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<https://doi.org/10.3013/cepol-bulletin.envcrime.2024.fwd-editorial>

The *European Law Enforcement Research Bulletin* has conquered a very particular space in the academic community and among law enforcement practitioners because of its innovative way of approaching law enforcement subjects. Taking on this new challenge, we realised we needed to progress and step forward in law enforcement research, creating digital object identifiers (DOIs) for all our articles and editions while continuing to follow the policy of the European Union Agency for Law Enforcement Training (CEPOL) for this bulletin of keeping up with new technologies and advancing efforts to ensure open access. While continuing to publish our general editions, for which we welcome all submissions, and ensuring the timely availability of the research findings turning it into an online publication with a rapid publication policy, maintaining the conference editions and starting the new approach of publishing thematic editions is sure to benefit both readers and authors by highlighting and improving research into the very relevant topics covered by our training portfolio.

Adopting a thematic focus for our research bulletins represents a considerable evolution from our past editions. By concentrating on specific crime areas or evolving security topics, we aim to provide in-depth analysis, foster a deeper understanding of emerging threats and offer practical solutions that can be readily implemented in the field. Integrating focused research into our training programmes ensures that law enforcement officials are equipped with the latest knowledge and best practices to tackle contemporary challenges effectively.

A distinctive aspect of this edition is the inclusion of practice-oriented essays developed to follow up on CEPOL training activities. These contributions from law enforcement practitioners offer valuable insights and practical perspectives that complement the scientific articles. By bridging the gap between theory and practice, we aim to foster a more dynamic exchange of knowledge that benefits both researchers and practitioners. This unique feature of our new thematic editions highlights the collaborative spirit of our community and underscores the importance of integrating practical experience with academic research. It ensures that our publications remain grounded in real-world applications, making them highly relevant and useful to the law enforcement community.

The new editorial strategy of the *European Law Enforcement Research Bulletin* aims to bridge the gap between practice and science, addressing the need for high-quality, impactful research, while also meeting the demands of the scientific community. This approach is designed to ensure that our publications not only serve as valuable resources for practitioners but also contribute to the academic discourse on law enforcement and public safety. By encouraging a closer relationship between researchers and practitioners, we can facilitate the development of innovative solutions to the complex challenges facing our societies today.

This first thematic edition will touch on environmental crime from diverse, kaleidoscopic perspectives. The European Union has recognised the critical importance of combating environmental crime, as reflected in the environmental crime directive (Directive (EU) 2024/1203 of 11 April 2024 ⁽¹⁾) and the 2022–2025 European multidisciplinary platform against criminal threats (Empact) ⁽²⁾. These frameworks highlight the necessity of a concerted, cross-border approach to addressing the complex and transnational nature of environmental crime.

The first part of this first thematic edition, on integrating academic research, starts with a brilliant introductory chapter by Professor Michael Faure, which discusses in detail the new environmental crime directive of the European Commission.

Following many detailed discussions, Professor Faure concludes that the enforcement of environmental law in the EU has been problematic for a long time. Environmental crime is, according to the United Nations, one of the most prevalent crimes worldwide and within the EU. According to Professor Faure, the European legislator has to be applauded for having produced an excellent piece of forward-looking, progressive legislation that, including by international standards, stands out.

Pernille Marie Agerholm Moesborg, author of the first article, ‘Reflections on some of the everyday challenges due to the complexity of waste crime legislation’, continues the discussion around legislation, presenting an astonishing case study from everyday life, with the Danish prosecutor showing that the complexity of legislation can have a fundamental impact on court rulings. The case study concerns a criminal case on the cross-border transport of waste, namely from Sweden through Denmark to Germany. The main regulation relevant to this criminal case was an EU one – Regulation (EC) No 1013/2006. An aluminium skimmings’ shipment from Sweden to Germany smelled strongly of ammonia. Danish authorities found that the shipment was not compliant with the ‘Annex VII procedure’. The prosecutor’s office filed charges against the dispatching company. The judge acquitted the defendant due to the wording of the indictment. The author concludes by remarking that making the legislation more transparent is crucial to ensuring that the main principles of that legislation can be followed in the courtroom.

The next article, authored by Ragnhild Sollund and Daan van Uhm, with the title ‘The reptile trade and law enforcement in Norway and the Netherlands: time for a ban?’, brings our attention to reptiles. More than one in five reptile species is threatened with extinction. Research on the reptile trade in Norway and the Netherlands was analysed to unravel overlapping themes and synthesise empirical findings. According to the authors, Meso-America is the largest reptile-exporting region, closely followed by sub-Saharan Africa. Traders declare reptiles as captive bred, even when they have been caught in the wild. Reptile laundering occurs through countries that are not members of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

⁽¹⁾ [Directive \(EU\) 2024/1203 of the European Parliament and of the Council of 11 April 2024 on the protection of the environment through criminal law](#) and replacing Directives 2008/99/EC and 2009/123/EC (OJ L, 2024/1203, 30.4.2024).

⁽²⁾ <https://www.europol.europa.eu/crime-areas-and-statistics/empact>.

Ragnhild Sollund and Daan van Uhm show us in the article that, worldwide, 36 % of reptile species are being traded, and many of them come from wild populations. Europe is one of the biggest markets for illegally traded reptiles. In this article, issues related to law enforcement associated with the reptile trade are discussed, showing that the Netherlands is considered both a transit and a destination country in the international trade of Horsfield's tortoises. Many reptile traders in the Netherlands are unaware of trade restrictions and reptile-laundering practices, particularly when it concerns non-CITES species. In addition, uncovering laundered reptiles presents a major challenge for Dutch and Norwegian law enforcement agencies. At the same time, the article finds that wildlife trade on the dark web is not as prevalent as the trade that goes on in open internet channels, such as through social media.

In the next article, 'Combating environmental crime: illegal cross-border waste transport and utilising modern technologies', Michal Cikhart shows that environmental crime is one of the world's fastest-growing security problems. The Basel Convention plays a crucial role in the international regulation of cross-border movement of hazardous waste. In 2021, the author refers that EU Member States exported almost 15 million tonnes of non-hazardous waste. Updating and strengthening legislation related to illegal waste transport could deter potential offenders.

This contribution provides a comprehensive introduction to the issue of environmental crime and illegal cross-border waste trafficking, with a focus on the use of EU legislation to combat these phenomena. Within the EU, these issues are systematically addressed through Directive 2008/99/EC. Tackling environmental crime is crucial for preserving a healthy environment for future generations. Success in this area is inextricably linked to the effective detection and investigation of crimes. The Basel Convention plays a crucial role in the international regulation of cross-border movement of hazardous waste, while EU legislation regulates waste categorisation, disposal and recycling processes. The Basel Convention categorises hazardous waste and establishes rules for its export, import and transport. Since the enlargement of the Schengen area in 2007, cross-border waste transport within the EU has increased.

Illegal waste transport has become a global issue that requires coordinated efforts from multiple countries. The use of modern technologies (drones, 3D scanners, etc.) by law enforcement agencies in the field of illegal cross-border waste transport appears to be a necessity. Updating and strengthening legislation related to illegal waste transport, including the introduction of strict sanctions, could deter potential offenders.

In the next article, Michal Phillip William Screen and his co-authors present an excellent overview of the EU-funded Emeritus project, which aims to improve the effectiveness of law enforcement agencies in identifying, locating and collecting evidence about environmental crimes. A lack of capacity across the entire enforcement chain, involving investigators, prosecutors and judges, inhibits the work of frontline forces. Common concerns include the requirement for permits, uncertainties about data storage and the centralisation of deployment decisions.

The Emeritus training needs assessment, involving both internal and external practitioners, was conducted through focus groups in five European countries. Interviews were conducted with the law enforcement and border guard authorities involved in Emeritus to identify the main factors hampering the uptake of cyber-physical technologies such as drones, satellites and sensors. The most significant gaps in responding to environmental crime were identified.

Researchers developed a library of state-of-the-art super-resolution models that were tested in different scenarios relevant to the study of waste. The 18 models were trained using a vast dataset of medium-resolution images (Sentinel-2), together with very high-resolution imagery (SPOT), to generate their high-resolution equivalents. The training methodologies employed were cutting edge, involving adversarial training that pits two networks against each other to improve image quality.

The next article, 'Applying remote sensing and data science techniques to enhance the monitoring and detection of environmental crime: examples from the NarcoView project', is authored by Tatjana Kuznecova, Nilay Swarge & Jaap Knotter. The Netherlands has gained an international reputation as a centre for the production and export of synthetic drugs such as MDMA and amphetamine, according to the authors. Dumping and discharge of synthetic drug waste is a serious environmental crime. The main regions of the EU facing problems related to drug waste dumping are the southern part of the Netherlands and the northern part of Belgium.

The research presented in this article was conducted within the framework as part of the NarcoView project, funded by the police component of the Internal Security Fund (ISF Police). The concept involves combining data from various sources and utilising data-driven algorithms that enable the prioritisation and/or inspection of larger areas in a shorter time. Three scenarios were tested for feasibility, of which two were selected for further research.

Dumping of drug waste is a serious environmental crime. Dumped chemicals penetrate the soil, groundwater and sewers, contaminating the environment. Disrupting this form of organised crime is one of the priorities of the European agenda on security. The NarcoView project aims to develop a platform for monitoring and detecting environmental crime for end users such as law enforcement authorities.

In the sixth and final article of the first part of this thematic edition, entitled 'Tackling environmental crime and harm by large industrial facilities: lessons learned based on two Dutch case studies', Lieselot Bisschop, Karin van Wingerde & Sammie Verbeek present Hoogovens/Tata Steel and DuPont de Nemours/Chemours as examples of large industrial facilities that have been polluting the environment in the Netherlands. Both companies are liable for the consequences of per- and polyfluoroalkyl substance (PFAS) contamination. Large class-action lawsuits have now been filed against both companies. Criminal investigations are being conducted into whether the companies and their executives have endangered public health.

Concerns about PFAS contamination by Chemours emerged in the Netherlands in 2015. Fragmented supervision and enforcement of environmental laws and regulations has led to a lack of coordination and citizens feeling overlooked. Countering fragmentation requires good information exchange between the different actors responsible for supervision and enforcement. The case of DuPont de Nemours/Chemours shows the consequences of this fragmentation.

A lack of high-quality data on environmental crime hinders environmental law enforcement. Data can be missing or incorrect, and in some cases, it is not possible to identify individual companies. The most frequently mentioned criticism of environmental law enforcement is the long-term failure to take action against – or the tolerance of – environmental law violations.

In the second part of our thematic edition, 'Essays of practice', the first article is written by Volodymyr Veretiannikov, one of the participants of the environmental crime workshop held at CEPOL Budapest in 2023. The article, 'Legal measures to combat and prevent forest fires in the EU and Ukraine', presents us with the case of forest fires, which are a widespread and dangerous natural phenomenon in EU Member States and Ukraine. Fires often occur due to people violating the rules of safe behaviour in the forest. In 2020, the Verkhovna Rada of Ukraine adopted Law 556-IX, which increased the fine for offenders by 10–15 times. According to official data of the Head of the State Forest Resources Agency of Ukraine, 569 fires were extinguished in forests in 2021.

For EU Member States and Ukraine, the main negative impact of forest fires is the death of a vast number of individuals of various species of fauna and flora. Forest protection in Member States is regulated by internal administrative, land and forest legislation. The pace of harmonisation of Ukraine's national laws with EU legislation has been very slow, with Ukraine still facing serious environmental problems that pose a high risk to ecosystems and the health of the population.

Ukraine uses traditional methods that involve outdated approaches to preventing and containing the spread of forest fires. However, recent advances in society have had an impact on the development of the national forest fire prevention system. The State Forest Guard of Ukraine, a law enforcement agency, needs to be reformed and given the authority to investigate environmental crime.

The next article is authored by Pedro Alexandre Maia Ribeiro, another participant of the very successful workshop held in Budapest. In this article, 'Europe Latin America programme of assistance against transnational organised crime (El PACCTO): the Jaguar Network', the author writes about Portugal having participated in Operation Madeira de Lei, which aimed to combat the illegal trade of and crimes committed against wildlife. More than 350 enforcement actions took place during the days of joint action in September 2022. Investigators detected many irregularities in 17 companies: 1 in Italy, 1 in the Netherlands, 3 in Spain and 12 in Portugal. The author concludes that collaborating with a network facilitates the harmonisation of legal frameworks, extradition agreements and mutual assistance treaties between countries. This streamlines legal processes and enables the more effective pursuit and prosecution of criminals across borders. By working together, law enforcement agencies can send a strong message of deterrence to potential offenders.

The final article, 'A well-functioning organisation for detecting and investigating environmental crimes: what is needed and how to get there? Experiences from Sweden', was written by Henrik Forsssblad. He closes our thematic edition by saying that environmental crime is a relatively new area for law enforcement authorities to handle in many European countries. Investigating environmental crime is complicated and requires new investigation methods and competences, and a multidisciplinary approach that is different from what police organisations are used to. The most serious concern with environmental crimes is that the large majority of them remain undetected.

There are often no individual victims or plaintiffs in environmental crimes, the author argues. These factors have an impact on how environmental crimes are detected and investigated. When applied to environmental crimes, intelligence can be very effective in detecting more serious offences at an early stage. The strict legislation regarding confidentiality in Sweden, and probably in other countries as well, is regarded as a major obstacle. The Swedish Environmental Act is now being revised for the second time.

As can be seen from this very brief overview of the edition, the societal impact of environmental crime cannot be overstated. From illegal waste dumping and wildlife trafficking to air and water pollution, these crimes have far-reaching consequences. They undermine sustainable development, exacerbate climate change and pose significant risks to public health and biodiversity. Moreover, the effects of environmental crime endanger the future of current and subsequent generations, threatening the very fabric of our ecosystems and the health of our planet. The illicit profits generated from environmental crimes often fund other forms of organised crime, further destabilising societies and economies.

Thematic research is crucial for the development of effective law enforcement practices and policies, as demonstrated in this edition. By focusing on specific issues such as environmental crime, we can provide targeted training and resources that address the unique challenges posed by these threats. This approach not only enhances the effectiveness of our law enforcement agencies but also contributes to the broader goal of creating a safer and more resilient society.

We hope that you enjoy reading the articles; we also very much hope that they stimulate your critical thinking and encourage you to make proposals, participate in our workshops, training and courses, and take advantage of all CEPOL offers, enabling you to increase your contribution to a better society.

We want to end with a word of gratitude to all the authors, reviewers and editorial board members, our management team at CEPOL and all our colleagues who have helped us succeed with this project. We really hope you enjoy reading this bulletin and that it helps to increase your engagement with us at CEPOL.