

ATBC Virtual Meeting 2021

Conference Report

July 21st-23rd, 2021

Association for Tropical Biology and Conservation



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Conservation



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Presentation

Over the 4.5 billion years of existence of planet Earth, there have been enormous changes and fluctuations in its physicochemical properties. Life has evolved and has participated in these changes. We are currently living in an epoch of the Quaternary period, which has changed its relative global environmental stability that persisted for more than 10,000 years and during which human civilization flourished. Science and its great advances in the knowledge of nature are a product of this flourishing, but so are the global alteration of climatic stability, the biodiversity crisis, deforestation, the appearance of new diseases, among other phenomena driven by human activity and a development model that is unviable in the long term.

It is urgent that our civilization take the necessary steps to change this path of degradation to one of remediation and development that takes into account the boundaries of the planet in terms of sustainability, social justice, and human well-being. In this context, the 57th Annual Meeting of the Association for Tropical Biology and Conservation (ATBC2021), held July 21-23, 2021, aimed to showcase lessons, advances, and opportunities arising from Tropical Biology and Conservation towards remediation, adaptation, and mitigation of the effects caused by global change. Due to the COVID-19 pandemic, ATBC2021 was held virtually for the first time, providing an inclusive space for knowledge sharing and co-construction.

This report shows the demographics of our participants, the program, as well as the transversal aspects on which our conference was based. We hope that ATBC2021 has facilitated the continuation of much research and action work for the conservation of tropical ecosystems, that it has fostered collaboration among our members and with new people coming from sectors outside of the academia, and that it has sparked interest in developing new ways of approaching conservation science in the tropics.

The Organizing Committee



ATBC 2021
Virtual Meeting

Organizing Committee

The organizing committee for this meeting was composed of all ATBC-Conference Committee members, with the addition of the ATBC Executive Director, Dr Lúcia G. Lohmann, and the current president of the ATBC, Dr Emilio Bruna (Figure 1.1).

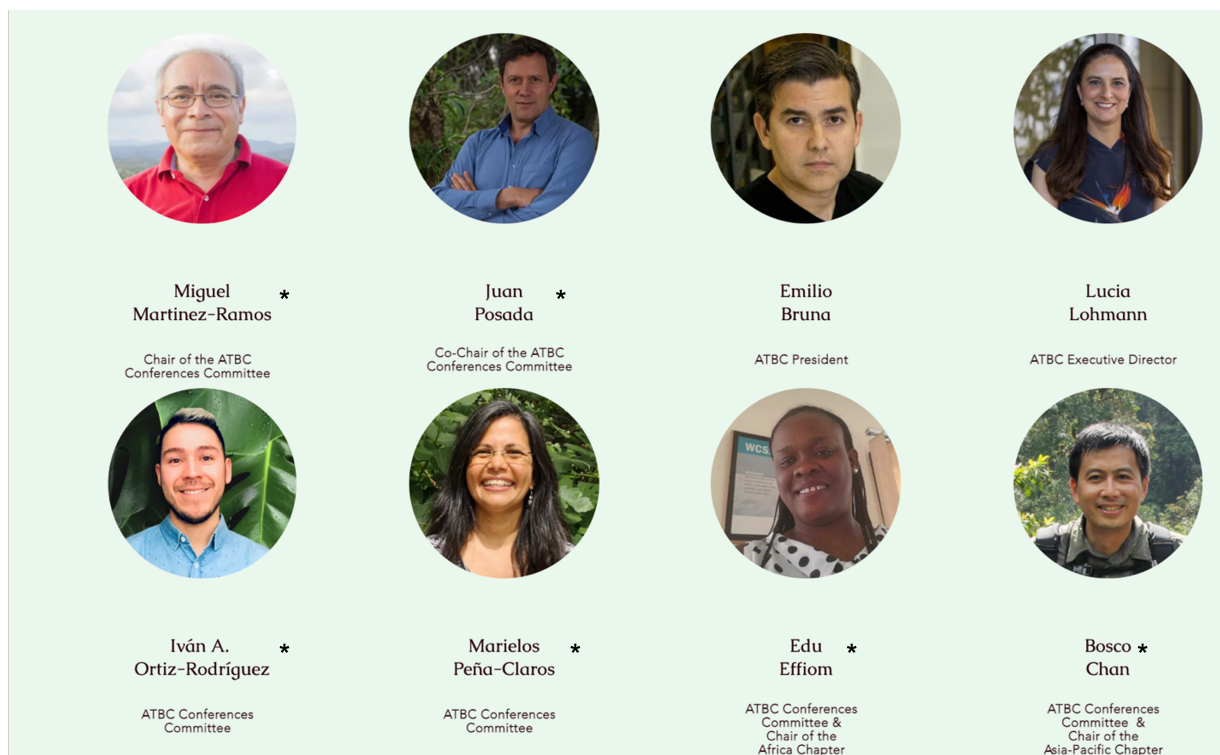


Figure 1.1: Members of the ATBC2021 Organizing Committee. Asterisks (*) indicate the members of this committee who are also part of the ATBC-Conferences Committee

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Meeting Theme

The meeting theme "Lessons, advances and opportunities in the face of global change" was dedicated to showcasing the lessons, advances and opportunities arising from Tropical Biology and Conservation towards remediation, adaptation, and mitigation of the alarming global change processes.

The specific sub-themes were defined by the members of the Organizing Committee after several discussions and receiving feedback from the ATBC councillors. These sub-themes sought to dictate the general lines of the meeting sessions (particularly for symposia and lightning talks), promoting the discussion on the frontiers and challenges in the various lines of action/research for the study and conservation of tropical socio-ecosystems (Figure 2.1).



Figure 2.1: Selected subtopics for ATBC2021

Fees and fellowships

As every year, we made an effort to keep the registration fees for ATBC 2021 as low as possible. We balanced the registration fees to favor the participation of professionals and students from all over the world (Figure 3.1). We also offered 37 registration fellowships to students from low-income countries with accepted presentations, and to some plenary speakers.

High-income countries				Middle-income countries				Low-income countries			
		Early bird (Until June 6th)	Regular fee (From June 7th)			Early bird (Until June 6th)	Regular fee (From June 7th)			Early bird (Until June 6th)	Regular fee (From June 7th)
MEMBERS	Professionals	50	100	MEMBERS	Professionals	30	60	MEMBERS	Professionals	10	20
	Post-docs	35	70		Post-docs	20	40		Post-docs	7	15
	Students	20	40		Students	10	20		Students	5	10
NON-MEMBERS	Professionals	100	150	NON-MEMBERS	Professionals	60	100	NON-MEMBERS	Professionals	20	40
	Post-docs	70	100		Post-docs	40	80		Post-docs	15	30
	Students	40	80		Students	20	40		Students	10	20

Figure 3.1: Registration fees for ATBC2021 participants. All fees are shown in US dollars

Demographics and transversal aspects

During the planning and development of ATBC2021, attention was paid to five transversal aspects that gave identity to our association:

- **Gender balance:** Our meeting had the participation of 560 delegates, of which 286 were female (51%), 210 male (38%), one non-binary, and 60 preferred not to answer (11%); these proportions were approximately the same for the speakers, where women represented a slight majority (Figure 4.1).
- **Diversity in career stages:** Early-career scientists predominated among the participants and presenters, but with a substantial number of mid-and late-career academics. In addition, there was the participation of members of civil society associations, industry and other sectors, which favoured the interaction of our society with other sectors in the search for innovative and integral solutions (Figure 4.2).
- **Geographical representation:** During the conference, we had representation from 56 countries, which shows a broad concern and attention to the conservation of tropical biodiversity at a global level; however, a large part of the delegates followed the conference from the USA and Brazil, probably due to the history and incidence of the ATBC in these countries. The ATBC, through its geographic chapters distributed in different continents, will actively seek a more equitable distribution in the number of participants from each country in future meetings (Figure 4.3).
- **Multi-scale dimension:** During ATBC2021, many contributions showed the attention to environmental issues not only from a biological/ecological perspective but also from a social/human perspective. Among the abstracts, in addition to traditional keywords in ATBC conferences related to the biological dimension in the analysis, it was also frequent to find keywords such as "management", "livelihoods", "sustainability" and "society", making it evident that we need more multi-, inter-, and trans-disciplinary efforts to impact the conservation of tropical ecosystems (Figure 4.4).
- **Cutting edge tools:** In many contributions of ATBC2021, it was inspiring that a significant part of the presentations is taking advantage of new tools, technologies and approaches for the analysis of diversity and its multiple dimensions; this is illustrated, but not limited, to the session "Using Cutting-Edge Tools in Conservation Science". Undoubtedly, the use of new technologies and innovative ways of analyzing environmental data and problems will help us consolidate solutions with more and more elements and impact.

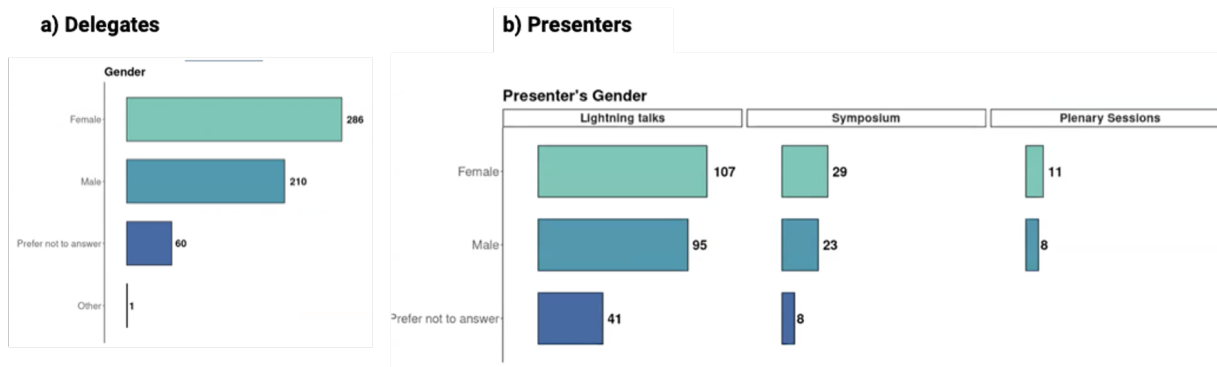


Figure 4.1: Gender frequency of (a) delegates and (b) presenters of Lightning talks, Symposia, and Plenary Sessions during the ATBC 2021 Virtual Meeting.

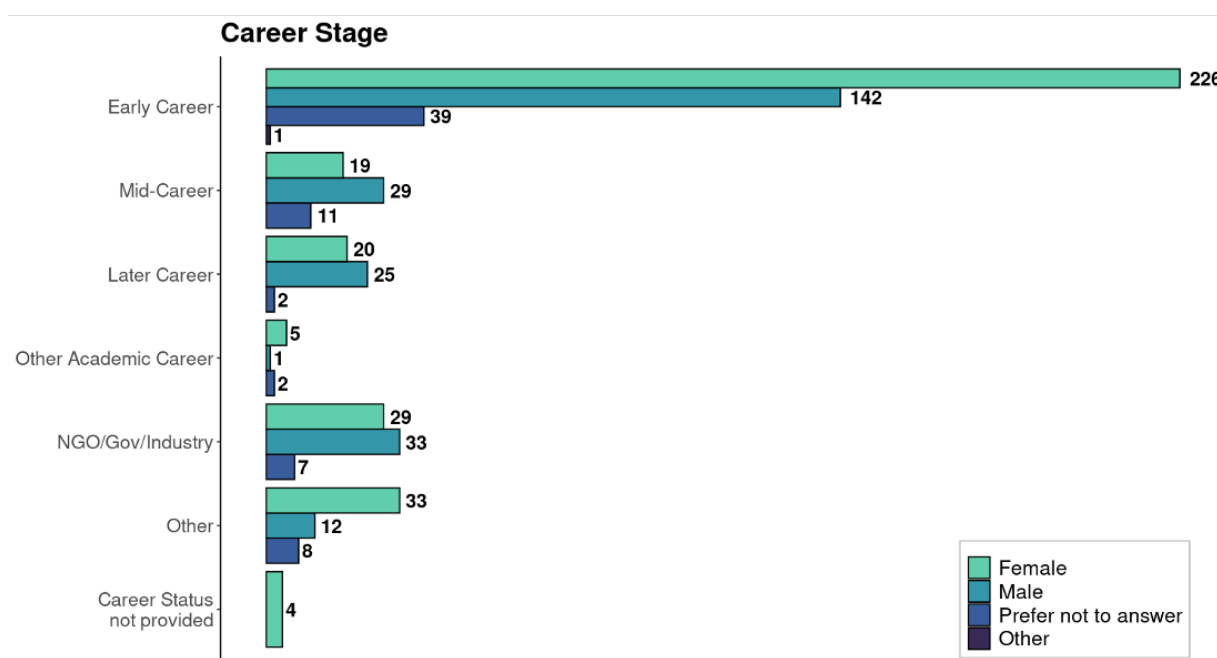


Figure 4.2: Career stage and Gender frequency for each career stage of delegates during the ATBC 2021 Virtual Meeting

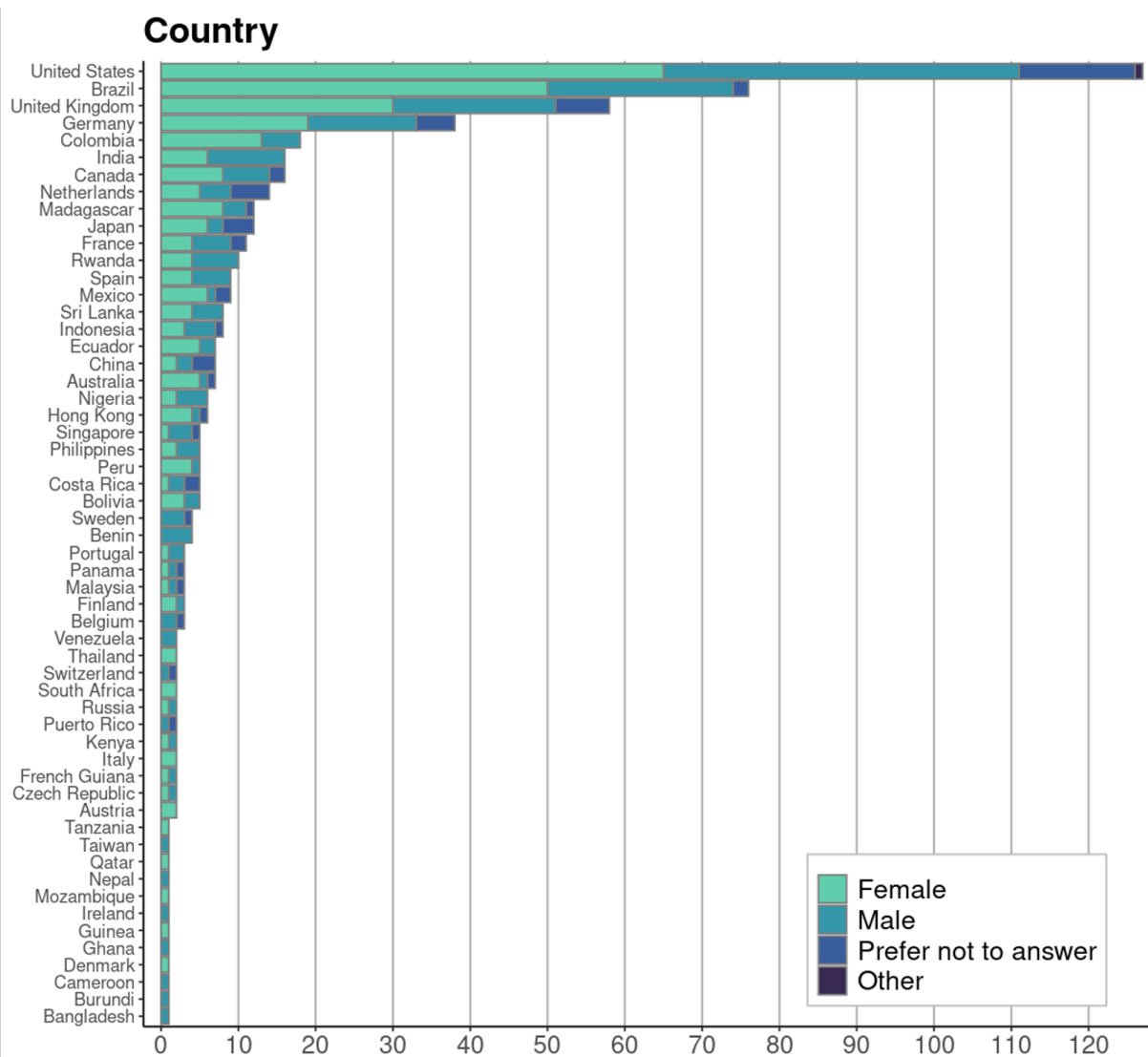


Figure 4.3: Nationalities and Gender frequency for each nationality of delegates during the ATBC 2021 Virtual Meeting

Conference Program

Over three days of work, the ATBC2021 program (consultable at www.atbc2021.org/program) included a total of 294 delegate contributions, divided into 15 symposia, 24 lightning talk sessions and six open format sessions.

5.1. Plenary Sessions

We had the participation of renowned scientists and experts from different regions of the world sharing their work, ideas and perspectives at the following plenary sessions:

- **How can scientists make significant contributions to the biodiversity crisis** (*Panelists: Patricia Balvanera, Colin Chapman, and Raman Sukumar; Moderators: Bette Loiselle and Onja Rafindratsima*). This session aimed to reflect on how scientists can collaborate and include knowledge from different sectors to understand and monitor biodiversity patterns at different scales, as well as their relationship with human well-being.
- **Ecological, Economic, and Social Dimensions of Tropical Restoration: Lessons and Opportunities** (*Panelists: Pedro Brancalion, Susan Chomba, and Fangyuan Hua; Moderators: Robin Chazdon and Jaboury Ghazoul*). This panel explored some of the opportunities and challenges of Forest and Landscape Restoration by drawing on some case studies reflecting its inter- and trans-disciplinary nature, including the benefits of the participation of local communities in the design, implementation and monitoring processes of restoration projects.
- **Janzen-Connell 50th Anniversary: Where Are We?** (*Panelists: John Terborgh, Phyllis Coley, and Daniel Janzen; Moderators: Rodolfo Dirzo and Liza Comita*). This plenary encouraged the reflection and discussion on the significance, remaining knowledge gaps, and future avenues in the study of the maintenance of tropical forests in the context of the seminal hypothesis of Janzen and Connell, with a particular emphasis on the challenges imposed by the Anthropocene.
- **ATBC Diversity, Equity, and Inclusion** (*Moderators & Presenters: Farrah Carrasco, Lou Santiago, Bea Maas, and Becky Williams*). In this session, the results of a workplace environment survey promoted by ATBC were presented, making clear the commitment of our association to promote an inclusive culture within our work teams and for tropical biologists in all workplaces. This session included a space to listen to the reactions/suggestions/questions from the participants in the session that will help understand how ATBC can improve in aspects related to diversity, equity, and inclusion.

The description, details, and recordings of plenary sessions can be consulted at www.atbc2021.org/plenaries

5.2. Symposia

During ATBC2021, 15 symposia were held on the impacts of human influence on biological processes and ways to counteract them (Table 5.1). These sessions consisted of a total of 59 talks and 285 authors.

ID	Symposium title
S-4	Weathering the storm: responses of forest wildlife to hurricanes
S-5	Death by a thousand cuts: insect declines in the Anthropocene
S-7	Is silvopasture a sustainable option to help tackle deforestation?
S-8	Combining climate, microclimate, and species' traits to assess climatic vulnerability for tropical species
S-9	Plant-animal interactions in a changing world: Implications for seed fates in the Anthropocene
S-10	Advances in the knowledge of the functional ecology of Andean forests
S-11	The Role of Agroforestry Systems in the Decade of UN Ecosystem Restoration
S-12	Sustaining Long Term Ecological Research in Venezuela: opportunities and challenges
S-15	Functional Diversity Management to Generate Sustainability: A Transdisciplinary Approach to Prevent Tipping Points
S-16	Andean-Amazonian forests responses to climate change
S-19	Response to wildfire: what do we know about plant community regeneration.
S-20	Natural Resources, Science and Political Processes
S-21	Effects of seed dispersal on forest regeneration during succession in human-modified landscapes
S-22	Human Wildlife Coexistence in Africa
S-23	Climate change effects on species interactions in the tropics

Table 5.1: Simposia developed during ATBC2021

5.3. Open Format Sessions

During this year, ATBC introduced the Open Format Sessions as an innovative model that sought to exploit the creativity of our community. In these sessions, organizers were able to carry out any activity that allow them a direct and enjoyable interaction among the session participants and with the audience. In this first edition of this format there was a total of six organized sessions (Table 5.2), three of which were dedicated especially to early-career audiences that sought to re-imagine the future of the tropics, explore frontiers in their research, and explore alternatives for their restoration. The remaining three sessions explored topics related to a variety of subjects (defaunation, zoogeochemistry, and ecotourism).

The description, details, and recordings of Open Format Sessions can be consulted at www.atbc2021.org/ofs

ID	Open Format Session title
OFS- 2	Young voices and visions in tropical restoration science
OFS- 3	Integrating defaunation with other key drivers of structure and diversity of tropical forests
OFS- 4	Tropical zoogeochemistry: alchemists of the wild
OFS- 5	Designing a collective prototype of future tropical and subtropical science
OFS-6	Social and ecological outcomes of ecotourism, a case study from southern China
OFS-7	Emerging Frontiers In Tropical Ecology: Voices from the Next Generation

Table 5.2: Open Format Sessions developed during ATBC2021

5.4. Lightning Talks

Replacing the traditional open presentations in oral and poster format, the ATBC2021 Virtual Meeting featured a total of 214 5-min lightning talks divided into 24 thematic sessions (Table 5.3). In addition to the direct participation of 214 speakers, there was the indirect participation of 924 authors. These talks allowed an effective participation that involved a large part of our community sharing key and concise information.

The recordings of Lightning Talks can be consulted at www.atbc2021.org/lightning-talks

ID	Lightning talk session title
LT-1	Ecosystem Services in the Face of Global Change
LT-2	Loss and Fragmentation of Tropical Ecosystems
LT-3	Optimizing Educational Strategies and Public Policies for Conservation
LT-4	Biology and Conservation of Tropical Birds
LT-5	Human Dimensions to Biodiversity Science
LT-6	Ecology and Conservation of Primates
LT-7	Biology and Management of Fishes and Herpetofauna
LT-8	Using Cutting-Edge Tools in Conservation Science
LT-9	Impacts of Agriculture on Tropical Ecosystems and Alternatives Towards Sustainability
LT-10	Natural Regeneration and Secondary Forests
LT-11	Restoration Ecology: Current Status and Next Steps
LT-12	Effects of Anthropogenic Disturbances on Fauna
LT-13	Anthropogenic and Natural Disturbances in Tropical Ecosystems
LT-14	Conservation Genetics and Genomics in the Face of Global Change
LT-15	Soils and Biogeochemical Cycles in Tropical Ecosystems
LT-16	Conservation Status, Ecological Niches, and Demography of Tropical Species
LT-17	Biotic Interactions in the Face of Global Change
LT-18	Frugivory, Seed Dispersal, and Fruit-seed Traits: Ecology and Conservation
LT-19	Knowledge and Use of Tropical Plant and Animal Species
LT-20	Climate Change: Adaptation and Mitigation- Part I
LT-21	Climate Change: Adaptation and Mitigation- Part II
LT-22	Functional and Structural Components of Tropical Ecosystems- Part I
LT-23	Functional and Structural Components of Tropical Ecosystems- Part II
LT-24	Functional and Structural Components of Tropical Ecosystems- Part III

Table 5.3: Lightning talks sessions developed during ATBC2021

5.5. Social Events

The ATBC2021, although developed virtually, did not neglect the social aspect, of great importance for the establishment of collaborations and friendships, the exchange of experiences, and the development of new capacities and skills. In particular, we had five activities, which undoubtedly represented a core part of our program (Table 5.4).

The description, details, and recordings of Social Events can be consulted at www.atbc2021.org/socialactivities

ID	Social Session Title
SS-1	Cascoland: Traditional Knowledge of Food Preservation Applied to Products From the Innovative Agroecological Food Forests
SS-2	Enhance Your Communication With Creative Photography
SS-3	How to Get Started With Keeping a Nature Journal
SS-4	Early Career Scientist Happy Hour
SS-5	Banquet/Concert

Table 5.4: Social Sessions

5.6. Chapter Side Events

The development of the side events of the ATBC chapters (Neotropical, Asia-Pacific, and Africa), held between July 26 and 28, was undoubtedly a fundamental part of our annual event. Participation in these sessions was free of charge and open to all interested parties. These events sought to deepen the topics addressed during the central meeting and to serve as an open space to address particular issues of interest to the different regional chapters under the following titles:

- **Neotropical Chapter:** Bridging the gap between scientists and restoration practitioners to promote natural regeneration of forests
- **Asia-Pacific Chapter:** Conservation Challenges and Initiatives across the Asia Pacific Region
- **Africa Chapter:** Developing Networks for Dynamic, Effective Conservation in Africa

The description, details, and recordings of Chapter Side Events can be consulted at www.atbc2021.org/sideevents

Recordings and Book of Abstracts

To encourage open science and the dissemination of knowledge for collaboration and co-construction of new solutions, the recordings of all sessions were openly published on the conference website (www.atbc2021.org), on the ATBC YouTube channel (Figure 6.1), and on ATBC social media (Facebook, Twitter, and LinkedIn). These videos include not only the individual talks of the speakers, but also the discussions that emerged from each session. These recordings can now be consulted and used as an educative resource for anyone interested in the biology, sustainable management, and conservation of tropical ecosystems. The conference's book of abstracts was edited and published on the conference website (www.atbc2021.org; Figure 6.2).

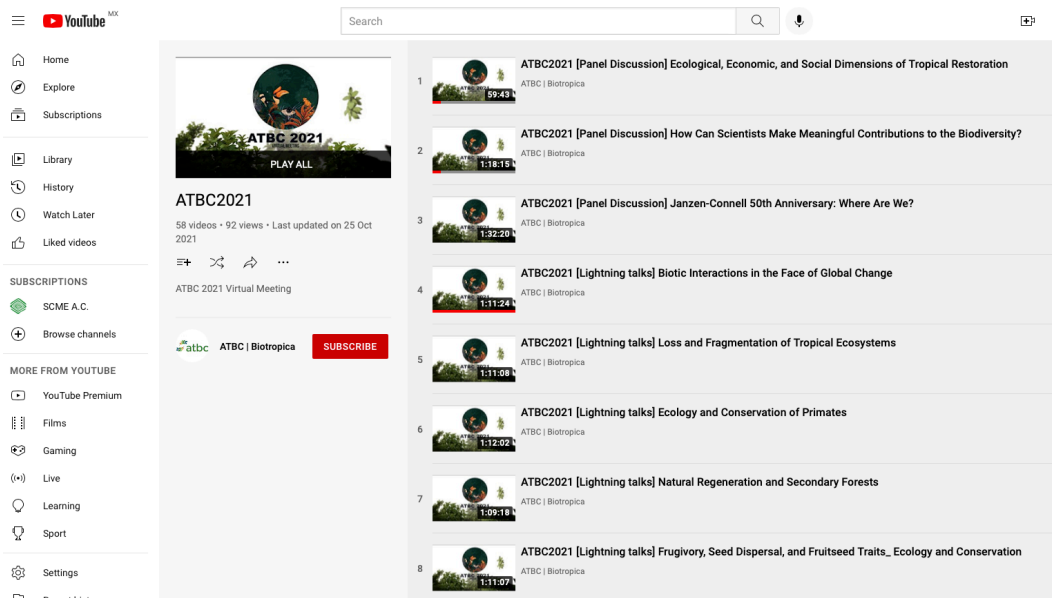


Figure 6.1: ATBC2021 Youtube Channel including all ATBC2021 recordings

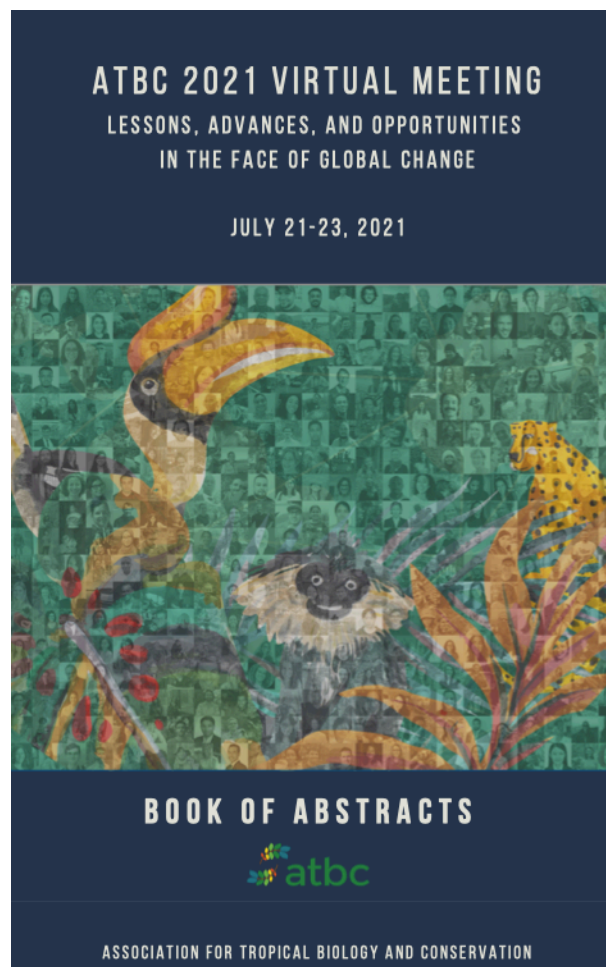


Figure 6.2: ATBC2021 Book of Abstracts

Post-conference survey

Following ATBC2021, an electronic survey was sent to delegates to evaluate their experiences during the conference. With a sample of $n=102$ delegates responding to this survey, the trends indicate, in general, a very favorable opinion of the meeting experience (Figure 7.1). Plenary and symposia speakers received "Good", "Very Good", and "Excellent" ratings. In the case of lightning talks, in addition to these three responses, "Fair" was also received by 4% of respondents.

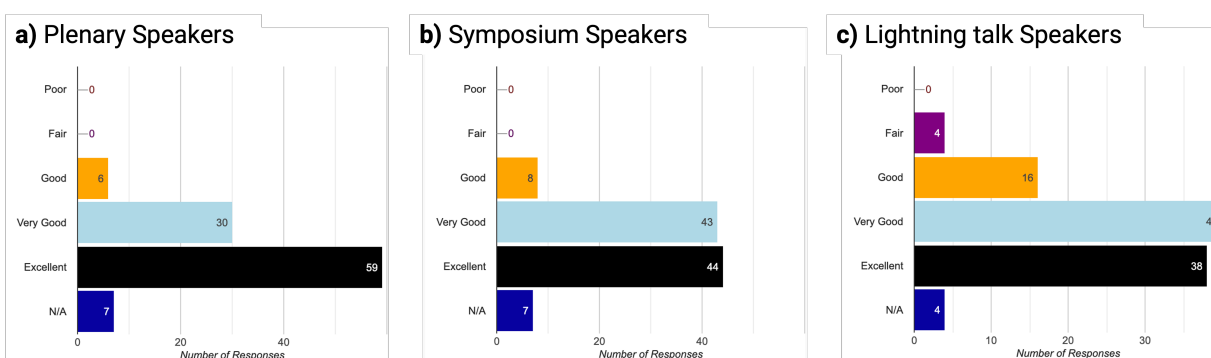


Figure 7.1: Feedback on delegates' experience during the different presentations given at ATBC2021; $n=102$ delegates. N/A indicates that the respondent did not participate in the sessions.

Networking opportunities and social interactions also received very favorable responses from respondents (Figure 7.2). We firmly believe that these kind of networking activities should be actively promoted in the following ATBC conferences, since the creation of human ties between people interested in the study and conservation of tropical socio-ecosystems will favor the development and catalyzing of new research and action projects.

Chapter side events also received very good ratings in the post-conference survey, with a majority rating of "Very Good" and "Excellent" (Figure 7.3).

Regarding Whova, the platform used for the development of ATBC2021, 93% of the respondents considered it "good", "very good", or "excellent" (Figure 7.4a-b). Ease of use by the user was the most valued aspect of this tool.

Finally, 72.5% of respondents indicated that the conference registration fee was adequate, 14.7% thought it was high but good for the value, and 9.8% perceived that ATBC2021 had a high cost (Figure 7.4c).

During the sessions and as open comments in the survey, it was evident that many delegates appreciated the virtual model of ATBC conferences because it facilitated the inclusion of members who do not have the resources to participate each year in a face-to-face meeting. In addition, it was also perceived that virtual meetings considerably reduce the participants' carbon footprint, as delegates do not have to travel long distances or use hotel services in another country. Undoubtedly, ATBC2021 represented a model for our association to replicate in the coming years, possibly alternating a face-to-face meeting and a virtual meeting each year.

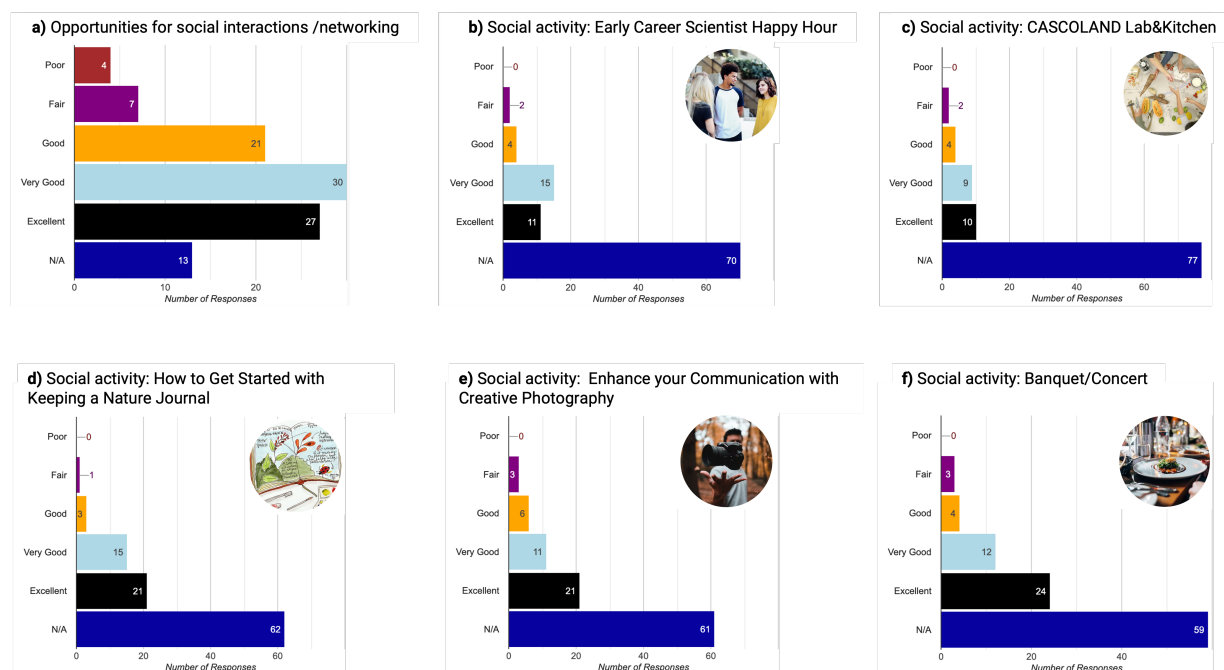


Figure 7.2: Opinion on the general interaction/networking opportunities (a), and experiences during the social sessions developed during ATBC2021 (b-f); $n = 102$ delegates. N/A indicates that the respondent did not participate in the sessions.

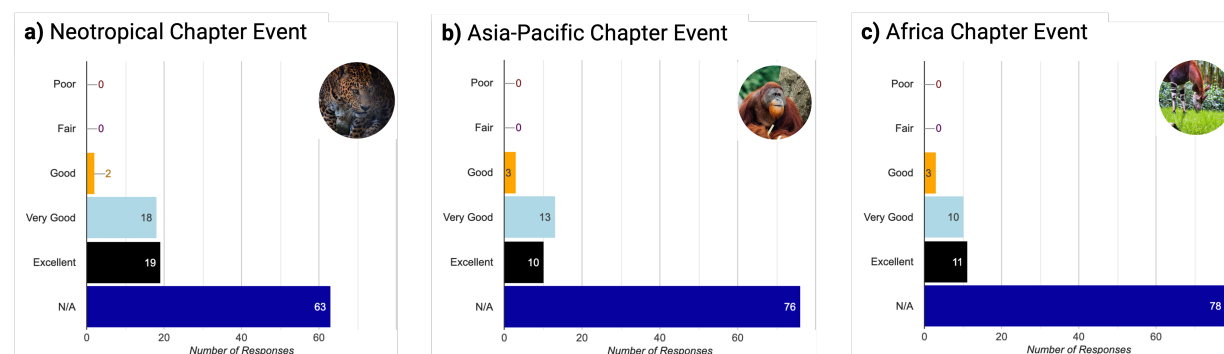


Figure 7.3: Feedback on the experiences of the ATBC chapters' side events held after the main conference; $n = 102$ delegates. N/A indicates that the respondent did not participate in the side event.

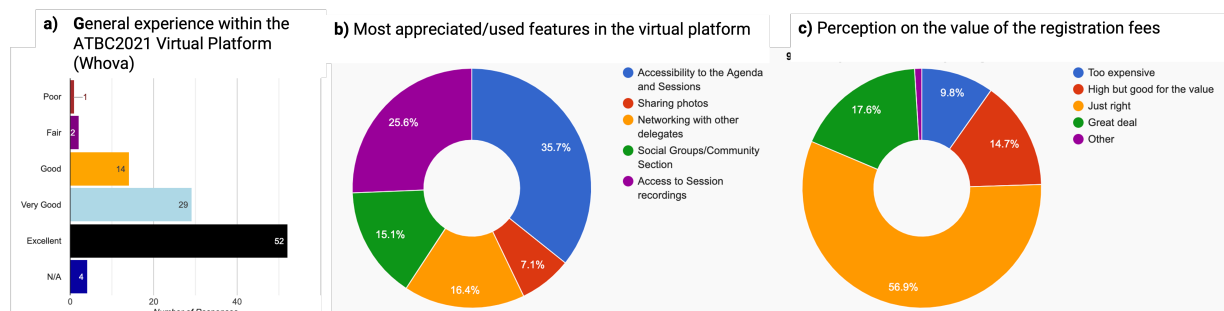
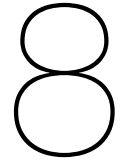


Figure 7.4: Feedback on delegates' experience using Whova, the virtual platform on which ATBC2021 was held (a-b), and perception on the value obtained for the fee paid (c); $n = 102$ delegates.



Final Remarks

ATBC2021 was a showcase of the scope for innovative models for bringing the ATBC community together for knowledge dissemination, networking and collaboration. Despite the health situation imposed by the COVID-19 pandemic that prevented the development of a face-to-face meeting, as developed during the last 56 years, ATBC2021 was a friendly space with high academic standards that allowed us to continue with the work of our association and the collaboration among our members. Without a doubt, the success of this conference was the result of intense planning by the organizing committee. Still, above all, it was possible thanks to the great efforts made by all the session organizers, speakers, staff and delegates.

Following the development of ATBC2021, we would like to highlight some reflections that emerged from this conference:

- **The planetary challenges require the development of high quality science.** The high quality of the presentations and information provided during ATBC2021 reflects that our community is making solid progress in addressing planetary challenges. We must continue to develop the best possible science to meet the challenges in the field of tropical biology.
- **Collaboration with sectors other than academia is urgent.** Academia must have close communication and collaboration with other sectors of society (including rural and urban communities, politicians, governments, entrepreneurs, etc.) to co-construct knowledge and solutions.
- **The dissemination of knowledge through novel forms of expression can help us generate solutions to environmental challenges.** Tropical biologists should be open to establishing alliances with people trained in making effective communication both inside and outside the academy. Creative forms of expression such as music, painting, dance, literature, theater, culinary arts, among others, can help us on this path.
- **We must be open to understanding and respecting the different visions and ways of life in the world.** ATBC has strived to cultivate a multicultural and inclusive profile, enriching our way of understanding and addressing global environmental issues. Building empathy, supported by a sense of universal equality, is essential to further advance on this path.
- **ATBC community should play a model role in the consumption of natural resources.** We must rethink our consumption patterns to lead by example and inspire others to make positive individual changes. A single ant may not make a positive change but when this ant operates in a crowd, they can change the entire landscape.