The Evolution of Biodiversity Conservation Agreements

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Summary

The Convention on the International Trade in Endangered Species entered into force 50 years ago. This anniversary serves as a reminder that biodiversity loss remains a critical issue that international law has yet to contain. Several biodiversity agreements were concluded decades ago and have not kept pace with emerging environmental realities. This research note analyzes how actively conservation agreements evolve over time, using amendments and decisions as indicators of institutional dynamism. We find that species-based conservation agreements are more active than those centered on specific territories or ecosystems, both in terms of the number of amendments and decisions adopted. We also find evidence of a substitution of amendments for decisions, signaling a shift toward more flexible forms of governance in biodiversity conservation. These findings highlight where regulatory renewal is most needed and how institutional evolution could be more effectively achieved.

Introduction

As biodiversity loss becomes an increasingly pressing issue, the adaptability of global environmental governance is under growing scrutiny. Despite decades of international cooperation and treaty-making, the rapid decline of species and ecosystems continues. An estimated one million plant and animal species face extinction (IPBES 2019). This accelerating loss of biodiversity exposes the limitation of existing institutional frameworks in addressing evolving environmental challenges. Many international environmental agreements (IEAs) governing biodiversity were negotiated before the scale of today's ecological crisis was fully understood. Therefore, assessing how IEAs evolve is essential for evaluating their relevance in the face of rapid environmental change.

This research note investigates the regulatory activity of conservation-related IEAs. More specifically, it examines 341 conservation IEAs recorded in the International Environmental Agreements Database (IEADB) (Mitchell et al. 2020). These include, for example, the 1972 Benelux Convention on the Hunting and Protection of Birds, the 1992 Convention on the Conservation of Antarctic Marine Living Resources, and the 1994 Agreement on the Conservation of European Bats. Out of these 341 IEAs, 173 are bilateral and 168 have three signatory parties or more.

For each IEA, we quantify regulatory activity by counting both their number of amendments and the number of regulatory decisions adopted by their governing bodies. While amendments are legally binding, decisions are generally considered as soft law instruments. Drawing on these two metrics, we assess the activity levels of conservation IEAs to identify how change has occurred and where institutional stagnation persists.

Differences in Amendment Frequency

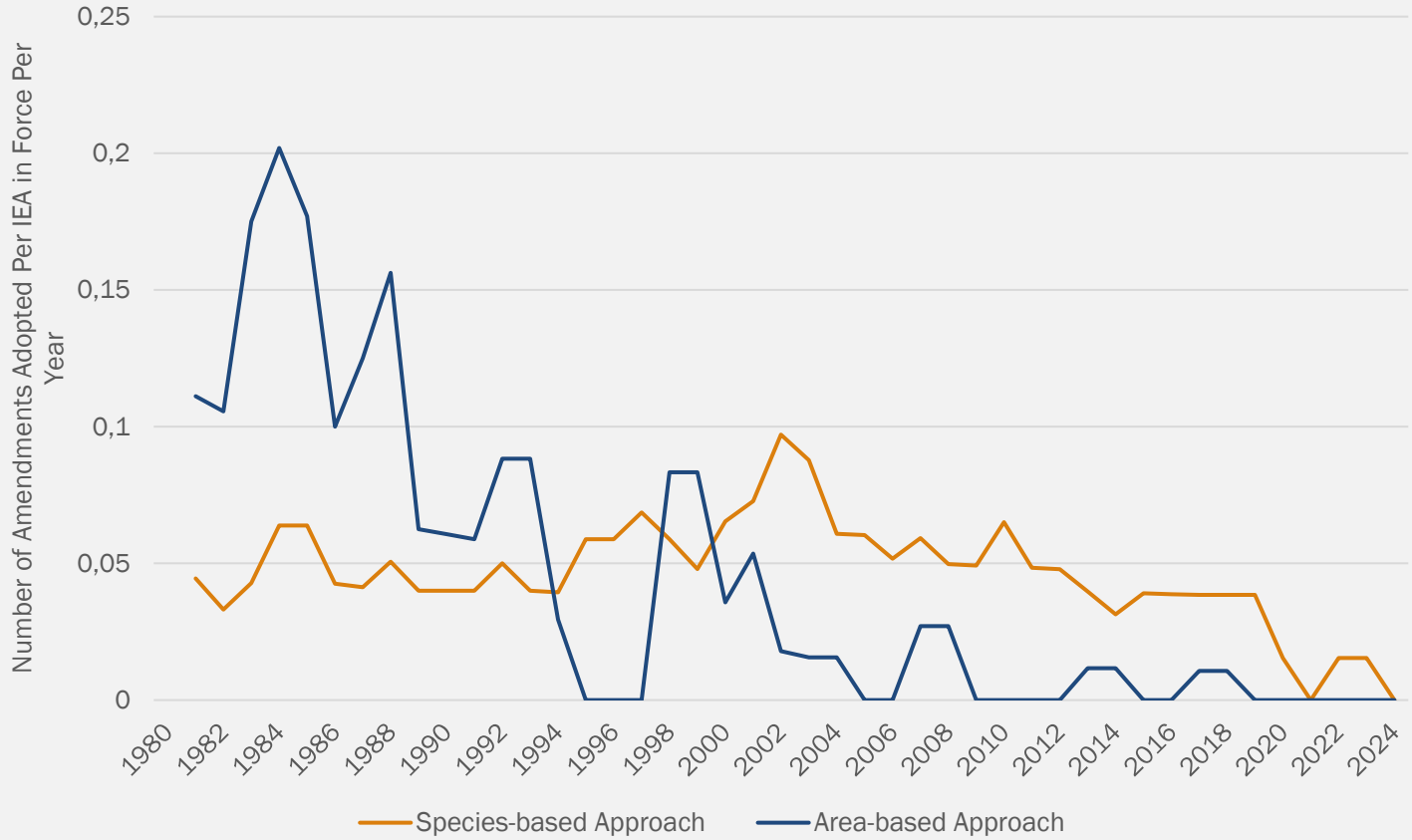
For the purpose of this research note, we distinguish between two groups of conservation IEAs. The first category focuses on specific species, including the 1973 Agreement on the Conservation of Polar Bears, the 1998 Agreement on the International Dolphin Conservation Program, and the 2001 Agreement on the Conservation of Albatrosses and Petrels. The second category of IEAs aims to protect specific territories or ecosystems.

Examples include the 1969 Convention on the Conservation of the Living Resources of the Southeast Atlantic and the 2014 Agreement on the Caspian Sea. This distinction between species-centric or area-centric approaches is classic in biodiversity conversation, with each approach having its own benefits and downsides. Of our collection of 341

conservation IEAs, 79 fall strictly into the species-specific category, 65 are classified as area-based, and 197 are indeterminate.

While area-based IEAs were amended more often than species-specific IEAs until the late 1990s, the trend reversed after 2000, with the latter surpassing the former. On average, each species-specific IEA that has been amended at least once undergoes 0,21 amendments per year, whereas such area-based IEAs are amended 0,14 times per year. This indicates that species-based IEAs are amended at a rate 1,5 times higher than area-centric ones. Furthermore, 19% of species-based conservation IEAs have at least two amendments, compared to only 9% of area-based IEAs.

Figure 1: Number of Amendments Adopted per IEA per Year, 1980-2024 (2-Year Moving Average)



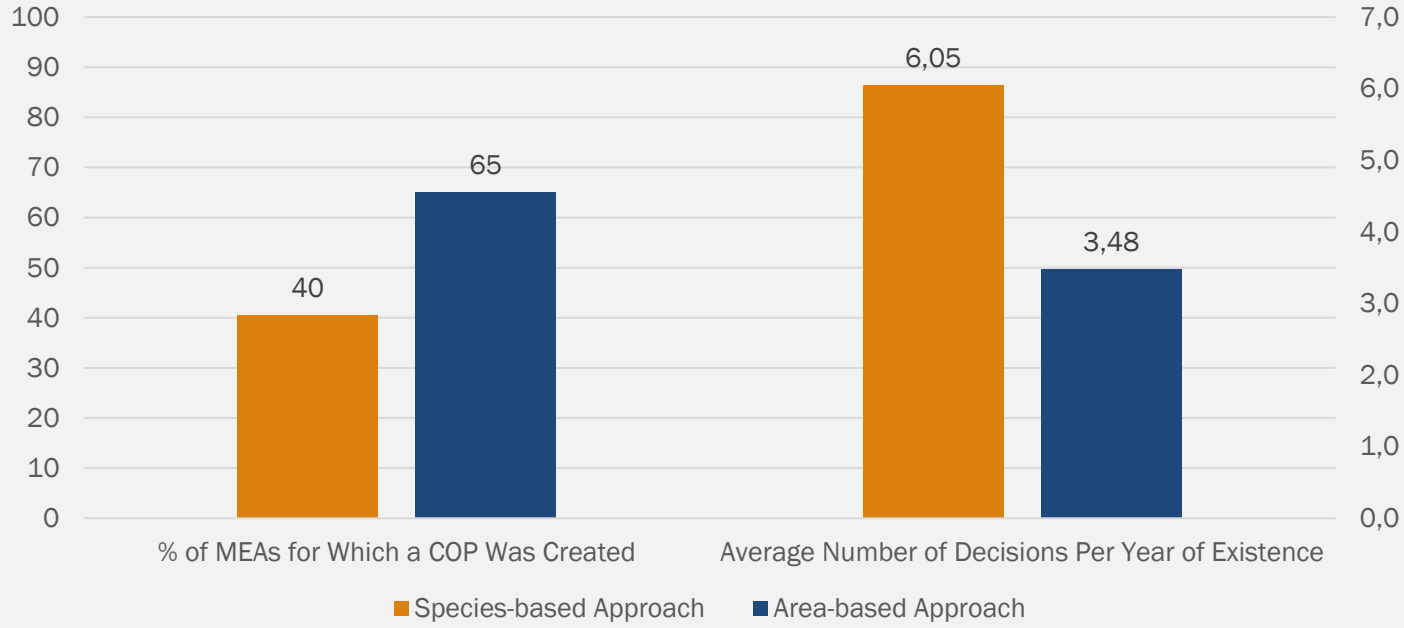
Species-based conservation IEAs often rely on annexes to list the species they are meant to protect, as well as to detail species-specific protection measures. These annexes are regularly amended to keep the IEAs aligned with current conservation needs. This likely accounts for the higher level of regulatory activity of species-based IEAs. For example, the International Convention for the Regulation of Whaling has undergone a record 72 amendments since its entry into force in 1948. These amendments include updates to the list of protected species, to species-specific size limits, and to the dates for the opening and closing catch seasons.

However, the gap between the number of amendments for the two conservation approaches has shrunk in recent years. As Figure 1 shows, the adoption of amendments for both conversation approaches has decreased. This suggests that amendments have become a less attractive means of institutional adaptation, perhaps due to higher transaction costs required relative to the adoption of soft-law decisions.

A Contrast in Decision Output

The two types of biodiversity IEAs differ in their institutional design. An important institutional feature that facilitates ongoing adaptation in IEAs is the establishment of a Conference of the Parties (COP) or a similar collective body. A COP can continuously assess the effectiveness of the IEA and take measures to address potential gaps. However, bilateral IEAs typically do not have a COP, while 55% of multilateral of environmental agreements (MEAs) devoted to biodiversity conversation have established a COP. Figure 2 shows that a COP was created for 65% of area-based conservation MEAs, whereas one was created for only 40% of species-based MEAs.

Figure 2: COP Creation and Average Number of Decisions Per Type of MEA

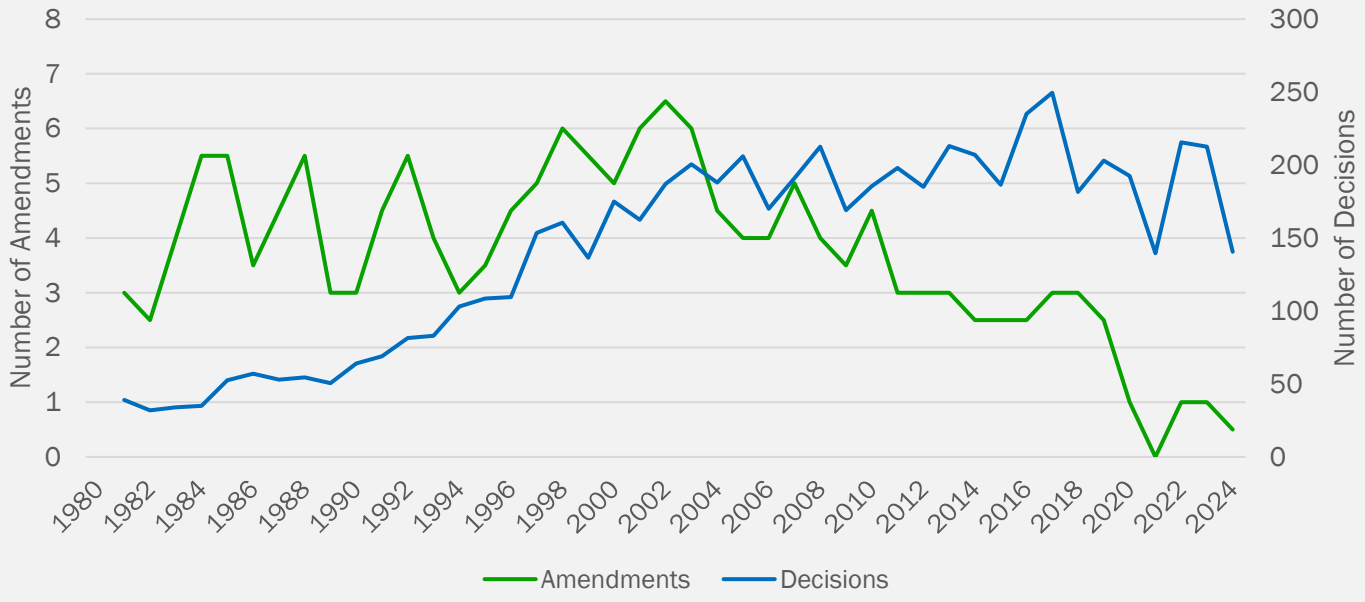


Interestingly, although a smaller proportion of species-based MEAs have created a COP than area-based MEAs, the former group has generated on average close to 1,75 times more decisions per year compared to the latter. As indicated in Figure 2, each species-based MEA generates on average 6,05 decisions per year, compared to 3,48 for area-based MEAs. This higher level of activity for species-based conservation IEAs may be attributed to the fact that these decisions address both which species are protected by these agreements and protection measures. For example, the CITES COP establishes every two years which species to list or to de-list, leading to more than 1014 in the last fifty years (Gehring & Ruffing, 2008 : 123). Therefore, while several area-based MEAs have established COPs, which greatly enhance their potential adaptability, they exhibit a lower degree of adaptative behavior than species-based MEAs.

A Shift in the Mode of Institutional Adaptation

The adoption of amendments represented the greater part of regulatory activity within conservation IEAs in the 1980s. This is no longer the case. Figure 3 illustrates a gradual shift from the use of amendments to the adoption of decisions. From 1980 to the early 2000s, the adoption of amendments has only risen by 57%, while decision-making has increased by 88%. In recent years, the adoption of amendments has clearly lost momentum, experiencing an 85% decrease between the early 2000s and 2024. This trend echoes the overall downwards trajectory in the adoption of new IEAs, identified by Veilleux & Morin (2025).

Figure 3: Number of Amendments and Decisions per Year, 1980-2024 (2-Year Moving Average)



Recent years have also seen a decrease in decision-making, although the decline is much less pronounced than that of amendment adoption. The adoption of decisions seems to have become the primary mode of regulatory adaptation for biodiversity conservation. This may signal a shift in regulatory preferences. Parties to conservation IEAs seem to favor the quicker and more flexible approach of decision-making over the formality of amendments.

Conclusion

Even though the species-based approach has been criticized for its limited impact at the ecosystem level, this research note finds that species-based IEAs display a higher degree of regulatory activity than area-based IEAs. This can be attributed to the use of annexes and decisions to record and update the protected species within species-specific IEAs. We also find that governance in biodiversity conservation has become more flexible over the last 20 years, shifting from the adoption of amendments to the adoption of decisions. Moreover, the pace of amendment adoption has greatly decreased in recent years for both conservation approaches. This reinforces the importance of decisions as a more flexible, though non-binding, mode of governance. To ensure that decisions remain relevant, decision-makers must maintain strong incentives for compliance.

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