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Increasing the safeguarding of protected areas threatened by warfare through international environmental law

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Abstract

Vulnerable ecological areas are often seriously impacted by armed conflicts. In theory, these areas could benefit from the safeguards offered by the international humanitarian law (IHL) regimes of "demilitarized zones" and "undefended localities", but in practice, these regimes – which are designed to protect human beings from the violence of hostilities, and whose application entirely depends on the goodwill of belligerents – are rarely triggered to protect the environment as such. However, international environmental law (IEL) contains a rich and diversified normative framework which organizes the establishment and management of areas of major ecological importance. While this framework has

* The author wishes to warmly thank Mattilda Gillis for having reviewed the language of the text.

not primarily been conceived to apply to war-related situations, it could nonetheless play a substantive role in strengthening the IHL normative regimes in two respects. Firstly, it could provide interpretative guidance for these regimes so that they can be oriented towards more "ecocentric" purposes and can be read in accordance with the most advanced IEL standards and mechanisms governing biodiversity hotspots (the "environmentalization" of IHL). Secondly, IEL norms and practices could directly apply during warfare and thus complement IHL in many respects. That said, the co-application of IEL and IHL raises difficult issues of compatibility between these regimes, requiring inter alia *that the IEL framework governing protected areas be adapted to the needs and specificities of armed conflicts (the "humanitarization" of IEL).*

Keywords: vulnerable ecosystems, biodiversity hotspots, demilitarized zones, undefended localities, protected areas, armed groups, designation and management of protected areas.

Introduction

Vulnerable ecosystems are often adversely affected by warfare. Animals that live in those ecosystems are regularly poached for food or trade, natural resources are overexploited and destroyed, and forest cover is depleted.[1] This harmful situation is usually exacerbated by the fact that conservation measures cannot be readily maintained during hostilities and environmental defenders cannot exercise their functions, as they may be targeted by belligerents.[2] Under international humanitarian law (IHL), biodiversity hotspots could, in theory, benefit from the reinforced protection which is offered to "demilitarized zones"[3] and "undefended localities".[4] Unfortunately, however, these special regimes are very much dependent upon the goodwill of belligerents to create, implement and respect these zones and localities[5] – and such a willingness rarely exists once hostilities have erupted. Also, regrettably, the IHL normative framework of protected areas was originally conceived to protect pieces of land where wounded and sick combatants or civilian populations are located, but not to address the complex

1 International Union for Conservation of Nature (IUCN), *Conflict and Conservation*, Nature in a Globalised World Report No. 1, Gland, 2021, pp. 11–17, available at: https://portals.iucn.org/library/efiles/documents/NGW-001-En.pdf (all internet references were accessed in August 2023).

2 *Ibid.*, p. 14. It should however be noted that "[t]here may also be some positive relationship between the state of warfare and the state of nature: 'gunpoint conservation'", owing, for instance, to the reduction of industrial and economic activities, including deforestation, during conflict. However, the positive effects of warfare on nature are usually temporary.

3 Protocol Additional (I) to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts, 8 June 1977, 1125 UNTS 3 (entered into force 7 December 1978) (AP I), Art. 60.

4 *Ibid.*, Art. 59.

5 *Ibid.*, Arts 59(2), 60(1)–(3).

and multifaceted risks faced by biodiversity hotspots. Thus, despite the devastating consequences that warfare has on these hotspots and neighbouring ecosystems, IHL does not provide the sophisticated measures of prevention and conservation that are required in these circumstances, beyond immunizing certain areas from military operations and attacks.

That being said, over recent decades, numerous environmental conventions have been adopted with the aim of establishing, designing and managing areas of major ecological importance.[6] While these environmental commitments do not seem to apply primarily to war-related situations, they could nonetheless play a substantive role in strengthening minimal IHL regulations in two respects. Firstly, they could provide interpretative guidance for those regulations so that they can be oriented towards a more "ecocentric" objective and can be read in accordance with the most advanced environmental standards and mechanisms governing the establishment and management of areas containing unique ecosystems and endangered species. This first dynamic could ultimately contribute to the "environmentalization" of IHL.[7] Secondly, when directly applied in the context of armed conflict, environmental instruments could have "normative effects" by filling some gaps left by IHL.[8] However, these environmental commitments are usually neither focused on specific environmental risks resulting from armed conflicts, nor adapted to military realities. That explains why, to be effective, they must be reinterpreted in light of underlying IHL rationales. This second dynamic could ultimately lead to the "humanitarization" of international environmental law (IEL).

This article will explore how these two co-related dynamics – the "environmentalization" of IHL and the "humanitarization" of IEL – could concretely take place, and will show that they could have significant theoretical and practical repercussions. From a theoretical angle, they could foster increased consistency and complementarity between the IHL and IEL regimes. From a practical perspective, they could contribute to the building of a comprehensive system of conservation and management of unique ecosystems threatened by military operations.

To illustrate these dynamics, the article will compare how IHL and IEL each protect endangered areas. It will start by outlining the purposes and legal natures of both legal frameworks, and will then conduct a comparative analysis of key concrete

6 See e.g. Convention on Biological Diversity, 1760 UNTS 79, 5 June 1972 (entered into force 29 December 1993) (Biodiversity Convention), Art. 8; Convention for the Protection of the World Cultural and Natural Heritage, 1037 UNTS 151, 16 November 1972 (entered into force 17 December 1975) (World Heritage Convention), Art. 11; Convention on Wetlands of International Importance Especially as Waterfowl Habitat, 996 UNTS 245, 2 February 1971 (entered into force 21 December 1975) (Ramsar Convention), Art. 2; Convention on the Conservation of Migratory Species of Wild Animals, 1651 UNTS 333, 23 June 1979 (entered into force 1 November 1983), Art. III(4).

7 See the normative process described in Raphaël van Steenberghe, "The Interplay between International Humanitarian Law and International Environmental Law: Towards a Comprehensive Framework for a Better Protection of the Environment in Armed Conflict", *Journal of International Criminal Justice*, Vol. 20, No. 5, 2022.

8 *Ibid.*

aspects of these frameworks from temporal, geographical, personal and material standpoints. Finally, the article will conclude by outlining general observations on the designing of institutional mechanisms of implementation that are grounded in the IEL and IHL regimes.

Purposes of protected areas

The establishment of protected areas under IHL is very much anthropocentric in nature. In other words, these areas aim at safeguarding human beings: wounded and sick members of armed forces,[9] wounded and sick civilians,[10] and other non-combatant populations.[11] In exceptional circumstances, sites which contain certain objects – those that are of "great importance to the cultural heritage of every people"[12] or that constitute the "cultural or spiritual heritage of peoples",[13] including, under restrictive conditions, specific parts of the environment – benefit from similar safeguards.[14] But, except in these particular circumstances, the main IHL provisions governing protected areas have not been designed to cover the environment as such. This silence is not surprising, since IHL conventions were conceived after the Second World War and during the decolonization process, at a time when environmental considerations had not yet attracted significant attention from States and international institutions, and when the added value of creating protected zones was still unclear.[15]

9 Geneva Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field of 12 August 1949, 75 UNTS 31 (entered into force 21 October 1950) (GC I), Art. 13 ("Hospitals and Safety Zones").

10 Geneva Convention (IV) relative to the Protection of Civilian Persons in Time of War of 12 August 1949, 75 UNTS 287 (entered into force 21 October 1950) (GC IV), Arts 14 ("Hospital and Safety Zones and Localities"), 15 ("Neutralized Zones").

11 AP I, Arts 59, 60.

12 Convention for the Protection of Cultural Property in the Event of Armed Conflict, 249 UNTS 240, 14 May 1954 (entered into force 7 August 1956), Arts 1(a), 4(1). Articles 19(2) and 24 of this convention invite States to conclude special protection agreements to enhance the protection of cultural properties in both international and non-international armed conflicts. Moreover, the 1999 Second Protocol to this convention puts in place a system of enhanced protection for certain cultural properties which are specifically listed. See Second Protocol to the Hague Convention of 1954 for the Protection of Cultural Property in the Event of Armed Conflict, 2253 UNTS 172, 26 March 1999 (entered into force 9 March 2004), Arts 10–12.

13 AP I, Art. 53(a); Protocol Additional (II) to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of Non-International Armed Conflicts, 1125 UNTS 609, 8 June 1977 (entered into force 7 December 1978) (AP II), Art. 16.

14 Due to space limitations, the present paper will not analyze the regime of cultural property as applicable in armed conflicts. While being primarily concerned with "man-made objects", this regime may however offer protection to specific parts of the environment – such as a tree of particular importance or certain archaeological sites – under limited conditions. See International Committee of the Red Cross (ICRC), *Guidelines on the Protection of the Environment in Armed Conflict: Rules and Recommendations Relating to the Protection of the Natural Environment under International Humanitarian Law, with Commentary*, Geneva, 2020 (ICRC Guidelines), Rule 12 ("Prohibitions Regarding Cultural Property"), paras 166–174, available at: www.icrc.org/en/publication/4382-guidelines-protection-natural-environment-armed-conflict.

15 Karen Hulme, "Armed Conflict and Biodiversity", in Michael Bowman, Peter Davies and Edward Goodwin (eds), *Research Handbook on Biodiversity and Law*, Edward Elgar, Cheltenham, 2016, p. 259.

Having noted this, the IHL notion of protected localities or zones can no longer remain completely isolated from IEL developments where these localities or zones are considered to be essential tools to ensure the conservation and maintenance of ecological processes, especially endangered ecosystems and species.[16] Indeed, as observed by the 2008 *Guidelines for Applying Protected Area Management Categories* of the International Union for Conservation of Nature (IUCN), "[p]rotected areas remain the fundamental building blocks of virtually all national and international conservation strategies, supported by governments and international institutions such as the Convention on Biological Diversity".[17] Furthermore,

> [t]hey provide the core of efforts to protect the world's threatened species and are increasingly recognized as essential providers of ecosystem services and biological resources; key components in climate change mitigation strategies; and in some cases also vehicles for protecting threatened human communities or sites of great cultural and spiritual value.[18]

Accordingly, today, several environmental instruments – such as the Convention on Biological Diversity (Biodiversity Convention),[19] the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention)[20] and the Convention for the Protection of the World Cultural and Natural Heritage (World Heritage Convention)[21] – reflect these preoccupations by containing protected area provisions.[22]

This IEL evolution should prompt IHL to follow a similar path. However, envisaging the creation of a new war-related convention or the modification of existing IHL instruments to achieve this purpose could turn out to be difficult, if not impossible, in practice. Indeed, currently, when States increasingly face serious challenges during warfare, they might not be inclined to increase, through a "legislative process", the protection of environmental needs. Such an IEL orientation could, however, be reflected in the interpretation and application of existing provisions of Additional Protocol I (AP I), which keep non-defended localities or demilitarized zones off-limits to military activities. Yet, as mentioned above and as highlighted in the Commentary on the Additional Protocols, these provisions have originally been designed to preserve human interests in priority.[23]

16 Nigel Dudley (ed.), *Guidelines for Applying Protected Area Management Categories*, IUCN, Gland, Switzerland, 2008, p. 2, available at: https://portals.iucn.org/library/sites/library/files/documents/pag-021.pdf.
17 *Ibid.*, Foreword.
18 *Ibid.*
19 Biodiversity Convention, above note 6.
20 Ramsar Convention, above note 6.
21 World Heritage Convention, above note 6.
22 Ole Kristian Fauchald, "International Environmental Governance and Protected Areas", *Yearbook of International Environmental Law*, Vol. 30, 2019, p. 105.
23 Indeed, as noted by the ICRC Commentary on the Additional Protocols: "In fact, this is the essential character of the zones created in Article 60: they have a humanitarian and not a political aim; they are specially intended to protect the population living there against attack." Yves Sandoz, Christophe Swinarski and Bruno Zimmermann (eds), *Commentary on the Additional Protocols*, ICRC, Geneva,

That said, nothing prevents the application of concepts of protected localities or zones in such a manner as to also promote ecological interests. Indeed, under IHL, belligerents are free to decide on the creation of such localities or zones; I will come back to this point below. It is also worth noting that, in its recent *Guidelines on the Protection of the Environment in Armed Conflict*, the International Committee of the Red Cross (ICRC) emphasizes the importance of employing AP I mechanisms to safeguard certain biodiversity hotspots when it expressly states that

> [a]reas of major ecological importance that could be designated as *demilitarized zones* include groundwater aquifers, key biodiversity areas (which could be national parks or endangered species habitats), ecological connectivity zones, or areas important for coastal protection, carbon sequestration or disaster prevention.[24]

The ICRC also emphasizes that

> [b]y agreeing or declaring a *non-defended locality* – which must be by definition "inhabited" and thus can only be considered for populated areas of the natural environment – a party to a conflict can reduce the risk of exposing a particular locality to hostilities, thus enhancing the protection of both the population and the natural environment in the given area.[25]

In the same manner, in its commentary to Draft Article 40 entitled "Military and Hostile Activities", the IUCN Draft International Covenant on Environment and Development mentions IHL demilitarized zones and non-defended localities as potential solutions for the protection of the environment.[26]

Legal nature of protected areas

Relying solely on the "greening" of non-defended localities and demilitarized zones to strengthen vulnerable ecosystems suffers from an important weakness: under IHL, the creation of these localities or zones depends entirely on the belligerents' will do to so. Indeed, as alluded to previously, there is no obligation under IHL to

1987 (ICRC Commentary on the APs), para. 2303. Furthermore, according to Article 59(2) of AP I, "non-defended localities" must be inhabited to receive protection under IHL. It should, however, be emphasized that paragraph 11 of the *San Remo Manual on International Law Applicable to Armed Conflicts at Sea* encourages belligerents "to agree that no hostile actions will be conducted in marine areas containing: (a) rare or fragile ecosystems; or (b) the habitat of depleted, threatened or endangered species or other forms of marine life". Louise Doswald-Beck (ed.), *San Remo Manual on International Law Applicable to Armed Conflicts at Sea*, Cambridge University Press, Cambridge, 1995.

24 ICRC Guidelines, above note 14, para. 208 (emphasis added).

25 *Ibid*., para. 207 (emphasis added).

26 IUCN, *Draft International Covenant on Environment and Development of the International Union for Conservation of Nature and Natural Resources*, IUCN Environmental Policy and Law Paper No. 31, Rev. 4, 2015, available at: https://portals.iucn.org/library/sites/library/files/documents/EPLP-031-rev4.pdf. It is worth highlighting that even if non-defended localities and demilitarized zones are not designed to protect the environment as such, when created, they offer indirect protection to the fauna and flora by excluding military activities from taking place in these localities and zones. See Matthew Gillett, "Animals in Protected Zones", in Anne Peters, Jérôme de Hemptinne and Robert Kolb (eds), *Animals in the International Law of Armed Conflict*, Cambridge University Press, Cambridge, 2022, pp. 253–255.

establish undefended localities or demilitarized zones.[27] Belligerents – both States and non-State actors[28] – are merely invited to do so by concluding agreements on the matter.[29] As a result, very few of these areas have been constituted during – or even before – an armed conflict.[30] When situations of violence break out, belligerents are not keen on negotiating with the adversary about the delimitation of such areas or on accepting the curtailment of their powers to further protect individuals.[31] Before the outbreak of armed conflict, identifying the limits of undefended localities and demilitarized zones to protect those who are not, or are no longer, involved in hostilities is complicated by the fact that, by definition, at this early stage, the location of combat operations and of strategic points is still unknown.[32] However, the situation is quite different for environmental areas; indeed, under several environmental treaties, States are now obliged to precisely map and define the perimeters of these areas on the basis of

27 Emanuela-Chiara Gillard, "'Safe Areas': The International Legal Framework", *International Review of the Red Cross*, Vol. 99, No. 3, 2017, p. 1078.

28 ICRC Guidelines, above note 14, para. 206. See also Jean-Marie Henckaerts and Louise Doswald-Beck (eds), *Customary International Humanitarian Law*, Vol. 1: *Rules*, Cambridge University Press, Cambridge, 2005 (ICRC Customary Law Study), Rule 36, available at: https://ihl-databases.icrc.org/en/customary-ihl/rules. This rule foresees that "[d]irecting an attack against a demilitarized zone agreed upon between the parties to the conflict is prohibited" under customary IHL in both international and non-international armed conflicts.

29 E.-C. Gillard, above note 27, p. 1078. It is interesting to observe that, according to Principle 4 of the International Law Commission (ILC) Principles on Protection of the Environment in Relation to Armed Conflicts, "States should designate, by agreement *or otherwise*, areas of environmental importance as protected zones in the event of an armed conflict, including where those areas are of cultural importance." ILC, *Principles on Protection of the Environment in Relation to Armed Conflicts*, UNGA Res. 77/104, 7 December 2022 (PERAC Principles), Principle 4 (emphasis added). In its commentary to Draft Principle 4, the ILC provides the following explanation: "The types of situations foreseen may include, *inter alia*, an agreement concluded verbally or in writing, or through reciprocal and concordant declarations, as well as those created through a unilateral declaration or designation through an international organization. It is worth noting that the word 'State' does not preclude the possibility of agreements being concluded with non-State actors." ILC, *Draft Principles on Protection of the Environment in Relation to Armed Conflicts, with Commentaries*, UN Doc. A/77/10, in *Yearbook of the International Law Commission*, Vol. 2, Part 2, 2022 (PERAC Commentary), p. 105. In fact, Article 59 of AP I had already envisaged the possibility that "non-defended localities" could be created by way not only of agreements, but also of unilateral declarations.

30 E.-C. Gillard, above note 27, p. 1084.

31 To overcome the lack of willingness of States to identify and safeguard protected areas, it is worth recalling the initiative taken by the IUCN and the International Council on Environmental Law to develop a Draft Convention on the Prohibition of Hostile Military Activities in Protected Areas according to which the UN Security Council, in "[e]ach resolution adopted … to take action under Chapter VII of the Charter, in response to a situation of armed conflicts, shall include a list of the relevant internationally protected areas, thereby designated as non-target areas in which all hostile military activities shall not be permitted during the armed conflict in question" (Art. 2). Thus, the Draft Convention imposes a rather "unusual" obligation upon the Security Council to act in this domain; however, it never came into force. For a critical analysis of the Draft Convention, see Richard T. Tarasofsky, "Protecting Specially Important Areas during International Armed Conflict: A Critique of the IUCN Draft Convention on the Prohibition of Hostile Military Activities in Protected Areas", in Jay E. Austin and Carl E. Bruch, *The Environmental Consequences of War*, Cambridge University Press, Cambridge, 2000.

32 The ICRC Commentary on the APs, above note 23, para. 2308, notes that "it is provided that the agreement may be concluded in peacetime". However, the Commentary goes on to state that, as "it is unlikely that two or more States will agree in advance to keep one or more zones clear of military operations in the event of a conflict breaking out between them", the possibility of the agreement being concluded in peacetime "seems, at least, a rather theoretical point".

objective criteria, or pursuant to the "listing systems" set out in those treaties. For instance, Article 8(a) of the Biodiversity Convention – which is currently ratified by 196 parties – requires States to unilaterally "[e]stablish a system of protected areas or areas where special measures need to be taken to conserve biological diversity". It is true that this obligation is limited by a significant caveat: it applies "as far as possible and as appropriate". Accordingly, it is usually considered to be an "obligation of conduct" imposing a "due diligence standard", rather than an "obligation of result" guaranteeing a specific outcome without a margin of appreciation. This does not mean, however, that this obligation is of a purely political nature.[33] As rightly emphasized by Ole Kristian Fauchald, "[i]t merely indicates that the commitments are subject to countries' ability to perform the duties and that states have broad discretion regarding how to achieve compliance".[34]

In any event, in subsequent practice, States have shown their willingness to treat seriously the obligation – albeit of conduct – to establish protected areas by, for instance, working together in identifying these areas and by adopting a Programme of Work on Protected Areas[35] designed to assist State authorities in the implementation of Article 8(a)– (i). The listing system envisaged by the Ramsar Convention – also ratified by a great number of States (172) – is another example of a clear undertaking by States during peacetime to designate particularly threatened zones. Indeed, under this system, when signing or joining the Convention, States are required to "designate suitable wetlands within [t]heir territor[ies] for inclusion in a List of Wetlands of International Importance" and to "designate at least one wetland to be included in the List".[36] In the same vein, the World Heritage Convention obliges the 195 States Parties, "in so far as possible, [to] submit to the World Heritage Committee an inventory of property forming part of the cultural and natural heritage, situated in [their] territory and suitable for inclusion in the [World Heritage] list".[37] This list, however, only encompasses natural sites that have acquired "significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity".[38] It is worth noting that both the Ramsar Convention and World Heritage Convention include in these lists sites threatened or affected by an armed conflict.

But how could IEL obligations further impact the regulation of warfare if the establishment of undefended localities or demilitarized zones is subject to the consent of States and so is, accordingly, rarely implemented in practice? These environmental obligations could play a role in influencing IHL in two respects.

33 O. K. Fauchald, above note 22, p. 107.
34 *Ibid.*
35 *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Seventh Meeting: VII/28: Protected Areas (Articles 8(a) to (e))*, UN Doc. UNEP/CBD/COP/DEC/VII/28, 20 February 2004, para. 18, available at: www.cbd.int/doc/decisions/cop-07/cop-07-dec-28-en.pdf.
36 Ramsar Convention, above note 6, Arts 2(1), 2(4).
37 World Heritage Convention, above note 6, Art. 11(2).
38 Intergovernmental Committee for the Protection of the World Cultural and Natural Heritage, *Operational Guidelines for the Implementation of the World Heritage Convention*, UNESCO, Paris, 2012, para. 49, available at: https://whc.unesco.org/archive/opguide12-en.pdf.

Firstly, it should be recalled that the establishment of protected localities or zones under Articles 59 and 60 of AP I, respectively, could be treated as a crucial way of implementing the general obligation to take all "feasible precautions against the effects of attacks" enshrined in Article 58 of AP I and in customary international law.[39] In other words, the creation of these areas could be described as constituting an effective method for carrying out the duty to take measures of precaution and, in particular, measures of segregation which require, among other things, the separation of war-related areas from other zones.[40] Furthermore, recent IEL developments with regard to certain protected environmental locations have shown that one of the most effective ways to maintain fragile ecosystems against irreversible damage caused by human activities – including by military operations – is precisely (1) to prevent these activities from taking place in these ecosystems, and (2) to adopt appropriate precautionary measures, such as the clear marking and delineation of certain areas and the communication of relevant information to other States. While it is true that the ICRC has recently recognized that "no rule of IHL currently exists to confer internationally recognized protection on specific natural areas",[41] effectively executing Article 58 obligations of precaution, in light of IEL commitments, necessitates *de facto* the preservation of certain fragile zones – which have been identified by States pursuant to environmental instruments – from all military actions and from the presence of combatants and military equipment. This requirement is nonetheless subject to a "feasibility standard" to which both the obligation to create protected zones under IEL[42] and the obligation to take precautions under IHL[43] are submitted. These obligations are, in reality, very similar in nature, which should facilitate the shaping of one obligation in light of the other.

Secondly, IEL obligations could impact the regulation of protected areas in warfare by directly applying alongside IHL. I will now turn to this complicated issue.

Scopes of application of protected areas

Directly applying IEL regimes governing protected areas during warfare raises the four following delicate and controversial difficulties: the continuing applicability of these regimes between belligerents when hostilities take place; their extraterritorial applicability to invaded and occupied territories; their applicability to non-State actors; and their concrete contributions to IHL norms protecting non-defended localities and demilitarized zones. These issues will be discussed in

39 ICRC Customary Law Study, above note 28, Rules 22–24.
40 See Jean-François Quéguiner, "Precautions under the Law Governing the Conduct of Hostilities", *International Review of the Red Cross*, Vol. 88, No. 864, 2006, p. 819.
41 ICRC Guidelines, above note 14, para. 146.
42 See e.g. Biodiversity Convention, above note 6, Art. 8.
43 AP I, Art. 58.

turn by comparing the temporal, geographical, personal and material scopes of application of both IEL and IHL regimes.

Temporal scopes of application

It is commonly accepted that IHL is the main branch of international law that regulates hostilities as such, while IEL governs pre- and post-conflict situations. This "division of labour" between IHL and IEL along a temporal line is, however, simplistic.[44] Indeed, IHL does not only apply during armed conflicts: it also foresees minimal pre- and post-conflict measures. Article 60 of AP I, on demilitarized zones, is a particularly good example of such measures that apply in peacetime since, as set out above, potential belligerents are invited to conclude all necessary arrangements regarding such zones before the outbreak of a war.[45] The importance of designing, testing and implementing sophisticated safety measures that contribute to preventing damage to biodiversity hotspots in peacetime cannot be overemphasized, as such damage is often irreversible and thus irreparable. This explains why, in its commentaries to the Draft Principles on Protection of the Environment in Relation to Armed Conflicts, the International Law Commission (ILC) has stated that "[w]hile the designation of protected zones could take place at any time, it should preferably be done before or at least at the outset of an armed conflict".[46]

Conversely, IEL instruments do not only relate to peacetime – they apply during warfare unless they expressly provide otherwise.[47] For instance, the World Heritage Convention envisages explicitly that a specific List of World Heritage in Danger must include properties notably threatened by "the outbreak … of an armed conflict".[48] Furthermore, when environmental treaties – like the Biodiversity Convention or the Ramsar Convention – are silent on the matter, they are presumed to keep on applying in these circumstances.[49] That said, even if theoretically applicable, environmental conventions may still contain specific provisions the respecting of which is incompatible with a state of war, such as those inviting signatories to actively cooperate with one another to guarantee the protection of endangered areas.[50] The Biodiversity Convention,[51] the Ramsar Convention,[52] and the World Heritage Convention[53] all contain such provisions regarding good cooperation. The impact of their non-applicability should not, however, be overestimated, for four reasons. Firstly, these provisions only concern

44 Jérôme de Hemptinne, "The Regulation of Hazardous Substances and Activities during Warfare", *Journal of International Criminal Justice*, Vol. 20, No. 5, 2023, p. 1258.
45 AP I, Art. 60(2).
46 PERAC Commentary, above note 29, p. 105.
47 R. van Steenberghe, above note 7, p. 1135.
48 World Heritage Convention, above note 6, Art. 11(4).
49 R. van Steenberghe, above note 7, p. 1137.
50 *Ibid.*, pp. 1139–1140.
51 Biodiversity Convention, above note 6, Art. 8(m).
52 Ramsar Convention, above note 6, Art. 6(2).
53 World Heritage Convention, above note 6, Art. 6(2).

the relationship between parties to the armed conflict.[54] This means that belligerents under whose jurisdiction protected areas are located and States which are not involved in the armed conflict must keep on cooperating to ensure the protection of these areas. Secondly, the suspension of cooperation among belligerents should only apply to war-related incidents or activities taking place in the concerned areas. Therefore, parties to the conflict should, in principle, continue working together to prevent, minimize or respond to damage caused to protected areas that is unrelated to military operations. Precisely delimiting what is connected to such operations and what is not might however raise practical difficulties; for instance, damage resulting from the poaching and trafficking of endangered species located in protected zones could well be done for purposes that are unrelated to an armed conflict, but such poaching and trafficking activities could also be conducted to generate money invested in the acquisition of weapons and ultimately to fuel hostilities. Thirdly, cooperation among States should not be affected by the occurrence of non-international armed conflicts taking place within their territories. Fourthly, it should be recalled, once again, that belligerents involved in non-international or international armed conflicts remain encouraged by IHL to negotiate the establishment of protected zones despite their disagreements. Accordingly, even if in practice this rarely happens, under IHL, cooperation on this important matter should not end with the onset of hostilities.

Territorial scopes of application

When confronted with an international or a non-international armed conflict on their own territories, States are, in principle, obliged to comply with obligations that are contained in environmental treaties with respect to safeguarding fragile zones. It remains unclear, however, whether these States also have extraterritorial duties when they carry out military operations in third-State territories. While the Ramsar Convention and the World Heritage Convention do not set out their jurisdictional scope, the Biodiversity Convention distinguishes between "components of biological diversity" which apply "in areas within the limits of [the State's] national jurisdiction" and "processes and activities" which apply "regardless of where their effects occur, carried out under [the State's] jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction".[55] That being said, at first sight, as observed by Karen Hulme, "the creation of *in situ* protected areas and the conservation of specific components of biodiversity does not appear capable of an extra-territorial reading".[56] This statement should be considered in light of the following two main points.

54 J. de Hemptinne, above note 44, p. 1279.
55 Biodiversity Convention, above note 6, Art. 4.
56 Karen Hulme, "Using International Environmental Law to Enhance Biodiversity and Nature Conservation during Armed Conflict", *Journal of International Criminal Justice*, Vol. 20, No. 5, 2023, p. 1180.

Occupying States should, in principle, safeguard areas that are legally protected in territories under occupation. Indeed, when "effectively controlling" these areas, these States are, in principle, bound to respect the (international) laws and institutions of occupied territories,[57] including those relating to the protection of specific sites. It could even be argued that these States should make necessary changes to local laws to be able to comply with their most fundamental environmental obligations on the matter. Moreover, Principle 19(2) of the ILC Principles on Protection of the Environment in Relation to Armed Conflicts (PERAC Principles) expressly recognizes that "[a]n occupying power shall take appropriate measures to prevent significant harm to the environment of the occupied territory", which could entail creating or maintaining ecological zones if required to avoid causing "harm that is likely to prejudice the health and well-being of protected persons of the occupied territory or otherwise violate their rights".

Determining whether invading States – which do not, as such, exercise "control" over territories under invasion – have environmental duties beyond their national jurisdiction is a more complex and controversial issue. Obviously, fully respecting the far-reaching obligations regarding the conservation and management of protected areas – as required under the terms of the Biodiversity Convention, the Ramsar Convention or the World Heritage Convention – would impose excessive burdens upon belligerents in the extreme circumstances of hostilities. Nevertheless, such practical limits should not allow belligerents to entirely disregard the existence of those areas when fighting abroad. Indeed, on a theoretical level, it could be argued that, over recent decades, the environment has progressively been ascribed a universal normative value which exceeds the constraints imposed by State sovereignty.[58] This recognition could concretely mean, amongst other things, that certain areas receive minimum extraterritorial protection against attacks, especially when destroying or damaging them would affect the ecological balance on a wide scale because, for instance, these areas possess a "trans-frontier" nature or contain shared or unique natural resources.[59] From a legal standpoint, Markus Vordermayer has shown that environmental conventions often have "traces of extraterritoriality".[60] For instance, as noted above, the Biodiversity Convention applies beyond national jurisdiction to "activities" (or "processes") under the "control" of the State. This clause could be interpreted as also encompassing military operations of armed forces carried out under the control of the invading State within the State where protected areas are

57 See PERAC Principles, above note 29, Principles 19(1), 19(3). According to Principle 19(1), "[a]n occupying Power shall respect and protect the environment of the occupied territory in accordance with applicable international law and take environmental considerations into account in the administration of such territory". Principle 19(3) adds that "[a]n occupying Power shall respect the law and institutions of the occupied territory concerning the protection of the environment and may only introduce changes within the limits provided by the law of armed conflict". See also GC IV, Arts 54, 64.

58 Markus Vordermayer, "The Extraterritorial Application of Multilateral Environmental Agreements", *Harvard International Law* Review, Vol. 59, No. 1, 2018, p. 110.

59 *Ibid.*

60 *Ibid.*, p. 83.

situated. While both the World Heritage Convention and the Ramsar Convention lack express provisions on their territorial scope, they contain articles that could be read as indicating that these conventions require States to respect obligations when acting abroad.[61] From a practical perspective, the extraterritorial applicability of specific environmental provisions on protected areas could be facilitated by the fact that most of the obligations referred to in these provisions impose duties of conduct: a State is expected to "do all it can … to the utmost of its own resources",[62] "in so far as possible, and as appropriate for each country".[63] Accordingly, such "feasibility standards" allow a State to adapt the taking of appropriate measures of safeguard in light of the level of control it exercises over a specific fragile environment. It should finally be noted that, under IHL, when setting up protected areas, States remain free to impose upon themselves extraterritorial obligations. Obviously, third parties cannot be bound by such obligations without their consent.[64]

Personal scopes of application

Obligations contained in IEL instruments on the identification and conservation of protected areas are not addressed to armed groups. It is nonetheless increasingly recognized that these groups are bound by international human rights law,[65] particularly when they control part of the national territory and exercise quasi-governmental functions. Although human rights instruments do not formally recognize environmental rights, the protection of the environment has progressively been considered indispensable to guaranteeing the respect of other fundamental rights,[66] such as the right to

61 See Vordermayer's reading of Articles 4 and 5 of the World Heritage Convention (above note 6) and Article 3(1) of the Ramsar Convention (above note 6): M. Vordermayer, above note 58, pp. 97–98.

62 World Heritage Convention, above note 6, Art. 4.

63 *Ibid.*, Art. 5. See also Article 8 of the Biodiversity Convention, above note 6, which uses similar terms: "as far as possible and as appropriate".

64 It is worth noting that the PERAC Commentary, above note 29, p. 155, emphasizes that "[t]he agreement may also contain provisions on the management and operation of the zone. Regarding the form of protection, it is obvious that the *pacta tertiis* rule will limit the application of a treaty to the parties. As a minimum, the designation of an area as a protected zone could serve to inform the planning of parties to an armed conflict such that they do not conduct military operations within the zone, and alert them to take the protected zone into account when applying the principle of proportionality or the principle of precautions in attack in the vicinity of the zone."

65 Marco Sassòli, *International Humanitarian Law: Rules, Controversies, and Solutions to Problems Arising in Warfare*, Edward Elgar, Cheltenham, 2019, p. 490; Andrew Clapham, "Human Rights Obligations of Non-State Actors in Conflict Situations", *International Review of the Red Cross*, Vol. 88, No. 863, 2006, pp. 522–523; Christian Tomuschat, "The Applicability of Human Rights Law to Insurgents Movements", in Horst Fischer, Ulrike Froissart, Wolff Heintschel von Heinegg and Christian Raap (eds), *Krisensicherung und Humanitärer Schutz – Crisis Management and Humanitarian Protection: Festschrift für Dieter Fleck*, Berliner Wissenschafts-Verlag, Berlin, 2004, p. 588; Dieter Fleck, "Humanitarian Protection Against Non-State Actors", in *Verhandeln für den Frieden – Negotiating for Peace: Liber Amicorum Tono Eitel*, Springer, Berlin, 2003, p. 79.

66 Daniil Ukhorskiy, "Environmental Destruction in War: A Human Rights Approach", *EJIL: Talk!*, 19 June 2023, available at: www.ejiltalk.org/environmental-destruction-in-war-a-human-rights-approach/. In this regard, see UNGA Res. A/76/L.75, 26 July 2022, which recognizes "the right to a clean, healthy and sustainable environment as a human right".

life,[67] the right to an adequate standard of living, including food,[68] and the right to "the enjoyment of the highest attainable standard of physical and mental health".[69] Indeed, as acknowledged by the ILC, "[t]here is in general a close link between key human rights, on the one hand, and the protection of the quality of the soil and water, as well as biodiversity to ensure viable and healthy ecosystems, on the other".[70] Furthermore, as shown above, effectively safeguarding ecological systems during wartime often requires the creation of environmental zones as envisaged in IEL, and these zones could well be located in lands that are under the control of armed groups.[71] It is thus essential that not only State authorities but also armed groups protect these zones so as to fully preserve the fundamental rights of populations who live therein. This obligation should be seen in view of the fact that, as discussed in the previous paragraph, environmental commitments regarding protected areas must be implemented to the maximum extent feasible. This flexible aspect of IEL is important in the context of armed groups, whose capacity to respect such obligations may vary widely from one group to another.

Material scopes of application

In this section, I will briefly examine what concrete types of protection are offered by both IEL and IHL environmental frameworks and how they could complement each other. For didactic reasons, I will distinguish between two questions: the identification of environmental zones that require specific protection during wartime, on the one hand, and the definition of adapted pre-, during and post-conflict measures of safeguard on the other. On the first point, we have seen that IHL leaves to States (and possibly to armed groups) the entire responsibility of selecting, delimiting and marking protected areas (by using a specific sign that must be visibly displayed, especially on their perimeters and limits, and on

67 International Covenant on Civil and Political Rights, 999 UNTS 171, 16 December 1966 (entered into force 23 March 1976), Art. 6.

68 International Covenant on Economic, Social and Cultural Rights, 993 UNTS 3, 16 December 1966 (entered into force 3 January 1976) (ICESCR), Art. 11.

69 *Ibid.*, Art. 12.

70 PERAC Commentary, above note 29, p. 162.

71 It should however be highlighted that the regulatory framework regulating protected areas is sometimes in conflict with the right of individuals to freely dispose of their natural resources. Indeed, conservationists have, for a long time, advocated the establishment of protected areas which are free from human occupation. The concerns of local populations are nowadays increasingly taken into account in the management of these areas. See Jérémie Gilbert, "The Right to Freely Dispose of Natural Resources: Utopia or Forgotten Right?", *Netherlands Quarterly of Human Rights*, Vol. 31, No. 3, 2013, p. 339. Indeed, as noted by the World Wildlife Fund (WWF), "there is increasing evidence of the important role that indigenous territories play in the conservation of biodiversity and protection of critical spaces for the maintenance of ecological processes and provision of ecosystem services. Although the main purpose of these territories is to secure the tenure of the ancestral lands of indigenous peoples and safeguard their cultures, the conservation of the biodiversity in their territories is fundamental for their survival and is strongly tied to their livelihoods and to ensuring their access to the natural resources they depend on." WWF, "Protected Areas and Indigenous Territories", available at: https://wwf.panda.org/discover/knowledge_hub/where_we_work/amazon/vision_amazon/living_amazon_initiative222/protected_areas_and_indigenous_territories/.

highways).[72] To precisely identify fragile ecological areas that could be affected by warfare, belligerents could benefit from criteria that have been set up (and concretely applied), pursuant to the Biodiversity Convention, by States Parties, as well as by international and non-governmental organizations. For instance, the IUCN[73] has provided a detailed definition of protected areas[74] and has established, on that basis, a global classification system of such areas[75] which, despite its non-binding nature, "has had significant impact on some international institutions and the majority of countries" in setting up and managing protected zones.[76] This classification system, which is based on management objectives, includes six categories. The first four categories (strict nature reserve[77] and wilderness area,[78] national park,[79] natural monument or feature,[80] and habitat or species management area[81]) are subject to particularly restrictive rules of isolation and conservation which require special attention during warfare. It should nonetheless be emphasized that, although States have agreed to use these categories as part of their commitments under the Programme of Work on Protected Areas referred to above,[82] they still retain a broad discretion about the extent to which they establish such areas.[83] Furthermore, identifying and delimiting zones that need to be spared from hostilities is rendered increasingly complex in a system where there is a great diversity of such zones "in size, age,

72 See AP I, Arts 60(5), 59(4).

73 It is important to highlight that the IUCN "enjoys a special position in the intergovernmental cooperation regarding protected areas and provides a forum for, and link between, governments, management authorities, scientist, NGOs, at other stakeholders at the international and national levels": O. K. Fauchald, above note 22, p. 114. Standards that are set by this institution in the field of protected areas carry important weight among State parties to the Biodiversity Convention: *ibid.*, p. 115.

74 The IUCN provides the following definition of protected areas: "A clearly defined geographical space recognized, dedicated and managed, through legal and other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values." N. Dudley, above note 16, pp. 8–9. As noted in O. K. Fauchald, above note 22, p. 117, this definition – which is more precise than the definition contained in Article 2 of the Biodiversity Convention ("a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives") – has received significant endorsement internationally.

75 For a detailed analysis of this classification system, see N. Dudley, above note 16, pp. 13–23.

76 Other tools, such as the United Nations List of Protected Areas (available at: https://wedocs.unep.org/handle/20.500.11822/33388), regularly updated since its creation in 1961, could also constitute a useful tool for that purpose.

77 "Strictly protected areas set aside to conserve biodiversity and, possibly, geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values." N. Dudley, above note 16, p. 9.

78 "Large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition." *Ibid.*, p. 9.

79 "Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities." *Ibid.*, p. 9.

80 "Areas are set aside to protect a specific natural monument, such as a landform, sea mount, a cave or even a living feature such as an ancient grove. They are generally quite small areas and often have high visitor, historical or cultural value." *Ibid.*, p. 9.

81 "Areas dedicated to the conservation of particular species or habitats." *Ibid.*, p. 9.

82 See *Decision Adopted by the Conference of the Parties*, above note 35.

83 O. K. Fauchald, above note 22, p. 119.

purpose, governance, management and outcomes",[84] and where environmental interests often transcend borders and, thus, require the creation of "transboundary conservation areas" and "the establishment and maintenance of cross-border governance structured and cooperative mechanisms".[85] This complexity is reinforced by the fact that the distinction between areas to which restrictive conservation measures apply (through banning or strictly limiting human visitation) and other protected landscapes that "focus on the provision of ecosystem services to local populations and humanity in general"[86] has been increasingly blurred in practice over recent decades. The Ramsar List of Wetlands of International Importance and, especially, the World Heritage List of Sites of Outstanding Universal Value for Humanity, which is submitted to a "rigorous and criteria-driven external validation selection process for listing",[87] could also be useful in this respect. That being said, the scopes of these two systems of protection seem too narrowly defined to constitute a comprehensive framework of reference for the conservation of the many different fragile ecological locations that exist on the planet and that are under threat during wartime.

On the second point – the elaboration of adequate measures of safeguard – IHL only proposes a unique "conservationist approach" by which certain areas are completely sealed off from military operations.[88] This mainly entails the respect of the following four obligations: that combatants, weapons and mobile military equipment are removed from these areas;[89] that fixed military installations and establishments are not used within these areas;[90] that acts of hostility do not take place into or in these areas;[91] and that any activities in support of military operations are not undertaken in these areas.[92] As we have seen in the previous paragraph, environmental instruments envisage similar measures of isolation from certain human activities. In some cases, these measures are even stricter than those contemplated under IHL; for instance, the IUCN category of "strict nature reserve" mentioned above envisages that "human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values".[93] Having said this, pursuant to IEL, States are also invited to contemplate a wide variety of other measures for the conservation and

84 Nigel Dudley, Jeffrey D. Parrish, Kent H. Redford and Sue Stolton, "The Revised IUCN Protected Area Management Categories: The Debate and Ways Forward", *Oryx*, Vol. 44, No. 4, 2010, p. 485.
85 IUCN, above note 1, p. 51. See also the IUCN "Parks for Peace" initiative, available at: www.cbd.int/peace/about/peace-parks/.
86 O. K. Fauchald, above note 22, p. 113.
87 See K. Hulme, above note 56, p. 1170.
88 See Michael N. Schmitt, "Ukraine Symposium – Protected Zones in International Humanitarian Law", *Articles of War*, 24 August 2022, available at: https://lieber.westpoint.edu/protected-zones-international-humanitarian-law/. Of course, this approach does not prevent States from agreeing to other measures that are necessary for the proper management and operation of the concerned zone. See PERAC Commentary, above note 29, Principle 18, para. 5.
89 AP I, Arts 60(3)(a), 59(2)(a).
90 *Ibid.*, Arts 60(3)(b), 59(2)(b).
91 *Ibid.*, Arts 60(3)(c), 59(2)(c).
92 *Ibid.*, Arts 60(3)(d), 59(2)(d).
93 N. Dudley, above note 16, p. 13.

sustainable use of biological diversity which integrate human activities into the management of protected areas. These measures are grounded on general obligations contained in the Biodiversity Convention and in the Ramsar Convention, which respectively require that States "[d]evelop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity",[94] and that they "formulate and implement their planning so as to promote the conservation of the wetlands".[95]

In theory, these multifaceted solutions stemming from environmental instruments regarding natural resource management and conservation (with the involvement of local communities) should be implemented not only when hostilities are already ongoing, but also, and especially, before and after the conflict has taken place. Indeed, the adoption of pre-conflict measures could significantly contribute to improving security and building peace in protected zones. As recently highlighted by the IUCN, "[b]y maintaining ecosystem services, protected areas in any IUCN management category can help to minimize risks of conflict during times of stress by direct contributions to wellbeing or subsistence".[96] IEL could also be a driving force for the taking of adequate restoration and clean-up post-conflict measures in order to adequately address war-related damage that is inevitable in case of military operations. While humanitarian conventions are silent on the matter, Principle 24 of the PERAC Principles encourages relevant actors – including States and international organizations – to cooperate with respect to post-conflict environmental assessments and remedial measures.[97] For example, these actors are invited to identify major environmental risks to fragile fauna and flora resulting from hostilities and to provide recommendations on how to address these risks. It is worth noting that the Biodiversity Convention is even more prescriptive in this respect since it obliges States Parties – albeit within the limits of their abilities – to "[r]ehabilitate and restore degraded ecosystems and promote the recovery of threatened species, *inter alia*, through the development and implementation of plans or other management strategies".[98] Obviously, these plans and strategies should be tailored to the specific nature of the destruction caused by the conduct of hostilities.[99]

94 Biodiversity Convention, above note 6, Art. 8(b). This entails that the restrictive conditions imposed by this IUCN category – where human visitation is strictly limited – would not be compatible with the regime of non-defended localities under Article 59(2) of AP I: as we have seen above, such localities must by definition be inhabited, so the regime can only be considered for populated areas of the natural environment. In this context, the only applicable regime would thus be "demilitarized zone".

95 Ramsar Convention, above note 6, Art. 3(1).

96 IUCN, above note 1, p. 39.

97 PERAC Principles, above note 29, Principle 24.

98 Biodiversity Convention, above note 6, Art. 8(f).

99 As recognized by the IUCN, above note 1, p. 55, "[a] second key implication of the complex interconnections between nature and conflict is the importance of conservation engagement in post-conflict situations. In some cases, warfare may alleviate threats to biodiversity, for example through the cessation of economic activities such as agricultural development, forestry, and fishing, as well as through the role military bases may serve as de facto protected areas. However, any such benefits tend

When hostilities are ongoing, the continuing application of the IEL framework of management and conservation of protected areas is essential to minimizing the harmful ecological consequences of war. This affirmation calls for nuanced observations. If the above conditions to seal off protected localities or zones from military operations are not respected, or the terms of the agreement between belligerents are breached, IHL provisions expressly recognize that military interests should prevail by allowing the other party to be released from its own obligations under the initial agreement.[100] In the same vein, in its PERAC Principles, the ILC grants protection against attacks to protected zones designated by agreement, "except insofar as [they] contain a military objective".[101] In such an eventuality, concerned localities or zones lose their status but shall continue to enjoy the general protection offered by IHL rules, such as those governing precaution,[102] distinction[103] and proportionality.[104] At the same time, however, targeting military objectives located in protected areas would seem to always run counter to the management and conservation obligations contained in environmental instruments which forbid States from conducting activities likely to cause harm to these areas. For instance, Article 6(3) of the World Heritage Convention formally prohibits any State party to the Convention from "tak[ing] any deliberate measures which might damage directly or indirectly the [listed] cultural and natural heritage situated on the territory of other States Parties to [the] convention", and this would obviously include targeting such heritage. Although the Biodiversity Convention and the Ramsar Convention do not contain a similar explicit prohibition, attacking protected zones is, without doubt, incompatible with the spirit of these conventions and the obligations of conservation that they impose on their signatories.

Would this entail that, by virtue of this explicit or implicit prohibitions, belligerents are always prevented from undertaking any military operations in these circumstances? This would appear unreasonable for most States, especially when they are combating rebel groups located within protected areas who are trying to destabilize their powers. In certain circumstances, fighting these groups might even be required to secure other legitimate interests – for example, such operations might be needed to protect forests against overexploitation, to

to be temporary, with waves of unconstrained development that often follow warfare quickly overwhelming any short-term reduction in pressures on nature. Natural resources such as wildlife and timber can often be the most easily available sources of revenue for reconstruction efforts, and so pressures on nature can be extremely high in post-conflict situations. Therefore, redirecting conservation action in the post-conflict context, for example through the application of nature-based solutions, is a key determinant of the long-term persistence of living nature in war-stricken regions."

100 AP I, Arts 60(7), 59(7).

101 PERAC Principles, above note 29, Principle 18. It is worth noting in this respect that, in its commentary to Draft Principle 18 (PERAC Commentary, above note 29, p. 154), the ILC observes that "[t]he phrase 'except insofar as it contains a military objective' is intended to denote that it may be the entire zone, only parts thereof, or objects located within the zone that become military objectives and lose the protection from attack".

102 AP I, Arts 57, 58.

103 *Ibid.*, Art. 52.

104 *Ibid.*, Arts 51(5)(b), 57(2)(a)(3).

safeguard park defenders against attacks, or to guarantee that endangered species are not poached or killed. In any case, as noted by Karen Hulme, "in practice, states do not appear to have interpreted Article 6(3) [of the World Heritage Convention] as a bar to … military actions".[105] Moreover, the flexible nature of the obligations contained in the Biodiversity Convention[106] and the Ramsar Convention[107] – which, as just recalled, do not contain a similar prohibition – allows, when absolutely necessary, for the application of IHL rules on the conduct of hostilities in case of warfare.[108]

This does not, however, mean that environmental considerations should be completely set aside in these circumstances. In accordance with the principle of systemic integration, IHL norms on the conduct of hostilities should be interpreted in light of "other relevant rules of international law applicable in the relations between parties",[109] including those relating to the establishment and management of protected areas contained in the above-mentioned conventions that have been widely ratified.[110] Concretely, such an environmental reading of IHL could entail, for instance, that the damage caused by military operations to the fauna and flora that is located in protected areas be ascribed a particularly heavy weight in the proportionality calculation that is needed to determine whether such damage is excessive under Articles 51(5)(b) and 57(2)(a)(3) of AP I (in international armed conflicts) or under customary IHL (in non-international armed conflicts).[111] Furthermore, military objectives situated at, or in the vicinity of, these protected areas could be narrowly defined as those which make not simply an effective contribution to military action as required for traditional military objectives,[112] but a "regular, significant and direct contribution" to such an action as required for certain specially protected objects, such as works and installations containing dangerous forces.[113] The rule of precaution in attack could also be interpreted as compelling that the targeting of such objectives be the only feasible way to terminate such contribution and that decisions on the matter be taken at a high level of command.[114]

105 K. Hulme, above note 56, p. 1183.
106 Biodiversity Convention, above note 6, Art. 8(a).
107 Ramsar Convention, above note 6, Arts 3, 4.
108 K. Hulme, above note 56, p. 1184.
109 Vienna Convention on the Law of Treaties, 1155 UNTS 331, 23 May 1969 (entered into force 27 January 1980), Art. 31(3)(c).
110 Given the wide variety of protected areas that could be established under IEL, a differentiated approach could be envisaged. Some protected areas – for instance, those belonging to the four categories mentioned above – could be submitted to more stringent conditions of conduct of hostilities than other areas which require less protection. This issue should be further studied.
111 ICRC Customary Law Study, above note 28, Rule 14. See Britta Sjöstedt, *The Role of Multilateral Environmental Agreements: A Reconciliatory Approach to Environmental Protection in Armed Conflict*, Hart, Oxford, 2020, p. 234.
112 See AP I, Art. 52(2).
113 See *ibid.*, Art. 56(2).
114 See K. Hulme, above note 56, p. 1168.

Concluding institutional observations

As a final note, it should be highlighted that recognizing the applicability of environmental multilateral conventions protecting biodiversity hotspots to all concerned actors, before, during and after hostilities, brings with it an important consequence: the institutional framework that flows from these conventions (such as the IUCN, the World Heritage Committee, and the Ramsar Standing Committee and Secretariat), as well as its administrative regime and decision-making process,[115] could play an active role in helping these actors to precisely identify protected zones in need of special attention in case of warfare, to shape appropriate measures of conservation and management of these zones, and to guarantee their application and respect in practice.[116] Exercising these functions can be examined from the two perspectives studied above. On the one hand, from an IHL angle, when agreeing on the establishment and governance of protected zones, States and non-State actors could formally decide to entrust some or all of the above responsibilities to these environmental institutions or, at least, to involve them in their implementation. It is worth mentioning in this regard that both Geneva Conventions I and IV contain in annexes quasi-identical draft agreements which aim at guiding belligerents when establishing hospital zones and localities.[117] These agreements specifically foresee the placing of these zones and localities under the control of one or more "Special Commissions" "for the purpose of ascertaining if they fulfil the conditions and obligations stipulated" in those agreements.[118] These supervisory functions could well be entrusted to environmental organs set up by environmental instruments or to newly created commissions that work in close collaboration with – or under the supervision of – these organs. On the other hand, from an IEL standpoint (which is particularly relevant since, as previously mentioned, belligerents rarely agree on protected areas), when interpreting and applying provisions of environmental treaties, or when issuing principles, operational guidelines and best practices pursuant to these treaties,[119] environmental institutions could develop and apply specific standards tailored to the needs of zones threatened by hostilities.[120] In this context as well, those institutions could increasingly perform monitoring functions to ensure the respect of IEL (and IHL) rules governing protected areas which are put under pressure – and often violated – because of warfare.

115 For the precise functions exercised by these institutions regarding protected areas in general, see O. K. Fauchald, above note 22, pp. 105–133.

116 This is of particular importance because, as highlighted in K. Hulme, above note 56, p. 1187, "[u]nder several of the conventions there is a support system provided by the treaty bodies that may be able to alleviate the governance vacuum that frequently accompanies conflict, and which has devastating impacts on nature".

117 For a short study of these draft agreements, see E.-C. Gillard, above note 27, pp. 1080–1081.

118 See Draft Agreement Relating to Hospital Zones and Localities, Annex I to GC I, Arts 8, 9; Draft Agreement Relating to Hospital and Safety Zones and Localities, Annex I to GC IV, Arts 8, 9.

119 For the many different roles of the IUCN, see O. K. Fauchald, above note 22, p. 115.

120 This is precisely what the IUCN does in its *Conflict and Conservation* report, above note 1.