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The Efficacy of Using SCB Guidelines to Facilitate Conservation Science-Faith Collaboration: Experiences in the Field

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Recognizing the need to identify ways in which conservation researchers and practitioners can work constructively with faith leaders and communities to conserve biological diversity, the Religion and Conservation Biology Working Group of the Society for Conservation Biology formally launched the Best Practices Project in March 2016 for the purpose of collecting recommendations from SCB members throughout the world. A survey of members in 2016, a forum at the 2016 International Marine Conservation Congress in Newfoundland/Labrador, a symposium, workshop and poster session at the 2017 International Congress for Conservation Biology in Colombia, and an e-mail request to RCBWG members in October 2017 yielded many recommendations that constitute *Guidelines for Interacting with Faith-based Leaders and Communities: A Proposal by and for Members of the Society for Conservation Biology* published by the SCB in May 2018. Members have been reporting the efficacy of following these guidelines in their projects, and five who worked with different faiths presented their experiences in the field during a symposium at the 2019 ICCB in Malaysia. Abridged versions of their presentations are shared in this article with focus on guidelines that proved most helpful for facilitating conservation-faith collaboration to achieve project goals. Discussed subsequently are ways in which conservationists and faith communities benefited from their joint efforts, reasons why conservationists should consider engaging faith communities in their projects, and impediments to collaboration that must be overcome. The SCB guidelines are listed succinctly, and conservationists are urged to consider using them in their projects.

Keywords: guidelines, conservation, faith, collaboration, mercy release, fatwa

INTRODUCTION

Conscious of its aims to strengthen collaboration between conservation and faith traditions and to promote awareness of the importance of this collaboration within the Society for Conservation Biology SCB, 2020)[1], members of the Religion and Conservation Biology Working Group (RCBWG) of the SCB initiated the Best Practices Project in 2016. Its goal was to collect from members throughout the world ways in which they interacted successfully with leaders and members of faith communities to achieve project outcomes. A survey of SCB members from May to September 2016, a forum at the 2016 International Marine Conservation Congress in Newfoundland/Labrador, and a symposium, workshop and poster session at the 2017 International Congress for Conservation Biology (ICCB) in Colombia yielded many recommendations for members to consider using in their projects. These recommendations fell into five sequential categories: (1) Planning before initiating contact with the faith community; (2) initiating contact with the leader of the community; (3) launching and implementing a research or practice project; (4) closing the project; and, (5) following up after closure. SCB members who participated in the Best Practices Project annotated individual guidelines to provide specifics about their experiences and included their e-mail addresses through which they can be reached for more information and insight. The annotated manuscript was sent in October 2017 to approximately 200 SCB members who had designated their interest in the RCBWG to obtain their input (Society for Conservation Biology SCB, 2017), and the manuscript was revised accordingly. For reactions from faith leaders, the revised manuscript was circulated to partners of the Alliance of Religions and Conservation (Alliance of Religions and Conservation [ARC], 2018), their comments were footnoted in the manuscript, and it was finalized. *Guidelines for Interacting with Faith-based Leaders and Communities: A Proposal by and for Members of the Society for Conservation Biology* was submitted to the RCBWG Board in February 2018 and published on the SCB web site in May (Society for Conservation Biology SCB, 2018)[2].

Though intended as a modest project by and for members of the SCB, other organizations have underscored the importance of the document. Among them are ARC, the Forum on Religion and Ecology at Yale University (FORE), and the Dialogue on Science, Ethics, and Religion (DoSER) of the American Association for the Advance of Science (AAAS) whose representatives have endorsed the guidelines (Society for Conservation Biology SCB, 2018).

Interest in the SCB guidelines has grown since the document was published, due in part to presentations in 2018 during Conservation Asia held in Bishkek, Kyrgyzstan, the Latin American-Caribbean Congress for Conservation Biology in Port of Spain, Trinidad and Tobago, the North American Congress for Conservation Biology in Toronto, Canada, and the European Congress for Conservation Biology in Jyväkylä, Finland. In 2019, the guidelines were featured in a symposium sponsored by DoSER at the annual meeting of the AAAS in Washington, DC and in a panel discussion at the Arctic Circle Assembly in Reykjavik, Iceland.

SCB members who have been applying the guidelines in the field have been reporting on their efficacy in facilitating constructive interactions with leaders and members of faith communities to achieve project goals. Five in which members interacted with different faiths were invited to present their experiences during a symposium held at the 2019 ICCB in Kuala Lumpur, Malaysia. They subsequently agreed to contribute to this article by describing their projects and identifying the guidelines that were most helpful to them when interacting with Buddhists in Vietnam and Cambodia, conservative Christians in Mediterranean coastal cities of Monaco and France, spirit intercessors in India, Pentecostal Christians in the Peruvian Andes, and Islamic clerics in Malaysia (**Figure 1**).

After brief descriptions of these five field experiences in which researchers followed the SCB guidelines that were particularly helpful in their projects, discussed are the benefits that conservation researchers and faith communities accrued, reasons why conservationists should strive to collaborate with faith leaders and communities, and impediments to collaboration that should be overcome. The guidelines recommended by SCB members are listed succinctly, and conservationists are urged to consider using them in their projects. Recognizing the unique context of each project and the faith professed in the community warrants careful appropriation of guidelines to achieve mutually beneficial outcomes for all collaborators.

EXPERIENCES USING SCB GUIDELINES IN THE FIELD

Mercy Release Practices in Cambodia and Vietnam

Mercy release (also known as prayer animal release and *Fang Sheng*) is the primarily Buddhist and Taoist practice of releasing captive animals as a form of worship. Following the principle of "doing no harm to any living thing" (Liu et al., 2013; Pu, 2014), practitioners believe they are helping the released animals, and by extension, the recipient ecosystems for which they gain "good karma" for themselves and their loved ones (Agoramoorthy and Hsu, 2005; Shiu and Stokes, 2008; Liu et al., 2013). However, mercy release results in the deaths of millions of animals through the capture and sale of wild animals (Shiu and Stokes, 2008; Awoyemi et al., 2012, 2016) and their introduction as invasive species into native habitats (Liu et al., 2012, 2013; Magellan, 2019; Wasserman et al., 2019) that threaten to reduce biological diversity and destabilize ecosystems.

The difficulty of quantifying mercy releases and the limited engagement between researchers and faith groups have resulted in scant knowledge about the dynamics of the practice. Most common in Asia, mercy release also occurs worldwide, though the exact geographic spread is not clear. The practice may involve different bird, reptile, amphibian, fish and invertebrate

[1]https://conbio.org/groups/working-groups/religion-and-conservation-biology
[2]https://conbio.org/images/content_2014scholarships/SCB_Guidelines_for_Interacting_with_Faith-based_Leaders_and_Communities_(1).pdf

FIGURE 1 | Locations of the five "Experiences in the Field."

species (**Figures 2**, **3**), but the precise species, the number of each, and the frequency with which they are released have not been quantified. The popularity of releasing animals for merit is thought to be increasing, but whether this occurs across the entire Buddhist world or within certain areas or specific population demographics remains undetermined. Due to this lack of data, faith groups and conservationists may not recognize mercy release as a problem. Systematic study is vital to begin to address the problems inherent in this practice.

Project Description

To help rectify some of this data deficit, the Mercy Release in Cambodia and Vietnam project was initiated in 2018. Mercy release is a common practice in both Cambodia and Vietnam, and critical baseline data were needed to quantify the demographics, views and general ecological knowledge of practitioners and the identity and frequency of animals released. Concurrently, Buddhist leaders and communities were encouraged to conduct alternative, more sustainable practices.

Funded by the Alliance of Religions and Conservation (ARC), this project was conducted between April 2019 and March 2020. Five groups of collaborators covered major population centers throughout Cambodia and Vietnam. The lead researchers were affiliated with the University of Battambang (UBB), the Conservation and Mercy Release Asia Network (CAMRAN), and the World Wide Fund for Nature (WWF). Anonymous questionnaire surveys were conducted in and around Buddhist temples in five cities in five Cambodian provinces and three cities in Vietnam. In Cambodia, researchers from UBB and CAMRAN surveyed Phnom Penh, Battambang, Banteay Meanchey, Mondulkiri and Siem Reap, and the SFS Center for Conservation and Development Studies conducted additional surveys in Siem Reap. The three cities visited in Vietnam ranged from Hanoi in the north, where surveys were conducted by affiliates of the Institute of Ecology and Biological Resources, and through the centrally located Hue City to Ho Chi Minh City in the South, where surveys were conducted by an affiliate of Gaia Nature Conservation (Gaia, 2020)[3]. At each temple, monks, nuns, temple-affiliated lay people (who dedicate a proportion of their time to temple upkeep), and people living around the temple were surveyed. Native speakers conducted the surveys except one for which a translator was employed. The surveys obtained information on the demographics of mercy release practitioners, the extent and frequency of occurrence of mercy release, prevailing views on mercy release, the identity of released animals, and general ecological knowledge. The data from this project are being analyzed and will be available after publication.

In addition to publishing the results and a funder report, one of the main outputs of this project is digital publication to assure that the results reach the widest audience possible. A website forming a "knowledge hub" of information on mercy release has been augmented by a new collaboration with the International Network for Conservation and Religion that will host these results and associated efforts aimed at conservation-faith cooperation. The Mercy Release in Cambodia and Vietnam project will be one feature at the launch of the knowledge hub.

Another area in which this project has been successful is initiating dialogue about moving forward to address the mercy release issue. Publications (e.g., Magellan, 2019; Wasserman et al., 2019) and conference presentations (e.g., the 2019 International Congress for Conservation Biology on which this entry is based) have raised the profile of mercy release within the scientific community. Hopefully, these efforts will result in wider assessment of mercy release and more essential work. Concurrently, conversations with faith communities in both Cambodia and Vietnam have been initiated to encourage

[3]http://www.gaiavn.org/

FIGURE 2 | Birds for sale at Huong Pagoda, Ha Noi, Vietnam (Magellan photo).

ecological education so members can better understand the potential problems caused by releasing animals and recognize alternatives to ongoing practices that are detrimental to biological diversity and ecological functioning (e.g., donating money to animal rescue charities; see Awoyemi et al., 2012, 2016; Wasserman et al., 2019 for other alternatives). Temple leaders who have indicated interest in this project are currently being approached to spearhead future work in these areas.

Efficacy of Using SCB Guidelines to Facilitate Collaboration

Most of the people involved in this project had no real interest in the SCB *Guidelines for Interacting with Faith-based Leaders and Communities*. Buddhism is an integral part of the culture in both countries, so Cambodian and Vietnamese partners were interacting as they usually would within their communities, though in a more systematic manner. Thus, the SCB guidelines served as a set of cultural guidelines that reminded western members of the survey team to appreciate the likelihood that local team members would have a better understanding of the local cultures. The usefulness of the guidelines became apparent to non-local team members as they interacted with people who followed an unfamiliar religion.

Pre-engagement Planning

This project had been discussed for several years before it was launched, thus allowing sufficient time for consulting with Buddhist practitioners and developing ways in which diverse stakeholders can communicate. Fortunately, researchers were able to draw on existing contacts to identify leaders and liaisons within the Buddhist communities to be surveyed and had time to build relationships as most members of the project team live and work within these communities. Lead researchers decided to rely mainly on local partners, research assistants and translators to show proper respect for Buddhists and to use appropriate terms of greetings. However, non-local team members remarked on the usefulness of the SCB guidelines for ways of expressing respect for faith leaders and members of their communities,

FIGURE 3 | Dead bird inside cage at Huong Pagoda, HaNoi, Vietnam (Magellan photo).

including bringing gifts to them. The most important aspect of pre-engagement planning was learning as much as possible about Buddhism (e.g., Shiu and Stokes, 2008), the community leaders, and the wider community as the guidelines urged. Researchers were prepared to begin their project with a well-designed plan.

Initiating Contact

In many cases, initiating contact with Buddhist leaders was unnecessary during this survey project. On the few occasions that faith leaders were contacted, local partners initiated the meetings. They were respectful when seeking agreement to meet, talk with, and take photographs of Buddhists who participated in the survey. When asked to modify or add to the project plan, researchers accommodated requests as much as possible. Of major interest were the many dialogues initiated by faith leaders that related directly to the project and to wider conservation and environmental issues.

Launching and Implementing

Local partners followed the survey plan in each of their assigned communities and submitted the collected data as required. As the SCB guidelines encouraged, surveyors maintained respect for and acceptance of the views of Buddhists with whom they were interacting, researchers asked Buddhists who were participating in the survey for their permission to take photographs, and gifts were presented at some locations, though views on gift-giving varied among surveyors. When a western surveyor brought a gift to each temple she visited, one of the Vietnamese surveyors remarked positively on the importance of bringing gifts, but local Cambodian surveyors did not see the need. Surveyors took time to listen to Buddhists' perspectives on mercy release and to discuss biological conservation generally. Surveyors concluded that many people within the Buddhist hierarchies and practicing Buddhists highly valued the natural environment.

Closing the Project

A single exit strategy was not established in advance for all geographical areas and disparate communities. Instead, each partner group closed and followed-up according to its location requirements. These ranged from a poster session and presentation in the Cambodian city of Siem Reap, a report to local Buddhist leaders, and plans for continued discussions with contacts established during this project. The data generated from the surveys are being used to apply for further funding for education and research that will involve many of the people who participated in this initial step to address the practice of mercy release in Vietnam and Cambodia.

Concluding Comments

One primary aim of the mercy release survey project and CAMRAN is to raise the awareness of Buddhist and Taoist practitioners and conservation researchers to the potentially devastating issues associated with the current practices. Many researchers are interested in the mercy release topic and want to conduct vital research, but they do not know how to relate constructively with leaders and members of religious communities. The SCB guidelines help by providing a starting point, structure and advice upon which to address this critically important issue throughout the world.

Engaging Christians in Addressing Microplastics in Mediterranean Coastal Cities

The adverse effects of microplastics on the marine environment (e.g., Cole et al., 2011; Eriksen et al., 2014; Barboza and Gimenez, 2015; Ogunola and Thava, 2016) are well established. Studies of microplastics in the Mediterranean Sea (e.g., Turner and Holmes, 2011; Kaberi et al., 2013; Cozar et al., 2015) are consistent with findings worldwide while providing nuances for specific areas investigated (e.g., Wang et al., 2016). Plastic debris have been detected in fish sold for human consumption (Rochman et al., 2015), and evidence for potentially pathogenic Vibro has been collected (Kirstein et al., 2016). The implications of this growing body of literature prompted A Rocha, a Christian biodiversity conservation organization (A Rocha, 2020)[4], to initiate a plan for raising awareness of the microplastics problem among Christians in the Mediterranean and addressing it from their faith perspective.

Project Description

Under the auspices of A Rocha, researchers designed their project to engage Christians from conservative backgrounds in France and Monaco in addressing microplastic pollution. Three young scientists from the United Kingdom, France and Germany accompanied the lead scientist of A Rocha's Marine Conservation Programme on a trip to investigate possible field sites, projects and topics close to A Rocha's field study centers in the French countryside near Arles and Nice. At these centers, staff integrate science and theology to protect species' habitats and engage local communities in conservation education.

One month after this investigatory trip, two interns were based on location at Les Courmettes, A Rocha's center near Nice in France. Both were postgraduates with bachelor degrees in conservation-related fields, had significant but different research experience, and were practicing Christians. They began by investigating the scholarly literature to identify possible methodologies for monitoring microplastic pollution. Limited resources dictated the selection of a low-cost methodology that conformed as closely as possible to developing European standards for monitoring microplastics. The data collected were intended to contribute to wider data sets.

The interns also began to survey the area to select specific sites at which to apply the selected methodology. Camargue, France near the mouth of the Rhone River was selected. This area has wide sweeping beaches that are protected within a nature reserve but close to heavy industrial areas at the mouth of the Rhone that empties plastics into the Mediterranean Sea. The site was also conveniently located close to A Rocha's study center near Arles.

Another scientist with a doctoral degree in biology joined the team to oversee the development of the scientific portion of the project. Two 100 m transects were laid along the high tide strand line on sandy beaches. Along each transect, five

[4]https://www.arocha.org/en/

randomly selected 50 cm × 50 cm quadrats were dug to a depth of 5 cm (**Figures 4**, **5**), and all sand was sieved through both a 5 mm and 1 mm geological grade sieve in order to collect the fraction of sediment and attendant microplastics within that size range. Metal and other non-plastic equipment was used to avoid contamination. Seawater was filtered through a 300-micron filter to avoid contamination from the ocean and used subsequently to flush the sediment and attendant microplastics through sieves to collect microplastics and sediments measuring between 1 and 5 mm. This mixture was transported to A Rocha's field study center where saline water was used to separate the sediment from the microplastics that float in saltwater. The microplastics were examined under a stereomicroscope and separated into categories of film, foam, fiber, fragment, pellet, and others.

While this methodology was useful for accurate categorization of microplastics to a level that could be published in peer review literature, other types of activities were necessary to engage people in citizen science-based activities. The possibility of becoming involved in scientific research generated enough interest among beachgoers that someone on the science team was designated the "educator" for the day who answered questions while the other scientists continued researching. Researchers adopted the non-technical, citizen science method that Fidra developed for its Great Nurdle Hunt to reduce plastic pellets in seas (Fidra, 2020)[5]. This method involved searching for nurdles on the beach and recording the length of time, location, number of participants, and number of nurdles found. Simple in its focus on one type of plastic, this method sensitized citizen scientists to the multitude of other types of microplastics and general plastic pollution on the beach.

To test this methodology, researchers gathered a small group of European Christians for a week-long experience—Microplastics Discovery Week— during which researchers used theological sources, Fidra's citizen science survey method, and a more complicated scientific method to demonstrate how they interrelated. Among the theological sources were passages from the Bible that prompted questions aimed at discerning ethical principles to be followed and application of the principles to the global plastic pollution problem (A Rocha, 2018)[6]. Participants wrote prayers for use at the beginning, during or after research.

Ample time was scheduled for discussion during meals and experiencing the beauty of the Camargue beaches. During Monacology Week, an annual event held in Monaco to focus on ecological issues, researchers highlighted their theological-scientific approach to the plastics problem in a resource booth and a variety of activities that A Rocha sponsored.

The materials developed, data accumulated, and accounts of experiences during the project were secured online in a Microplastics Toolbox where they are available to other A Rocha organizations (A Rocha, 2019)[7]. Subsequently, teams in Portugal, the United States, and Kenya launched scientific surveys and used nurdle hunts to study microplastics. Five other national programs added beach and river cleanups to their existing work in which they utilized the toolbox for its resources and the Nurdle Hunt citizen science approach to learning about microplastic pollution.

[5]https://www.fidra.org.uk

FIGURE 4 | The microplastics research site (J. Calcutt photo).

FIGURE 5 | Collecting samples at research site (J. Calcutt photo).

Efficacy of Using SCB Guidelines to Facilitate Collaboration

Several guidelines were useful in this project, especially at pre-engagement planning, launching, implementing and closing stages to address the microplastics pollution problem locally and globally.

Pre-engagement Planning

When planning the microplastics project, researchers thought carefully about how to explain it in ways the members of the community could understand. They anticipated working with a variety of Christian communities whose members had

[6]https://www.arocha.org/en/work/scientific-research/marine-coastal/microplastics-toolbox/theology

[7]https://www.arocha.org/en/work/scientific-research/marine-coastal/microplastics-toolbox/

differing levels of scientific knowledge and decided to bridge science and faith by grounding their communications in biblical language. They also decided to use social media for highlighting the scientific research, asking why Christians should care (A Rocha, 2018)[8] , and soliciting their reasons based on their faith. Researchers chose a liaison person who was respected and trusted by the local Christian faith community, spoke its predominant language, and was willing to identify pertinent communities and people to engage in the project.

Launching and Implementing

Researchers launched and implemented the project as planned. They engaged Christians in the scientific research, asked why they should care about the microplastics found on the beaches, and facilitated their reflections on biblical passages. The Christians settled on the language of loving God and one's neighbor as touchstones for identifying actions aimed at mitigating microplastic pollution. Researchers received invitations to participate in special events and other occasions that they accepted with gratitude as urged in the SCB guidelines. The vicar of an Anglican church in Monaco granted permission for the researchers to work with members of his congregation during the 4 days of Monacology and invited them to speak at a Sunday morning service.

Closing the Project

To benefit the Christians who participated in the science-faith project beyond its closure, the researchers developed the Microplastics Toolbox (A Rocha, 2019). Its contents include scientific and religious sources for understanding and addressing microplastic pollution and is relatively easy to use. The availability of the toolbox on A Rocha's web site has also proven helpful to organizations in other countries that are interested in this vexing global problem with its continuing threats to biological diversity and the functioning of marine ecosystems.

Concluding Comments

Working with Christian leaders and members of their communities to address microplastic pollution in the Mediterranean, A Rocha researchers engaged the minds, bodies, and spirituality of Christians who live in the area by gathering evidence of microplastics, reflecting on their findings from a faith perspective, and identifying ethical principles that should prompt them to help mitigate the problem. The SCB guidelines provided principles for working constructively with these Christians who became aware not only of the microplastics problem, but also of theological sources for reflecting on threats to biological diversity and ethical reasons why and how they should be addressed.

Involving Spirit Intercessors in Conservation Efforts in India

In the Panna tiger reserve located in India's North Madhya Pradesh state, the endangered tiger species (*Panthera tigris*) became locally extinct in 2006 (Kolipaka, 2018). Poaching, poor management, and lack of natural corridors connecting Panna tiger reserve with other tiger supporting habitats are primary causes of their extirpation in that area. The Madhya Pradesh state government and conservation partners have collaborated to revive tiger species. To assure their long-term survival, however, large swaths of corridor forests outside the protected areas must be safeguarded (Kolipaka et al., 2017). These forests consist of multiple-use and private lands with many villages and high human activity, but the reach of conservation agencies into these rural areas is weak. While trying to find ways to secure outside protected areas for wildlife, local beliefs in protector spirits and the generally positive attitudes of the people toward wildlife have become evident (Kolipaka et al., 2015). To embed the conservation-friendly local faith practices into conservation planning, a much deeper understanding is needed about how local practices are conducted and organized by communities.

Faith in God is a powerful motivator for many people in the Panna region of North Madhya Pradesh where rural villagers—heterogenous groups of people following Hinduism, Islam, tribes, and other faiths—believe and worship benevolent protector spirits. For example, rural villagers perceive the forest, wild animals, rivers and streams, old trees, rocks, and boulders as powerful spiritual forces. These forces are understood as benevolent protective forces of which they are also afraid because they believe these forces have great strength and power that are capable of harming humans. For example, a dislodged boulder could crush everything in its way, a flash flood could carry away people and things in its path, and a tiger or a wolf could scare, injure or kill domestic livestock. To protect themselves from these natural forces, villagers make pacts with their spirit protectors through intercessors. In exchange for protection, people make promises of offerings and adhere to norms while in the forests. Offerings range from simple gifts such as coconuts, incense sticks, and alcohol to more costly sacrifices of poultry and goats for food. Their norms include tolerating potentially harmful animals, not polluting spirit sites, and avoiding forests after dark. These conservation-friendly religious practices in the region yield benefits to local wildlife and forests, and adherence to these norms and offerings to spirits is mostly self-regulated. Studies to understand people's local practices indicate that their motivation to offer gifts and adhere strictly to norms comes from a deep fear of retribution.

Making offerings and adhering to norms have practical as well as psychological benefits (Kolipaka et al., 2015). For example, people believe that when resting near spirit sites, livestock is protected from predators. Villagers keep the surroundings around spirit sites clear and undisturbed. Frequent visits by herders and their livestock during the day deter predators. Thus, villagers feel safe near spirit sites. Their beliefs in spirits, scale of their belief system, norms and practices, and favorable attitudes and behaviors toward wildlife and forests have positive relevance for biological conservation (**Figure 6**).

In ritualistic ceremonies that are common within the Panna region, spirit intermediaries play important roles for the people. Spirit intermediaries contact people's spirit protectors to seek explanations from their spirits on a variety of issues that occur in their lives. For example, if someone

[8]https://www.arocha.org/en/news/why-care-about-microplastics/

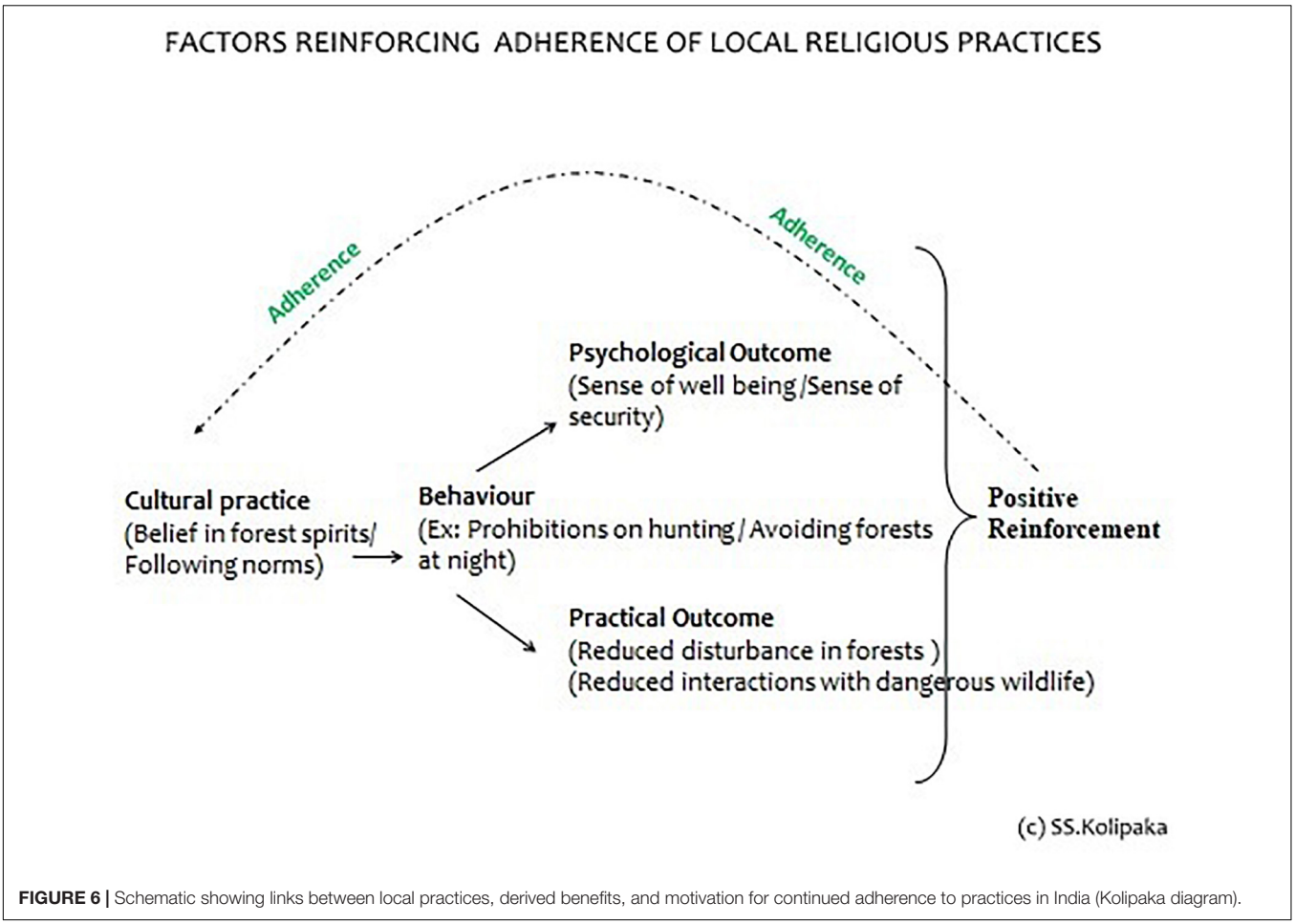

FIGURE 6 | Schematic showing links between local practices, derived benefits, and motivation for continued adherence to practices in India (Kolipaka diagram).

experiences repeated tiger attacks on cattle, the person views these attacks as supernatural manifestations over which they have no control. The person contacts his or her protector spirits through trusted spirit intermediaries to find answers to questions and quandaries, and the person accepts the intercessors' answers and explanations because they are well respected and have powerful voices in the communities (Kolipaka, 2020)[9].

Project Description

An action research project, Involving Spirit Intercessors in Conservation Efforts, was initiated in 2017 to solicit the support of local traditional faith leaders for conservation efforts in the area. The project was planned to span 2 years in a large corridor forest connecting the Panna tiger reserve and Padhadi Khera, the adjoining hill system. Approximately forty villages with a human population of over 50,000 live and use the area. The project was financially supported by DeFries-Bajpai Foundation, United States and supported academically and administratively by Leiden University and the Leo Foundation, The Netherlands, and the State Forest Department of Madhya Pradesh, India. The principal investigator (PI) and practitioner with a team of local paraecologists implemented the project (Paraecologist, 2020)[10] .

The goal of the project was to develop partnerships between faith leaders and local conservation programs (privately governed or government implemented) and to actively involve spirit intercessors in communicating with members of local communities on conservation issues. The first objective was to listen and to ask, to discuss and learn, and, subsequently, to see how partnerships with intercessors might evolve. The second objective was to assess what the partnerships might accomplish for local conservation. The PI educated the paraecologists on the overall goal of the project and prepared them for their roles that included making contact with spirit intercessors, maintaining relations with them in the project area, recording interactions among them and with the people in their areas, and providing feedback to the PI.

As soon as the paraecologists identified and recruited locally respected spirit intercessors, a snow-balling strategy was employed wherein initial recruits provided references for more friendly and open-minded intercessors who were subsequently recruited. Paraecologist-intercessor meetings and discussions about local conservation needs were encouraged. Intercessors

[9]https://wildlifetrackingin.000webhostapp.com/Man_and_his_Spirits.pdf

[10]http://www.paraecologist.org/index.php?title=Main_Page

were urged to develop stories for communicating about the tiger, local rock art, and human-wildlife interactions that could engage local citizens. The newly developed stories were practiced, and the content and delivery techniques were fine-tuned. Local festivals and public events were identified at which the intercessors could tell their stories. Paraecologists closely monitored the intercessors' storytelling until the new stories became frequent within local conversations. An independent reviewer gauged progress every 6 months. Peer-to-peer contact programs were conducted for intercessors to share their experiences with one another. Local village chiefs were involved to increase awareness and acceptance of the project. An engagement and feedback protocol was developed and followed (**Figure 7**).

Efficacy of Using SCB Guidelines to Facilitate Collaboration

The PI and paraecologists have worked in the tiger reintroduction project in Panna since 2009. They researched tigers and local communities (Kolipaka, 2018), and they actively engaged local spirit intercessors. The PI's responses to the 2016 Best Practices Project Survey contributed to drafting the SCB guidelines, and lessons learned from interactions between spirit intercessors and paraecologists were submitted subsequently as annotations to specific guidelines that are included in *Guidelines for Interacting with Faith-based Leaders and Communities*.

Pre-engagement Planning

During this initial stage of the project, the PI selected paraecologists who were recognized as local experts, respected as local citizens, and available to engage spirit intercessors for the duration of the project. Research began on the role and function of the spirit intercessors in the community and identifying the qualities to seek in intercessors (e.g., good communication skills, well respected in the community, willing to assume a leadership role and to work independently, and showing non-monitory motivation for engaging in the project). A communications strategy was planned for introducing the project, sharing research findings, and conveying project needs to the intercessors. A detailed plan was developed with envisaged roles and expectations of the PI, paraecologists, and spirit intercessors. To include new learning during the project, an adaptive management approach was incorporated (**Figure 8**). As the SCB guidelines urged, this project was well planned for engaging spirit intercessors.

Initiating Contact With Faith Leaders

Paraecologists initiated contacts with the spirit intercessors who met the project requirements, provided information about it, and created the setting for the first contact between the PI and the intercessors. Using a handheld Philips Pico, the PI and paraecologists projected slides that assumed a storytelling approach to presenting the project's needs and previous research findings. When the intercessors indicated willingness to participate, a series of discussions occurred over the next few days into weeks during which a strategy for engaging community members was co-developed. Expectations and roles of paraecologist, spirit intercessor, and the principal investigator were discussed and negotiated.

Launching and Implementing

When launching the project, the workloads for paraecologists and intercessors were specified, and work habits were streamlined. These tasks included periodic meetings, consultations, discussions of the topics, and developing new stories for communicating with the public. Ten intercessors were involved in the first 3 months, and, by the end of the 2-year project, over thirty intercessors were engaged. Three peer-to-peer meetings among intercessors were organized that subsequently proved formative and productive for establishing their roles within the project. During these meetings, the intercessors shared their experiences, discussed ways to engage people in their communities, explored conservation problems, and motivated one another toward the project's goals. Paraecologists met the intercessors every week for the first 3 months and participated as observers in sessions where they

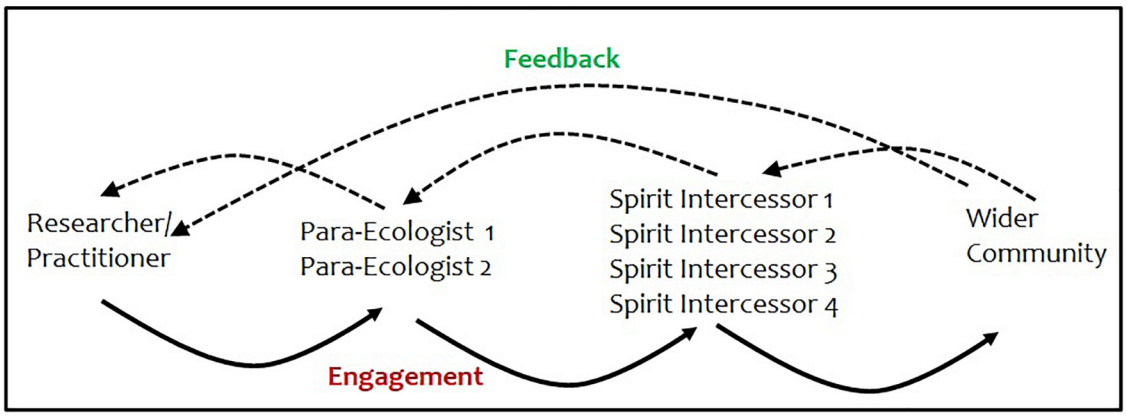

FIGURE 7 | The schematic of an engagement and feedback protocol developed for the project (Kolipaka diagram).

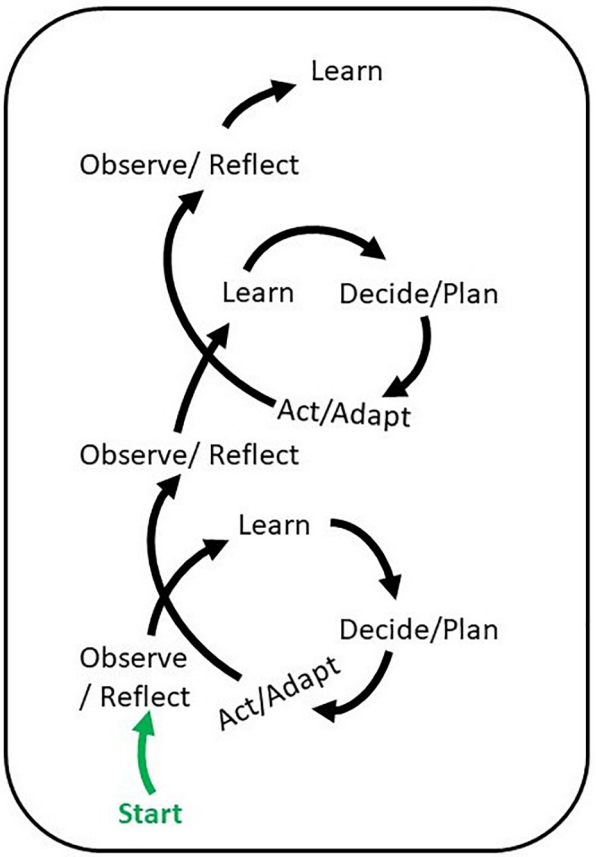

FIGURE 8 | Observation and learning base schematic (adapted by SS Kolipaka from a figure in an anonymous source).

engaged community members in stories that had significance for conservation. After observing consistency in storytelling and communication skills, paraecologists decreased monitoring to two times a month. Intercessors were encouraged wherever possible to use What's App to communicate messages and sources of information. Using this communication tool proved to be a cost-effective and efficient way of monitoring far-flung partners over the large landscape of the project. Toward the end of the project, fourteen intercessors out of thirty self-initiated reports to the paraecologists. Other intercessors' performances proved unsatisfactory because they needed constant hand-holding and would only discuss the project topics with communities when the paraecologists were present.

A project reviewer visited the paraecologists for 3 days every 6 months to monitor their progress with the spirit intercessors and engagement with the communities. The value of the paraecologists became obvious as the project proceeded: Their stature in the communities as local conservation experts facilitated the acceptability of the project, the involvement of spirit intercessors, and the willingness of community members to listen to their stories. To further motivate the paraecologists, the PI offered them small incentives (e.g., paying school fees for their children and investing in computer and internet training). The PI also encouraged them to write reports of their efforts.

Closing the Project

The project ended in October 2019 with an agreement to review it and its impact in 1 year. Though the paraecologists engaged in this project were working in other locales, they remain in contact with the spirit intercessors who are continuing their storytelling efforts unmonitored. The impact of their communication program will be measured in two ways: Public recall of the new stories told by spirit intercessors and the evidence of reduced human disturbance near rock art sites.

Concluding Comments

The SCB guidelines can be helpful when engaging people who are motivated by their faith to conserve forests and wildlife. Because spirit intercessors in the Panna region were motivated to protect and nurture the well-being of local people, they recognized the benefits to them when forests and wildlife are conserved. The PI's plan to return to Panna to measure the continuing evidence of the project outcome should prove helpful for planning future projects.

Applying the Creation Care Principle With Pentecostals in the Peruvian Andes

Deforestation in the montane forest of the tropical Andes is rampant. Species are disappearing, landscapes are altered, and ecological interactions are diminishing (Valiente-Banuet et al., 2014). Information about species and ecosystems is available for conservation activities, but more data are needed (Young et al., 2009). One area of high endemism is the central montane forest of Peru in the department of Huánuco where studies on ecological interactions have not been conducted. The Carpish mountains and the elfin forest of Unchog within Huánuco constitute an important hotspot of avian endemism (Swenson et al., 2012). Golden-backed Mountain Tanager, Rufous-browed Hemispingus, Pardusco and Coppery Metaltail are among the endemic birds found here. Initially they were considered charismatic species that attracted specialized tourism and accrued income for the communities (Kerr, 2003). Eventually, these birds became subjects of conservation research (Walpole and Leader-Williams, 2002). In 2019, after considerable local efforts to formally underscore the value of the area, Peru designated the Carpish mountains and elfin forest of Unchog as the first Regional Conservation Area in Huánuco (Peru, 2019).

Project Description

When planning to study avian ecology in the montane forest of Huánuco to obtain data for writing a dissertation for a doctoral degree in Interdisciplinary Ecology at the University of Florida (Gonzalez, 2015), the researcher learned that conservation studies required approval and participation of the communities in which they are conducted. The researcher discovered that the Pentecostal Christian churches in Huánuco were highly influential (Gonzalez, 2018). To gain their cooperation, church leaders had to be assured that the research related positively to their religious values. Though the researcher had not planned

to include faith-based research in his dissertation project, he became involved with the local people, understood that they valued birds for their attraction to tourists who spent money in their communities (Walpole and Leader-Williams, 2002; Kerr, 2003), and made a commitment to teach the Pentecostals about the endemic birds and their ecological services as pollinators that dispersed seeds and controlled pests (e.g., Whelan et al., 2016).

Pentecostals in the Andes seek to live spiritually inspired lives. As a committed Christian and biologist (Sequeira and Gonzalez, 2019), the researcher knew that birds are mentioned in the Bible in ways that promote nature conservation and aid the deepening of Christian spirituality (Stott, 1999). The avian knowledge he intended to share with Pentecostals would give them more reason to praise God, conserve bird habitats, and avoid negative environmental practices (e.g., adults cutting down the forest and children killing birds for "fun"). After thinking carefully about his project, he decided to rely on the Christian doctrine of Creation Care (Evangelical Environmental Network [EEN], 2020)[11] that teaches believers about their moral duty to conserve nature and interprets the Bible in ways that promote the conservation of natural resources (e.g., Waldrop, 2014).

Efficacy of Using SCB Guidelines to Facilitate Collaboration

The SCB guidelines were particularly helpful in facilitating constructive conservation-faith collaboration when planning, initiating contact with faith leaders, and implementing the avian Pentecostal project.

Pre-engagement Planning

At this beginning stage of the project, the researcher anticipated spending considerable time identifying and developing a relationship with key people in the area. Staff of Paz y Esperanza, the Evangelical non-government organization (NGO) that fights for social justice in Huánuco, and the leader of Comunidad campesina de Cochabamba that local peasants organized were especially helpful in identifying Pentecostal leaders and elders of the local communities with whom to initiate a trustful relationship. The researcher decided to include sufficient time in his project for building trust through personal interactions with Pentecostals and opportunities to participate in their church assemblies.

Key to his efforts was understanding the doctrine of Creation Care from a Pentecostal perspective. He also learned that Pentecostals in Latin America have inherited a fundamentalist worldview from American missionaries who professed a Young-Earth creationist understanding of the world, special creation of the human being, and biological evolution as an atheistic doctrine that violates Christian values. Foreign researchers who identify themselves as scientists can be viewed as "spiritual enemies," but mistrust can dissipate after personal and respectful interactions. While avoiding topics about origins and other contentious issues is essential when interacting with Pentecostals, they welcome practical advice on how to manage their land, basic norms of hygiene, and how to adapt to the adverse effects of climate change that are occurring in the Andes. Discussing issues that are not contentious from a faith perspective can open to opportunities for positive interactions between conservationists and Pentecostals to achieve mutually beneficial goals (Gonzalez et al., 2018).

To enhance his plan to teach Pentecostals about birds and their roles in the area, the researcher sought but was unable to identify a guide or company that specialized in bird tours. He proceeded nevertheless to begin his project. Hosted in the home of the Comunidad leader, the researcher began contacting Pentecostal elders and pastors.

Initiating Contact

Among the Pentecostal pastors and elders the researcher contacted was the Pastor of Iglesia de Dios de la Profecia Church in Pillao, Huánuco who invited him to explain his project to church members. As the SCB guidelines urged, the researcher was humble toward and respectful of the pastor and his views of the human-Earth relationship. The researcher remained silent when listening to the pastor, never belittling his expressions of faith nor arguing from a scientific perspective. Subsequently, he explained his plan to all Pentecostal pastors and elders that *Paz y Esperanza* staff identified, and he proceeded to launch his project.

Launching and Implementing

Especially helpful when launching and implementing this project was the workshop for Pentecostal leaders that *Paz y Esperanza* helped organize. The workshop provided an opportunity for the researcher to share his knowledge about the endemic birds, their ecological services, and why, from a Christian Care faith perspective, these birds should be conserved. The researcher also accepted with gratitude invitations to special events and other opportunities with the aim of building mutual trust between himself and the Pentecostals, showing appreciation for them, and establishing personal relationships with them. Especially significant was the pastor's invitation to preach at an assembly of Pentecostals during which the researcher shared the resonance of Creation Care with bird conservation.

After talking with one Pentecostal pastor about avian research in relation to Creation Care, the pastor encouraged members of his assembly to learn about and value the endemic birds. The children were especially amazed about the birds that the researcher facilitated their viewing through a telescope and binoculars and in book pictures (**Figure 9**). When giving a sermon to youth on their personal development and career goals, the pastor mentioned the possibility of their choosing to become professional nature tour guides.

Among the lessons the researcher learned during this project was to avoid becoming involved in local political issues. By remaining focused on avian research, developing constructive relationships with pastors, and teaching Pentecostals about the endemic birds in the Peruvian Andes, the researcher was able to complete the project.

Concluding Comments

Recommendations in the SCB guidelines are helpful for conservation scientists who need permission from faith communities to conduct research. They are highly effective when working with communities of people who profess a

[11] https://creationcare.org/who-we-are/beliefs.html

FIGURE 9 | Teaching Pentecostal children about birds in the Peruvian Andes (Gonzalez photo).

faith that contrasts with basic scientific findings about the world. As the guidelines urge, acting respectfully, listening carefully, interacting personably, and focusing on the research project facilitated constructive collaboration that achieved positive outcomes.

Combating Illegal Wildlife Trade through Conservation-Islamic Partnerships in Malaysia

Poaching to supply the illegal wildlife trade is a serious threat to Malaysia's large mammals (Clements et al., 2010). The Malayan tiger and the Asian elephant are among the species that are being pushed toward extinction by poachers (Bernama, 2018) who are both foreigners and local people (Bartholomew, 2017). To deter poaching, the government uses law enforcement as its main strategy (Ariffin, 2015) that is enhanced by outreach programs to increase public awareness of the illegal wildlife trade (Clements et al., 2009). Partnerships between conservation and faith groups remain an underutilized approach for engaging the public in wildlife protection.

Project Description

Islam is the predominant faith practiced in Malaysia. Approximately 60% of Malaysians self-identify as Muslims (Ushama and Moten, 2006). A 2008 study in the state of Terengganu on the east coast of Peninsular Malaysia (**Figure 10**) indicated that Islamic sermons containing conservation messages improved Muslims' awareness of the importance of turtle conservation (Clements et al., 2009). Encouraged by this finding, Rimba, a Malaysian-based conservation NGO, established a tiger conservation project in Terengganu in 2014 and initiated partnerships with faith leaders to engage Muslim grassroot communities in raising their awareness of the need to protect wildlife. Following the passage in Indonesia of a fatwa (a formal Islamic legal opinion) (Mehmood et al., 2015) that prohibited Muslims from participating in the illegal wildlife trade (Council of Ulama, 2014), Rimba collaborated with the Terengganu state government to encourage issuing a similar fatwa against wildlife poaching in Malaysia. Islamic clerics in Terengganu issued a fatwa in 2015 with hope that it would be extended throughout Malaysia (Yi, 2016).

With funding from the United States Fish and Wildlife Service and support from the British NGO Alliance of Religions and Conservation (ARC), Rimba launched a program from 2017 to 2019 to raise awareness about the wildlife trade fatwa in Muslim communities in and around the country's largest protected area—Taman Negara National Park, a Class 1 Tiger Conservation Landscape in Terengganu. The goal of the project was to disseminate the fatwa's teachings to help reduce local participation in the illegal wildlife trade. The methods used were largely based on ARC's successful experience with local partners on fatwa-based approaches to conservation in Indonesia.

Members of the project team proceeded to work with Islamic faith and academic partners in Malaysia to develop fatwa-themed training sessions for Islamic leaders and a fatwa resource module to support "conservation clerics" in delivering sermons and providing educational programs in their villages. Team members

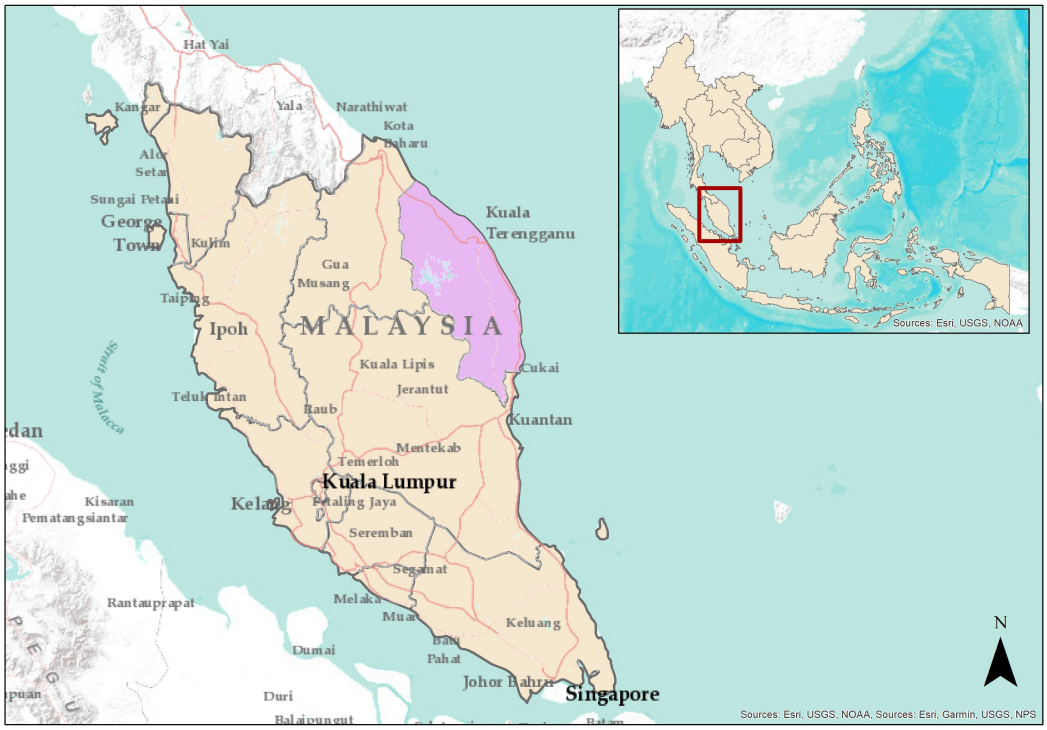

FIGURE 10 | Project Site in Terengganu.

trained 100 Islamic leaders on the wildlife trade fatwa who in turn shared these teachings with communities near Taman Negara with the goal of reducing illegal wildlife hunting around the park. Team members also worked with Islamic officials to develop a fatwa-themed sermon to be read in government mosques on a Friday, the traditional day for special congregational prayers. Messages about the fatwa were shared in Terengganu mosques, during local events and meetings, in national sermons, on television, and through social media.

Though final impact surveys have not been conducted in Terengganu's targeted villages, the project team found working through Malaysia's strict Islamic structure more difficult than working in Indonesia where clerics have more freedom to spread the fatwa's teachings. Furthermore, the team needed more time in Malaysia to find champions of conservation among the local Islamic establishments. Currently, the fatwa training module for Islamic leaders is being shared with national religious organizations that are adapting and using it to train clerics and Islamic educators in different Malaysian states. Working through the Islamic school education system and in mosques appears to have the highest potential for shifting attitudes and behaviors of civil society toward wildlife protection.

Efficacy of Using SCB Guidelines to Facilitate Collaboration

Recommendations by SCB members facilitated positive interactions with Muslims in Malaysia throughout the wildlife fatwa project. Especially helpful were guidelines at pre-engagement, initiating contact, launching, and implementing, and closing stages of the project.

Pre-engagement Planning

During this initial stage of the wildlife fatwa project, team members anticipated following the Indonesian model of fatwa training and education through Islamic clerics in 24 communities of several districts of Terengganu. However, the team had not previously worked with Islamic leaders and communities in the area, were unaware of the highly centralized Malaysia religious structure, and did not know that all Muslim clerics are government employees who are assigned to preach in villages using a centralized curriculum. After spending considerable time appealing to authorities in the districts where the team planned to work and learning that none had the authority to approve new projects, Rimba staff sought and eventually received approval from Malaysia's Religious Affairs Department in Kuala Terengganu. In the interim, refining the project plan continued, and a coordinator was sought who, as the SCB guidelines urged, would be respected and trusted by people in the local communities. The coordinator selected was Muslim, spoke the local language but not the dialect, had lived in the main targeted village for nearly 2 years, and was a member of the tiger conservation team.

Pre-engagement planning included making decisions about how to allocate funds. Because the project team anticipated spending a great deal of time interacting with Islamic leaders, clerics and members of the targeted communities, the team

decided to allocate much of the funding for training clerics, study visits, government meetings, and community events. Team members also planned to equip the district Islamic department with a set of multimedia equipment (e.g., a projector, a laptop, a video featuring Terengganu's Sultan, and sample presentations) for lending to clerics to prepare interactive and stimulating fatwa-themed sermons. Budget allocations were kept relatively flexible to accommodate unanticipated expenses including publications, travel costs, and additional meetings that may be scheduled to assure good rapport with government Islamic departments.

Initiating Contact

When initiating contact with Islamic community leaders in Terengganu, members of the project team were humble and respectful as the SCB guidelines urged. They deferred to Islamic authorities on all fatwa-related issues and focused on sharing technical information pertaining to current threats to wildlife within the state (e.g., habitat loss, poaching of wildlife, and encroachment issues). To brief governmental officials from all Islamic departments in pertinent districts of Terengganu on the wildlife fatwa project, team members arranged a 1-day seminar during which they showed a video featuring the Sultan of Terengganu, the highest Islamic leader in the state, in which he described Muslims who conserve wildlife as good caliphs (guardians) of Earth (Rimba, 2017b; Harimau Selamanya, 2018)[12] . Another high-ranking state Islamic leader, the deputy Mufti, spoke in support of the fatwa approach to wildlife conservation. A Universitas Nasional Indonesia scholar who spearheaded fatwa-based conservation programs in Indonesia shared his experiences and sensitivity to Islamic perspectives. His stature proved invaluable for initiating open discussions among high level authorities and the clerics who participated in subsequent fatwa training programs in Terengganu.

Launching and Implementing the Project

The team launched the wildlife fatwa project by organizing training sessions for Muslim clerics during which fatwa teachings were linked to Islamic values (e.g., Ahmad, 2014) for giving sermons, weekly preachings, community events, and social media. After two fatwa training sessions, team members attended some of the sermons at local mosques and preaching session groups to handle any technical problems that might arise. They closely observed the clerics as they delivered fatwa-themed sermons and noted how delivery methods varied from cleric to cleric based on their experience, presentation skills, and age. Team members realized the importance of allowing clerics the space to deliver fatwa messages in their own ways. The videos, slideshows and other presentation materials provided by the team were important complementary tools, but team members realized and appreciated the effectiveness of clerics when delivering conservation messages in their own words, styles and presence (Rimba, 2017a)[13].

Team members sought additional opportunities for sharing wildlife fatwa-related information. Among them were village gatherings during Ramadan season and at public events organized by the Islamic districts, a series of activities with communities near the national park that included sports events, an Eid-al-Fitr dinner (Festival of Breaking the Fast) celebrated by Muslims worldwide at the end of Ramadan, and conservation-themed multimedia presentations. These community opportunities were vital for educating villagers about the fatwa, building relationships, and encouraging intelligence gathering by villagers on wildlife crime.

While implementing the project, team members kept in close contact with Islamic leaders. Occasionally the leaders invited members of the team to join Islamic department events and to give presentations on Rimba's conservation projects. Members of the team accepted all invitations from Islamic officials to attend events, even when they were located far away, for the goal of building trust and mutual respect. They established a WhatsApp group for maintaining contact with the clerics after their fatwa training so information and news about wildlife protection could be readily available to them for updating their knowledge and sharing it with members of their congregations. Members of the project team also occasionally contacted individual clerics in person to maintain close connections with them.

Team members focused on their project's mission and avoided distractions during this implementation stage as the SCB guidelines recommended. When suggestions by high-ranking officers in Islamic departments did not always align with the wildlife fatwa project's goals (e.g., asking the police department to gather local villagers with gun licenses together to speak with them about wildlife protection, focusing the project on socio-economic issues, and promoting organic farming), team members listened respectfully and explained that donor requirements and limited manpower and resources prevented deviating from the project. Eventually the Islamic authorities accepted the parameters of the project's activities, and members of the team were able to advance it as planned.

As the SCB guidelines urged, members of the project team also refrained from imposing their personal values when Islamic leaders shared their knowledge and expressed their feelings about the fatwa's teachings during open discussions. Team members respectfully shared their suggestions for using the fatwa's teachings in sermons and reaching out to target groups in their communities. The main objective of these discussions was to identify various ways in which clerics could harmonize conservation messages with Islamic teachings in their own individual styles for sharing with Muslims in their congregations.

Cognizant of the need to underscore the benefits of the wildlife fatwa project to Islamic leaders and their congregations, the team offered an opportunity to five promising conservation clerics to deepen their commitments to wildlife protection by taking them on a short field trip to Riau, Indonesia. There they met and learned from Muslim clerics in the Rimbang Baling Wildlife Reserve who were raising awareness about the Indonesian wildlife trade fatwa among thousands of villagers in their communities.

Closing the Project

After clerics in ten mosques completed training on the wildlife fatwa, they assumed full responsibility for weekly

[12]https://www.youtube.com/watch?v=azfH7SKlG50

preaching on fatwa themes in their districts. The project team presented the aforementioned multimedia tools to the Islamic department in Hulu Terengganu that is close to Terengganu National Park with the understanding that all clerics trained in the project would have access to the tools. To further facilitate the clerics' capability to give sermons on conservation issues, the team provided additional support by collaborating with the International Islamic University Malaysia, the International Institute of Advanced Islamic Studies in Malaysia, and GRASS Malaysia, an Islamic environmental NGO, to produce *Da'i Konservasi Islam & Conservation Guidebook* in which guidance for harmonizing Islam and conservation is provided.

These three organizations are disseminating the guidebook to other states and partners in Malaysia where it can be used as a training module and resource by Islamic clerics, leaders, educators in Islamic schools, and conservation NGOs. The International Institute of Advanced Islamic Studies plans to translate the module into English so it can be used in other countries to motivate and facilitate wildlife protection based on Islamic beliefs and values.

Concluding Comments

Though progress was much slower in Malaysia than anticipated, this project led to a heightened awareness of wildlife trade issues and contributed invaluable insights about the effectiveness of conservation-Islamic partnerships to combat the illegal wildlife trade. Progress would have been quicker and fewer obstacles encountered if staff had better understood how Malaysia's Islamic institutions function and the project coordinator had spoken the local dialect. Members of the wildlife fatwa team anticipate following the SCB guidelines closely to facilitate future conservation-Islamic partnerships.

DISCUSSION

Appropriating and applying SCB *Guidelines for Interacting with Faith-based Leaders and Communities* facilitated conservation-faith collaborations in Vietnam and Cambodia, France and Monaco's Mediterranean coastal cities, India's North Madhya Pradesh state, the Peruvian Andes, and Malaysia's Terengganu state to achieve project outcomes with Buddhists, conservative Christians, spirit intercessors, Pentecostals and Muslims, respectively. We proceed in this section to discuss ways in which the projects, researchers, and faith communities benefited from their collaboration. Subsequently, we discuss why researchers should consider collaborating with leaders and members of faith communities and identify impediments to their collaboration that must be overcome.

Outcomes Benefiting the Projects, Researchers and Faith Communities

Benefiting the Projects

When following SCB members' recommendations in *Guidelines for Interacting with Faith-based Leader and Communities*, conservation researchers collaborated successfully with faith leaders and members of their communities in Cambodia and Vietnam, France and Monaco, India, Peru, and Malaysia to complete their projects. Different guidelines at the various stages of the projects proved particularly helpful toward collaborating with Buddhists, conservative Christians, spirit intercessors, Pentecostals, and Muslims in those countries. The positive outcomes of these five projects are helpful for identifying how to collaborate with faith leaders and communities in future projects.

Benefiting Researchers and Future Research

Researchers benefited from developing collaborative skills that can be used in future endeavors. Non-local team members who surveyed Buddhists in Cambodia and Vietnam were illuminated by the multi-cultural advice in the guidelines and found it invaluable for understanding the contexts in which they were working. Data collected in the surveys will be vital when developing a more expansive science-faith project for addressing problems caused by the ongoing capture and release of animals for individual merit—a practice that was intended initially to show compassion for animal suffering.

In the Mediterranean microplastic awareness project, researchers learned how to develop an effective program that engages the mind, body, and Christian spirituality to yield practical conservation outcomes. The Microplastics Toolbox developed by the A Rocha team is readily available for use by the local people who participated in the project and by researchers throughout the world for studying the vexing microplastics problem.

In the Panna region of North Madhya Pradish state, the researcher became skillful in training paraecologists who worked with spirit intercessors to develop faith-conservation stories that continued to be told unmonitored by the paraecologists. Positive outcomes in Panna prompted the researcher to involve spirit intercessors in a reforestation project in the Indian state of Chhattisgarh.

The researcher in the Peruvian Andes became more familiar with the Creation Care principle that he skillfully related to conserving endemic birds when teaching Pentecostal adults and children. His acceptance of an unexpected invitation to preach about this principle in relation to his avian research in a Pentecostal assembly furthered his ability to relate science and faith in a religious setting.

In Terengganu, researchers became skillful in training Islamic clerics to give sermons and lead prayer sessions focusing on the Malaysian wildlife fatwa and other conservation issues. The guidebook generated from this project can be helpful in training clerics in other Malaysian states, and its translation into English and other languages will facilitate addressing wildlife trafficking in other parts of the world.

Perhaps the most important benefit to researchers was becoming acquainted with faith leaders and communities whose traditions resonate with conservation goals and can be viewed as allies in the quest to preserve biological diversity. Knowing how to interact in ways that facilitate collaboration to achieve project outcomes and interacting

accordingly can prove invaluable to researchers in future endeavors.

Benefiting Leaders and Members of Faith Communities

Faith leaders and their communities benefited in several ways from the five projects. Islamic clerics in Malaysia benefited from receiving sources for sermons and prayer sessions that link Islamic beliefs to wildlife protection and from the guidebook produced by Islamic academicians and conservation advocates. Pentecostal adults and children in the Peruvian Andes benefited from learning their faith's relatedness to protecting birds in their area and scientific knowledge about the birds' ecological services. The people in the Panna area of India who consulted their spirit intercessors benefited from the links made between the protection of the forest and their well-being. Conservative Christians in French and Monacan coastal cities benefited from the opportunities to learn about microplastics and continue to have access to the Microplastics Toolbox that the A Rocha team developed. Buddhists in Vietnam and Cambodia where the mercy release survey was conducted benefited from answers to the stimulating questions they asked, opportunities to converse with the researchers about broader conservation issues, and gifts brought by the western surveyor. Opening people of these different faiths to scientific knowledge about the subjects of researchers' projects expanded their knowledge and understanding of the species and ecosystems within which they functioned.

Leaders and members of the faith communities in each of the five projects also benefited from their growing awareness of beliefs within their traditions that resonate with biological conservation and motivate them to want to preserve biological diversity. Though stimulating awareness of faith traditions is not an explicit guideline recommended by SCB members and awareness of faith-conservation relatedness was not measured prior to, during, or after the projects were closed, researchers can assume that awareness pertaining to the biological foci of their projects was raised to some extent as demonstrated by the ways in which leaders and members of faith communities collaborated to achieve project outcomes.

Studying faith-conservation awareness may be a ripe focus for interdisciplinary research that could benefit faith communities as well as conservationists. Research to gage faith-conservation awareness prior to and at the completion of a conservation project might yield helpful insights from which faith communities can frame education, practice, and advocacy programs. Also helpful may be following-up a conservation-faith collaboration project a year or more after its closure to find evidence of the extent to which the conservation issue is being addressed by the faith community and to identify the most motivational faith-based rationale for continuing to address the issue. These and other interdisciplinary efforts may have significance for the well-being of faith communities and for conserving biological diversity, the integrity of ecosystems, and the life-flourishing capacity of Earth's biosphere.

Why Conservationists Should Consider Collaborating With Faith Leaders and Communities

According to SCB members who contributed to the Best Practices Project, conservation researchers should consider collaborating with faith leaders and members of their communities for two major reasons: The significance of the number of people throughout the world who self-identify with specific faiths who may be helpful for conserving biological diversity, and the need to obtain permission from faith leaders/communities to conduct particular types of conservation research.

Potential Help From and Support by Faith Leaders and Communities

Societal support is essential for establishing policies and implementing practices that conservation researchers identify for preserving and protecting biological diversity (e.g., Lemos and Agrawal), and members of faith communities constitute a significant segment of the global population that may be helpful and supportive (e.g., ACT Alliance, 2015; Mcleod and Palmer, 2015; Sayem, 2019; United Nations Environmental Programme [UNEP], 2019). In a study of 2010 censuses, surveys and population registries in 230 countries and territories, the Pew Research Center estimated that approximately 84 percent of adults and children are affiliated with a "religion" (a term used broadly to refer to organized world religions and various traditional, indigenous and folk religions including African traditional, Chinese folk, Native American tribal, and Australian aboriginal) (Pew Research Center, Religion and Public Life, 2012). Though neither the extent to which these 5.8 of 6.9 billion people are involved in their faith communities or the depth to which they express their faith in word and action were explored in this Pew survey, scholarly studies of the world religions and spiritualities point to faith perspectives that are compatible with conservation goals (e.g., Forum on Religion and Ecology [FORE], 2020). Scholarly studies also point to traditions in organized religions that ground ethical principles (e.g., Schaefer et al., 2019) on which leaders have called their constituents to reflect and act (e.g., Council of Ulama, 2014; Francis Pope, 2015; Waskow, 2015; Bartholomew Patriarch, 2016; Dalai Lama, 2016).

Some faith communities have been motivated by their beliefs and values to initiate and maintain ways of living that promote biological diversity and the flourishing of ecosystems within which they function. Among these communities is Holy Wisdom Monastery, the first recipient of the SCB's Assisi Award for Faith-based Conservation (e.g., Benedictine Sisters of Holy Wisdom Monastery, 2020). These and other "sacred natural sites" have been characterized as "hot spots" for faith-motivated biological conservation (Sacred Sites International Foundation, 2010; Healey et al., 2018).

Thus, as SCB members who contributed to the Best Practices Project have urged, conservation researchers and practitioners should consider approaching faith leaders and communities with the anticipation that they may want to help and may support conservation projects. Their local to global support may be key

to conserving biological diversity, ecosystem functioning, and the biosphere of Earth.

Need for Permission to Conduct Research and Implement Practice Projects

Some conservation research projects require permission from faith leaders and/or communities to proceed. In the RCBWG Best Practices Survey conducted in 2016, half of the SCB members reported that they needed permission from a faith-based community before beginning their research. Another half indicated that members of faith communities helped achieve the objectives of conservation projects, some by collecting data that conservationists needed (Schaefer and Higgins, 2016). Respondents to this survey and presenters in SCB regional and international congresses shared many effective ways in which they sought permission and help from faith leaders and communities that yielded mutually beneficial outcomes. Of the five field experiences featured in this article, avian research in the Peruvian Andes and wildlife trafficking in Malaysia required permission to proceed, and both yielded positive outcomes.

Impediments to Collaborating

SCB researchers have identified two prevailing impediments to collaborating with faith leaders and communities: Discomfort with and biases about faiths and not knowing how to relate to faith leaders and members of their communities.

Researchers' Reluctance

During a forum at the 2016 IMCC in Newfoundland/Labrador, several participants identified as impediments to conservation-faith collaboration some researchers' negative views of faiths as causes of strife and violence in the world, discomfort with religious and spiritual ways of thinking beyond material reality, desire to work only within their fields of expertise in which they are well-trained, and biases, assumptions and stereotypes of organized religions and other faiths (Schaefer, 2016). These characteristics parallel the "conflict" and "contrast" categories in which scholars have placed religion in relation to science (e.g., Haught, 1994; Barbour, 1997). The Pew Research Center reached similar conclusions when surveying AAAS members who are scientists (Masci, 2009). According to participants in the IMCC forum, these impediments to approaching faith leaders and communities are "self-inflicted" and must be overcome to make faith-conservation collaboration possible (Schaefer, 2017).

Not Knowing How to Relate

Some participants in SCB congresses lamented that they did not know how to work constructively with faith leaders and communities and welcomed the development of guidelines that would help. SCB members who participated in the Best Practices Project responded by describing ways in which they had collaborated successfully that were subsequently assembled for *Guidelines for Interacting with Faith-based Leaders and Communities* (Society for Conservation Biology SCB, 2018). They urge other researchers and practitioners to try using these guidelines if they want and/or need help with their projects, including advocacy for implementing scientifically informed strategies to conserve biological diversity and ecosystem functioning. The five field experiences highlighted in this article demonstrate how researchers applied guidelines that were especially helpful for achieving the outcomes of their projects.

RECOMMENDED ACTION

Realizing the increasing need to protect biological diversity and support toward this goal that may be provided by faith leaders and communities, members of the SCB's Board of Governors requested staff to plan a communications rollout of *Guidelines for Interacting with Faith-based Leaders and Communities* early in 2020 to familiarize SCB members with the guidelines and to encourage their consideration in research and practice projects. The document was featured on the entry SCB web site from January to June 2020 to remind members about the availability of the guidelines.

Following are key guidelines organized according to the five stages of research and practice projects. Annotations by SCB members are available in the document with their contact information (Society for Conservation Biology SCB, 2018) to signal their willingness to consult with researchers and practitioners about using the guidelines, adapting them to their projects, and thinking about additional guidelines that are needed.

At the Pre-engagement Planning Stage

(1) Develop a well-constructed conservation research or practice project from commencement to termination that can be explained to the leader and members of the faith community in the language they can understand.
(2) Build into the project adequate time to develop and nurture a constructive and trustworthy relationship with the faith leader and members of the community.
(3) Identify the leader of the community and hierarchical norms within the community to assure respectful interaction with the appropriate leader.
(4) Learn as much as possible about the makeup of the community, interaction of men, women and children within the community, and restrictions on involving them in conservation projects.
(5) Prepare to encounter the faith leaders and community members who may have a faith perspective that is different from yours.
(6) Seek information about the faith practiced in the community by consulting basic sources and be willing to listen and learn from leaders and members of the faith community about localized expressions of their faith.
(7) Anticipate that the faith leader and community members may be politically sophisticated, know much more about the locale than the researcher, and are willing to take risks motivated by their faith.
(8) Seek information about the economic and social needs of the community that cannot be separated from conservation biology issues.

(9) Recognize the jurisdictions within which the faith community is functioning, its interactions with other religious communities in the area, the sovereignties that affect them, and, if pertinent, the community's past as having been disenfranchised and/or oppressed by outsiders/colonizers.
(10) Identify a potential liaison person who is respected, trusted by the local faith community, and can speak the language used in the community, but be prepared for the leader to recommend an alternate liaison.
(11) Think creatively about meaningful gifts and/or how to express gratitude for extending to the leader and members of the faith community for their collaboration.

When Initiating Contact With the Leader of the Faith Community

(1) Make an appointment for a personal visit with the leader, ask the leader's approval to bring a liaison who can speak the leader's language, be prepared to explain your project from commencement to closure in as much detail as the leader desires, and identify outcomes that benefit the faith community as well as the project.
(2) Act humbly toward and respectful of the leader and his/her faith tradition's view of the human-Earth relationship, and respond to the leader's request to share your knowledge about connections between protecting/caring for Earth and protecting global health and well-being.
(3) Identify with the leader a mutually agreeable regular time to listen, build trust, develop rapport, and update the leaders/members of the faith community on the project.
(4) If comfortable and appropriate, approach the leader as a person of faith in the subject of the community's worship or another faith to which you ascribe.
(5) If pertinent, remain cognizant of the community's colonized or oppressed past.
(6) Confirm your pre-engagement understanding of the makeup and interaction of men, women and children in the community and if there are any cultural rules about involving them in the conservation project.
(7) Promise the leader only what you will deliver and be prepared for the possibility that the leader will ask for more or something else.

When Launching and Implementing the Project

(1) Present your project plan to the community in its primary language and degree of technicality required using visual, audible and/or other communication aids.
(2) Consistently follow earlier guidelines for demonstrating respect.
(3) Confirm and follow through on the plan discussed with the faith leader for a regular time to listen, build trust, and nurture collaboration with members of the faith community.
(4) Maintain cordiality, respect for, and acceptance of the community's faith traditions.
(5) Accept with gratitude invitations to special events and other opportunities to build mutual trust.
(6) Be prepared to give meaningful thank-you gifts that show appreciation for the leader's and community's cooperation and to present them on occasions that are special to the community.
(7) Avoid becoming embroiled in local politics.
(8) Focus throughout on the project mission and avoid being side-tracked.

When Closing the Project

(1) Follow the exit plan shared previously with the faith leader and community members; if deviations are necessary, clear them with the faith leader before proceeding.
(2) Deliver any promises made—resources, financial support, or enhancement of some sort that the faith leader and community will appreciate.
(3) Humbly underscore the benefits accrued by the community and the researcher through the project.
(4) Provide the community with the final research report, expressing thanks for the roles the faith leader and community played in the project's completion.
(5) Leave the site in a condition that shows you have caused no harm.

When Following-up the Project

(1) Contact the faith leader to assure receipt of your report, answer questions about it, express your gratitude again for the community's collaboration, discuss the mutual benefits of the project, and provide your latest contact information.
(2) Consider sharing your hopes for the future of the faith community, wildlife in the area, and ecosystems.

CONCLUSION

Recommended by members of the Society for Conservation Biology, *Guidelines for Interacting with Faith-based Leaders and Communities* identifies constructive ways in which conservationists have collaborated with leaders and members of faith communities to achieve project goals at planning, initiating, implementing, closing and following-up stages. The efficacy of using the guidelines to facilitate conservation-faith collaboration is exemplified in five experiences of conservation researchers who worked with Buddhists in Vietnam and Cambodia, conservative Christians in Mediterranean coastal cities of France and Monaco, spirit intercessors in India, Pentecostal Christians in Peru, and Muslims in Malaysia. These successful efforts may be helpful to other conservationists who need and/or want to involve faith leaders and members of their communities in research or practice projects. Recognizing the unique context of each project and the faith professed in the community warrants careful appropriation of guidelines that are most promising

to achieve outcomes that benefit conservationists and the faith communities.

ETHICS STATEMENT

Contributors have not encountered any ethics issues pertaining to the submitted manuscript. The authors of this article are the only identifiable people who appear in the figures they submitted for inclusion.

AUTHOR CONTRIBUTIONS

JS invited, collected and edited contributions pertaining to five projects in which researchers followed SCB's *Guidelines for Interacting with Faith-based Leaders and Communities* (2018) and researched and wrote other components of this article. Contributors of project descriptions, efficacy of most helpful guidelines, pictures, and graphics who approved edits of their submissions are: KM on Mercy Release Practices in Cambodia and Vietnam; RS on Engaging Christians in Addressing Microplastics in Mediterranean Coastal Cities; SK on Involving Spirit Intermediaries in Conservation Efforts in India; OG on Applying the Creation Care Principle with Pentecostals in Avian Research in the Peruvian Andes; AR, GC, and CE on Combating Illegal Wildlife Trade through Conservation-Islamic Partnerships in Malaysia. All authors contributed to the article and approved the submitted version.

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