



# National waste crime survey report 2021 - findings and analysis

Chief Scientist's Group report

October 2021

We are the Environment Agency. We protect and improve the environment.

We help people and wildlife adapt to climate change and reduce its impacts, including flooding, drought, sea level rise and coastal erosion.

We improve the quality of our water, land and air by tackling pollution. We work with businesses to help them comply with environmental regulations. A healthy and diverse environment enhances people's lives and contributes to economic growth.

We can't do this alone. We work as part of the Defra group (Department for Environment, Food & Rural Affairs), with the rest of government, local councils, businesses, civil society groups and local communities to create a better place for people and wildlife.

Published by:

Environment Agency  
Horizon House, Deanery Road,  
Bristol BS1 5AH

[www.gov.uk/environment-agency](http://www.gov.uk/environment-agency)

© Environment Agency 2021

All rights reserved. This document may be reproduced with prior permission of the Environment Agency.

Further copies of this report are available from our publications catalogue:

[www.gov.uk/government/publications](http://www.gov.uk/government/publications) or  
our National Customer Contact Centre:  
03708 506 506

Email: [research@environment-agency.gov.uk](mailto:research@environment-agency.gov.uk)

Author(s):

Danielle Morrissey, Matthew Hess,  
Hannah Watson

Keywords:

Waste crime, survey, illegal waste sites,  
misdescription, deterrence, enforcement.

Research contractor:

SYSTRA Limited, 3<sup>rd</sup> Floor, 5 Old  
Bailey, London, EC4M 7BA

Environment Agency's Project Manager:  
Danielle Morrissey

Citation:

Environment Agency (2021) National  
waste crime survey report 2021.  
Environment Agency, Bristol.

# Contents

Foreword.....	4
1. Introduction .....	5
1.1. Waste crime – an increasing challenge .....	5
1.2. Background .....	6
2. Findings and analysis .....	7
2.1 National waste crime survey - findings 2021 .....	7
Headline findings.....	7
Scale of waste crime .....	7
Impacts of waste crime.....	10
Deterrence posture and waste crime.....	12
Area of Interest – Misdescription of waste.....	14
3. Conclusion .....	16
4. Methodology note .....	17
Background .....	17
Methodology.....	17
Benefits .....	17
Limitations .....	18
National Waste Crime Survey 2021 .....	18
Environment Agency strategy .....	19
References .....	20

# Foreword

Malcolm Lythgo, Head of Waste Regulation at the Environment Agency summarised the findings from the National Waste Crime Survey:

*“Waste criminals undercut legitimate business, damage our environment, and are a blight on local communities. The more we know about how they operate and the impact of our enforcement action, the better we can target our resources to combat them.”*

*The latest results from the 2021 National Waste Crime Survey provide the Environment Agency with valuable insight on the scale and impact of waste crime. It contains information on how legitimate business is impacted, how our enforcement action and criminal sanctions can deter criminals and highlights a disparity between waste crime incidents that are reported and the perceived scale of waste crime.”*

**Environmental incidents and waste crime can be reported through the following channels which provide a 24-hour service:**

- **Anonymously by calling Crimestoppers: 0800 555 111**
- **Environment Agency Incident hotline (England): 0800 80 70 60**

# 1. Introduction

## 1.1. Waste crime – an increasing challenge

Waste crime costs the economy in England an estimated £1 billion per year. This represents a 55% increase since the last estimate made in 2015 of £604 million per year (*Counting the Cost of Waste Crime Report 2021, ESA*). Criminality in the waste sector is on the rise and is increasingly complex and serious in nature, causing significant harm to the environment, local communities and legitimate business. Sir James Bevan, Chief Executive of the Environment Agency, described waste crime as the ‘new narcotics’ as it can often be as profitable as drug trafficking - but without the same sanctions.

**Figure 1: The increasing cost of waste crime**



The environmental impacts of waste crime include pollution of surrounding land and waters, as well as dangerous fumes released into the air from waste fires. The prevalence of waste crime also prevents the UK from realising its climate ambitions by removing waste from the circular economy and increasing the demand for ‘new’ resources and materials. The circular economy will not only help the UK to reduce its carbon emissions it is also estimated that by 2035 it will have created 450,000 jobs in the UK (Green Alliance, 2019).

Waste crime significantly reduces the viability and competitive advantage of legitimate businesses that handle and dispose of waste appropriately, working within Environment Agency regulation. Criminals undercut these businesses, creating unfair competition, and subsequently the cost of remediation of illegally handled waste falls to public services and/or landowners.

As the scale and cost of criminality within the waste sector rapidly increases, the Environment Agency continues to see threats to its enforcement budget. Without appropriate funding, the challenge of fighting waste crime will grow, the impacts will increase, and those trying to operate within the regulations will find it increasingly difficult to do so.

## 1.2. Background

Waste criminals actively seek to avoid detection by the Environment Agency. This means the data and intelligence held on our databases can only ever paint part of the picture. Understanding the scale of this information gap and tracking it over time will allow the Environment Agency to better understand the impact of our interventions. This will help us to be more effective and efficient at achieving our ambition of eliminating waste crime.

The National Waste Crime Survey was established to understand the information gap and provide the Environment Agency with independent indicators on the scale and nature of waste crime activity in England. The survey also explores the impacts on those affected, and the perceptions of what is likely to motivate and deter waste criminals.

The survey ran for its second year in March 2021 and invited the waste industry, farmers, landowners, local councils, and service providers to share their experience and observations of waste crime. We plan for the survey to run every two years to establish a long-term baseline of waste crime activity and understand the impacts of enforcement. This will inform our strategic approach to tackling waste crime and ensure that our resources are deployed to greatest effect.

Please note all findings presented here are based upon subjective responses and should be carefully interpreted. Please see the methodology note at the end of this document for further information on the sample, project background and methodology.

## 2. Findings and analysis

### 2.1 National waste crime survey - findings 2021

#### Headline findings

The following key findings are based on the twelve months prior to March 2021:

- Waste crime is perceived as widespread with 18% of all waste estimated to be illegally managed.
- Notably more respondents believe that waste crime increased, rather than decreased.
- Financial and social impacts are the most frequently reported issues faced by those affected by waste crime.
- The size of financial gain combined with low likelihood of being caught are perceived to be the key drivers of waste crime.
- Reporting rates are low with the sample group estimating that just 25% of waste crime events are reported to the Environment Agency.

#### Scale of waste crime

The observations and experiences reported by those who took part in the National Waste Crime Survey 2021 suggest that waste crime in England is endemic and that activity is on the rise, with COVID-19 contributing to an increase in the last 12 months. This perception contrasts with our data on verified reports that shows that at the end of March 2021, the number of active illegal waste sites was the lowest we have ever recorded. Several factors will drive this difference, including the impact of COVID-19 on our operational ways of working and it is this type of difference between our verified reports and the survey that demonstrates the value of the exercise.

The 2021 survey showed that waste crime is perceived to be widespread, with those from the waste industry estimating that 18% of all waste is illegally managed, equating to approximately 34Mt. This figure is slightly lower than the 20% reported in the 2020 pilot survey, however the change is within the margin of error for both surveys and so is not notable. Please see the methodology note for limitations of this comparison.

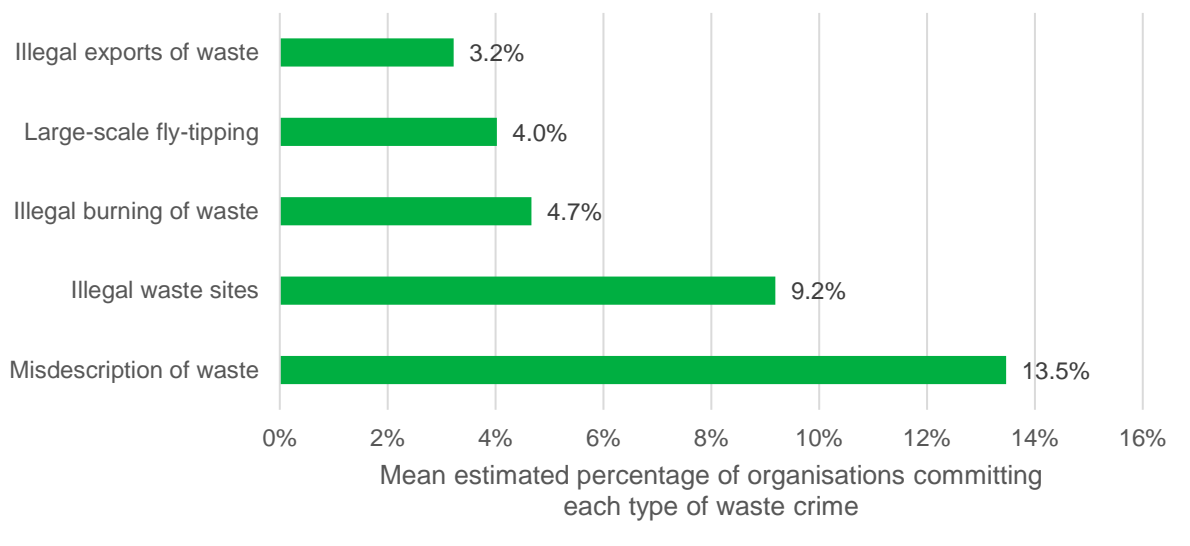
The estimates of the scale of waste crime generated by both surveys are markedly larger than other estimates of scale and should be treated cautiously. We will be better able to assess the reliability of this figure as future surveys generate more data points.

**Figure 2: the volume of waste estimated to be illegally managed**



The misdescription of waste is perceived by the waste industry to be the most prevalent waste crime type, followed by the operation of illegal waste sites (Figure 3).

**Figure 3: Estimated percentage of organisations committing each type of waste crime**



The respondents were asked to provide their perception on whether different waste crime types have increased based on their observations and experience in the last twelve months; large scale fly tipping was perceived to have increased by the most people, with 55% of the sample reporting an increase.



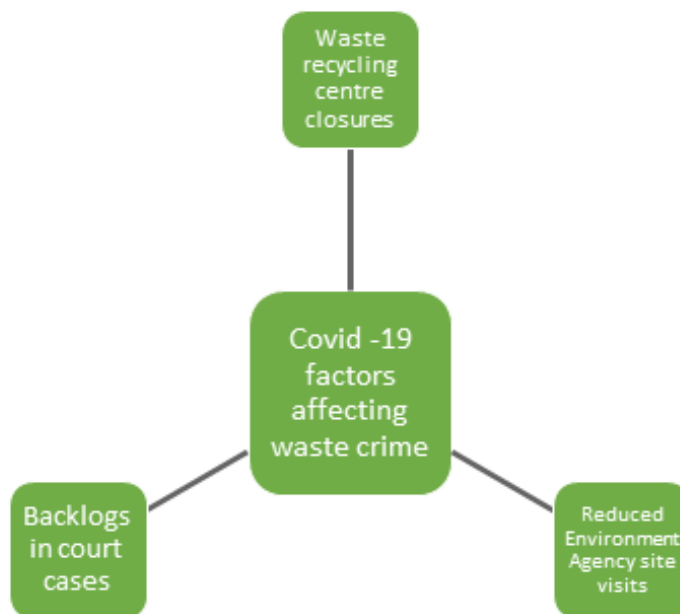
**Figure 4: A large scale fly tipping incident**



The respondents were also asked about national changes that may have influenced waste crime. The most identified driver of the perceived increase in waste crime over the last 12 months was COVID-19, with 62% reporting that it had led to an increase.

COVID-19 and the subsequent impacts on ways of working were discussed with individuals during the interviews, the key contributors suggested by those who were interviewed are presented in Figure 5.

**Figure 5: Contributing factors identified due to Covid-19**



The coronavirus pandemic has created additional challenges for tackling waste crime. We have had to operate within the restrictions laid out in law and have prioritised the safety of staff and customers when deciding whether we should attend a site in person. Our staff have adapted to the challenge and developed innovative ways of working; making use of

modern technology so that we can continue to deliver our regulatory duties and respond to incidents.

Malcolm Lythgo, Head of Waste Regulation at the Environment Agency explained how the Environment Agency had adapted during the pandemic:

“Where appropriate, our local teams are now doing more desk-based investigative work, which has the dual benefit of increasing efficiency, while reducing the carbon emission associated with driving to a site. Teams have also increased the use of remote sensing to carry out inspections. As well as allowing inspections at a safe distance, the technology allows for visuals of very large or hard to access sites. As a result of the efficiencies and capabilities that the innovations bring, they are likely to be included in the way we work into the future. Using intelligence and other techniques in this way will allow us to maximise the effectiveness of our other interventions like face-to-face site visits.”

EU Exit was thought to have played less of a role in influencing levels of waste crime, with only 17% believing that it had led to an increase and 51% reporting that it had no impact.

### **Impacts of waste crime**

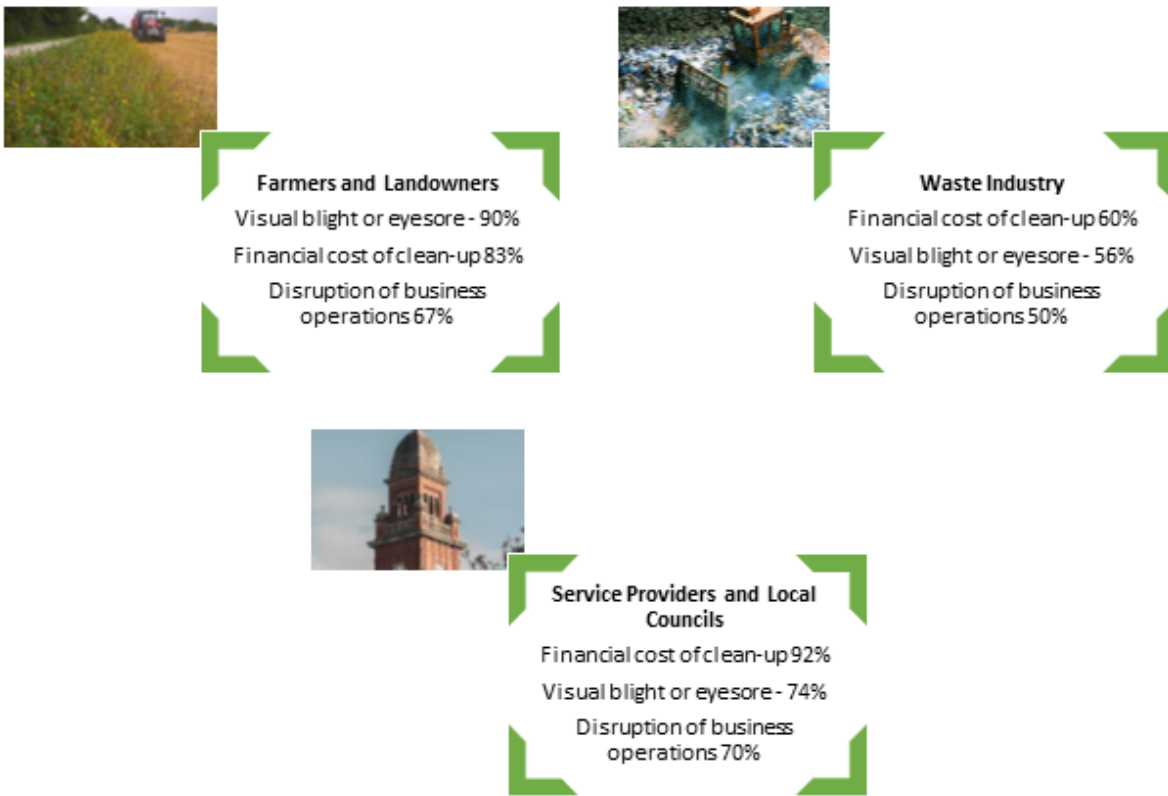
The impacts of waste crime are far reaching; negatively affecting human health, the environment, businesses, and our public services. In this survey, the Environment Agency set out to hear from those affected by waste crime in England to establish what impacts they had experienced in the 12 months prior to the survey.

Overall, those that were affected by waste crime in England most frequently reported experiencing economic impacts with 73% reporting that they had incurred the financial cost of clean-up and 58% experiencing disruption to business operations.

The societal impact of the dumped waste becoming a ‘visual blight or eyesore’ disproportionately affected those from the farming community and landowners with 90% reporting this impact.

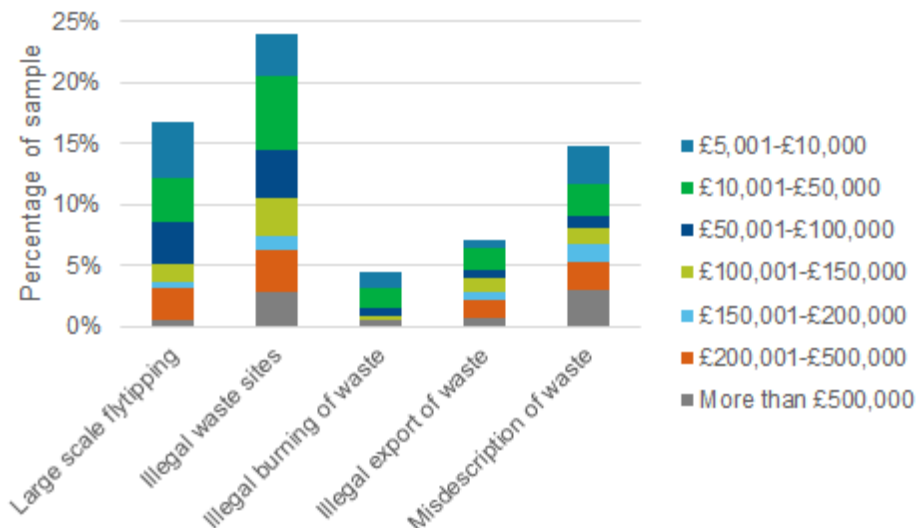
Service Providers and local councils were most affected by the ‘financial cost of clean-up’ with 92% reporting this.

**Figure 6: The top 3 most experienced impacts of waste crime according to the sub-sample groups**



Those in the waste industry reported experiencing the greatest financial impacts from illegal waste sites, followed by large scale fly tipping and the misdescription of waste (Figure 7). Approximately 24% of respondents reported over £5,000 in costs to their organisation in the last 12 months as a result of illegal waste sites, followed by large scale fly tipping and misdescription with 17% and 15% respectively.

**Figure 7: Estimates of the total financial cost (including loss of business) of waste crime to waste industry respondents in the past 12 months**

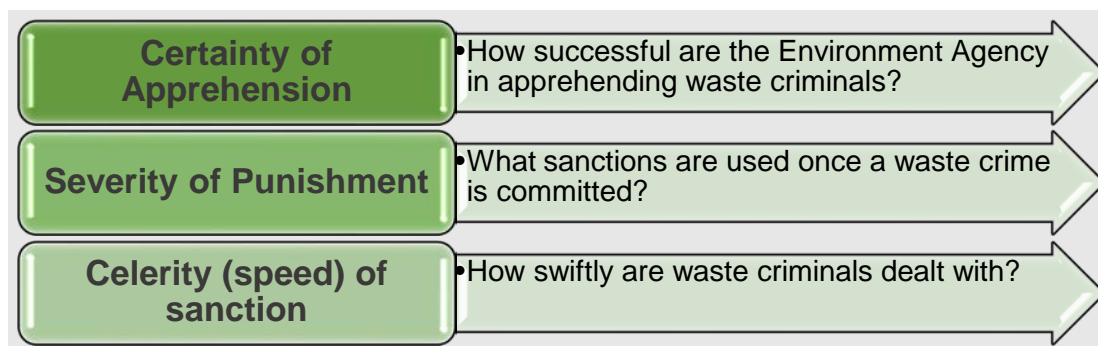


## Deterrence posture and waste crime

Traditionally our role as an environmental regulator has been to ensure compliance and impose sanctions on those who breach environmental regulations. However, with the persistence in observed waste crime activity and the involvement of organised criminal groups it is essential that our approach responds and adapts to protect the environment, legitimate businesses and communities.

Deterrence theory assumes that would-be offenders balance the benefits and costs of crime based upon three key components: the certainty of apprehension, the severity of the sanction, and the swiftness of the sanction being delivered (Braithwaite & Makkai, 1991; Cohen, 2000; Simpson, 2002; Gray & Shimshack, 2011 as cited in Wingerde, 2016). The three elements (Figure 8) must be present to produce an effective deterrent and crucially the threats must be communicated to would-be criminals in order for the deterrent to be effective (Braga, A et al, 2019).

**Figure 8: The three components of deterrence theory**



Research conducted on regulation, enforcement, and its effect upon waste crime is limited but more general conclusions on business compliance suggests that the certainty of apprehension is the most important factor (Braithwaite and Makkai, 1991 as cited by Wingerde, 2016).

The survey asked the sample for their opinions on what they believe to be the motivating factors for waste criminals, how effective Environment Agency measures are on deterring different groups and what they perceive to be the most important feature of a waste crime deterrent.

When asked which factors motivate waste crime the ‘size of financial gain’ was the most identified reason with the three key components of the deterrence theory featuring in the top five (Table 1).

**Table 1: The key motivators of waste crime**

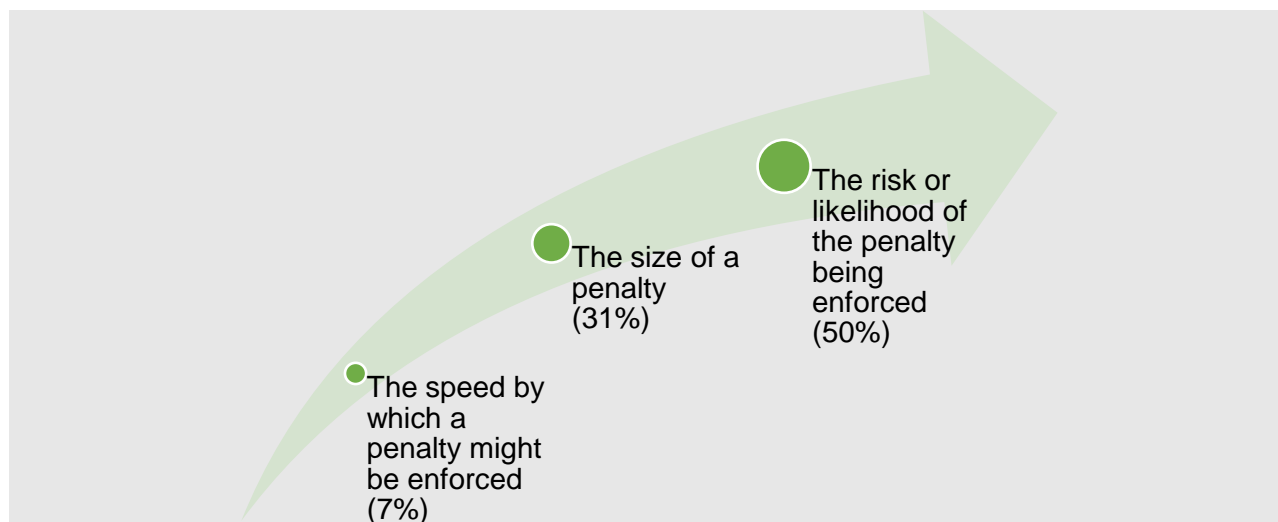
Motivators of waste crime	Percentage
Size of financial gain	84%
Low likelihood of detection	75%
Low likelihood of penalties or enforcement measures being applied	64%
Penalties or enforcement measures do not match the potential gains	57%
Slow delivery of penalties or enforcement measures	46%

The findings reflect the opportunity for waste criminals to profit from disrupting legal and regulated waste streams. The most cited motivators indicate that the Environment Agency needs to strengthen its deterrence posture across all deterrence elements. Raising awareness of enforcement efforts to tackle waste crime also plays a significant role in improving the deterrence posture of the Environment Agency.

85% of respondents thought that waste crimes are more likely to be committed by repeat offenders. 35% of the sample thought they were more likely to be committed by organised criminal groups. When asked how effective Environment Agency measures are at deterring these groups over half of the sample felt that they were fairly or very ineffective.

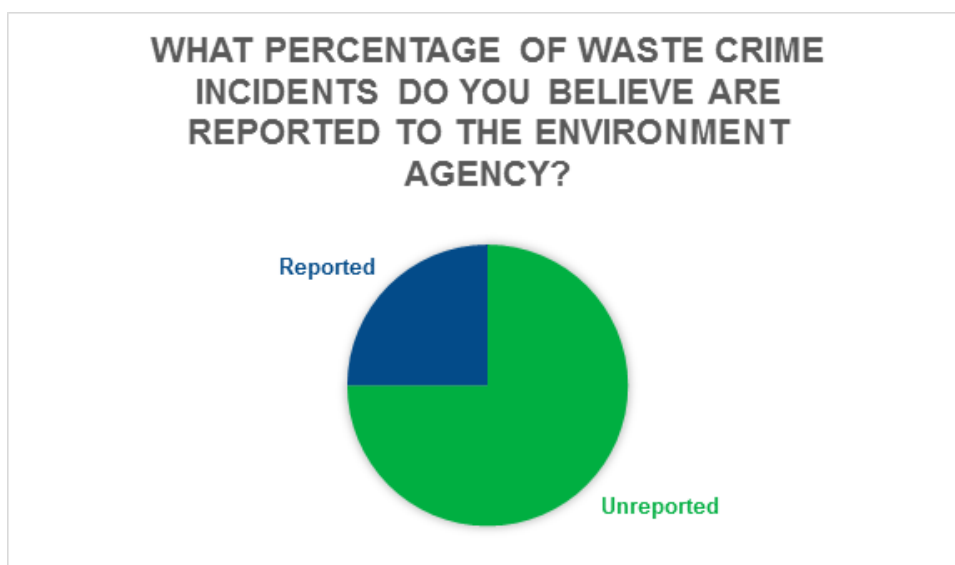
The sample identified the risk of a penalty being enforced as the most important feature of an effective waste crime deterrent, followed by the size of the penalty (Figure 9).

**Figure 9: Effective waste crime deterrent features**



To effectively tackle waste crime, the Environment Agency relies on waste crime activity being reported. We encourage members of the public and businesses to report incidents and suspicious activity to the incident helpline or anonymously through Crimestoppers. Reporting activity plays a critical role in Environment Agency operations and helps to fill knowledge gaps; information is recorded on the Environment Agency's secure system and turned into intelligence, which helps the Environment Agency more efficiently target our limited resources. However, the 2021 sample estimated that just one quarter of all waste crime incidents are reported to the Environment Agency (Figure 10). This represents a slight increase on the 22% reported in the 2020 survey, however the change is within the margin of error for both surveys and so is not notable. Please see the methodology note for limitations of this comparison.

**Figure 10: Percentage of waste crime events estimated to be reported to the Environment Agency**



If 75% of incidents remain unreported there is a substantial amount of waste crime that cannot be investigated or disrupted. This also impacts the effectiveness of future action as the information gained builds a richer intelligence picture which enables the Environment Agency and its partners to direct resources to the right place, at the right time to detect, prevent and disrupt waste crime.

**Environmental incidents and waste crime can be reported through the following channels which provide a 24-hour service:**

- **Anonymously by calling Crimestoppers: 0800 555 111**
- **Environment Agency Incident hotline (England): 0800 80 70 60**

### **Misdescription of waste**

The misdescription of waste is generally defined as being *the incorrect description given to waste in order to avoid legal requirements for the material*. Research reports began highlighting the problem, notably from 2014 onwards, and since then Environment Agency

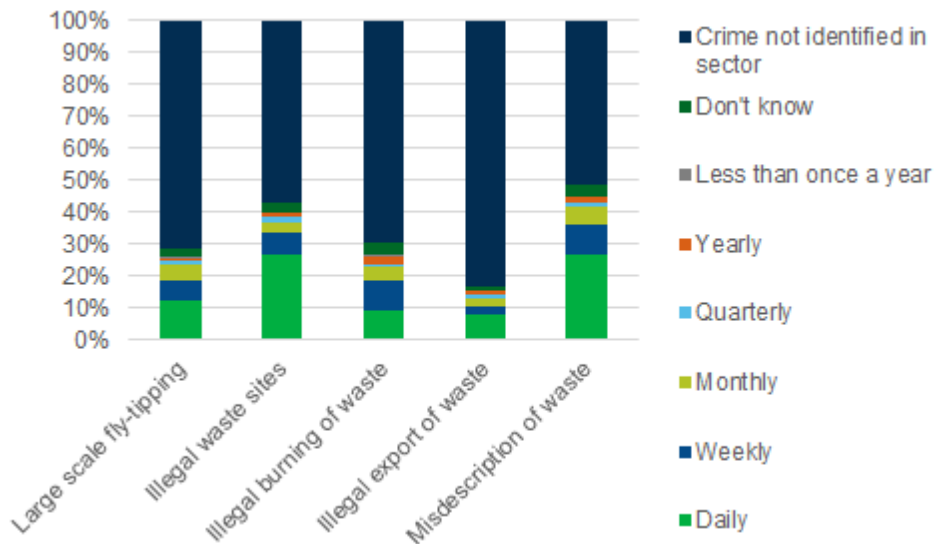
investment has been used to establish a dedicated team of officers to tackle the crime and minimise environmental harms.

Organised crime groups and repeat offenders deliberately evade significant sums of landfill tax by misdescribing waste at the point of disposal; those who are found to be liable are pursued by HMRC. Misdescription can also cause significant impacts for the environment and communities, for example, major air quality incidents can be caused by misdescribed waste containing plasterboard (or other high-sulphate waste) entering landfills that lack the specialist containment and control measures to prevent future problems.

Hazardous waste is often misdescribed as non-hazardous, this can have significant impacts on the health of people and wildlife. Our trommel fines campaign discovered that more than half of the waste sampled was misdescribed hazardous waste. When the necessary containment and control measures for carcinogenic and mutagenic substances are absent it can have long term consequences for victims. The motivation for misdescribing waste is believed to be driven by financial gains and the sample estimated that those misdescribing their waste evaded 36% of their annual landfill tax bill.

The sample showed the misdescription of waste and illegal waste sites to be of high frequency with a quarter of people perceiving that the crime is committed daily (Figure 11).

**Figure 11: Frequency of waste crime activity according to waste crime type**



Misdescription was also the waste crime type that respondents in the waste industry felt most tempted to commit (10% at least slightly tempted) which raises important points about what can be achieved through policy and legislation change.

The Environment Agency will continue to raise awareness and target waste criminals misdescribing waste. In 2021-22 the Environment Agency Misdescription Project will run a campaign on construction and demolition sites as well as waste destined for export where the risk of misdescription is high. The project continues to share intelligence with HMRC to root out landfill tax fraud.

### 3. Conclusion

The headlines from the National Waste Crime Survey are clear. The waste industry perceives waste crime to be endemic, they believe it is on the rise, and that the deterrents for active and would-be waste criminals are not strong enough.

The findings also suggest that the scale of unreported waste crime is potentially significant, that the direct financial costs incurred by legitimate industry are large, and that waste criminals are evading significant sums of landfill tax.

Set against the backdrop of the latest Environmental Services Association and Eunomia report: Counting the Cost of Waste Crime, it paints a picture of a persistent waste crime problem that is resistant to the current set of enforcement resources and available sanctions. This reduces profits for legitimate business, undermines the transition to a circular economy and net zero, burdens victims with the cost of clean-up, and in some cases leaves a polluting legacy within the environment for future generations.

Malcolm Lythgo, Head of Waste Regulation at the Environment Agency summarised how the data will be used going forward:

*“I’d like to thank everyone who took the time to respond to this survey – all 839 of you - as well as those who were part of our stakeholders’ panel; Environmental Services Association, Chartered Institution of Wastes Management, United Resource Operators Consortium and the National Farmers’ Union. The more we know, the better we can be at tackling this blight on society.*

*These findings are vital in shaping our front line and strategic response to waste crime and your submissions will contribute to securing future funding and investment that will allow us to tackle the growing threat that criminal activity in the waste sector poses to businesses, public services, communities and our fragile environment.*

*As the Environment Agency continues to prioritise the worst offenders and innovate where it can, the National Waste Crime Survey provides insight into the long-term impact of efforts to tackle waste crime.”*



## 4. Methodology note

### Background

A draft method and survey structure was produced by a team led by Air and Space Limited, which included academics at University College London (UCL), and London School of Economics (LSE). Environment Agency staff and external stakeholders were consulted, and a pilot was conducted in 2020.

The National Waste Crime Survey is designed to run every one to two years and aims to:

- Quantify the scale and impacts of waste crime in England
- Establish a long-term baseline of waste crime in England, improving current Environment Agency waste crime metrics
- Understand what motivates and deters waste criminals in England.

### Methodology

The survey seeks to build an evidence base by engaging with specific groups associated with the waste industry about their observations and experience of waste crime.

In 2021, the survey targeted the following groups: local councils, service providers (e.g. insurance industry and environmental consultants), the waste industry, the farming community, and landowners. The farming community was a new addition to the 2021 survey and were not included in the pilot year.

The sample target was informed by the wisdom of the crowd theory, whereby the collective opinion of a group of individuals can provide collective intelligence on a subject matter. The wisdom of crowd approach assumes that a crowd:

- Is diverse in opinion
- Has specialised, local knowledge; and
- Is able to provide independent views.

These conditions are challenging to meet in practice, for example, it is unclear that the survey sample captured the diversity of the sample groups or that respondents' views are not collectively informed by trade press and industry associations.

Waste crime is a sensitive topic, and respondents may be unwilling to answer more direct questions regarding their behaviour, or the behaviour of others in their sector, honestly. The wisdom of the crowd questioning technique can be utilised for exploring such areas.

### Benefits

**Repeatability:** A survey offers a sustainable method which can be repeated to build a long-term baseline by retaining a set of core questions.

**Adaptable:** New modules can be added to incorporate new topics to ensure that the data remains relevant to environmental policy and regulation. This year new questions were incorporated to detect any impacts that COVID-19 and EU Exit had upon waste crime. In the future, questions about the effectiveness of new Environment Agency interventions are likely to be introduced.

**Hard to Reach Groups:** The survey asks the population about sensitive subject matters and gains insight into a largely unreported area. Utilising this method allows data to be collected from a sample that may not have been reached through existing channels.

**Independent Data:** The data gathered through the survey is independent of Environment Agency resources and processes.

## **Limitations**

**Pilot year comparability:** The lessons learned from the pilot fed into this survey carried out in March 2021. The farming community were added to the target population and new questions were included to capture the effects of EU Exit and COVID-19. The pilot year received a much lower response rate of 239 compared to 836 in 2021. Due to the differences highlighted, direct comparisons between the findings from 2020 and 2021 are limited.

**Sample Bias:** The sample itself may present some bias as those engaging with the survey are self-selecting, e.g. they are more likely to be actors who want to abide by the law.

**Subjective Responses:** The data collected through the survey is subjective and based upon a mix of observations, experiences, and perceptions of waste crime in England. The data is not a quantitative measurement of waste crime.

**Short-term Impacts:** The impacts of waste crime presented in this report are focused upon short-term consequences observed by the individual. The long-term impacts on societal, environmental, and economic factors are complex and in their infancy.

## **National Waste Crime Survey 2021**

The National Waste Crime Survey was open for three weeks from 1 to 22 March 2021 using an online platform.

Following the distribution of the online survey, a series of qualitative telephone interviews were undertaken to explore respondents' experiences of waste crime in more detail.

Both the survey and interviews were conducted by Systra, an independent market research company.

The survey received 836 responses with half of the respondents working in land ownership, farming or management (50%).

Small and medium sized enterprises (organisations employing less than 249 employees) represented 91% of those that responded.

Based upon Environment Agency areas, the greatest response rates were from people located in East Anglia (13%) and the West Midlands (12%) with the lowest response rates located in the North East (4%), Thames (4%) and Hertfordshire and North London (4%).

The greatest response from the waste management sector came from the construction and demolition sector (47%) and recycled materials (39%).

### **Environment Agency strategy**

The Environment Agency recently developed a new Enforcement Strategy, based on the Home Office '4P' model (Prepare, Prevent, Protect and Pursue), which aims to focus more heavily on upstream prevention of waste crime. A waste crime specific version of the strategy will follow shortly.

# References

Braga, A.A., Turchan, B., Weisburd, D. (2019) Focused deterrence strategies effects on crime: A systematic review. 3<sup>rd</sup> Edition. Campbell Systematic Reviews.

Wingerd, K.V. (2016) Deterring Corporate Environmental Crime: Lessons from the Waste Industry in the Netherlands. In Environmental Crime in Transnational Context: Global Issues in Green Enforcement and Criminology / ed. by Spapens, White, Huisman, 2016; (Green Criminology) (pp. 193–207).

Green Alliance. (2021). Levelling up through circular economy jobs. Green Alliance policy insight. Green Alliance Trust.

HMRC tax gap report. (2021). <https://www.gov.uk/government/statistics/measuring-tax-gaps>

Eunomia, Environment Services Association, Counting the cost of waste crime. (2021). <https://www.eunomia.co.uk/reports-tools/counting-the-cost-of-uk-waste-crime/>

# Would you like to find out more about us or your environment?

Then call us on

03708 506 506 (Monday to Friday, 8am to 6pm)

Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)

Or visit our website

[www.gov.uk/environment-agency](http://www.gov.uk/environment-agency)

## incident hotline

0800 807060 **(24 hours)**

## floodline

0345 988 1188 **(24 hours)**

Find out about call charges (<https://www.gov.uk/call-charges>)

## Environment first

Are you viewing this onscreen? Please consider the environment and only print if absolutely necessary. If you are reading a paper copy, please don't forget to reuse and recycle.