

# From Environmental Harm to Ecocide: Reassessing Responsibility and Accountability Under the Rome Statute

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**Abstract.** This article examines the urgency of recognizing ecocide as a core crime under the Rome Statute and its consequences for state responsibility. The Rome Statute of 1998 establishes four core crimes, namely genocide, crimes against humanity, war crimes, and aggression, yet it provides no comprehensive protection against large-scale environmental destruction, particularly in peacetime. At the same time, most international environmental instruments remain largely declaratory, setting out obligations and commitments without effective criminal sanctions for serious environmental harm. Using a normative juridical method, this research analyzes the Rome Statute, key international environmental instruments, and contemporary doctrinal discussions on ecocide to assess the legal and ethical foundations for its recognition as a core international crime. The study finds that codifying ecocide would close a significant normative gap, expand the International Criminal Court's jurisdiction over environmentally destructive conduct, and indirectly reinforce state responsibility through individual accountability. Moreover, recognizing ecocide would support the realization of the Sustainable Development Goals, particularly those concerning climate action and the protection of marine and terrestrial ecosystems.

## 1 Introduction

Large-scale environmental destruction increasingly threatens ecological integrity and human security. Examples such as deforestation, transboundary fires, marine pollution, biodiversity loss, and extractive-driven degradation demonstrate harm that may be severe, widespread, and long-term [1]. This raises a central accountability question: why do acts producing catastrophic environmental consequences often evade effective international legal responsibility?

This reality reveals an accountability gap in global environmental governance. On the one hand, international environmental law has expanded through numerous conventions and instruments that articulate principles of prevention, precaution, international cooperation, and the obligation of states to protect the environment. On the other hand, when environmental

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destruction causes extensive harm to communities, species, and ecosystems, pathways for international criminal accountability remain narrowly framed. Despite the growth of international environmental instruments and due diligence-oriented obligations, enforcement remains limited, and international criminal accountability for catastrophic peacetime harm is narrowly framed. This produces a structural gap in which severe ecological destruction can persist without proportionate legal consequences [2].

The accountability gap becomes especially visible within the framework of the Rome Statute of 1998, which established the International Criminal Court. The Rome Statute defines four core crimes, genocide, crimes against humanity, war crimes, and the crime of aggression, as the gravest crimes of concern to the international community. Although the Statute contains a war crimes provision that may cover certain forms of environmental damage in the context of armed conflict, it does not provide comprehensive protection against large-scale environmental destruction in peacetime. Consequently, conduct that results in severe, widespread, and long-term ecological harm may fall outside the jurisdiction of the Court if it cannot be brought within the legal elements of the existing core crimes [3]. This limitation produces a normative gap: the environment may be a victim of serious wrongdoing, but international criminal law has not yet clearly recognized environmental destruction as a protected interest at the highest level of international concern.

Against this background, the concept of ecocide has emerged as a proposed legal response to reframe international accountability. Ecocide is generally understood as unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment. Recognizing ecocide as a core crime is commonly argued to close a significant normative gap, expand the International Criminal Court's jurisdiction to address destructive environmental conduct, and enhance deterrence through individual criminal responsibility. More broadly, the criminalization of ecocide may indirectly strengthen state responsibility [4].

Accordingly, this article addresses three questions: the extent of the Rome Statute protection gap for large-scale peacetime environmental destruction, the legal and ethical bases for recognising ecocide as a core crime, including *actus reus*, *mens rea*, and harm thresholds, and the implications of codification for accountability through ICC individual liability and its indirect effects on state responsibility. The study aims to clarify the doctrinal limits under the current Statute, assess the case for codification, and evaluate its implications for the architecture of international responsibility and sustainable development-oriented environmental protection.

## **2 Method**

This research employs a normative juridical method based on primary materials, chiefly the Rome Statute 1998 and relevant international environmental instruments, supported by secondary scholarship and doctrinal debates on ecocide and international responsibility. A statutory approach assesses the Rome Statute's scope, while a conceptual approach clarifies the construction of ecocide and its accountability implications.

## **3 Results and discussion**

### **3.1 Conceptual framework: Environmental harm and ecocide**

In international law, environmental harm encompasses human activities that degrade ecosystems and impair ecological functions, often assessed through severity, geographic

scale, and duration [5]. These criteria help distinguish ordinary regulatory breaches from exceptional harm that may warrant international criminalisation [4].

The concept of ecocide builds on this spectrum by identifying a category of environmental destruction that is so grave that it should be treated as an international crime. Although there is no universally accepted definition in binding law, contemporary doctrinal debates generally converge on several core elements. First, ecocide presupposes serious environmental damage, commonly defined as severe, widespread, or long-term harm to the environment, including ecosystems, biodiversity, and natural resources. Second, the conduct element typically covers unlawful or wanton acts. Unlawful acts refer to behavior that violates domestic or international legal obligations, while wanton acts capture conduct carried out with reckless disregard for clearly excessive environmental harm relative to the anticipated social or economic benefit. This distinction is important because some of the most destructive activities may occur under permissive domestic regulation, making “wantonness” a crucial normative gateway for accountability beyond formal legality. Third, the mental element requires a culpable state of mind. Many proposals emphasize that the conduct creates a substantial likelihood of producing severe, either widespread or long-term, environmental damage [6]. These standard positions ecocide between intentional harm and negligence, reflecting the reality that large-scale ecological destruction is often driven by calculated risk-taking, not by an explicit purpose to destroy nature. Fourth, ecocide entails protected interests that are primarily ecological, even though human victims often suffer alongside environmental loss. This ecological focus supports an understanding of the environment not merely as property or an economic asset, but as a shared and life-sustaining system deserving independent protection.

International environmental law provides the normative foundations for this conceptualization. The prevention principle requires states to avoid activities that cause significant environmental harm, including harm beyond their borders. Closely related is the no-harm rule, which prohibits states from allowing activities within their jurisdiction to cause serious damage to the environment of other states or to areas beyond national jurisdiction. The precautionary principle strengthens preventive logic by justifying regulatory action even when scientific certainty is incomplete, particularly where risks are serious or irreversible. Due diligence obligations operationalize these principles by requiring states to adopt and enforce reasonable measures, including environmental impact assessments and monitoring, to reduce the likelihood of significant harm. The polluter-pays principle further reinforces accountability by linking environmental damage to the responsibility of bearing the costs of prevention and remediation. Ultimately, the principle of sustainable development combines environmental protection with economic and social priorities, emphasizing that development cannot be legitimate if it systematically undermines the ecological conditions that sustain life.

Together, these concepts and principles frame ecocide as a legal and ethical response to extreme environmental harm. They clarify the threshold of gravity, justify criminal condemnation where regulatory mechanisms fail, and connect individual culpability to broader duties of environmental stewardship under international law.

### **3.2 Rome statute and the protection gap**

The Rome Statute of 1998 established the International Criminal Court and defined four core crimes that fall within its jurisdiction: genocide, crimes against humanity, war crimes, and the crime of aggression. These categories represent the most serious offences of concern to the international community, and they were designed primarily to address mass atrocity violence against persons and the collective security of states. Within this framework, environmental protection appears only in limited and indirect ways, leaving a significant

protection gap for severe environmental destruction, especially when it occurs in peacetime [7].

Among the four core crimes, the most explicit reference to environmental harm is found under war crimes. Article 8 includes a provision criminalizing intentionally launching an attack in an international armed conflict with knowledge that it will cause widespread, long-term, and severe damage to the natural environment, where that damage is clearly excessive in relation to the concrete and direct overall military advantage anticipated. This provision is important because it recognizes the natural environment as a protected interest and introduces a gravity threshold for environmental damage. However, the way it is drafted makes it exceptionally narrow. It applies only in the context of international armed conflict, requires intentional conduct, and demands proof that the perpetrator knew the attack would cause damage that meets three cumulative qualifiers: widespread, long-term, and severe. In addition, the proportionality requirement, which asks whether the harm was clearly excessive compared to the anticipated military advantage, sets a further evidentiary hurdle and embeds a balancing exercise that can be difficult to litigate.

Beyond war crimes, environmental destruction might be captured only indirectly through other categories, but the fit is often strained. Genocide, for example, could theoretically encompass environmental destruction if it is used to inflict conditions of life calculated to bring about the physical destruction of a protected group. Yet genocide requires a specific intent to destroy the group in whole or in part. This intent requirement is extremely demanding and is rarely compatible with situations where environmental harm results from profit-driven activities, reckless governance, or systemic regulatory failure, rather than a purpose to eliminate a group. Crimes against humanity might cover conduct that causes serious environmental harm if it is part of a widespread or systematic attack directed against a civilian population, such as forced displacement, persecution, or other inhumane acts [8]. Still, this route requires proof of an attack against civilians and a nexus between environmental destruction and the broader policy of the attack, which again excludes many forms of peacetime ecological devastation that are not framed as violence against a civilian population. The crime of aggression, meanwhile, concerns unlawful uses of force between states and offers no direct basis for addressing environmental destruction [9].

These limitations reveal the protection gap at the heart of the Rome Statute framework. The most catastrophic environmental harms in the contemporary world often occur outside armed conflict, such as large-scale deforestation, toxic pollution, extractive projects that collapse ecosystems, and climate-related destruction driven by cumulative emissions. In peacetime, such conduct usually does not satisfy the contextual elements of war crimes, the intent element of genocide, or the attack requirement for crimes against humanity. As a result, even when environmental consequences are severe, widespread, and long-term, they may remain beyond the Court's reach.

The gap is reinforced by the Statute's structural features. The ICC prosecutes natural persons, not states or corporations, which limits its capacity to address complex environmental harm involving corporate decision-making and state-enabled regulatory environments. Moreover, the Court operates under the principle of complementarity, relying on national systems as the primary forum for prosecution. Where domestic enforcement is weak or captured, accountability for serious environmental destruction can remain elusive. In combination, these features explain why the Rome Statute provides only partial protection for the environment and why peacetime environmental destruction continues to fall largely beyond international criminal accountability.

### **3.3 Legal basis for codifying ecocide as a core crime**

Codifying ecocide as a core international crime within the Rome Statute framework can be justified on both legal and ethical grounds, especially when assessed through the structure of international criminal law and the broader matrix of international environmental law. At its core, the proposal responds to a normative mismatch: contemporary international law increasingly recognizes that severe environmental destruction threatens peace, security, and human survival, yet the principal treaty on international criminal accountability remains largely focused on violence against persons and armed conflict. The legal basis for codification, therefore, lies in the capacity of international criminal law to evolve in response to new forms of harm that implicate fundamental interests of the international community [10].

Ecocide codification is defensible as a doctrinal development consistent with the Rome Statute's rationale of addressing harms of exceptional gravity and universal concern where domestic enforcement proves ineffective. It also coheres with international environmental law duties, particularly no harm, due diligence, and precaution, by providing a criminal accountability endpoint for the most serious cases.

International environmental law also provides doctrinal support. While much of it operates through state obligations rather than individual criminal liability, its principles establish a clear normative trajectory. The prevention principle and the duty of due diligence require states to regulate activities under their jurisdiction to avoid significant environmental harm. The no-harm rule reinforces this obligation by prohibiting serious transboundary damage and harm to areas beyond national jurisdiction. The precautionary principle supports earlier intervention when risks are serious or potentially irreversible, even in the face of scientific uncertainty. Environmental impact assessment obligations, widely recognized in practice, further operationalize these duties by requiring states to evaluate and mitigate foreseeable harms. Together, these norms indicate that certain levels of environmental destruction are legally unacceptable. Ecocide codification can be seen as the criminal law counterpart to these obligations, designed not to replace them but to provide a stronger enforcement response where harm reaches an exceptional threshold and where ordinary regulatory mechanisms fail [11].

Ethically, criminalizing ecocide is grounded in the idea that the environment is not merely an economic resource but a life-sustaining system that supports human rights and human dignity. Severe ecological destruction disproportionately harms vulnerable communities, including Indigenous peoples and those dependent on land and marine ecosystems, and it undermines the rights to life, health, food, water, and an adequate standard of living. There is also an intergenerational justice dimension: long-term environmental damage imposes burdens on future generations that cannot consent and cannot adequately be compensated. In this sense, ecocide codification aligns with widely accepted ethical premises that criminal law may intervene where conduct causes profound harm, violates basic duties of care, and shocks the conscience of the international community.

A central doctrinal issue is the threshold for ecocide. Proposals commonly refer to "severe and either widespread or long-term" damage, echoing language already familiar in the Rome Statute context for war crimes against the environment. The threshold serves two functions. It limits ecocide to the most serious cases, preventing over-criminalization of ordinary environmental offences, and it signals that the crime targets exceptional harm with systemic ecological consequences [12]. Yet defining these qualifiers is contested. "Severe" may be tied to the intensity of ecological damage, including significant biodiversity loss, ecosystem collapse, or serious impairment of environmental functions. "Widespread" can be understood as damage extending over a large geographic area, affecting multiple communities or ecosystems, or producing transboundary consequences. "Long term" raises distinct problems because ecological recovery timelines vary dramatically; some harms are reversible within

years, while others persist for decades or are effectively irreversible. Critics argue that vague thresholds risk uncertainty and selective enforcement, while supporters respond that international criminal law already operates with evaluative concepts, and that careful drafting, guidelines, and scientific evidence can make the threshold sufficiently operational [13].

Equally important is the debate over *mens rea*. A strict requirement of specific intent to destroy the environment would mirror genocide's heightened intent standard, but it would likely render ecocide impractical. Much large-scale environmental destruction is driven by reckless decision-making, deliberate risk acceptance, or wilful blindness rather than an express purpose to destroy nature [14]. For this reason, many contemporary formulations focus on knowledge of a substantial likelihood that the conduct will cause severe, either widespread or long-term, damage. This knowledge standard aligns with how international criminal law addresses awareness of consequences in other contexts, while maintaining a high culpability threshold. Another debated option is recklessness, which could capture situations where perpetrators consciously disregard an obvious and substantial risk of catastrophic environmental harm. Critics caution that recklessness could lead to excessive liability, potentially criminalizing complex regulatory failures or controversial development choices. Supporters counter that a carefully framed "wanton" element, understood as conduct carried out with reckless disregard where harm is clearly excessive in relation to any anticipated benefit, can preserve moral blameworthiness while excluding *bona fide*, proportionate activities conducted with due diligence [15].

Finally, the international legal justification for ecocide is strengthened by systemic coherence. Codification would complement, rather than conflict with, existing regimes by creating an accountability endpoint for the worst cases: where environmental harm meets a high gravity threshold, is foreseeable, and results from conduct that is unlawful or manifestly unjustifiable. It would also reinforce complementarity by encouraging states to develop domestic ecocide legislation, strengthen corporate and administrative enforcement, and integrate environmental risk assessment into decision-making. In sum, within the framework of international law, ecocide as a core crime can be defended as a necessary doctrinal evolution to protect fundamental interests of the international community and to ensure that catastrophic environmental destruction no longer remains structurally insulated from criminal accountability.

### **3.4 Responsibility and accountability**

The International Criminal Court prosecutes natural persons for the most serious international crimes. Its jurisdiction is grounded in individual culpability, requiring proof of conduct, contextual elements, and a requisite mental element. This focus reflects a central premise of international criminal law: grave harms are ultimately committed through human decisions, and attributing criminal blame to individuals strengthens justice and deterrence by identifying responsible decision makers rather than treating harm as an impersonal policy failure. At the same time, the ICC does not exercise jurisdiction over states or corporations. This limitation means that ICC proceedings cannot directly impose state reparations, declare a state internationally responsible, or compel institutional reform. Nevertheless, ICC prosecutions can still influence state conduct through indirect legal and political pathways.

State responsibility, as articulated in customary international law and reflected in the International Law Commission Articles on Responsibility of States for Internationally Wrongful Acts, concerns whether a state has breached an international obligation and whether the act is attributable to it. When responsibility is established, the state is generally required to cease the wrongful conduct, offer assurances and guarantees of non-repetition, and make full reparation, which may include restitution, compensation, or satisfaction.

Unlike individual criminal responsibility, state responsibility is not dependent on moral blameworthiness in a criminal sense. It is primarily about legal accountability for internationally wrongful conduct. Yet in practice, it often suffers from enforcement deficits, since remedies depend on diplomatic processes, interstate litigation, or political leverage that may be unavailable in environmentally sensitive cases.

Codifying ecocide would tighten the connection between these regimes. First, individual prosecutions can strengthen compliance incentives. When senior officials or other key decision-makers face potential criminal exposure, states may become more motivated to regulate high-risk industries, enforce environmental standards, and integrate due diligence into licensing and oversight processes. Second, ICC proceedings can generate authoritative factual records on environmental harm, causation, and foreseeability, which may support parallel claims of state responsibility in other international forums. Third, the principle of complementarity can encourage states to adopt domestic legislation criminalizing ecocide and to develop investigative capacity, thereby reducing their reliance on the ICC and enhancing enforcement at the national level.

These dynamics have implications for prevention and deterrence. The prospect of personal liability may alter cost-benefit calculations within government and corporate governance structures, making reckless environmental decision-making less attractive. It can also shift norms by framing catastrophic environmental destruction as a matter of international criminality rather than regulatory non-compliance. However, deterrence will depend on practical factors such as the clarity of legal thresholds, the feasibility of evidence gathering, and consistent enforcement. Even with these challenges, integrating ecocide into the Rome Statute would strengthen the overall architecture of accountability by combining individual criminal responsibility with the broader normative pressure of state responsibility, thereby enhancing prevention and reinforcing the international community's commitment to protecting the environment from the gravest forms of harm.

## 4 Conclusion

This article finds that the Rome Statute leaves a significant protection gap for severe environmental destruction in peacetime because existing crimes are either conflict-bound or require contextual and mental elements that do not reflect typical patterns of large-scale ecological harm. Recognising ecocide as a core crime would address this normative deficit by explicitly treating catastrophic environmental destruction as a matter of international criminal concern and by enabling individual accountability that may indirectly reinforce state responsibility. The article, therefore, supports a Rome Statute amendment adopting an operational definition of ecocide focused on severe environmental damage, whether widespread or long-term, coupled with a culpability standard based on knowledge of a substantial likelihood of such harm and coverage of unlawful or wanton conduct. Interpretive guidance on thresholds, causation, and scientific evidence is necessary for legal certainty. States should complement this development through domestic criminalisation and strengthened enforcement capacity consistent with complementarity principles.

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