signatory Parties have to take 'all appropriate legal, administrative and technical measures to at least maintain and where possible improve the current water quality and environmental conditions of the Danube river and of the waters in its catchment area, and to prevent and reduce as far as possible adverse impacts and changes occurring or likely to be caused'.

During the 3rd ICPDR Ministerial Meeting held in Vienna in February 2016, the 2016 Danube Declaration was adopted. Amongst many other topics, the Declaration addresses the Danube Sturgeons as the flagship species of the Danube River Basin by:

- recognizing the species as 'living fossils';
- considering that sturgeons are a suitable indicator for a variety of pressures;
- recognizing the need to address various stakeholders from different sectors;
- desiring to advance broad public awareness and political commitment;
- welcome and support the progress made on sturgeon issues in the framework of the EU Strategy for the Danube Region (EUSDR), in particular the Program 'Sturgeon 2020' and
- supporting the sturgeon fishery bans being in force in Bulgaria, Romania, Serbia and Austria.

With the support of the environmental pillar of EU Strategy for the Danube Region (EUSDR), scientists, governmental and non-governmental organizations, the Danube Sturgeon Task Force (DSTF) was established in January 2012 to support the achievement of the EUSDR target 'to ensure viable populations of sturgeon and other indigenous fish species by 2020'. The aim of the DSTF is to foster synergies of the existing organizations and support the conservation of highly endangered native sturgeon species in the Danube River Basin and Black Sea by promoting the implementation of the Program 'Sturgeon 2020'. The program describes the respective measures required to achieve a successful implementation of the conservation and revival of sturgeon populations in the Danube River Basin and the adjacent Black Sea region. Each topic specifies goals/objectives, measures and recommendations, relevant actors and links to other EUSDR Priority Areas. In addition, the DSTF may well assist in coordinating the SAP.

Enforcement Challenges

The illegal trade in caviar is particularly difficult to control in the EU single market because once caviar has been imported by a member state, it can be moved freely between the 27 countries (88).

EU-TWIX is an online database and tool to facilitate information exchange on illegal wildlife trade in the European Union (94). EU-TWIX is accessed exclusively by enforcement officials from the 28 EU member states and helps law enforcement in the EU to fight illegal wildlife trade. According to data reported to EU-TWIX to date, over 7000 kg of illegal caviar were seized by European authorities from 2000 to 2007.

Furthermore, between 2007 and 2011, EU-TWIX recorded 508 seizures reported by EU member states, amounting to 4,104 kilograms of specimen mass (95). The most important countries of export were Ukraine, Russia and Azerbaijan.

The countries with the highest recorded import were France, Germany and the United Kingdom. Over 75% of the seizures involved 1 kilogram of caviar or less.

Although the largest proportion of the illegal and seized caviar originates from the Caspian, illegal fishing and trade is occurring in the Danube as well. A recent 5-day control operation carried out in July 2017 on the Danube river, led by the National Environment Guard commissioners, along with representatives of the Danube Delta Police Department, resulted in the seizure of an important quantity of fish and caviar, five crimes, ten legal sanctions and the confiscation approximately 2000 meters of illegal fishing nets and other poaching tools (including boats) (96).

The actual amount of illegal trade in sturgeon meat and caviar is likely to be higher than figures provided by EU-TWIX data and other sources. This is due to the fact that there is limited information available, in particular regarding import reports, remains limited. A large proportion of illegal trade therefore remains undetected.

Reasons for non-compliance

- Restaurant or supermarket activities are not strongly controlled, leaving room for abuses. Wild caviar mislabelled and sold as an aquaculture product was found in shops, proving that the aquaculture caviar market needs to be more strongly controlled;
- It can often be very difficult to enforce CITES regulations because illegally fished caviar can be disguised - easily mislabelled as farmed - and then traded as legally produced caviar (97);
- Penalties applied for law offences are low considering the high retail prices for caviar.



Geographical scope of the Danube River Protection Convention © ICPDR



Conclusions and Recommendations

Raising awareness of key stakeholders and public

There is a lack of understanding of the seriousness of wildlife crime, and low penalties are imposed, if any.

- Increased advocacy is required to raise awareness at national level. The development of an international knowledge exchange on best practices (scientific facts, field controls, legislation, penalties in range states, etc.) is needed;
- Study visits, regular information exchanges and meetings should increase scientific data and ultimately awareness on species status and trends.

Law enforcement, prosecution and jurisdiction

Improving the implementation of existing legislation and enforcing controls along the whole capture/production-distribution-selling chain are key priorities in diminishing the sturgeon product traffic.

- Stronger penalties should be applied for law offences, from gradual increase of fines to suspending licenses in case of repeated abuses and prison sentences. Domestic markets and restaurants should be controlled better to stop purchasing of illegal caviar.
- Trainings and awareness raising for law enforcement officials as well as for prosecutors and judges is needed to enhance investigations and enable prosecutors to more effectively pursue cases and make sufficient arguments in court as well as enable judges to impose higher fines, and in serious cases even prison sentences.
- Interinstitutional and cross-border cooperation should be strengthened by creating multidisciplinary control teams, e.g. a Task Force, involving Police, Environmental Guard, Public Health and Food Control units.
- A regional cooperation framework for tackling illegal caviar trade and sturgeon fishing should ideally involve the members of the International Consortium for Combating Wildlife Crime (ICWC) - in particular WCO: World Customs Organisation (for international trade), INTERPOL: International Police Organisation (for wildlife crime enforcement by police units) and CITES: the Convention on International Trade in Endangered Species of Wild Species of Fauna and Flora, as well as EUROPOL: European Police Organisation; the Police Cooperation Convention for Southeast Europe (for wildlife crime enforcement by police units), IMPEL: European Union Network for the Implementation and Enforcement of Environmental Law (for enforcement), SELEC: Southeast European Law Enforcement Center (for prosecution and jurisdiction), ENPE: European Network of Prosecutors for the Environment (for prosecution), EUFJE: European Union Forum of Judges for the Environment (for jurisdiction) and EU-TWIX (for exchange of data on seizures etc.).

It is important for all these bodies to consider illegal fishing of sturgeons and trade in their products relevant and consequently increase coordination and concrete actions.

Controls along the production-consumer chain

- International control teams may be supported by local “assist control authorities” broadening their scope / reach;
- The aquaculture caviar market needs to be more strongly controlled by applying genetic and isotope analyses in addition to the CITES labelling. Private sturgeon breeding enterprises should be checked on a regular basis (e.g. breeding capacity and reported outputs) and informed of sturgeon conservation issues, i.e. to foster sustainable

regional sturgeon aquaculture.

- Agencies responsible for trade across borders, such as Customs or Border Police, should ensure that caviar from poached sturgeons cannot enter international markets and be exported to consumer countries. Therefore, an enhanced cooperation between CITES, INTERPOL/EUROPOL is required. It is recommended to include statistics about illegal caviar trade in the annual reports and to advertise labelling of CITES controlled caviar, informing customers about the endangered status of sturgeons and influencing their choice towards aquaculture caviar.

Socio-economic support

Fishing communities require support to stop illegal fishing of sturgeon; compensatory measures should be put in place for fishermen, providing incentives and alternative income sources e.g. touristic guides, handicraft business, etc. Fishermen should be trained by sturgeon experts to become sturgeon advocates. They can be employed in sturgeon monitoring and conservation projects.

- Social studies about local fishermen and other residents may elucidate their behaviour, e.g. regarding low or high risk of being prosecuted.

ILLEGAL KILLING OF WILD BIRDS



Introduction

The illegal killing, taking and trading of wild birds is a problem that occurs in many countries in the wider Mediterranean region. Wild birds are mainly killed, traded and taken illegally for food (to be eaten as a delicacy or sold for profit), sport and for use as cage birds or hunting decoys (98).

The Mediterranean/Black Sea Flyway is one of three Palaearctic-African flyways connecting Europe with Africa. Collectively, these constitute the world's largest bird migration system. The scale of the avian movement is immense with over 2 billion passerines and near-passerines, 2.5 million ducks and 2 million raptors migrating from their breeding grounds in Europe and central and western Asia to winter in tropical Africa (99). The large number of birds flying annually through the region makes the Mediterranean basin susceptible to the illegal killing, taking and trading of wild birds. The high level of biodiversity and great number of native birds in the region also increases the risk of wildlife crime (100). Consequently, southeast Europe has been one of the hotspots for wild bird crime for decades (12).

According to a 2015 BirdLife International report (101), the highest-ranking countries for wild bird crime include Egypt (5.7 million / year), Italy (5.6 million / year) and Syria (3.9 million / year). Malta and Cyprus rank among

the highest in intensity of number of wild birds killed illegally per square kilometre.

One of the main concerns in regard to bird crime is the fact that several countries in the region have problems in effectively implementing the International Environmental Agreements relevant for nature and fauna conservation (such as CITES, CBD, Bern and Bonn Convention). Even in 2017, the level of effective implementation of international agreement obligations and national wildlife related legislations significantly varies.

Serbia, as an accession country to the European Union, provides an interesting case for study. The geographic location of the country places it in a suitable position for international illegal trafficking according to the EU standards (102). According to various reports, hunting of birds in Serbia is serious and engages a range of sectors, organizations, public authorities and individuals (103). The NGO "Bird Protection and Study Society of Serbia (BPSSS)" – a BirdLife Affiliate – has been fighting for an official ban of Turtle Dove (*Streptopelia turtur*) and Common Quail (*Coturnix coturnix*) hunting since 2003. Both species are listed in Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals. This means that both species have an unfavourable conservation status and would benefit from



global or regional Agreements for their conservation and management (104). BPSSS was particularly motivated by the outcomes of the 'Balkan Birds scandal', where a police officer seized a trailer carrying 12 tonnes of deep-frozen bird on the border between Slovenia and Italy in 2001. The 120,700 dead birds of 83 species mainly originated from the Serbian Vojvodina Province (105).

BirdLife International reported in 2011 that Common Quail is killed illegally on a large scale in Serbia with the use of electronic hunting devices, which are banned according to national and international regulations. The hunters' association of Vojvodina (Serbia) reported on 8 November 2004 that 38,000 Common Quails were killed during the year's hunting season. It was also reported that the annual number of birds killed in Vojvodina during the breeding period was between 20,000 and 30,000 (17).

In 2016, Birdlife International published the results of preliminary assessment of the scope of bird crime: illegal killing, trapping, taking and other ways of killing birds in 26 Mediterranean and peri-Mediterranean countries/territories (14). According to the assessment, 11-36 million birds per year are killed/taken illegally across the Mediterranean region, of which 104,000 - 163,000 birds are killed/taken illegally every year in Serbia alone. These numbers are increasing (14). Dead birds are concealed in a variety of ways for smuggling across borders, often hidden among other products in cars and refrigerated trucks (15). Most commonly the birds are illegally smuggled to northern Italy and Malta, where they are served in restaurants and consumed as a delicacy (106). Violent clashes between poachers and activists have grown increasingly common during past years (107).

Illegal killing is not the only harmful activity taking place

in the country. Pesticides are becoming an increasingly serious threat to birds and wildlife in general (in addition to human health). Soil samples were taken in order to control fertility and monitor the potential presence of harmful and hazardous substances in Vojvodina soil and other possible factors of soil degradation (108). Counterfeit and illegal pesticides are being produced, marketed and sold to local farmers by criminal organizations. Improved access to technology and legislative loopholes facilitate the trade of counterfeit and illegal products. It is becoming a serious organised crime (109).

Institutional and legal framework

From reports by organisations such as TRAFFIC, it appears that there is still work to be done in order to achieve full compliance with the provisions of the EU Bird Directives, both in terms of legislation and its enforcement (15) (110). The Ministry of Environmental Protection in Serbia has broad powers in the field of environmental law enforcement. Executive authorisations are mostly entrusted to the inspection authority operating within the Ministry. However, inadequate capacities of enforcement bodies to control activities throughout the territory of the country, both in terms of means and expertise, represent one of the main reasons bird crimes occur (14).

The rights of environmental inspectors are described in articles 120 and 121 of the Law of Nature Protection of Serbia, and the provisions include a range of measures for managing protected species. However, environmental inspectors are not given the legal basis to conduct investigations related to wildlife crimes (only the Police are authorised to conduct these investigations). If the provisions of National Environmental Legislation are breached, there are administrative, economic and criminal offences provided to sanction illegal activities.



Most of the administrative and economic offences are listed in the Law on Nature Protection, whereas article 265 of the Penal Code is used for offences that are more serious. Nevertheless, there is not a clear distinction in the legislation indicating when an administrative/economic offence or penal charge needs to be filed. It is usually up to the enforcement body and prosecutors to decide what qualifies as an administrative/economic offence and what qualifies as a criminal offence (111). Penalties in cases of disobeying this legislation are listed specifically for certain types of criminal acts or irregularities. Penalties in cases of killing strictly protected species are based on compensation prices, which vary depending on the monetary value of each of the considered species.

Enforcement and governance

The Inspectorate for Environment consists of twelve inspectors and is responsible for the law enforcement regarding bird species protection in the territory of Serbia outside of Vojvodina Province. The Provincial Inspectorate for Environment, consisting of only four inspectors is responsible for the Autonomous Province of Vojvodina. The environmental inspectors have a widely defined mandate in collecting all information needed for submission of reports to public prosecutors who decide on the initiation of the procedure of charges (32 Basic Prosecutor's Departments in Serbia). They are, however, not authorised to make arrests or conduct field investigations.

The statistical service of the Public Prosecutor's Office shows that the most commonly prosecuted crime is for the killing and torturing of animals (51 cases in 2014). However, the statistical service does not provide a breakdown of cases, and it is unclear which of these cases specifically relates to the killing of protected species. This state of uncertainty is an obstacle for the law enforcement.

Reasons for non-compliance

The lack of transparency is seen as one of the most critical factors enabling illegal wild birds trafficking (112). Corruption and the illegal trade between supply and demand countries provide an important source of resilience for organised criminal groups involved in such crimes (113). In Serbia, problems related to the lack of transparency are apparent at all levels of the enforcement and judiciary systems (114).

In addition, non-compliance is due to a general lack of awareness of the seriousness of bird crime, the low interest in bird protection and conservation as well as the weak

institutional control and the hunting organisations working against the conservation of bird species and nature (105). The absence of reporting on criminal offences related to nature is significant.

In recent years, Non-Governmental Organisations (NGOs) and CITES have played a growing role in investigating and exposing wild bird crime, thanks to their growing skills and capacities associated with environmental law enforcement and the ways they are contributing to this task (115). The dearth of adequate controls and regulatory actions within official environmental criminal justice and state officers on matters pertaining to wild bird crime is a problem of considerable proportions. It is very often transnational environmental activists (e.g. the role of BPSSS in the "Balkan Birds Operation" in 2001, when an Italian court determined that two hunting tourism firms had facilitated the smuggling of over two million birds shot in Serbia into Italy over six years) who have taken action to stop wild bird crime by increasing exposure, providing details on poor regulation and enforcement practices and contributing both formally and informally to prosecution processes.

Another reason for non-compliance is the fact that prosecutors are often not educated about environmental crime. Convictions therefore are extremely rare and most commonly occur when poachers are inexperienced (110).



Conclusions and Recommendations

The recommendations below, although based on the case study, should be seen as highly relevant for application in the wider Mediterranean region as well.

Priority areas, the way forward:

- Ways to raise public awareness

- Prosecutors need to actively cooperate in prosecuting environmental crimes. Promoting further improvement of knowledge, capacities, awareness and prioritization in acting of responsible institutions that are tackling bird crime issues, in particular: environmental inspection, hunting inspection and prosecution. Lack of specialised knowledge on wildlife crime in administrative, enforcement and judicial bodies and lack of specialised institutions can be attributed to a general lack of priority and resources allocated to wildlife crime issues as well as a lack of specialised training for prosecutors and law enforcers; Recipient countries of illegal imports should carry out focused activities to increase the awareness of consumers, enforcement officers and the judiciary about this illegal trade and its impact on wild populations, as well as taking measures against offenders;
- Publishing information on what is legal and illegal in the country, e.g. existing laws and regulations about hunting and taking of birds, derogations from EU Nature Directives, etc. If there are no hunting or taking laws in place, involving local experts in the development of legislation and law enforcement strategies is necessary.

- Ways to reduce the lack of transparency

- Implementing adequate screening and introducing the necessary reforms to the judiciary system. An effective judiciary can then lead reform efforts within the enforcement system, thereby rooting out and detecting corrupt officials. There is a need for cost-effective investment strategies for strengthening enforcement performance and improving the weakest links between judiciary institutions and environmental stakeholders;
- Supporting the capacity building of judges/police in using the results from monitoring of illegal killing;
- Involving authorities by offering them the opportunity to join forces and state their intention to scale up their efforts to tackle the issue, rather than being the target of criticism.

- Ways to improve compliance

- A specialized wildlife enforcement body with expertise regarding wild species and competences of police is necessary to tackle wildlife crime;
- This enforcement body must be able to conduct investigations;
- The system of public monitoring of illegal activities needs to be strengthened. Most of the responsible institutions, authorities and Task Forces in the area need better equipment as well as training in investigation of environmental crimes. The end goal is to eliminate illegal activities or to reduce them to tolerable levels. From this point of view, enforcement contributes to that goal by creating a deterrent effect;
- There is also a need for capacity building in law enforcement through a priority programme that includes the purchasing and use of improved technical facilities and equipment, international and national field training and educational seminars, developing better cross-border controls and making use of cooperating systems between supply-transit and demand countries.

POACHING OF LARGE CARNIVORES



Introduction

The Carpathians are one of the few European hotspots of wilderness left for large carnivores; it is therefore important to manage and protect the habitats of bears, wolves and lynxes. The estimated total number of brown bears in Europe is about 18,000 individuals. Based on reported and updated census data, the largest population is the Carpathian population (> 7,000 bears). The estimated total number of wolves in Europe is larger than 10,000 individuals; the largest populations are the Carpathian population and the Dinaric-Balkan population (> 3,000 wolves). The total number of lynxes in Europe is around 9,000-10,000 individuals, one of the largest autochthonous populations is the Carpathian one (2,300 lynxes). All the reintroduced populations are of smaller size as they were only established with a small number of founders 40 years ago (116). Detailed studies on the habitat suitability of the Carpathian Ecoregion (117) (118) suggest that around 50% of the territory is highly suitable for bears, lynxes and wolves. Suitable areas are fragmented, but interspersed with areas of less suitability value, without being isolated, and spatially distributed all along the Mountain range (Fig. 1) (117).

The contacted national experts, addressed via on-line questionnaires and face-to-face interviews, consider

large carnivore poaching in the Carpathians an issue of national concern largely driven by domestic socioeconomic reasons. The contacted experts provided a few cases where animals' parts were trafficked together with cigarettes (caught by hidden camera traps, then found and destroyed), but these events represent the exception and not the norm.

National experts underline that the trend of large carnivore poaching in Carpathian countries varies due to the different socio-economic situations in the rural areas, the history of local human-wildlife interactions and the demand for meat and/or animal parts. In many areas (e.g. in the Ukrainian Carpathians), rural communities have poaching traditions that are difficult to change due to poverty and the perception of poaching as a low-risk profitable activity. Some countries (i.e. Serbia and Ukraine) have improved the national legislation and adopted specialised police corps to address poaching. However, they are not a deterrent for criminals due to the diffused lack of transparency and a generally negative attitude towards large carnivores (especially wolves).

Large carnivore poaching is a serious threat for local wildlife populations in all the Carpathian countries (18).

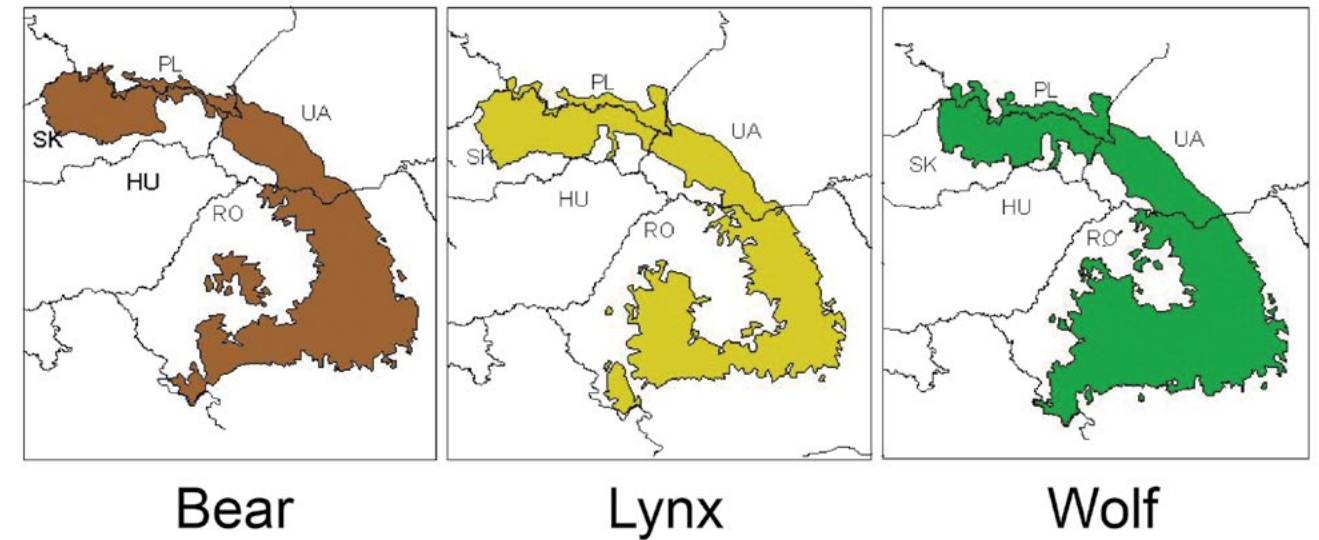


Figure 1 - Large Carnivore occupancy in the Carpathians (from Salvatori, 2004)

The inadequate management of game species generally has led to a decrease in the main prey of large carnivores, primarily the wild ungulates. The usual alternative prey is domestic animals; this escalates the clash between large carnivores and the local community, increasing poaching intensity and/or hunting pressure (19).

National experts believe that the reasons for poaching have changed over time: 15-20 years ago, poaching was mainly a form of retaliation for damages caused by large carnivores, while currently the main reasons for poaching is trophy hunting, hunting for leisure and meat trafficking.

Some experts report a very low willingness to address poaching: the impoverished rural populations are not against poaching; there is a weak implementation of the laws; there is an absence or ineffectiveness of trans-boundary cooperation; there is low awareness among judiciaries; and the large carnivore habitats are decreasing due to human infrastructure expansion. The involvement of local rural populations in the decision and management processes has increased, adopting specific and punctual measures to mitigate the human-wildlife conflicts. However, these strategies are very limited and mostly project-based, for example the LIFE for Bear project (121).

The institutional and legal framework

Slovakia, Czech Republic and Romania have qualified

wildlife crime as a criminal offence punishable by effective, proportionate and dissuasive criminal penalties (40) (122) (123); (124) (106) (125) (126) (127) (128). In these countries, all three species of large carnivores are strictly protected according to the law. The government of the Czech Republic has committed to protect endangered species (Bern Convention) and wildlife biodiversity (Convention on Biological Diversity) through the preparation and realisation of a management plan as a keystone for effective protection of any species. Romania does not foresee relevant provisions on illegal wildlife and forest offences in the Criminal Code, but has announced that it would no longer allow trophy hunting of large carnivores, which represents one of the threats to populations of brown bears, wolves, lynxes and wildcats in Romania. A popular pro-hunting argument is that the regulated hunting helps prevent poaching. Yet, such claims do not seem to be based on any sound scientific data. In fact, the latest research suggests exactly the opposite (129). As an alternative, ecotourism projects are being developed in Romania which may bring a long-term sustainable profit to local communities while ensuring the survival of endangered species (130).

Serbia and Ukraine, as non-EU member countries have established the Emerald Network, an ecological network made up of Areas of Special Conservation Interest on a level that is equivalent to the EU's Natura 2000 network of specially protected sites, only not legally binding. Serbia and Ukraine have joined the EU-TWIX (European Union

COUNTRY	Bear Population	Trend in the last 10 yrs	Wolf Population	Trend in the last 10 yrs	Lynx Population	Trend in the last 10 yrs
Romania	5500-6500	Stable	2500-3500	Stable	1200-1500	Stable
Slovakia	1000-1490	Increase	300-450	Stable	300-400	Stable
Ukraine	350-450	Stable	350-450	Stable	350-450	Stable
Poland	100-150	Stable	250-550	Stable	150-250	Stable
Czech Rep	< 5	Sporadic	< 15	Sporadic	< 15	Sporadic
Hungary	< 5	Sporadic	< 5	Sporadic	10-20	Sporadic
Carpathians	6650-7905	Stable	3550-5565	Stable	2200-3030	Stable

Large carnivores populations show a favourable conservation status, with stable and increasing trends in all the countries, as shown in Table 1: (119) (120).

Trade in Wildlife Information exchange, established in 2005), which facilitates the monitoring of illegal wildlife trade by providing a seizure database and platform for communication between enforcement officials across European countries.

In **Ukraine**, the brown bear and lynx have been listed in the Red Data Book since 2003 and 1980 respectively, in Appendix II of the Bern Convention and Appendix II of the CITES to which Ukraine is a Party. Regarding the wolf, official data from the State Forestry Agency of Ukraine reports that up to 50 % of the wolves still living in the country are killed each year (131) (132) (133) (134) (135). The lynx population is considered to be stable or decreasing (136) (137) but there is no management action plan at the national level; only some local conservation actions have been performed in protected areas of Carpathian and Polissya regions (138).

In **Serbia**, contacted experts believe that the penalties imposed by the courts are too low to be a deterrent for poachers. Available studies of the effectiveness of Serbia's prosecution of environmental crimes are largely out-of-date, but generally show shortcomings in the state's capacity to enforce environmental criminal law (139).

Enforcement and governance

In the Carpathians, during the early 20th century, there was a high density of large carnivores due to the limited presence of humans in high-altitude territories. The killing of livestock was the main cause of the conflicts with bears and wolves. Nevertheless, people used to coexist with large carnivores, protecting their activities using shelters and dogs. After 1945, the Soviet system

changed the use of resources from high altitude territories completely, increasing the presence of livestock. Bears and especially wolves were seen as pests and were often poisoned. After the collapse of the Soviet Union, the situation changed again. Until the last few years, large carnivore poaching was mainly due to trophy hunting, but only at the domestic level; "illegal international trade" of large carnivores and their parts did not exist, or just minimally (140) (141). Poacher groups' details are unknown; national experts state that poachers act in small groups within a very closed community, but information about locations of poached bears or wolves can be gained from legal hunters, while taxidermists and veterinaries are able to identify where the animal came from and how, and who it was killed by.

Several projects have addressed the problem of poaching in the Carpathian countries. In the Western Carpathians, the NGO "Hnutí DUHA Olomouc (Friends of the Earth Czech Republic)" has developed a project to improve the conditions necessary for coexistence between wild carnivores and humans, using techniques such as electric fences around sheep pens and bear-proof bins. During the project timeframe (2012 – 2014), 500 field patrols took place to prevent poaching in important areas for large carnivores (142) (143).

In **Romania**, the Association for Biodiversity Conservation (ABC) developed the project "The wolves and local communities in Vrancea County/Romania" in order to reduce wolf poaching. Discussions with local stakeholders have shown that the extension of protected area local networks and the amelioration of local inhabitants' attitude towards large carnivores were elements that gradually led to a reduction of wolf poaching (144).

In **Ukraine**, interviewed experts point to the Ukrainian-Romanian border as one of the most important poaching locations. Due to several transnational conservation projects that promote ecology in the region, the population of bears is increasing. Official data reports that, on average, 15 bears are illegally killed each year in the Ukrainian Carpathians; almost 50% of them are killed at the Ukrainian-Romanian border (145).

Reasons for non-compliance

The main reported reason for the current state of large carnivore poaching in the Carpathian countries is the poverty of rural populations, who can gain additional money from selling trophies (skin + skeleton), meat, fat and other parts of the body (145). National experts agree that the factors playing an important role in the current dissemination of poaching are the absence/ineffectiveness of anti-poaching units, distrust in police forces, difficulties of gaining and using updated investigative techniques and the low awareness among people and the judiciary. A big role is played by fear of consequences, which stops people from reporting well-known poachers to prosecutors in the Carpathian region. National wildlife enforcement agencies face many challenges, including a lack of transparency inside the controlling institutions, a general lack of equipment, limited training opportunities and difficulties in accessing modern enforcement tools like intelligence gathering and analysis and forensic science support. Other addressed causes seem to be the general increase in firearm possession and hunting traditions. Poachers rely on the general lack of transparency of controlling authorities.

The Carpathian Convention expert networks (e.g., Science for the Carpathians) are still underdeveloped; common integrated wildlife management strategies are missing and there is a lack of common transboundary research projects on this topic. National experts are highly interested in providing their knowledge to investigate and mitigate this phenomenon, joining international consortia. Experts agree that hunting and poaching are domestic issues and are still seen as an element of local traditions by large parts of rural populations.

The main threats for large carnivores in the Carpathians are increasing anthropogenic impacts, especially related to the development of new linear transportation infrastructures (i.e., TRANSGREEN, 2017), illegal logging and the transformation of habitat.

Conclusions and Recommendations

- Populations of large carnivores are stable but under threat from poaching;
- The national experts report that the implementation of the Article 3 of the EU Environmental Crime Directive (146) exists only on paper and that new transnational and Carpathians-wide management measures have to be proposed through participatory planning with key specialists;
- Poachers take advantage of the lack of transparency of the controlling authorities, the poor governance structure, and the difficulties of monitoring huge wilderness areas;
- Anti-poaching units need to be organized, and border control should be improved, enhancing the work with neighbouring countries;
- Carpathian countries should promote proper law enforcement, aiming at a decrease in bureaucracy, improving transparency and promoting capacity building among authorities;
- Fines / penalties for poaching should be increased;
- New projects need to be developed transnationally and inside each country, aiming at providing a basic legislation for the protection of ecological corridors, enhancing the general awareness of people towards poaching and the protection of rural economic activities;
- National experts anticipate that the situation could improve in the future if effective awareness campaigns are undertaken to increase commitment to nature protection among police forces, NGOs and the general public;
- Wildlife-related tourism would help to reduce unemployment, which plays a prominent role in encouraging poaching and illegal logging, and would secure a sustainable presence of people and tourists in these areas (147) (118);
- By promoting the cooperation between hunting organisations, NGOs and local authorities, hunters may play an important role in fighting poaching;
- In 2014, the European Union and Ukraine signed an Association Agreement that constitutes a new state in the development of EU-Ukraine contractual relations, aiming at political association and economic integration (149);
- Geographic Information System (GIS) technology could be used to help the authorities in marking poaching hotspots.



CONCLUSION

Wildlife trafficking is a large and profitable business. In 2009, the estimated value of global legal imports was over USD 323 billion and in the EU alone worth EUR 100 billion annually (150) (151). Illegal trafficking of wildlife and its products, including logging has become a highly lucrative criminal activity with a relatively low risk of detection. The research presented in this study confirms this is true not only globally but also in the EU and more specifically in the countries of Central and Southeastern Europe.

This study represents one of the first focussing on wildlife and forest crime in the Danube-Carpathian region. Wildlife trade in the region in the EU is challenging, given the fact that the region is divided into 44 countries with each country having their own legislative and enforcement framework, as well as 28 of them working under a single market system, with an open and free trade zone for goods, services, capital and people. These factors add to the challenges authorities, as customs, police and inspectorates face to control the import and export of wildlife and forest products. This also means that it is crucial for countries within the EU to work together, develop joint strategies and raise awareness for combating illegal wildlife and forest crime.

There is a continuing challenge to turn international and European legislation and commitments, including e.g. the Convention on biological Diversity, the Bern- and Bonn Conventions, the EU Nature Directives, and the EU Timber Regulation, into effective actions at the national level. In EU member states, the EU environmental legislation has certainly contributed to the development and cross border harmonization of national laws. However, the harmonization of national criminal codes with the crime regimes included in the Environmental Crime Directive (ECD) and bringing enforcement policies in line with the EU Action Plan against Wildlife Trafficking (adopted on 26 February 2016) varies significantly from country to country.

Despite policies and measures in place within the EU, such as the EU Timber Regulation and EU Flegt Action Plan, and forest certification schemes, such as the FSC and PEFC, illegal logging remains a serious threat and issue within the Danube-Carpathian region. Focus was put on Romania, as the country holds Europe's most extensive old growth primary forests and Europe's largest population of large carnivores. While progress has been made with controlling illegal logging in Romania, the issue is still not solved and can be linked to corruption, economic hardships and institutional and governance factors. The restitution process or change of ownership that has been ongoing in Romania, has negatively

impacted forest conservation. The development of education programmes, trainings, increasing awareness and capacity building for forest owners on forestry legislation and nature conservation is an important recommendation. Furthermore, the enforcement and development of secondary legislation to ensure the implementation of the EUTR, like in many other Danube-Carpathian region countries is still insubstantial. The harmonisation of legislation for illegal logging cases between Danube-Carpathian region countries would be an important step forward for forest protection.

Illegal logging is also facilitated by the fact that old growth forests have not yet been fully mapped. An integrated mapping system for the entire Danube-Carpathian region will facilitate forest conservation. Tracking systems in place, such as the SUMAL application, is a positive development and its further improvement and use should be encouraged. Harvesting companies should be equipped to enable them to efficiently implement due diligence procedures and authorities should be mobilized to undertake regular and joint control actions and inspections. A lack of cooperation between authorities and sharing of information was found to be one of the main problems within the region. Joint trainings and the development of a platform for information and intelligence sharing, both on enforcement, mutual legal assistance and prosecution cases is urgently needed to protect the remaining old growth forests in Europe.

Sturgeons (Acipenseridae) are the most endangered group of species worldwide. It must be noted that the largest proportion of illegal trade of sturgeon meat and roe, also known as caviar, originates from the Caspian Sea region. However, Europe's last viable sturgeon populations, living in the lower Danube, are also under threat. National legal frameworks and protection measures such as fishing bans (in e.g. Romania, Ukraine, Serbia and Bulgaria) and agreements through inter alia the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Danube River Protection Convention, Danube Declaration and Bern Convention, are in place, yet illegal caviar trade and sturgeon fishing has not yet been eradicated.

This report concludes that one of the reasons for the continuing illegal fishing and caviar trade is due to the fact that there are no compensation measures put in place for local fishermen to go alongside the fishing bans. It is recommended therefore to work on the establishment of alternative livelihoods for fishermen in the region. This can be achieved through inter alia the introduction of education programmes and developing work opportunities within the tourism sector. Furthermore,

this report concludes that a lack of information on sturgeon conservation status and illegal fishing, cooperation and intelligence sharing between Danube region countries is a problem. This goes alongside with the finding that the region suffers from a lack of trained enforcement officials and capacity with regard to environmental crime specifically. A regional collaborative network that includes international / joint trainings for border police, customs officials and other relevant authorities to identify caviar shipments and follow the supply chain from source to destination country is recommended to reduce the illegal fishing and caviar trade. Enforcement officials should also be trained on how they can provide the judiciary with all the necessary information for effective prosecution. Penalties for trading illegally in caviar remain rare and low considering the high retail prices for caviar.

A final important recommendation to combat illegal fishing and caviar trade is related to the development of a reliable traceability system. Despite the CITES labelling system, it appears that the development of fake labels, and consequently concealing, trading and selling of wild caught caviar remains relatively easy. Therefore, it is recommended that the aquaculture caviar market is more strictly controlled through for example applying genetic and isotope analyses and undertaking regular checks at private sturgeon breeding enterprises.

The illegal killing, taking and trading of wild birds is an issue in many countries in the wider Mediterranean region. Southeastern Europe is a known hotspot for wild bird crime. Serbia provided an interesting case study for this report considering its geographic location, high biodiversity and is an accession country to the EU. One of the main findings and obstacles with regard to tackling wild bird crime is the fact that several counties in the region have been slow in ratifying the International Environmental Agreements relevant for nature and fauna conservation (such as CITES, CBD, Bern and Bonn Convention). Even in 2017, the level of effective implementation has not yet been fully reached.

The relationship between Serbia and the EU is still under development. There is no clear evidence yet of measure in which Serbia has transposed the EU Birds Directive 2009/147/RC in its national legislation and enforcement practice. Convictions and bird crime court cases in Serbia are rare due to the fact that the judiciary / prosecutors are often not educated about wild bird crime. The introduction of necessary reforms to the judiciary system is therefore urgently recommended. Furthermore, enforcement reforms are recommended. Wild bird crime is often not considered a priority by relevant authorities and efforts are further undermined by inadequate capacities and technical facilities,

lack of information sharing, cross border cooperation and low awareness. Enforcement training and awareness raising among authorities as well as hunters and the public at large is recommended.

While Serbia is used as an example for this report, it is clear that wild bird crime is an important issue in the wider Mediterranean region, with the highest amount of wild bird crime reported in Egypt, Italy and Syria (2015). The recommendations therefore for Serbia, in particular those related to awareness raising, enhancing enforcement capacity and cross-border cooperation, should subsequently be seen as highly relevant for wider application in the region.

The Carpathian region, is a hotspot for Europe's remaining populations of large carnivores. Poaching however remains a threat in all Carpathian countries due to deep rooted hunting traditions and inadequate management of game species, human-wildlife conflict, poverty and meat trafficking. National experts report that the implementation of Article 3 of the EU ECD is often not translated into action. Penalties remain low and enforcement to combat the poaching of large carnivores is weak. Some experts interviewed for this report advised for the development of new Carpathian-wide management measures.

Progress has been made in the Danube-Carpathian region to protect large carnivores. In Slovakia, Czech Republic and Romania, the brown bear, wolf and lynx are protected strictly by law. Romania furthermore announced that it would no longer allow trophy hunting of large carnivores. Ukraine has listed the brown bear and lynx in its Red Data Book, meaning hunting is prohibited. However, there are also concerning reports, e.g. the trends of the wolf population in Ukraine, that is in decline.

The importance of enhanced cross-border cooperation and training of border police and customs is also an important recommendation for tackling the poaching of large carnivores. Anti-poaching units are often disorganised and border control is weak. Experts believe that the Ukrainian-Romanian border for example is one of the most important poaching locations in the region. Reports show that out of the average number of bears killed illegally in Ukraine, around 50% of them are killed along the Ukrainian-Romanian border. Capacity building by introducing technology such as Geographic Information System (GIS) may help authorities support anti-poaching operations.

This report further concludes that the current lack of data on large carnivores' population and conservation status undermines conservation efforts. Research and the

development of scientific data on large carnivores is therefore an important recommendation.

Combating environmental crime in the Danube-Carpathian region is currently not effective, as the countries and the wide range of relevant stakeholders (e.g. environmental inspectors, police, judiciary and prosecutors) do not work and cooperate in a coordinated manner. Although initiatives and cooperation between specialized international organisations exist, such as the International Consortium for Combating Wildlife Crime (ICCWC), there is a need for cooperation on a much broader scale. The cooperation, information exchange and coordination between international and European organizations and initiatives, such as the DG Environment and DG Justice, EUROPOL, EUROJUST, IMPEL, ENPE,

CMS and ICCWC is often weak or partly absent. There is a clear need to assist countries to harmonize and enhance their enforcement activities and capabilities. Appropriate information systems and communication channels should be put in place as a prerequisite for effective enforcement and effective joint actions.

A targeted and prioritized action programme concluded, implemented and peer reviewed under appropriate regional and sub-regional regimes like the Carpathian Convention and the International Commission for the Protection of the Danube River (ICPDR) would allow for clustering and addressing the needs and requirements identified in this study. It is recommended to develop and ensure wide participation and support for such a programme.



ACRONYMS

ABC	Association for Biodiversity Conservation
BPSSS	Bird Protection and Study Society of Serbia (BirdLife International Affiliate)
CBD	Convention on Biological Diversity
CC	Carpathian Convention
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on the Conservation of Migratory Species of Wild Animals
DC	Danube-Carpathian
DCR	Danube-Carpathian Region
DDS	Due Diligence System
DSTF	Danube Sturgeon Task Force
EC	European Commission
ECD	Environmental Crime Directive
ENEC	European Network against Environmental Crimes
ENPE	European Network of Prosecutors for the Environment
EU	European Union
EUFJE	European Union Forum of Judges for the Environment
EUROJUST	European Judicial Network
EUSDR	European Strategy for the Danube Region
EUTR	European Union Timber Regulation
FACE	European Federation of Associations for Hunting and Conservation of the European Union
FLEGT	Forest Law Enforcement, Governance and Trade
FSC	Forest Stewardship Council
GIS	Geographic Information System
IAD	International Association for Danube Research
ICCWC	International Consortium for Combating Wildlife Crime
ICPDR	International Commission for the Protection of the Danube River
IMPEL	European Union Network for the Implementation and Enforcement of Environmental Law
INTERPOL	International Criminal Police Organisation
IUCN	International Union for Conservation of Nature
MS	Member State
NGOs	Non-Governmental Organisations
OG	Official Gazette
PEFC	Programme for the Endorsement of Forest Certification
SAP	Sturgeon Action Plan
SCC	Secretariat of the Carpathian Convention
SELEC	Southeast European Law Enforcement Center
SUMAL	Sistem informațional integrat de urmărire a materialelor lemnoase
TAF-DRP	Technical Assistance Facility for Danube Region Projects
UNEP	United Nations Environment Programme
UNODC	United Nations Office on Drugs and Crime
WCO	World Customs Organization
WWF	World Wide Fund for Nature
WWF-DCP	World Wide Fund for Nature - Danube Carpathian Programme

CONTRIBUTORS

Editorial Team

Lynn Schlingemann, UN Environment (Editor in Chief)
Isidoro de Bortoli, Eurac Research
Filippo Favilli, Eurac Research
Harald Egerer, UN Environment
Eleonora Musco, Eurac Research
Thierry Lucas, UN Environment
Irene Lucius, WWF-Danube Carpathian Programme

Contributors, Interviewed Experts and/or Reviewers

Thorsten Arndt, Programme for the Endorsement of Forest Certification
Andreas Beckmann, WWF-Danube Carpathian Programme
Marita Arvela, European Commission
Andriy-Taras Bashta, Inst. Ecology of the Carpathians NAS, Ukraine
Julian Blanc, UN Environment
Joerg Bloesch, International Association for Danube Research
Andras Demeter, European Commission
David Duthie, Convention on Biological Diversity
Ihor Dykyy, Franko National Univ. Lviv, Ukraine
Harald Egerer, UN Environment Vienna – Secretariat of the Carpathian Convention
Orieta Hulea, WWF-Danube-Carpathian Programme Romania
Jutta Jahrl, WWF Austria
Pavle Jovanovic, CITES Serbia
Ján Kadlečík, State Nature Conservancy, Slovak Republic
Dmytro Karabchuk, WWF-Danube-Carpathian Programme Ukraine
Mário Kern, Ministry of Interior, Slovak Republic
Milivoje Krvavac, Inst. Nature Conservation, Serbia
Ivan Kruhlov, Franko National Univ. Lviv, Ukraine
Giacomo Luciani, European Commission
Radu Melu, WWF Danube-Carpathian Programme, Romania
Maria Morgado, UN Environment
Christian Nellemann, RHIPTO – Norwegian Center for Global Analyses
Bianca Notarbartolo, UN Environment
Magdalena Peneva, WWF-DCP, Bulgaria
Luca Perez, European Commission
Bohdan Prots, WWF-DCP, Ukraine
Jaap Reijngoud, IMPEL
Cristian-Remus Papp, WWF-DCP Romania
Gaël de Rotalier, European Commission
Milan Ruzic, Bird Life Serbia


Cristina Sandu, Inst. of Biology, Bucharest, Romanian Academy / Danube Sturgeon Task Force
Maryna Shkvyria, Schmalhausen Institute of Zoology, National Academy of Sciences, Ukraine
Olena Slobodian, Gorgany Nature Reserve
Nikola Stojnic, Institute Nature Conservation of Vojvodina Prov., Serbia
Hans Stielstra, European Commission
Martin Strnad, Ministry of Environment, Czech Republic
Ivan Svetozarevic, Centre for Sustainable Future, Green Zone

Carpathian Convention National Focal Points

PHOTO CREDITS

Page	Credit	Page	Credit
Cover top	Shutterstock/Nadezda Murmakova	17	iStock/salajejan
Cover bottom	Shutterstock/aslobodian	19	iStock/costinmm
3	Shutterstock/Tomas Hulik	20	Shutterstock/Kletr
5	Shutterstock/alicia neumiler	21	Shutterstock/FreeProd33
6	Shutterstock/Pawel Kazmierczak	23	Shutterstock/Anastasia Panait
7	Shutterstock/Toma Hulik	26	Shutterstock/Chris Moody
9	Carpathian Convention	27 - top	CITES Serbia
10 - right	WWF	27 – bottom	CITES Serbia
10 - left	DSTF	28	iStock/Goldilocksimage
11 - right	Shutterstock/Nate Allred	30	Shutterstock/Toma Hulik
11 - left	CITES Serbia	35	iStock/Kyslinsky
12	iStock/xalanx	38	iStock/Krafla
14	iStock/zstockphotos	Back cover	Shutterstock/LALS STOCK

GENERAL REFERENCES

 Assessment of Illegal Wildlife & Forest Related Practices and Trade in the Danube- Carpathian Region and the Effects on the Conservation Status of Endangered Wildlife Species and Priority Forest Habitats. UN Environment with the support of the EU Technical Assistance Facility for Danube Region Projects (TAF-DRP) 2016. Ed. by Samec S., Jozic T., Edthofer M., with inputs from WWF-Danube Carpathian Programme, Bird Protection and Study Society of Serbia – BirdLife Serbia and Institute for Nature Conservation of Vojvodina Province (Serbia), International Commission for the Protection of the Danube River, Romanian Academy - Institute of Biology, Bucharest.

Relevant reports, websites, databases and documents from: Carpathian Convention, CITES, European Union, EU-Twix, EURAC, GRID-ARENDAL, ICPDR, INTERPOL, IUCN, FAO, Themis Network, RHIPTO, TRAFFIC, UN Environment, UNODC, WWF

BIBLIOGRAPHY

1. *Development of Common Integrated Management Measures for Key Natural Assets in the Carpathians*. **Appleton, M. R. and Meyer, H. Editors.** s.l. : WWF Danube-Carpathian Programme, Vienna, 2014, Integrated Management of Biological and Landscape Diversity for Sustainable Regional Development and Ecological Connectivity in the Carpathians (Work Package 4).
2. *Virgin forests in Romania and Bulgaria: results of two national inventory projects and their implications for protection*. **Veen, P., et al.** 2010, *Biodiversity and Conservation*, Vol. 19, pp. 1805-1819.
3. *Conservation gains through HCVF assessments in Bosnia-Herzegovina and Romania*. **Ioras, F., et al.** 2009, *Biodiversity and Conservation*, Vol. 18, pp. 3395–3406.
4. *The status of the Carpathians*. **Webster, R., Holt, S. and Avis, C. (Eds.)**. 2001, WWF Vienna .
5. *Stealing the last forests: Austria's largest timber company, land rights, and corruption in Romania*. **EIA**. 2015, Environmental Investigations Agency (EIA) Report.
6. *Competition Assessment Reviews: Romania*. **Organisation for Economic Cooperation and Development (OECD)**, s.l. : OECD Publishing Paris, 2016. <http://dx.doi.org/10.1787/9789264257450-en>.
7. *Forest Administration in Romania: Frequent Problems and Expectations*. **Marinchesu, M., et al.** July-Dec 2014, *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, Vol. 42, pp. 588-595.
8. *Project synthesis and long term strategy, Vienna, Bucharest, Sofia*. **WWF**. September 2015, LIFE11-INF-AT-902.
9. *Sturgeon more critically endangered than any other group of species*. **IUCN**. March 2010, IUCN website. web link: <https://www.iucn.org/content/sturgeon-more-critically-endangered-any-other-group-species> (Accessed on 3 April 2017) .
10. *A high price for survival: fighting the illegal caviar trade in wild sturgeon*. **ICPDR**. 2013, Danube Watch, Vol. 1.
11. *The IUCN Red List of Threatened Species. Version 2016-3*. **IUCN**. 2016. web link: <<http://www.iucnredlist.org>>. Downloaded on 07 December 2016. .
12. **BirdLife International**. 2011.
13. *Global Biodiversity: Indicators of Recent Declines*. **Butchart, S. H. M., et al.** 5982, 2010, *Science*, Vol. 328, pp. 1164-1168.
14. *Preliminary assessment of the scope and scale of illegal killing and taking of birds in the Mediterranean*. **Brochet, A.L., et al.** 1, 2016, *Bird Conservation International*, Vol. 26, pp. 1-28.
15. *The illegal trade in wild birds for food, through South-east and Central Europe*. **TRAFFIC**. 2008. web link: http://www.trafficj.org/publication/08_Illigal_trade_in_wild_birds.pdf.
16. *The Hunting: Italian Country Profile: National Land Pressure, International Hunting Destinations*. **Rocco, M. and Isotti, R.** 2006, *CITES Species Subjected to Hunting. WWF-Italy Report (unpublished)*, Rome, Italy.
17. *The background for common integrated management of large carnivores and herbivores in the Carpathians*. **Szemethy, L., et al.** 1, June 2016, *North-Western Journal of Zoology*, Vol. 12, pp. 122-129. e151705.
18. *Conservation Status of Large Carnivores in Europe and Freedom within Frames Approach*. **Salvatori, V., et al.** Belgrade : s.n., 2008, In: Potts, R. G. and Hecker, K. (eds.), 2007. *Proceedings of the International Symposium "Coexistence of Large Carnivores and Humans: Threat or Benefit?"*, pp. 111-117. web link: http://www2.nina.no/lcie_new/pdf/634991314059237563_CIC_Full_Proceedings.pdf. Accessed on 10 April 2017.
19. *Status, Management and Conservation of Large Carnivores in Serbia*. **Paunovic, M., Cirovic, D. and Milenkovic, M.** 2008, In: Potts, R. G. and Hecker, K. (eds.), 2008. *Proceedings of the International Symposium "Coexistence of Large Carnivores and Humans: Threat or Benefit?"* Belgrade, 2007, pp. 111-117. web link: http://www2.nina.no/lcie_new/pdf/634991314059237563_CIC_Full_Proceedings.pdf. Accessed 10 on April 2017 .
20. **Food and Agricultural Organization**. FAOSTAT. FAOSTAT Romania Profile. [Online] 2014. [Cited: 22 September 2017.] <http://www.fao.org/faostat/en/#country/183>.
21. **Eurostat (for_auw) and (for_area), FAO Forest Resources Assessment**. Eurostat Statistics Explained. Volume of work per area of forest available for wood supply (figure 3). [Online] 2013. http://ec.europa.eu/eurostat/statistics-explained/index.php/Forestry_statistics.
22. *Conservation of biodiversity in Romania*. **Soran, V., et al.** s.l. : *Biodiversity and Conservation*, 2000, Vol. 9, pp. 1187–1198.
23. *Quantifying Landscape Pattern and assessing the land cover changes in Piatra Craiului National Park and Bucegi Natural Park, Romania, using satellite imagery and landscape metrics*. **Vorovencii, I.** 11, 2015, *Environmental Monitoring and Assessment*, Vol. 187.
24. *Fractal analysis for studying the evolution of forests*. **Andronache, I., et al.** 2016, *Chaos Solitons & Fractals*, Vol. 91, pp. 310-318.
25. *Sinteza Raportului de audit privind "Situatia patrimonială a fondului forestier din România, în perioada 1990-2012» [Summary Audit Report "State of Romanian Forest Patrimony from 1990-2012"]*. **Romania**. 2013, *Romanian Court of Accounts, Bucharest*.
26. *privind în înțarea Gărzilor forestiere [Emergency Ordinance 32/2015 on the establishment of forest guards]*. **OUG**. 32, s.l. : *Ordonanta de Urgenta*, 2015, *The Official Gazette* , Vol. No. 474/30.06.2015.
27. *Revista Presei. Cătălin Tobescu, cepreședintele Nostra Silva - Federația Proprietarilor de Păduri din România*. 8 November 2016, *Administratia Nationala - Apele Române*. www.rowater.ro.
28. *The Romanian forestry sector: privatisation facts*. **Ioras, F. and Abrudan, I. V.** 2006, *International Forestry Review*, Vol. 8, pp. 361–367.
29. *Using annual time-series of Landsat images to assess the effects of forest restitution in post-socialist Romania*. **Griffiths, P., et al.** 2012, *Remote Sensing of Environment*, Vol. 118, pp. 119-214.
30. *Patterns and drivers of post- socialist farmland abandonment in Western Ukraine*. **Baumann, M., et al.** 2011, *Land Use Policy*, Vol. 28, pp. 552– 562.
31. *From spatial continuity to fragmentation: the case of Russian farming*. **Ioffe, G., Nefedova, T. and Zaslavsky,**

I. 2004, *Annals of the Association of American Geographers*, Vol. 94, pp. 913–943.

32. Post- socialist forest disturbance in the Carpathian border region of Poland, Slovakia, and Ukraine. **Kuemmerle, T., et al.** 17, 2007, *Ecological Applications*, pp. 1279–1295.

33. Carbon in idle croplands. **Henebry, G. M.** 2009, *Nature*, Vol. 457, pp. 1089–1090.

34. Forest cover change and illegal logging in the Ukrainian Carpathians in the transition period from 1988 to 2007. **Kuemmerle, T., et al.** 2009, *Remote Sensing of Environment*, Vol. 113, pp. 1194–1207.

35. Developments in the Romanian Forestry and its Linkages with other Sectors. **Abrudan, I.V., et al.** 2009, *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, Vol. 37, pp. 14–21.

36. Forest conditions and management under rapid legislation change in Romania. **Strimbu, B.M., Hickey, G.M. and Strimbu, V.G.** 2005, *The Forestry Chronicle*, Vol. 81, pp. 350–358.

37. Property reforms in rural Romania and community-based forests Romanian Sociol. **M., Vasile and L., Mantescu.** 2009, *Sociologie Romaneasca*, Vol. 7, pp. 96–113.

38. Carbon implications of forest restitution in post-socialist Romania. **Olofsson, P., et al.** 6, 2011, *Environmental Research Letters*, p. 10pp.

39. A decade of Non-State Administration of Forests in Romania: Achievements and Challenges. **Abrudan, I.V.** 2012, *International Forestry Review*, Vol. 14(3), pp. 275–284.

40. Evaluation Study on the Implementation of Directive 2008/99/EC (Slovakia). **Milieu Ltd. Brussels.** 2012. web link: http://ec.europa.eu/justice/criminal/files/environment/toc_sk_redacted_en.pdf. Accessed on 10 April 2017..

41. Forest restitution and the protected area effectiveness in post-socialist Romania. **Knorn, J., et al.** 1, February 2012, *Biological Conservation*, Vol. 146, pp. 204–212 .

42. Protected Area - Working Forest Interface. Ecological Concerns for Protected Areas Management in Canada. **Cameron, R. P.** 2006, *Natural Areas Journal*, pp. 403–407.

43. Interactions between protected areas and their surroundings in human-dominated tropical landscapes. **DeFries, R., Karanth, K.K. and Pareeth, S.** 2010, *Biological Conservation*, Vol. 143, pp. 2870–2880.

44. Russia's protected areas in transition: the impacts of perestroika, economic reform and the move towards democracy. **Wells, M.P. and Williams, M.D.,** 1998, *Ambio*, Vol. 27, pp. 198–206.

45. Environmental issues in Russia. **Henry, L.A. and Douhovnikoff, V.** 2008, *Annual Review of Environment and Resources*, Vol. 33, pp. 437–460.

46. Conservation of biodiversity in Romania. **Soran, V., et al.** 2000, *Biodiversity and Conservation*, Vol. 9, pp. 1187–1198.

47. Illegal logging in the Russian Far East and Siberia. **Vandergert, P. and Newell, J.** 2003, *International Forestry Review*, Vol. 5, pp. 303–306.

48. Property rights distribution and entrepreneurial rent-seeking in Romanian forestry: a perspective of private forest owners. **Nichiforel, L. and Schanz, H.** 2011, *European Journal of Forest Research*, Vol. 130,

pp. 369–381.

49. **Ministry of Agriculture, Food and Forests, Romania.** Forestry Development Program: Environmental Assessment for Project Preparation. s.l. : Environmental Resources Management, October 2001. Report No. PID8602.

50. Strengthening Romania's Protected Area System by Demonstrating Public-Private Partnership in Romania's Maramures Nature Park. **UNDP.** 2004, United Nations Development Programme Project Document.

51. The Romanian forestry sector: privatisation facts. **F., Ioras and V., Abrudan I.** 3, s.l. : Commonwealth Forestry Association, 2006, *The International Forestry Review*, Vol. 8, pp. 361–7.

52. Forestry in transition: imperial legacy and negotiated expertise in Romania and Poland. **Lawrence, A.** 2009, *Forest Policy and Economics*, Vol. 11, pp. 429–436.

53. Forest Restitution in Romania: Challenging the Value System of Foresters and Farmers. **Lawrence, A. and Szabo, A.** 2005, *European forests in ethical discourse*. Berlin, Germany.

54. Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market Text with EEA relevance. **Regulation (EU) No 995/2010.** 20 October 2010, *Official Journal of the European Union*. <http://data.europa.eu/eli/reg/2010/995/oj>.

55. Laying Down the Obligations of Operators Who Place Timber and Timber Products on the Market. Available online: **EU Regulation No 995/2010.** 2010, European Union Regulation - (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010. web link: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010R0995> (Accessed on 18 December 2015)..

56. The Interaction between FSC Certification and the Implementation of the EU Timber Regulation in Romania. **Gavrilut, I., et al.** 7, 2016, *Forests*. doi:10.3390/f7010003.

57. Chain of custody certification in Romania: Profile and perceptions of FSC certified companies. **Halalisan, A.F., et al.** 2013, *Int. For. Rev.*, Vol. 15, pp. 305–314.

58. **Programme for the Endorsement of Forest Certification (PEFC).** [Online] August 2017. [Cited: 4 August 2017.] <https://www.pefc.org/standards/chain-of-custody>.

59. **Forest Stewardship Council (FSC).** [Online] August 2017. [Cited: 4 August 2017.] <https://ic.fsc.org/en/what-is-fsc-certification/chain-of-custody-certification>.

60. **Commission, European.** COMMISSION NOTICE of 12.2.2016 Guidance Document for the EU Timber Regulation C(2016) 755 final. 2016.

61. FSC: Facts and Figures. **Forest Stewardship Council International.** 4 August 2017, <https://ic.fsc.org/file-download/facts-figures-august-2017.a-2140.pdf>. ic.fsc.org.

62. *In Market Info Pack*; Forest Stewardship Council: Bonn, Germany. **Forest Stewardship Council.** 2015.

63. **Certification, Programme for the Endorsement of Forest.** Give your feedback on the Austrian and Romanian forest certification systems. [Online] August 2017. [Cited: 9 August 2017.] <https://www.pefc.org/news-a-media/general-sfm-news/2373-give-your-feedback-on-the-austrian-and-romanian-forest->

certification-systems.

64. **Programme for the Endorsement of Forest Certification.** PEFC website certification database. PEFC International. [Online] August 8 2017. https://www.pefc.org/find-certified/certified-certificates/advanced-search?organisation_name=&certificate_number=&licence_number=&certification_body_notification=0&country=RO+%28Romania%29&certificate_status=Valid&industry_sector=0&product_category=0&product_name=&action=search&searchtype=advanced_search.

65. Forest Code of Romania – amended 20th April 2012 from 19/03/2008 . **Romanian Parliament.** 27 March 2008, Official Gazette no. 238 of 27/03/2008.

66. Romania: Amended Forestry Code aims to reduce illegal harvesting. **CMS Law-Now.** 30 June 2015.

67. Romania acts to save forests from logging spree. **BBC.** [ed.] Peter Lawrence. 21 May 2015, BBC News. web link: <http://www.bbc.com/news/world-europe-32792314> (Accessed on 18 May 2017).

68. Property rights distribution and entrepreneurial rent-seeking in Romanian forestry: a perspective of private forest owners. **Nichiforel, L. and Schanz, H.** 2011, European Journal of Forest Research, Vol. 130, pp. 369–381.

69. [inspectorulpadurii.ro](http://www.inspectorulpadurii.ro). [Online] 2016. www.inspectorulpadurii.ro .

70. PM Dacian Cioloş statement on 11.2.2016 at the beginning of the Government meeting. **Romanian Government.** 2016. web link: <http://gov.ro/ro/guvernul/sedinte-guvern/declaratiile-sustinute-de-premierul-dacian-ciolo-la-inceputul-edintei-de-guvern1478076958>. Accessed on 17 April 2017.

71. **The Romania Journal.** The restraints of the current timber deliveries tracking systems. The Romania Journal. [Online] 13 March 2017. [Cited: 10 August 2017.] <http://www.romaniajournal.ro/the-restraints-of-the-current-timber-deliveries-tracking-systems/>.

72. **WWF Romania.** 2015, WWF News: A hotline in Romania fights illegal logging. web link: http://wwf.panda.org/about_our_earth/search_wwf_news/?237550/a-hotline-in- (accessed on 16 April 2017) .

73. Illegal logging in the context of the sound use of wood. **Bouriaud, L. and Niskanen, A.** s.l. : Food and Agriculture Organization, Timber Committee European Forestry Commission, 2003, In Strategies for the Sound Use of Wood, pp. 1-10.

74. **WWF Danube Carpathian Programme.** Illegal Logging in Romania. [Online] 18 December 2015. <http://wwf.panda.org/?247014/Thousands-in-Romania-protest-illegal-logging>.

75. The Main Changes of the Romanian Forests Code in 2015. Stanciu, S., et al. [ed.] Sorin Stanciu I Constantin Banu I. 1, s.l. : Banat's University of Agricultural Sciences and Veterinary Medicine, 2015, Lucrari Stiintifice, Seria I, Vol. XVIII (3).

76. **Besliu, R.** Romania's 'occupy forests' movement demands clampdown on corporate crime. [Online] 21 August 2015. [Cited: 18 May 2017.]

77. **Guinness World Records.** "Most Expensive Caviar". Guinness World Records official website. [Online] 2017. [Cited: 12 May 2017.] <http://www.guinnessworldrecords.com/world-records/most-expensive-caviar>.

78. EU wildlife trade 2013: Analysis of the European Union and candidate countries' annual reports to CITES

2013. **UNEP-WCMC.** s.l. : UNEP-WCMC, Cambridge, 2015.

79. Sensitivity of North American sturgeons and paddlefish to fishing mortality. **Boreman, J.** 1997. 1997, Environmental Biology of Fishes , Vol. 48, pp. 399-405.

80. **Sandu, C., Reinartz, R. and Bloesch, J (Eds).** Sturgeon 2020 - A program for the protection and rehabilitation of Danube sturgeons. Danube Sturgeon Task Force (DSTF) & EU Strategy for the Danube River (EUSDR) Priority Area (PA) 6 – Biodiversity. 3. s.l. : Danube Sturgeon Task Force, 2013. www.dstf.eu.

81. **Gunay Hasanova - Azernews.** Caspian states meet in Ashgabat to mull problem of poaching. www.azernews.az. [Online] 8 November 2016. [Cited: 10 August 2017.] www.azernews.az/nation/104794.html.

82. **Uhm, D. P. van.** The Illegal Wildlife Trade: Inside the World of Poachers, Smugglers and Traders. s.l. : Springer International Publishing, 2016. 978-3-319-42129-2.

83. The Illegal Trade in Black Caviar. **Uhm, D. van. and D., Siegel.** 1, March 2016, Trends in Organized Crime, Vol. 19, pp. 67-87.

84. **Nellemann C, Henriksen R, Raxter P, Ash N, Mrema E (eds).** The Environmental Crime Crisis - Threats to sustainable development from illegal exploitation and trade in wildlife and forest resources. United Nations Environment Programme and GRID-Arendal. s.l. : Birkeland trykkeri AS, Norway, 2014. UNEP Rapid Response Assessment.

85. Acipenseriformes. Document AC.16.7.2. **CITES.** 2000, 16th meeting of the CITES Animals Committee. 11–15 Dec. 2000. CITES, Shepards town, USA. .

86. Opportunity or threat: e role of the European Union in global wildlife trade. **Engler, M. and Parry-Jones, R.** s.l. : TRAFFIC Europe - Brussels, Belgium, 2007, A TRAFFIC Europe Report.

87. **Sellar, J. M.** The UN's lone ranger. Combating International Wildlife Crime. s.l. : Whittles Publishing, Caithness, 2014.

88. Black Gold: The Caviar Trade in Western Europe. **TRAFFIC.** October 2009, TRAFFIC Fact Sheet. web link: <http://www.traffic.org/publications/black-gold-the-caviar-trade-in-western-europe.html>. Accessed on 04.11.2016. .

89. Wildlife Crime - Study for the ENVI Committee. **Sina, S., et al.** March 2016, European Parliament, Brussels . web link: <http://www.europarl.europa.eu/supporting-analyses>.

90. Trade in Sturgeon Caviar in Bulgaria and Romania - overview of reported trade in caviar, 1998-2008. **Kecse-Nagy, K.** 2011, A TRAFFIC report for WWF Austria, Budapest, Hungary.

91. **WWF.** WWF - Sturgeon: Romania also extends full ban on fishing sturgeon. WWF. [Online] 31 May 2016. [Cited: 30 June 2017.] <http://wwf.panda.org/?269190/>.

92. Sturgeons in the Danube River - Biology, Status, Conservation. **Reinartz, R.** 2002, Literature study on behalf of Bezirk Oberpfalz, International Association for Danube Research (IAD) and Landesfischereiverband Bayern e.V.

93. Action Plan for the conservation of sturgeons (Acipenseridae) in the Danube River Basin - Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). **Bloesch, J., et al.** 2005,

94. **EU-TWIX**. Trade in Wildlife Information Exchange - Database. EU-TWIX. [Online] 2016. www.eu-twix.org.
95. *Illegal Wildlife Trade and the European Union: an analysis of EU-TWIX seizure data for the period 2007-2011*. **Mundy-Taylor, V.** 2013, A TRAFFIC Report prepared for the European Commission.
96. **Cristian Trupina - National Environment Guard Romania**. The National Environment Guard is Frying Up Fish Poachers in the Danube Delta Area. 2017. News.
97. *Illegal caviar trade in Bulgaria and Romania – Results of a market survey on trade in caviar from sturgeons (Acipenseridae)*. **Jahrl, J.** 2013, WWF Austria & Traffic, Vienna, Austria.
98. **Stuart Butchart for BirdLife International**. Eight million birds killed illegally at 20 Mediterranean locations each year. BirdLife International. [Online] 4 March 2016. [Cited: 3 September 2017.] <http://www.birdlife.org/worldwide/news/eight-million-birds-killed-illegally-20-mediterranean-locations-each-year>.
99. **Finlay Duncan for BirdLife International**. Extent of illegal killing of birds in the Mediterranean revealed in BirdLife report. BirdLife International. [Online] 21 August 2015. [Cited: 3 September 2017.] <http://www.birdlife.org/europe-and-central-asia/news/extent-illegal-killing-birds-mediterranean-revealed-birdlife-report>.
100. *Study on understanding the causes of biodiversity loss and the policy assessment framework. In the context of the Framework*. **European Commission**. 2006, European Commission, Directorate-General for Environment.
101. **BirdLife International**. The Killing - Unlawfully shot, trapped or glued. Every year around 25 million birds are slaughtered in the Mediterranean. Read our first review of illegal killing of birds in the region. BirdLife International. s.l. : BirdLife International, 2015.
102. **European Commission**. Roadmap towards eliminating illegal killing, trapping and trade of birds. s.l. : Brussels, European Commission, 2012.
103. *Illegal hunting and trade in birds in Central Eastern Europe*. **Steiner, A.** 2006, WWF Hungary report. Budapest, Hungary.
104. **CMS**. Convention on the Conservation of Migratory Species of Wild Animals. <http://www.cms.int/en/page/appendix-i-ii-cms>. [Online] 2017. [Cited: 29 June 2017.] www.cms.int.
105. *The Balkans bird mafia*. **Benedetti, L.** 11 March 2015, BirdLife Europe. web link: <http://www.birdlife.org/europe-and-central-asia/news/balkans-bird-mafia>. Accessed on 10 April 2017.
106. *Wolf hunting ban on the Slovak side of the Eastern Carpathians*. **Rewilding Europe**. 2014. web link: <https://www.rewildingeurope.com/news/wolf-hunting-ban-on-the-slovak-side-of-the-eastern-carpathians/>. Accessed on 10 April 2017.
107. *Emptying the skies*. **Franzen, J.** 86, 2010, The New Yorker, pp. 48-60.
108. *Soil contamination in south Backa region of Serbia with dangerous and harmful substances*. **Maksimović, L., et al.** 2012, FAO, Matica Srpska Library. web link: <http://agris.fao.org/agris-search/search.do?recordID=RS2012001948>.
109. **ECPA**. European Crop Protection website. [Online] 2017. web link: <http://www.ecpa.eu/stewardship/>

counterfeit-illegal-pesticides (Accessed on 10 May 2017).

110. **CITES Serbia**. 2017.
111. *Law on Nature Protection*. **Serbia**. 2010, Official Gazette of RS, no. 36/2009, 88/2010 and 91/2010 – corr. and 14/2016. web link: http://www.pregovarackagrupa27.gov.rs/?wpfb_dl=107.
112. *Should Conservation pay more attention to corruption?* **Smith, R.J. and Walpole, M.J.** 2005, Oryx, pp. 251-256.
113. *Business, Corruption and Crime in Serbia: The impact of bribery and other crime on private enterprise*. **UNODC**. 2013.
114. **GAN Integrity**. Serbia - Anti-Corruption Portal - country profile. GAN Business Anti-Corruption Portal. [Online] 2017. <http://www.business-anti-corruption.com/country-profiles/serbia>.
115. *Transnational Environmental Crime*. **White, R.** 2013, pp. 519-522.
116. *Status, management and distribution of large carnivores—bear, lynx, wolf & wolverine—in Europe*. **Adamec, M., et al.** s.l. : European Commission, 2012.
117. *Mapping conservation areas for carnivores in the Carpathian mountains*. **Salvatori, V.** s.l. : University of Southampton Faculty of Engineering, Science and Mathematics - School of Geography, April 2004, Thesis for the degree of Doctor of Philosophy. web link: http://www.carnivoreconservation.org/files/thesis/salvatori_2004_phd.pdf. Accessed 10th April, 2017.
118. *The BioREGIO Carpathians project: aims, methodology and results from the “Continuity and Connectivity” analysis*. **Favilli, F., et al.** 2014, Nature Conservation, Vol. 11, pp. 95-111.
119. *Large carnivores in the Alps and Carpathians. Living with the wildlife*. **Vogel, M., et al.** 2009, Task Force Protected Areas - Permanent Secretariat of the Alpine Convention. Report: 1-24. Chambéry, France.
120. *Rozšírenie a početnosť veľkých šeliem v Európe a na Slovensku [Distribution and population of large carnivores in Europe and in Slovakia]*. **Paule, L.** [ed.] A. & Antal, V. (eds) Lešová. s.l. : Štátna ochrana prírody Slovenskej republiky, Banská Bystrica, 2015, Ochrana a manažment veľkých šeliem na Slovensku, pp. 52-59.
121. **LIFE for Bear**. Conservation of Brown Bear (*Ursus arctos*) population in Romania. [Online] 2013. [Cited: 10 April 2017.] <http://www.forbear.icaswildlife.ro/>.
122. *Act No. 543/2002 Coll. on Nature and Landscape Protection*. **Slovak Republic**. 1994. <http://www.noveaspi.sk/products/lawText/1/54225/1/2>.
123. **Wolves and Humans Foundation**. Predators in Slovakia – science, politics and tradition in conflict. [Online] 2006. [Cited: 10 April 2017.] <http://www.wolvesandhumans.org>.
124. *The European commission can help wolves in the Beskydy Mountains. Wolf hunting in Slovakia under investigation*. **Carnivores CZ**. 2013. web link: <http://www.carnivores.cz/articles/the-european-commission-can-help-wolves-in-the-beskydy-mountains/> (Accessed on 10 April 2017).
125. *40/2009 Coll. ACT of 8 January 2009 Criminal Code*. **Czech Republic**. 2009. web link: <http://www.ejtn.eu/PageFiles/6533/Criminal%20Code%20of%20the%20Czech%20Republic.pdf> (Accessed on 10 April 2017).

126. **Management plan for Eurasian lynx, grey wolf and brown bear in the Czech Republic.** [Online] 2016. [Cited: 10 April 2017.] <http://www.planpecevelkeselmy.cz/about-the-project>.
127. **ANCLP.** Agency for Nature Conservation and Landscape Protection of the Czech Republic. [Online] 2005. [Cited: 10 April 2017.] <http://www.zachranneprogramy.cz/en/about-action-plans>.
128. **Romanian Criminal Code. Romania.** 2014. web link: www.just.ro/wp-content/uploads/2016/01/Noul-cod-penal-EN.doc (Accessed on 10 April 2017).
129. **Blood does not buy goodwill: allowing culling increases poaching of a large carnivore.** **Chapron, G. and Treves, A.** 11 May 2016, *Proceedings of the Royal Society B. Biological Sciences*. DOI: 10.1098/rspb.2015.2939. .
130. **Duskova, M.** Romania bans trophy hunting of bears, wolves and wildcats. [Online] 2016. [Cited: 10 April 2017.] <http://www.carnivores.cz/articles/romania-bans-trophy-hunting-of-bears-wolves-and-wildcats/>.
131. **Management of the Wolf (Canis Lupus) In Ukraine.** Report by the Government. Council of Europe. 2012a. web link: <https://wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=2131168&SecMode=1&DocId=1870926&Usage=2>. (Accessed on 4 April 2017).
132. **Management of the Wolf (Canis Lupus) In Ukraine.** Report by the Ngo. **Council of Europe.** 2012b. web link: <https://wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=2063731&SecMode=1&DocId=1874652&Usage=2> (Accessed on 4 April 2017) .
133. **T-PVS Bern Convention.** Report of the Group of Experts on the conservation of Large Carnivores in Europe. Gstaad (CH) : Convention on the Conservation of European Wildlife and Natural Habitats, 2012. web link: http://www.kora.ch/malme/05_library/5_1_publications/C/CoE_2012_Group_of_Experts_on_the_conservation_of_LC_in_Europe_Saanen_meeting_Report.pdf. (Accessed on 10 April 2017).
134. **Law No. 1827-VI amending Law No. 1478-III on hunting economy and hunting. Ukraine.** 2010, *Criminal Code of Ukraine*. April 5, 2001 No. 2341-III (Last edition of 21-12-2016). web link: <http://www.rada.kiev.ua/>.
135. **Press Service of the Verkhovna Rada of Ukraine Secretariat. Verkhovna Rada.** 4 April 2016. web link: <http://rada.gov.ua/en/news/en/news/News/127644.html> (Accessed on 5 April 2017) .
136. **Lynx. Rare and threatened animal species of the Lviv region (Ukraine).** **Bashta, A.-T. and V., Dykyy I.** Lviv : s.n., 2013, Liga-pres, p. 196.
137. **Red Data Book of Ukraine Lynx.** **Shkvyria, M. and Shevchenko, L.** 2009, Kiev: Publ. House “Hlobalkonsaltnh”, p. 546.
138. **Spatial distribution of lynxes and wolves in the Polissya Reserve.** **Zhyla, R., Shkvyrya, M. and Petryv, Z.** 2002, *Luhansk University Bulletin*, Vol. 1, pp. 173-174.
139. **Report Serbia, Environmental Performance Reviews Series No. 26. . UNCE.** 1020-4563, s.l. : United Nations Publication, 2007. Sales No. E.07.II.E.16, ISBN 978-92-1-116969-0.
140. **Myronenko, M.** Draft model of reformation and development of hunting sector in Ukraine. [Online] 2015. [Cited: 4 April 2017.] <http://www.enpi-fleg.org/>.
141. **Enforcement and management of the forestry sector in the eastern region of action of the European Neighborhood and Partnership Instrument - II (ENPI East FLEG II).** **WWF.** 2017. web link: http://wwf.panda.org/uk/our_work/forests/law_enforcement/fleg_ii/ (Accessed on 4 April 2017).
142. **Hnuti DUHA.** Complaint to the Commission of the European Communities concerning failure to comply with Community law – hunting of grey wolves (Canis lupus) in Slovakia. [Online] 2011. [Cited: 10 April 2017.] http://www.carnivores.cz/data/files/EU_Complaint_2011_CZ.pdf.
143. —. **Conservation of large carnivores, West Carpathians.** <http://www.outdoorconservation.eu/project-detail.cfm?projectid=225>. [Online] 2014. [Cited: 10 April 2017.]
144. **The wolves and local communities in Vrancea County/Romania 15 December 2005 – 30 June 2007.** **ABC.** 2007, *Final Report*. web link: http://lupul.biodiversitate.ro/final-raport-12.09.05_rufford.pdf. (Accessed on 10 April 2017).
145. **Bashta, A. T.** Open borders for bears between Romanian and Ukrainian Carpathians. [Online] 2015. [Cited: 5 April 2017.] http://ec.europa.eu/environment/nature/conservation/species/carnivores/pdf/6_Bashta_Open_borders_Romania_Ukraine_bear.pdf.
146. **European Commission.** 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 (Text with EEA relevance). [Online] 2008. [Cited: 10 April 2017.] <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0099>.
147. **Regional Development Opportunities of Protected Areas and Natural Assets in the Carpathians. Work Package 4. Integrated Management of Biological and Landscape Diversity for Sustainable Regional Development and Ecological Connectivity in the Carpathians.** **Bösze, S. and Meyer, H.** 2014, *WWF Danube-Carpathian Programme*, Vienna, Austria.
148. **BBC.** Bears in Dracula Country. *BBC Wildlife Magazine*. [Online] 2016. [Cited: 4 April 2017] <https://www.pressreader.com/uk/bbc-wildlife-magazine/20161221/283734133880110>.
149. **EEAS.** EU-Ukraine Association Agreement. [Online] 2014. [Cited: 4 April 2017.] <http://eeas.europa.eu/>.
150. **Rosaleen, D.** EU Trade Policy and the Wildlife Trade. *European Parliament’s Committee on International Trade, European Parliament - Directorate-General for External Policies*. 2016. doi: 10.2861/221523.
151. **TRAFFIC.** Wildlife trade: What is it?’. [Online] 2009. [Cited: 8 September 2017.] <http://www.traffic.org/trade/>.
152. **Forest Cover Change in Romania in 2000-2011.** **Greenpeace Russia.** s.l. : GISUnit, 2012, *Greenpeace Russia Report*. Retrieved from <http://www.greenpeace.org/romania/Global/romania/paduri/Despaduririle%20din%20Romania/Forestcover%20change%20in%20Romania%202000-2011.pdf>.
153. **Ecoregion-based conservation in the Carpathians and the land- use implications.** **Turnock, D.** 2002, *Land Use Policy*, Vol. 19, pp. 47–63.
154. **Forest Restitution in Romania: Challenging the Value Systems of Foresters and Farmers.** **Lawrence, A. and Szabo, A.** s.l. : nvironmental Change Institute, University of Oxford, 2005, *Human Ecology Working Paper 05/01*, p. 15.
155. **Review of the Illegal Killing and Trapping Bird in Europe.** **BirdLife International.** 2011, *European*

156. **TRANSGREEN**. *Integrated transport and green infrastructure planning in the Danube-Carpathian region for the benefit of people and nature*. [Online] 2017. [Cited: 10 April 2017.] <http://www.interreg-danube.eu/approved-projects/transgreen..>

157. *Romania. In Forest Land Ownership Change in Europe*. Nichiforel, L., et al. 2015, COST Action FP1201 *FACESMAP Country Reports, Joint Volume*; Živojinović, I., Weiss, G., Lidestav, G., Feliciano, D., Hujala, T., Dobšinská, Z., Lawrence, A., Nybakk, E., Quiroga, S., Schraml, U., Eds.; *EFICEEC-EFISEE Research Report*; University of Natural Resources and Life Sciences, Vienna (BOKU): Vienna, Austria, 2015, pp. 471–495.

158. *Perception of relevant stakeholders on the potential of the implementation of the “Due Diligence” system in combating illegal logging in Romania*. Nichiforel, R. and Nichiforel, L. 2011, *J. Horticul. For. Biotechnol.*, Vol. 15, pp. 126–133.

159. **FSC**. *Forest Stewardship Council International*. [Online] 2017. [Cited: 31 May 2017.] <https://ic.fsc.org/>.

160. **Programme for the Endorsement of Forest Certification (PEFC)**. <https://www.pefc.org/certification-services/eu-timber-regulation>. [Online] August 2017. [Cited: 5 August 2017.]

161. **Nellemann C, Henriksen R, Raxter P, Ash N, Mrema E (eds)**. *The Environmental Crime Crisis - Threats to sustainable development from illegal exploitation and trade in wildlife and forest resources*. United Nations Environment Programme and GRID-Arendal. s.l. : Birkeland trykkeri AS, Norway, 2016. *UNEP Rapid Response Assessment*.

162. *The evolution of forest certification: a short review*. Halalisan, A.F, Marinchescu, M. and Abrudan, V. *Series II, s.l. : Bulletin of the Transilvania University of Braşov, 2012, Agricultural Food Engineering, Vol. 5 (54) No. 2*.

163. **The World Bank**. *Romania-Forest Development Program*. s.l. : The World Bank, Washington, USA, 2001. *Report No. PID8602*.

GLOSSARY

This glossary provides an overview of some of the key policies, institutional and legal frameworks in place, relevant for the Danube-Carpathian region, to combat illegal logging and wildlife crime.

The Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention) is a sub-regional agreement, adopted in May 2003, and entered into force in January 2006. The Convention strives for Parties to ensure a high level of protection of natural and semi-natural habitats, and its flora and fauna, in particular endangered and endemic species. Sustainable and integrated management of rivers and forests is therefore essential and collaboration in these areas is captured in the Convention through joint policies, strategies and Protocols agreed upon by the seven countries of the region (Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia and Ukraine). Although the Convention text does not specifically mention wildlife and forest crimes, at least two of the Protocols providing for the implementation of the Convention have a clear link to the subject: the “Protocol on Conservation and Sustainable Use of Biological and Landscape Diversity” and the “Protocol on Sustainable Forest Management.”

Parties to the Convention are obliged to develop and implement policies and strategies in their national territory and must cooperate with each other and integrate the objectives of protection and sustainable use into their sectoral policies, particularly those concerning spatial planning and land resources management, water and river basin management, agriculture and forestry, transport and infrastructure, tourism, industry and energy.

The Convention on Co-operation for the Protection and Sustainable Use of the River Danube - The Danube River Protection Convention with its International Commission for the Protection of the Danube River (ICPDR) aims to ensure that surface waters and groundwater within the Danube River Basin are managed and used sustainably and equitably. The ICPDR is involved in the Danube Sturgeon Task Force (DSTF) established in January 2012 by a number of scientists, governmental and non-governmental organizations to support the achievement of the EUSDR target: ‘to ensure viable populations of sturgeon and other indigenous fish species by 2020’. The aim of the DSTF is to foster synergies of the existing organizations and support the conservation of highly endangered native sturgeon species in the Danube River Basin and the Black Sea by promoting the implementation

of the Program ‘Sturgeon 2020’.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) regulates the international trade for more than 35,000 animal and plant species worldwide. CITES introduces specific restrictions and requirements for listed endangered species, regarding their export, re-export and import of live and dead animals and plants, their parts and/or derivatives. CITES regulations are enforced through a system of permits and certificates. Depending on which annex a species is on, trade is prohibited, restricted or permissible under certain conditions. There is an express requirement under CITES for states to enforce its provisions through imposing criminal penalties (CITES Art. 8 par. 1). CITES has been integrated into the EU legal framework since 1984 through the EU Wildlife Trade Regulations, including: Council Regulation (EC) 338/97 of 9 December 1996. In addition, the EU adopted an Action Plan against Wildlife Trafficking in 2016.

Currently there are 183 Parties to CITES. All Danube-Carpathian countries are Parties to CITES. In 2015, the EU became a Party.

The EU Environmental Crime Directive (ECD) – The ECD (2008/99/EC) aims at strengthening the protection of the environment through criminal law. The ECD is an essential piece of EU legislation, promoting a unified approach to environmental protection across the EU. The ECD compels EU member states to provide criminal penalties for offenses against the environment. Several countries of the DC region have introduced crimes against the environment and wildlife into their criminal codes. However, harmonization of national penal codes with the environmental crime provisions of the ECD varies significantly by state, with some achieving full compliance and others only addressing basic pollution crimes. In some cases, national criminal law provisions are covering only certain aspects of the offenses listed in the ECD. Furthermore, sanctions imposed for environmental crimes, particularly with regards to the size of fines, vary significantly from state to state. The main obstacle is that the ECD does not create criminal law, but requires governments to provide criminal penalties for environmental offences under their own national laws.

The European Union Habitats and Birds Directives are key legal instruments to protect nature and biodiversity in Europe. Under the Habitats Directive (92/43/EEC of 21

May 1992) over 1.000 animal and plant species, as well as 200 habitat types are protected in various ways (inter alia through designated sites of Community importance included in the NATURA 2000 network). Under the Birds Directive (2009/147/EC of 30 November 2009), more than 500 wild bird species naturally occurring in the EU are protected through inter alia the designation of special protected areas and hunting bans.

The European Union Forest Law Enforcement Governance and Trade (FLEGT) - The FLEGT Action Plan is a response and policy for the European Union to fight illegal logging and associated trade. It led to the EC FLEGT Regulations (2173/2005 of 20 December 2005 and 1024/2008 of 17 October 2008), a scheme for Voluntary Partnership Agreements between countries and the EU to ensure that only legally harvested timber is imported into the EU. The agreements promote better enforcement of forest law and an inclusive approach involving civil society and the private sector.

The European Union Timber Regulation (EUTR) – the EUTR (995/2010 of 20 October 2010) lays down the obligations of the operators who place timber and timber products on the market. Under the Regulation, placing illegally harvested timber and products on the EU market is prohibited. Timber accompanied by a Forest Law Enforcement, Governance and Trade (FLEGT) or Convention on International Trade in Endangered Species (CITES) license/permit will be accepted as legal. In all other cases, operators must exercise “due diligence” when they introduce imported and domestic timber or timber products to the EU market to ensure “negligible risk”.

Apart from legislative measures, the EU has also sought to increase demand for legal and sustainable timber and timber products by encouraging both private and public sector procurement policies that give preference to legally harvested timber and timber products. In the public sector these form part of a broader effort to ‘green’ public procurement policies. An increasing number of EU member states is adopting green public procurement policies requiring timber and timber products to be from legal and/or sustainable sources. Many EU private sector timber trade and retail federations and companies have made commitments through Codes of Conduct to eliminate illegally harvested timber from their supply chains.

The Convention on Biological Diversity (CBD) main objectives are to ensure the conservation of biodiversity as well as the sustainable use of biological resources and the access to benefits arising out of the utilisation of

genetic resources. All Danube-Carpathian countries are Parties of the Convention.

As it was adopted in 1992, in the form of a ‘framework convention’, the CBD leaves it to individual states to determine how best to implement and enforce its legal provisions (through National Biodiversity Strategies and Action Plans). In 2011, the EU adopted an ambitious Biodiversity strategy setting out 6 targets and 20 actions to halt the loss of biodiversity and ecosystem services in the EU by 2020.

The (Bonn) Convention on Migratory Species (CMS) is the only global and UN-based Convention for the conservation and management of terrestrial, aquatic and avian migratory species throughout their range. As of October 2015, the Convention had 122 Parties including the Danube-Carpathian countries, except Bosnia & Herzegovina.

The CMS covers a great diversity of migratory species, listed in Appendix I – Threatened Migratory Species, or II – Migratory Species requiring international cooperation. Parties cooperate to conserve listed species and their habitats by establishing multi-lateral agreements, such as the EUROBATS (concerning the European bats population) and the Middle European Population of the Great Bustard. The Parties adopted guidelines to combat the risk of poisoning of migratory birds.

Developed under the CMS umbrella is the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA). The Agreement is dedicated to the conservation of migratory water birds and their habitats across Africa, Europe, the Middle East, Central Asia, Greenland and the Canadian Archipelago

The Bern Convention on the Conservation of European Wildlife and Natural Habitats is a binding international legal instrument that aims to ensure conservation of wild fauna and flora species and their habitats, covering most of the natural heritage of the European continent and extending to some States of Africa. In 1989, contracting parties to the Bern Convention launched the creation of a special tool for the protection of European natural habitats: The Emerald Network. This is an ecological network made up of Areas of Special Conservation Interest at national level. This network is considered as one of the main tools for the Contracting Parties to comply with their obligations under the Bern Convention. Several Danube river basin countries have set up this network (Bosnia & Herzegovina, Montenegro, Serbia and Ukraine).

The United Nations Office on Drugs and Crime (UNODC) established in 1997, is a global leader in the fight against illicit drugs and international crime. Through its Global Programme for Combating Wildlife and Forest Crime, UNODC helps to improve crime prevention and assists with criminal justice reform in countries. It co-launched the International Consortium on Combating Wildlife Crime (ICWC) in 2010, bringing together INTERPOL (the world largest international police organization, which set up an Environmental Crimes Committee in 1992), the CITES Secretariat, the World Customs Organisation (WCO) and the World Bank. ICWC aims to promote effective law enforcement nationally and internationally through inter alia the development and country level application of the Wildlife and Forest Crime Analytic Toolkit and the provision of training in investigative techniques to judges, lawyers, customs and wildlife officials worldwide.

Europol is based in The Hague, Netherlands, and is the European Union’s law enforcement agency, assisting the EU member states in their fight against serious international crime and terrorism. According to the ‘Threat Assessment 2013 Environmental Crime in the EU’, the most prominent and organized environmental crimes in the EU are the trafficking in illicit waste and in endangered species. Europol works closely with law enforcement agencies in the 28 EU Member States and in other non-EU partner states and organizations.

The European Union Network Implementation and Enforcement of Environmental Law (IMPEL) is a network of the environmental authorities of EU member states, acceding and candidate countries and Norway. It provides a framework for policy makers, environmental inspectors and enforcement officers to exchange ideas and encourages the development of enforcement structures and best practices.

The European Network of Prosecutors for the Environment (ENPE) is a non-profit International Association established in 2012 in Belgium. Its main aim is to support the operative work of environmental prosecutors. It cooperates with the Network for the Implementation and Enforcement of Environmental Law (IMPEL) and the EU Forum of Judges for the Environment (EUFJE). The prosecutors’ network completes the chain of representative bodies across Europe for those involved in tackling environmental crime, from enforcement officers, through to prosecutors and on to judges.

The Themis Network’ Managing Natural Resources

and Combating Environmental Crime’ is an informal network of national authorities responsible for natural resources management and protection, and for the development, implementation and enforcement of environmental laws, in particular on nature conservation, in the EU and other countries in South-Eastern Europe. The network’s mission is to protect the environment by improving the capacities of its members to implement and enforce legislation on natural resources management and forestry, and to combat environmental crimes.

The European Network against Environmental Crimes (ENEC) is a BirdLife Europe initiative, bringing together members of BirdLife Europe and representatives from the ENPE, the EUFJE, police forces (EnviCrimeNet), the European Federation of Associations for Hunting and Conservation (FACE), and the CMS to combat environmental crime and improve the implementation of Community legislation on environmental crime.

The ENEC has adopted proposals for a European Action Plan to combat illegal poisoning of wildlife. The measures agreed contribute to the implementation of the EU Guidelines to prevent the risk of poisoning of migratory birds adopted by the parties to the Convention on Migratory Species (CMS).



UN
environment



eurac
research

**UN Environment
Vienna Programme Office
Secretariat of the Carpathian Convention
Vienna International Centre
P.O. Box 500
1400 Vienna, Austria**

**Tel. (+43 1) 260 60 83038
unep@unvienna.org**

**Eurac Research
Viale Druso 1
39100 Bolzano, Italy**

**Tel. (+39) 0471 055 055
info@eurac.edu**

**World Wide Fund for Nature
Danube Carpathian Programme Office
Ottakringer Strasse 114-116
1160 Vienna, Austria**

**Tel. (+43 1) 52454 70 0
office@wwfdcp.org**