COMMENTARY

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The future for ATBC conservation declarations

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1 | INTRODUCTION

The Association for Tropical Biology and Conservation (ATBC) is the world's largest international and professional organization whose mission is to promote research, education, and communication about the world's tropical ecosystems. A core component of ATBC's mandate is to engage in conservation science and capacity-building activities on a global and regional basis. It therefore has a critical role to play in advocating the use of science and other evidence-based approaches to inform conservation practices and policies at local, national, and global levels, as described further in the 2015-2025 Strategic Plan.¹ The main purpose of our commentary is to enlighten members of ATBC and the wider tropical conservation community of the importance and value of ATBC conference declarations as instruments for identifying and tackling significant conservation issues across the tropics. We also share our combined insights and recommendations on how to prepare, deliver, and evaluate any future ATBC conference declarations.

The ATBC strategy for the application of science in conservation policy and management action is far-reaching. ATBC has made

¹https://tropicalbiology.org/conservation-policy/atbc-strategic-plan/

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strong efforts to have positive impacts on conservation at the local level across the tropics by helpingbuild support and facilitate effective action for local conservation issues.² As the largest association of scientists dedicated to the study of tropical ecosystems and biodiversity ATBC can help focus international attention on local conservation issues, and have lasting value through supporting the efforts of individuals, institutions and environmental groups engaged in conservation advocacy. ATBC uses a range of approaches to bring attention to and raise awareness about urgent conservation issues. Through annual conferences and chapter meetings predominantly held in tropical countries, ATBC engages with local conservationists and thereby facilitates communication and collaboration among tropical biologists, conservation practitioners, and policymakers. Notably, we encourage our members to identify important pressing local conservation issues that are often in need of attention by tropical biologists. Annual and chapter conferences provide excellent opportunities to develop evidence-based advocacy on particular conservation issues, make specific recommendations for grass roots action, and identify who should take such action.

²https://tropicalbiology.org/conservation-policy/

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Published media articles that only mention the conference (n)	0	0	4	45	2
Declaration and year	ATBC 2016 in Montpellier, France	ATBC 2017 in Merida, Mexico	ATBC 2018 in Kuching, Malaysia	Total for all declarations (<i>n</i>)	Avato Petition Madagascar (n)

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One of the tasks of the ATBC conservation committee, as outlined in its mission, is to foster understanding of emerging conservation issues and conflicts, and propose feasible ways of addressing them. At annual and chapter conferences, this entails identifying a conservation issue or issues worthy of attention by our membership, the broader conservation community, and governments, and then working with local conservation scientists and organizations (in the country or region) to gather evidence and formulate a concise statement in the form of a conference declaration, for example, the Kuching Declaration (2018). The ATBC conservation committee also issues ad hoc resolutions that relate to general conservation issues of urgent concern and global relevance to tropical ecosystems and dependent livelihoods. Petitions are another tool supported by the conservation committee for the first time in 2019, but are not as yet formally recognized by the committee.

Since 2005, ATBC has issued 16 declarations on a range of issues from human disturbance of fragile island ecosystems in Hawaii to road development in the remote dry forests of Cambodia (ATBC's Declarations since (2005),). To date, we know very little about the conservation outcomes of these 16 declarations, other than informal evidence from those involved in their original preparation and follow-up. There are also no guidelines for evaluating the effectiveness of declarations in contributing to positive changes in environmental management and policy in the targeted countries/regions.

We begin this commentary by presenting a media survey of the 16 ATBC declarations. We used online searches of mainstream media and social media to quantify numbers of published news articles, Facebook posts, and Twitter tweets for all declarations since their inception in 2005 to 2018. We were unable to survey coverage on radio and television programs. The purpose of this survey is to quantify the number of posts on mainstream and social media digital platforms that reference specific ATBC declarations. We then discuss five case-study declarations that represent examples from across the tropics with differing contexts and outcomes. We conclude by introducing a set of five criteria for writing effective declarations, developed from results of the online survey, key insights from the five case studies, and our collective experience that may be useful to guide the writing and evaluation of future ATBC declarations.

2 | A MEDIA SURVEY OF THE 16 ATBC DECLARATIONS

The mainstream and social media survey were conducted by one of us (Sheherazade) in July 2019, and results were evaluated collectively. The Google search engine was used to examine mainstream media posts through keywords in English such as "ATBC conservation conference declaration" and "ATBC conservation conference declaration Marburg". From this, it was possible to extract published media news articles that mentioned a particular ATBC conference and/or declaration, and other published documents that made references to a particular declaration (e.g., a journal article). For social media, Facebook was searched in English to evaluate the posts

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mentioning a particular declaration, the number of times posts were shared, the number of likes of posts, and the number of comments on particular posts. This analysis had a number of limitations, notably because ATBC's Facebook page was only created on June 30, 2013, this restricts the number of posts before that time. Twitter was launched in 2005 and ATBC joined in August 2010. Twitter was searched for tweets and retweets on ATBC Twitter, and also relevant hashtags (e.g., #atbc2005, #atbcdeclaration, and #atbccairns). For both Facebook and Twitter, it was not possible to differentiate non-public posts. While online searches were in English, the survey includes media and social media data in other languages, including French, Spanish, Portuguese, and Indonesian. We were unable to survey television and radio coverage but we know this occurred for some declarations (e.g., radio and television covered the Cairns and Honolulu Declarations).

Our media survey has shown that the 16 ATBC conferences and their declarations received some mention in online news media, but there were very low levels of online attention on social media platforms (Table 1). From 2005 to 2018, there were 30 published media articles that mentioned both ATBC conferences and declarations. However, for the same period an additional 45 media articles mentioned only the conferences. Of interest, there were 12 publications that cited various declarations. For example, the Marburg Declaration was cited six times in scientific articles and a book about REDD and sustainable management of forests. The Bali Declaration was cited in a document produced by the Green Building Council Indonesia, in which they stated their strong support for biodiversity conservation in Indonesia. Other examples are discussed in the five case studies below.

On Facebook, the number of posts relating to ATBC declarations was very low (n = 22), and these were shared 45 times (Table 1). On Twitter, there were 13 tweets and 13 retweets about 16 declarations, with most of those coming from the ATBC conservation committee members, and some conference participants. None of the tweets or retweets was made by stakeholders targeted by the specific declaration. These data may overlook social media coverage because we could not extract the "impressions" for all the declarations. Impressions show the number of times a tweet appears to users. Only two declarations provided data on the number of Twitter impressions: Phnom Penh and Hawaii with 208 and 1,711 reads, respectively.

Besides social media, few declarations were covered in mainstream news media and cited in other published documents to advocate issues highlighted in the declaration (Table 1). However, the initial goal of the conservation committee was to reach its members, largely tropical biologists, and make them aware of conservation issues and problems as a means to socialize the newly added "C" in ATBC. It was never intended to reach wider society, which is why ATBC conferences have always concluded with a reading of the conference declaration.

It is worth noting that anecdotal evidence suggests about 60 percent of people attending the ATBC meetings are first timers. Reading the declaration out at the dinner or final plenary gathering

may be the only exposure they have to our efforts. Most of these participants are from the country where the meeting is held. Hearing the declaration read out loud personalizes the larger ATBC community's concern with efforts in their country. With the maturation of the ATBC over the past decade, along with the explosion of social media, there is now an unprecedented opportunity to extend ATBC's conservation outreach to the wider global community. We expand on some of these insights below.

3 | CASE-STUDY DECLARATIONS

3.1 | Selecting the five case studies

We present five case-study declarations (Table 1) to illustrate examples from across the tropics and socioeconomic contexts. The rationale for choosing these five was constrained by the availability of useful online news media and social media data (Table 1), and the authors "collective memory" as active participants in their preparation, and subsequent knowledge of their conservation policy and management outcomes in the targeted country and/ or region.

3.2 | The San José Declaration (2013)

Over the past three decades, Costa Rica has become a global symbol of sustainable development. In response to this global standing, the San José Declaration called upon the Costa Rican Congress and Ministry of Environment, Energy and Mines to withdraw a proposal presented to Congress to de-gazette 1,000 ha of natural forest of Rincón de la Vieja National Park. The issue concerned plans to exploit the Las Pailas Geothermal Field, whose best quality geothermal resources underlie the national park. Exploitation of geothermal energy in the country is being driven by an ambitious government strategy for Costa Rica to achieve 100% renewable energy this decade. Opposition to the de-gazettal was raised by many local and international organizations, including ATBC, and there were mainstream and social media interest (Table 1). As of January 2020, two Congress Bills for de-gazettal of Rincón de la Vieja National Park have not been passed, as it appears that alternative ways to exploit the geothermal resource under the park have been instigated ensuring that the key infrastructure and activities are located outside the national park (Rafael Celis, pers. comm.). One possible rationale for the shelving of the Bills is that Costa Rica has very clear laws to protect national parks from any development projects. Projects are prohibited unless they are compatible with the environment, and this recognition of the law was omitted in their original proposal.

Guido-Sequeira³ argues that in Costa Rica, coexistence of geothermal development and conservation activities is possible, provided protection of natural resources has been ensured, and laws

³https://pangea.stanford.edu/ERE/db/WGC/papers/WGC/2015/03006.pdf

enabling geothermal resource exploitation in national parks are effective and not politicized. As a consequence of targeted news media coverage (Broadbent, 2013; Butler, 2013), public outcry in Costa Rica, and the final policy decision to restrict development activities and infrastructure to areas outside the national park, we rated the effectiveness of the San José Declaration as high.

3.3 | The Banda Aceh Declaration (2013)

ATBC Asia-Pacific Chapter conference researchers gathered in Aceh, on the Indonesian island of Sumatra, to discuss the many challenges facing Asia-Pacific biodiversity and ecosystems. However, the local NGO community called in the national press for the ATBC to take a formal position on the draft revisions made to the Aceh Spatial Plan. Sentiments were running so high that over 70 local demonstrators gathered outside the conference venue on its opening night, urging the ATBC to act. The backdrop to this is that Sumatra has suffered devastating forest loss and degradation in recent decades mainly due to large-scale expansion of oil palm plantations, enabled in part by provincial spatial plans that do not adequately incorporate environmental concerns. Yet, Aceh Province has stood out for its low deforestation rates and preserving the largest block of intact forest in Sumatra. It is also the only place where tiger, rhino, elephant, and orangutan still co-occur in the wild. The spatial plan governs the fate of over 3 million ha of the province's forests and included, in its then version, provisions to convert large expanses of forest to agricultural plantations.

In the face of such urgency, ATBC elected to issue a formal statement—the Banda Aceh Declaration—after conferring with its conservation committee members, local NGOs and relevant members of the Aceh Government. The declaration recommended that the Aceh Spatial Plan be based on the best scientific data available and that it fully considers the environmental risks associated with the loss and degradation of ecological services that underpin Aceh's economy and the well-being of its 5 million + citizens. It also stressed the need to enforce the law to halt ongoing illegal logging. The declaration was a notable achievement for Aceh at the time—it was the first joint position that leading scientists, local conservation NGOs, and the Government of Aceh agreed upon. The declaration only received modest media attention (Table 1).

The final outcome of the former Aceh Spatial Plan went unresolved because the central (national) government provided detailed feedback on where the provincial draft version needed further modifications, as several key components of the plan did not align with national policy. Despite not being nationally ratified, the provincial government proceeded to use its version of the plan, which should be taken as a positive step. Understanding the history of Aceh is important, because at the time of the declaration, the province had recently ended a 30-year separatist struggle, in which 15,000 lives were believed to have been lost. Maintaining peace and stability in the province and avoiding political confrontations, such as over natural resource management and the spatial plan in question, was

therefore a national government priority. In July 2017, the political party presiding over the contentious spatial plan was voted out of office and replaced by the so-called "Green Governor," Dr Yusuf Irwandi, who as governor from 2007-2012 had developed an environmentally and economically progressive spatial plan, which was then canceled. Given this historic context, the declaration could not be expected to influence political processes, but finding common ground among competing stakeholder groups at the time was a success and helped these groups to engage more constructively in future debate and negotiations. The spatial plan is scheduled for revision in 2020, and a wider stakeholder consultation process is already underway. For this reason, we rated the effectiveness of the Banda Aceh Declaration as partial, as there is clearly more to be achieved in terms of policy development and implementation of the Aceh Spatial Plan.

3.4 | The Cairns Declaration (2014)

Australia's Great Barrier Reef (GBR) World Heritage Area is threatened by unsustainable adjacent land uses, industrial dumping, and climate change affecting rich reefs and marine life, and threatening the viability of its multi-billion dollar tourist industry. The Cairns Declaration called upon the Australian (federal) and Queensland (state) Governments to strengthen protection of the Great Barrier Reef Marine Park (GBRMP). The declaration came as the Australian Government approved industrial dumping of dredge spoil in the Great Barrier Reef Marine Park as well as port development in a nearby coastal area.⁴ The declaration, an outcry from Australian and international marine experts, and concerns that UNESCO may decide to list the GBRMP as "World Heritage in-danger" generated national and international news media interest (Mongabay, 2014; Oxford Long-term Ecology Laboratory, 2014; Whitsunday Residents Against Dumping & Australian Marine Conservation Society,). The declaration was used also by two conservation NGOs in Australia in a document identifying threats to the Great Barrier Reef and was attached as part of a letter to the prime minister urging greater protection for the GBR.⁵The declaration also received some local television and social media interest advocating the issues and raising awareness about the urgency of Great Barrier Reef protection (Table 1).

A combination of media interest generated by ATBC (Table 1) and various NGOs, a threat that UNESCO might downgrade the GBR's world heritage status, and public pressure gave gravitas to a joint decision by both governments to afford stronger protection of the GBRMP through the implementation of Reef 2050 Plan⁶ in 2015. As

 $[\]label{eq:linear} ^4 https://www.theguardian.com/environment/2014/jan/31/great-barrier-reef-dredg ing-spoil-dumping-approved-abbot-point$

 $^{^5}http://www.uni-koeln.de/sfb389/natureandenvironmentinaustralia/Williams_additional_information.pdf$

 $[\]label{eq:static} ^{6} http://www.environment.gov.au/marine/gbr/publications/reef-2050-long-term-sustainability-plan-2018$

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a consequence of the Reef 2050 Plan, both governments agreed to limiting the number of working ports in the GBR lagoon region, with all dredging spoil for new developments (e.g., Abbot Point) to be dumped on land. There may be issues with land spoil affecting important wetland areas, so this is considered by many not to be an ideal solution to the problem. From this perspective alone, it would seem that the declaration certainly contributed to the science consensus at the time that more needed to be done by governments to protect the GBRMP's world heritage values.

In 2018, both the Australian and Queensland Governments have approved the Carmichael (Adani) mine, one of the largest thermal coal mines in Australia, that will see coal exported to India through the expanded Abbot Point terminal with ships taking the coal via the GBR lagoon. Moreover, the burning of the generally low-to-moderate grade thermal coal will add to global CO_2 emissions, thereby contributing to oceanic warming, and ultimately placing more thermal stress on coral reefs. The northern and central sections of the GBRMP experienced unprecedented back-to-back mass bleaching events in 2016 and 2017, shifting the GBRMP debate from water quality to climate risk. Overall, the Cairns Declaration was effective as both the Australian and Queensland Governments agreed to implement the Reef 2050 Plan, and to put on hold any new port development in the GBR region.

3.5 | The Phnom Penh Declaration (2015)

The Mondulkiri Protected Forest in Cambodia is part of a globally important landscape that supports some of the most threatened species in Asia, and forms the core of the largest area of lowland deciduous dipterocarp forest remaining in South-East Asia, along with substantial natural resources and ecosystem services [http:// www.wwf.org.kh/where_we_work_cambodia/eastern_plains_ landscape/]. In addition, the forest has unique and globally significant biodiversity and supports the world's largest population of banteng (*Bos javanicus*), one of the last remaining populations of Leopard (*Panthera pardus*) in Indochina, and more than 230 bird species, including nine species listed by the IUCN as Globally Threatened.

A proposed border checkpoint at Kbal Damrei, on Cambodia's eastern border with Vietnam, together with a new road leading up to it, may harm Cambodia's Mondulkiri Protected Forest by opening up access to the protected area to illegal activities. This Special Ecosystem Zone sustains more than 150 individuals of *Elephas maximus*, representing the largest population of elephants in Cambodia. This population moves across the route of the proposed road as part of its annual migration. The current road development plan posed a high risk of diminishing the opportunity for nature-based tourism that would be critical to secure long-term economic returns to local communities and provincial government.

The Phnom Penh Declaration recommended a thorough environmental impact assessment and wise planning based on it, which may entail cancelation of road proposals for Mondulkiri Province, and other Cambodian "Protection Forests," and development of alternative plans, in order to minimize damage to the natural capital of Cambodia, and South-East Asia. The Declaration was issued after consultation with senior Forestry Administration officials. As of late 2019, no official decision has been made on whether the road is approved. Direct interventions by WWF, the EU Ambassador, and the media associated with the declaration(Butler, 2015) may have made a difference (Table 1). The Ministry for Agriculture Forests and Fisheries in Cambodia has written to the Ministry of Environment, asking for the road and border crossing to be canceled. We also understand that the original Vietnamese investor has withdrawn. After four years, an official decision remains to be made about the road, so as of January 2020 we rated the effectiveness of the Phnom Penh Declaration as moderate as the road project has been shelved for the time being, although it is not canceled.

3.6 | The Honolulu Declaration (2015)

The Hawaiian Archipelago is an important and unique global biodiversity hot spot. The Honolulu Declaration called for stronger support of cultural and biological restoration of Kaho'olawe Island in Hawaii. The island was used from 1941 to 1993 by the US navy as a "training ground," mainly for bombing range practice. Following intervention by Presidents G.H.B Bush and W.J. Clinton, the island was returned to the State of Hawaii in 1994 to be "held in trust for an Hawaiian entity." Ordinance removal over a 10-year period was followed by official transfer to the State in 2003. Today the island is managed by the Kaho'olawe Island Reserve Commission, which is responsible for restoration and ongoing management of the island prior to being returned to the native Hawaiian people for sovereign maintenance.

Initial funds for restoration of the island were allocated by Congress, but these were only sufficient to ensure partial restoration as they were exhausted in early 2015. The declaration recommended the State fund (or equivalent funds petitioned by the US military) the full remediation and biocultural restoration of the island. A further request was made for the US military to provide at least US\$700 million to complete the environmental clean-up (ordinances), together with at least US\$300 million to mitigate erosion, restore the native flora, and eliminate invasive animals. The declaration received national and international media attention(D'angelo, 2015), including reports on National Public Radio, local television news programs, and some social media interest (Table 1).

In 2015, State legislators appropriated US\$1 million to the Kaho'olawe Island Reserve Commission for fiscal years 2015 through 2016. In the last session, another \$450,000 was added for the 2017 fiscal year (*Maui News* 2/10/2017). As of February 2018, 25% of the island remains degraded but expectations are high that in time the island will restored back to its original condition.⁷ Given that funds— albeit modest—have been allocated to restore the island, and a

⁷http://www.hawaiinewsnow.com/story/37604472/the-bombing-of-kahoolawe-wenton-for-decades-clean-up-will-take-generations/

governance system is in place to ensure continued restoration involving the native Hawaiian people, we rated the effectiveness of the Honolulu Declaration as high for bringing this conservation issue to the public attention.

4 | THE FUTURE FOR ATBC CONSERVATION DECLARATIONS

None of the five case-study declarations achieved their varying conservation outcomes through the same approach, and the influence of media varied among the five. However, a commonality was that, in each case, their effectiveness was the result of local conservationists providing data and analysis, influencing opinion, and changing attitudes among lawmakers and natural resource managers in addition to ensuring declarations were accessible to people with the ability to act on them. The ATBC annual and chapter conferences bring together hundreds of tropical biologists, activists, and policymakers to discuss issues concerning the study and conservation of tropical biodiversity, habitats, and ecosystems. They provide excellent opportunities for local conservationists to receive support for an important environmental issue and for ATBC to lend its weight to influence policy that can influence conservation outcomes if the approach is well orchestrated, executed, and followed up. It would also be naïve for ATBC to be considered the only driving force in the case of declarations with positive outcomes, as we recognize there are multiple actors involved in the process, including local, national, and international conservation NGOs and other institutions, but the experience of the ATBC can both provide empirical advice and help provide leverage for local organizations. Moreover, the declaration process builds capacity, thereby instilling confidence among single actors and NGOs to address future conservation issues even if ATBC is not holding an annual or chapter conference in the country and/ or region of concern.

Critical to the effectiveness of future ATBC declarations will be the local conservationists who are left behind to work on the issue of concern. We therefore recommend the nurturing of an active member base in every country where ATBC holds conferences, including growing our member base across the tropics. An important role for the ATBC is then to recruit local scientists and conservationists to champion a declaration and to then help work on conservation challenges defined therein, and in so doing increase its membership and its influence at global, regional, and local scales. For future declarations, and based on the experience gained over our many collective years, insights from the five case studies, and the outcome of our online Google media and social media searches, we recommend utilizing the following five criteria in preparing a future declaration:

 It is important to identify the right conservation topic. It should be an urgent issue that a declaration should be able to influence, such as through management or policy change.

- 2. It is necessary for those preparing the declaration to recognize the scale of the topic, both geographically and institutionally.
- It is critical to garner sustained participation from the conservation scientists in the host (or target) country/region. In preparing declarations, we have found it most effective to target actions to a specific responsible organization for all the recommendations. The process must involve the host/target country/region as part of the team that brainstorm, think, and formulate the declaration.
- 4. It is important to provide recommendations that are clear, realistic, and actionable, rather than being too general. Depending on the urgency of the conservation issue, it is useful to provide a timeline for implementation, and to frame the issue in a constructive or positive way. In this regard, a follow-up strategy is also necessary to be part of the declaration planning process.
- 5. Targeted mainstream and social media exposure should be built into the planning of a declaration, preferably early in the process. This includes acknowledgement of the declaration's importance and recommendations by governments (at relevant levels), politicians, civil servants, and civil society in the country and/or region targeted in the declaration. The Google media survey shows that the ATBC has been largely ineffective at using social media to promote its declarations (Table 1). There is therefore an enormous opportunity to leverage our collective social media reach to enhance this increasingly important mode of communication where we are currently underperforming.

ATBC Council, through its conservation committee, should encourage all annual and chapter conferences to prepare in advance declarations. Ideally, planning declarations should occur at least six months before the conference, and follow the five criteria outlined above.

We conclude with a brief mention of other public statements that may form part of future ATBC conservation committee conference business. We make particular reference to the "Ivato Petition"⁸an initiative of the ATBC 2019 Conference organizing committee in Antananarivo, Madagascar (30 July-3 August, 2019). The main purpose of the petition was to inform the new Malagasy President why he should care about biodiversity in Madagascar for social, economic, and environmental reasons. By September 2019, the Ivato Petition had been signed by 6,583 people, and has since been handed over to the Minister of Higher Education and Scientific Research and the Ministry of the Environment for transmission to President Andry Rajoelina.⁹ At the same time, the petition has already received considerable social media coverage (Table 1), but as of January 2020 the Malagasy President has not officially agreed to back the petition. After providing initial inputs to early drafts of the statement, during the Antananarivo meeting, the ATBC conservation committee did not play an active role in the petition, but the fact

⁸https://www.atbc2019.org/petition-english

⁹http://www.midi-madagasikara.mg/societe/2019/08/13/conservation-de-la-biodiversi te-lengagement-du-prm-toujours-attendu/

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that it was online and ready from the beginning of the conference probably helped it gain more visibility and traction. Conservation petitions are an option for conveying urgent conservation issues that future ATBC conservation committees should explore, along with their usual declarations and resolutions. However, it is also important to allow a declaration prepared in advance to be replaced at the in-country conservation committee meeting with a more topical declaration, as was demanded by attendees at the San Jose meeting.

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