

Coral reef conservation campaign in Brazil

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Abstract The Brazilian Ministry of the Environment launched the Coral Reef Conservation Campaign in 2001, understanding that public awareness is crucial to environmental conservation. The main objective of this campaign was to promote principles of environmentally friendly behavior based on the international “Leave No Trace” Campaign. In the first phase of the Campaign, managers of nine protected areas established in coral reef sites were invited to be partners. In 2005, with the financial support of the National Fish and Wildlife Foundation, environmental training courses were developed targeting the five most visited Brazilian beaches with coral reefs (Maracajau, João Pessoa, Porto de Galinhas, Tamandaré and Porto Seguro). Various outreach materials were prepared: posters, folders, textbooks, stickers, t-shirts, caps and DVD-videos. We also established partnerships with airlines and a public TV channel to broadcast the video, and supported its use at events, such as “Clean Up Day”, in three beaches: Natal, Tamandaré and Maceió. In this paper, we describe the methodology, dissemination and partnership strategy used, and we discuss the results and evaluation of the awareness campaign.

Keywords: Coral reef conservation, Brazil

Introduction

Coral reefs are distributed over 3,000 km along the northeastern coast of Brazil, representing the only coral reef ecosystem in the South Atlantic (Maida and Ferreira 1997). Most of the reef building corals are endemic, forming structures not found in any other part of the world. About 18 million people live on the coastal zone of the Brazilian northeastern region. The health, well-being and subsistence of these coastal populations benefits directly from the environmental quality of the coastal ecosystems, especially of the coral reefs (Maida et al. 1997). Nevertheless, due to unsustainable use of resources over the years, several Brazilian reefs, mainly coastal ones, are showing increasing signs of stress. It is imperative that actions be taken to protect these ecosystems. Public awareness of coral function and value seems to be fundamental to achieving conservation.

The Brazilian Ministry of the Environment (MMA) launched the “Coral Reef

Conservation Campaign.”, which promotes environmentally aware behavior based on the international “Leave No Trace” Campaign. Ecotourism in Marine Protected Areas is considered the best option for making these areas financially self-sustainable. If, however, visitation is uncontrolled and careless, it can become a serious threat to the protection and conservation of local biodiversity. In this case, public awareness of the roles and importance of wild areas is a key step for environmental conservation. Building on this principle, the MMA decided to launch an awareness campaign directed to the visitors of these protected areas. The first phase of the Coral Reef Conservation Campaign was prepared by the Brazilian Ministry of the Environment and the Coastal Reefs Project in 2001/2002 (MMA, 2002). Its objective was to conserve coral reefs by reducing harvesting on reefs and controlling damage or destruction of the coralline structure. In 2004, the Brazilian Ministry of the Environment received a grant from the National Fish and

Wildlife Foundation to continue the Campaign in partnership with the Mater Natura Environmental Studies Institute to expand the campaign, showing the importance of coral reef protection to tourists and environmental agents, managers of protected areas, teachers and environmental volunteers. Activities included: (i) producing printed material; (ii) producing a video with coral reef information for distribution to tourist centers, airplanes, local community centers, and dive shops; (iii) launching a training program for managers of protected areas, teachers, tourist guides and volunteers; and (iv) evaluating the campaign.

Material and Methods

This project aimed to extend the original campaign “Leave No Trace” to coastal and marine zones, specifically for coral reefs, with the production of educational brochures and a DVD. As the primary goal of campaigns for the conservation of wild areas is the creation of behavioral guidelines for tourism and leisure activities in terrestrial areas, the campaign was followed by developing suitable guidelines to be applied to marine ecosystems in Brazil. Coral reefs were the first to be selected. A public awareness campaign on the role and importance of the population was considered the principal measure to ensure protection of these ecosystems. The overall purpose was to create the most attractive products and a logo that identified the campaign (Fig 1).



Figure 1: Logo of the campaign

Three different types of campaign materials were designed (folder, poster and booklet, www.mma.gov.br).

In the second phase, activities were reinforced in five reef areas that were suffering extensive

impacts due to coral collection, fishing, sedimentation, pollution and actions resulting from urban occupation and unplanned tourism. In 2004, the Coastal and Marine Division was created within the Brazilian Ministry of the Environment to become the focal point of the campaign. The training program was launched in the states of Rio Grande do Norte, Paraíba, Pernambuco and Bahia.

Activities were: DVD and new dissemination materials, a training program and the evaluation of the campaign, analyzing the courses and the outreach material through questionnaires and interviews with the participants of the courses. The training program was held in the beaches of Maracajau, João Pessoa, Porto de Galinhas, Tamandaré and Porto Seguro and consisted of at least 10 hours of lessons, including topics on coral reefs, the importance of conservation, Brazilian coastal protected areas, coral reef monitoring and techniques to minimize impacts on natural environments. The project evaluation report included four criteria and indicators: (1) participation rate: an indicator of the number of people interested in courses; (2) number of committed implementers and a description of participant's involvement in the campaign; (3) the level (presence/absence) of municipal endorsement of the program and the integration of the campaign in other community programs (total number of activities launched with the campaign); and (4) the attitude toward coral reef conservation among tourists. The tourists' evaluation was prepared by five environmental agents from the local community.

Results

The campaign began with the distribution of printed material to protected areas and, in the second phase, the final product of the project was to engage institutions and stakeholders in five areas highly endangered by intense tourism. The courses were attended by 180 persons and the outreach material distributed to schools, tourist centers, local communities, universities and municipalities (Fig 3).



Figure 3: Printed material of the campaign

A set of guidelines based on the major principles people should bear in mind when visiting reef areas, regardless of whether these areas are protected or not, was produced. These guidelines are: a) scuba diving can be the best way of exploring coral reefs, but divers should contact professional divers and managers of protected areas for information, and follow the protected area's rules when planning to visit the area; b) take care to drop anchor onto the sand, because when set onto the reefs, corals and other organisms are damaged, in addition to it being illegal; c) refrain from stepping or touching the coral, they are very fragile organisms; d) feeding fish is harmful to their health; e) when diving, use waterproof skin lotion; f) shells, corals and starfish provide shelter to other organisms, so should not be removed from their habitat; g) divers must maintain control of diving equipment so that it doesn't bump against the reef; h) avoid wearing fins in shallow waters because they can damage corals and other organisms and suspend sediments; i) move slowly when diving in order not to scare animals away; j) the law prohibits buying and selling handicrafts made from corals, so do not purchase these; k) try to obtain information on the tide times and cycles in order to avoid unexpected, potentially dangerous situations; l) do not use explosives, liquid bleach and other chemicals for fishing as these are extremely harmful to the reef environment and their use is prohibited by law; m) avoid using harpoons and fishgigs, as they scare animals away; n) when visiting a natural area, take the trash you produce back with you; and o) do not collect anything, make sure that the only things you take away from the reefs are

memories and pictures (Fig. 4).



Figure 4: Guideline: Take from the environment only memories and pictures

The course evaluations ascertained that the activities and the outreach material were appropriate for communicating about coral reef ecology and the campaign for minimum impact conduct. It also provided an opportunity to discuss coral reef issues among the various local institutions, who suggested more courses and the creation of a coral reef network. The results of the campaign evaluation show that at some beaches, local agents gave lectures to the public, explained the issue in schools, carried out a Clean Up Day, and distributed posters in shops and restaurants and stickers and folders in boats. The evaluation of the attitude toward coral reef conservation among tourists resulted from 168 interviews in September 2007, to acquire information on visitor awareness and behavior towards coral reef areas in the five beaches of the project. Out of the 168 tourists interviewed, 144 said that they do not buy handicrafts made with coral and 99 do not feed fish when visiting a coral reef area. They chose a coral reef beach because of its beauty, some have marine parks and they could dive and see the coral reef ecosystem. This information shows that in some places there is concern for environmental protection. A case in point is the marine protected area of Recifes de Coral, in Maracajau beach. Its council created rules like limiting the number of boats that can use the area, established the presence of environmental guards and volunteers that explain the importance of coral reefs. In João Pessoa, a large campaign was carried out in the summer for tourists. In

Porto de Galinhas, the number of boats is limited and in Tamandaré, the Pernambuco Environmental Company carried out an environmental education program and set up an environmental library. In addition, we established a partnership with a Brazilian airline to show the coral reef DVD in the airplanes that fly to the northeast of Brazil and to support the Clean Up Day activities in three beaches: Natal, Tamandaré and Maceió. These specific events were organized by local NGOs: Oceânica, in Rio Grande do Norte, the Pernambuco Environmental Company in Tamandaré and the Mergulha Maceió dive shop in Maceió. These events attracted more than 200 volunteers. In Porto Seguro, we received support from the Coral Vivo Project, which developed a coral reef research project and used some campaign material to inform the tourists.

Discussion

In Brazil, some environmental education and awareness raising initiatives have been specifically developed for the coastal zone. Some of these are aimed at diving activities or at attempting to establish underwater interpretative trails. The distribution of information material in itself is not the only way to meet the broader objective of responsible conduct, but it has an important role in the comprehension of certain concepts. The basic principle behind an awareness raising campaign is to inform a group about the importance of the conservation and the minimum impact conduct. The training

courses and the outreach material are a way to reinforce the conservation activities developed by some institutions in the coast. One possible means of evaluation is to hand out questionnaires to the visitors of the areas, before and after they receive the material, on their attitudes with regard to the environment or their knowledge of the fragility, value and function of the particular ecosystem. The Ministry of the Environment carried out a survey with the participants, tourists and environmental agents on the receptiveness of the Campaign and is also using the campaign in 2008 to disseminate the International Year of the Reef.

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