ROATÁN CRUISE TERMINAL. ENVIRONMENTAL EDUCATION AND AWARENESS RAISING PROGRAM.

GENERAL GOAL AND SPECIFIC OBJECTIVES

Bay Islands' coral reef ecosystem is part of the Mesoamerican Barrier Reef System: the Atlantic Ocean´s largest reef and the second largest barrier reef of the world. This ecosystem is characterized by an extensive coverage of live corals representing genetic banks, natural nurseries of marine flora and fauna species, with one of the highest diversities in the Caribbean. In this coral ecosystem forty two coral species and one hundred fish species have been identified. (1).

The general goal of Roatán Cruise Terminal's Environmental Education and Awareness Raising Program is stressing the significance of the Bay Islands' ecosystems and resources. This program is aimed to continue improving environmental behavior in both cruise ship visitors (including crew members) and the local population.

The specific objectives (2) of this program are:

- *To continue raising awareness*. To help cruise ship visitors and the local population to continue acquiring awareness of the Bay Islands' ecosystems as a whole.

- *To continue increasing sensitivity*. To help cruise ship visitors and the local population to continue gaining a variety of experiences in, and a basic understanding of, the Bay Islands' ecosystems.

- *To continue improving attitudes*. To help cruise ship visitors and the local population to continue acquiring a set of values and feelings of concern for the Bay Islands' ecosystems and to continue motivating them for actively participating in its environmental improving and protection when feasible.

- *To continue developing skills*. To help cruise ship visitors and the local population to continue acquiring skills for identifying and solving relevant Bay Island's environmental problems when feasible.

- *To continue encouraging participation*. To continue providing cruise ship visitors and the local population with an opportunity to be actively involved in solving relevant Bay Island's environmental problems when feasible.

It is important to note that considering the diversity of the social group composed by Cruise Ship visitors and local population the objectives above can't be achieved at the same level on the different members of the group: Cruise Ship tourists might be only for a few hours in Roatán and never return, some might visit several times, crew members are frequent visitors and the local population is also diverse and can have different levels of involvement in the program.

METHODOLOGY

The environmental education methods for achieving the general and specific goals of Roatán Cruise Terminal's Environmental Education and Awareness Raising Program are conditioned by the characteristics of the social group participating in the program and by the kind of activities carried out by its members.

Most of the methods would obviously have an indirect/practical approach rather than formal class-room methods, which are virtually ineffective in this context.

The methods applied in the program are the following:

- *Nature trail*
- *Walkway to Mahogany Beach*
- *Exhibits*
- *Environmental signage system*
- *Brief printed educational materials*
- *Educational materials posted in Mahogany Bay Cruise Center's Website*
- *Practical activities*
- *Environmental presentations*
- *Adopting Schools*
- *Environmental training*

Nature trail

The nature trail runs through 213 meters (700 ft.) in an area of Mahogany Bay Cruise Center which was left untouched by the construction of the Center and where Roatán's flora and fauna can be observed. The nature trail is an environmental education method acting mainly upon:

- Both kinds of Cruise ship visitors:
    - Tourists
    - Crew members

- From the local population:
    - Employees from shops and food and beverage facilities
    - RCT's employees
    - School students
    - General visitors

The main ecosystems and environmental features corresponding to this trail are:

- Roatán's vegetation
- Roatán's fauna
- Mangroves. For this particular ecosystem RCT's Mangrove Restoration Project is the most important aspect.

Fig. 1. Nature trail

Fig. 2. Nature trail

Fig. 3. Mangrove restoration project

The main objectives that can be achieved are:

- *To continue raising awareness*
- *To continue increasing sensitivity*
- *To continue improving attitudes (partially)*

Walkway to Mahogany Beach (including bridge)

The walkway is an environmental education method acting mainly upon:

- Both kinds of Cruise ship visitors:
    - Tourists
    - Crew members.

- From the local population:
    - Employees from shops and food and beverage facilities
    - RCT's employees
    - School students
    - General visitors

The main ecosystems and environmental features corresponding to this trail are:

- Roatán's vegetation
- Mangroves

The main objectives that can be achieved are:

- *To continue raising awareness*
- *To continue increasing sensitivity*
- *To continue improving attitudes (partially)*

Exhibits

Roatán's Heritage Exhibit, has two modules:

One is devoted to Roatán's shrimp industry including a replica of a shrimper, which illustrate how important was marine life and still is to sustain Roatán's economy.

Fig. 4 . Shrimpers of Roatán exhibit

The second module is devoted to a Historic overview of the Garinagu culture. This exhibit shows how the sustainable agricultural exploitation of the terrestrial environment of Bay Islands contributed to appropriately provide the main food requirements for this community. This module has signs and samples of the main plants which were in the core of Garinagu agriculture.

Fig. 5. Garinagu culture exhibit. Plants sustaining Garinagu agriculture

Fig. 6. Garinagu culture exhibit. Plants sustaining Garinagu agriculture

This exhibit is an environmental education method acting mainly upon:

- Both kinds of Cruise ship visitors:
    - Tourists
    - Crew members.
- From the local population:
    - Employees from shops and food and beverage facilities
    - RCT's employees
    - School students
    - General visitors

The main ecosystems and environmental features corresponding to Roatán's Heritage Exhibit are:

- Roatán's marine life
- Roatán's vegetation

The main objectives that can be achieved are:

- *To continue raising awareness*
- *To continue increasing sensitivity*
- *To continue improving attitudes (partially)*

Environmental signage system

RCT has an environmental signage system strategically located all along Mahogany Bay Cruise Center. This environmental education method acts mainly upon:

- Both kinds of Cruise ship visitors:
    - Tourists
    - Crew members.
- From the local population:
    - Employees from shops and food and beverage facilities
    - RCT's employees
    - School students
    - General visitors

Fig. 7. Sign describing the environmental importance of Mangroves and RCT's Mangrove Restoration Project.

Fig. 8. RCT's Beach and Coral Reef Etiquette sign in English and Spanish

The main ecosystems and environmental features corresponding to the environmental signage system are:

- Coral reefs
- Marine life in general
- Beaches
- Roatán's vegetation
- Mangroves

The main objectives that can be achieved are:

- *To continue raising awareness*
- *To continue increasing sensitivity*
- *To continue improving attitudes (partially)*

Brief printed educational materials

All passengers, crew members and other visitors have available a unique beach and coral reef etiquette card. This card consists of a small map of the island, and the importance of the preservation of the coral reefs and the island beaches. The cards are available at selected locations in the cruise terminal. The cards can also be used as a souvenir or a bookmark.

Fig. 9. Roatán Beach & Coral Reef Etiquette Card

RCT has also sponsored the publication of a Fish and Coral Identification Booklet, as shown below:

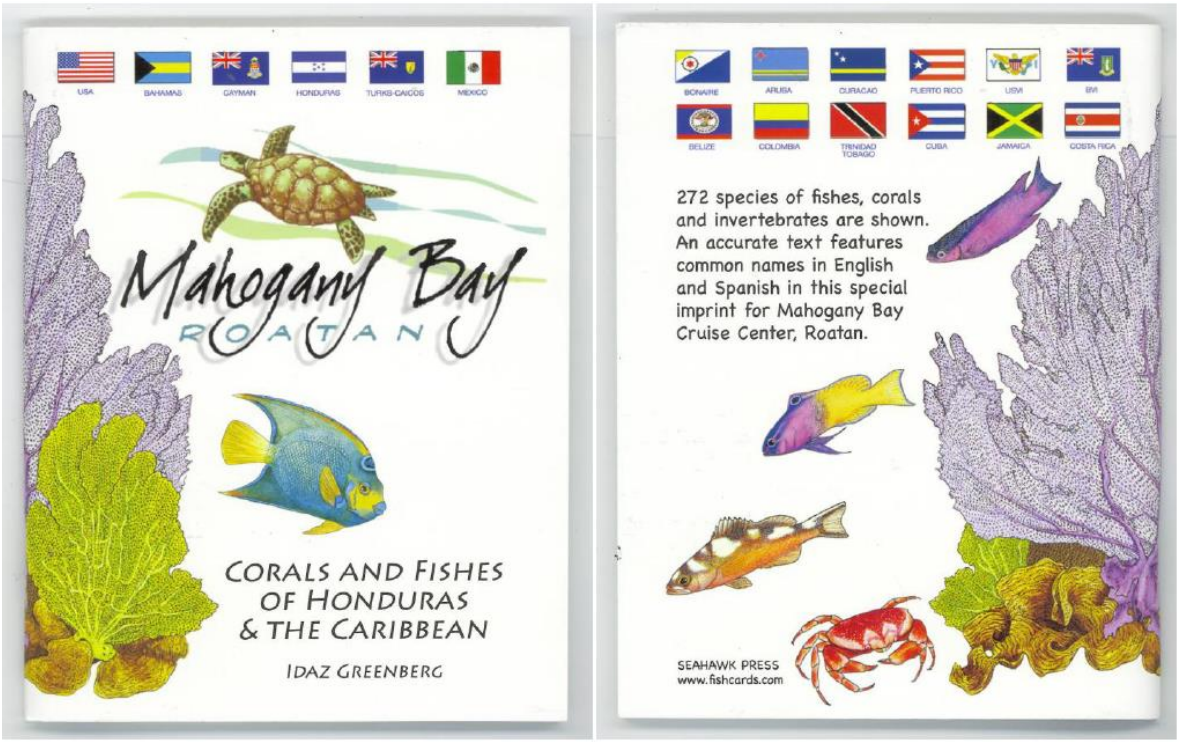

Fig. 10. Fish and Coral Identification Booklet

This environmental education method acts mainly upon:

- Both kinds of Cruise ship visitors:
  - Tourists
  - Crew members.
- From the local population:
  - Employees from shops and food and beverage facilities
  - RCT's employees
  - School students
  - General visitors

The main ecosystems and environmental features corresponding to this card are:

- Coral reefs

- Marine life in general
- Beaches

The main objectives that can be achieved are:

- *To continue raising awareness*
- *To continue increasing sensitivity*
- *To continue improving attitudes (partially)*

Educational materials posted on Mahogany Bay Cruise Center's Website

Coral reef restoration project. A brief description of this project illustrated by photos will be posted on Mahogany Bay Cruise Center's web site.

Fig. 11. RCT's Coral Reef Restoration Project

Mangrove restoration project. A brief description of this project illustrated by photos will be posted on Mahogany Bay Cruise Center's web site.

This environmental education method acts mainly upon Mahogany Bay Cruise Center's web site visitors, such as:

- Both kinds of Cruise ship visitors:
    - Tourists
    - Crew members.
- From the local population:
    - Employees from shops and food and beverage facilities
    - RCT's employees
    - School students
    - General visitors

The main ecosystems and environmental features corresponding to this environmental education method are:

- Coral reefs
- Marine life in general
- Mangroves

The main objectives that can be achieved are:

- *To continue raising awareness*
- *To continue increasing sensitivity*
- *To continue improving attitudes (partially)*

Practical activities

RCT will organize systematic clean-ups of the coastal area, especially in the immediate area of influence of the facility with special emphasis in Mahogany Bay Beach and surrounding mangrove system. Volunteers should be involved in these clean-ups when required. Special days like Earth Day, should be used as motivation to involve crew members and the local population when appropriate.

This environmental education method acts mainly upon:

- From Cruise ship visitors:

    - Crew members.

- From the local population:
    - Employees from shops and food and beverage facilities
    - RCT's employees
    - School students
    - Other sectors of the local population if appropriate

The main ecosystems and environmental features corresponding to this environmental education method are:

- Beaches
- Mangroves

The main objectives that can be achieved are:

- *To continue raising awareness*
- *To continue increasing sensitivity*
- *To continue improving attitudes*
- *To continue developing skills*
- *To continue encouraging participation*

Environmental presentations

RCT would give space inside the Mahogany Bay Cruise Center for conducting environmental education presentations and talks for visitors and local population, if appropriate according to vistors' schedules and other planned activities.

This environmental education method could act mainly upon

- Both kinds of Cruise ship visitors:
    - Tourists (some might be interested although is not envisioned many)
    - Crew members.
- From the local population:
    - Employees from shops and food and beverage facilities

- RCT's employees
- School students
- General visitors

The main ecosystems and environmental features corresponding to this environmental education method would depend on the presentation's subject but could likely be:

- Coral reefs
- Marine life in general
- Beaches
- Mangroves

The main objectives that can be achieved are:

- *To continue raising awareness*
- *To continue increasing sensitivity*
- *To continue improving attitudes (partially)*

Adopting Schools

RCT will adopt a School to contribute to the environmental education of Roatán's students.

The students would be invited to visit Mahogany Bay Cruise Center, will be given a coral reef and beach etiquette card and other educational materials and will be also informed how to access the website. Their visits would comprise for instance:

- Flying beach chair
- Nature trail
- Walkway to Mahogany Beach
- Exhibits
- Environmental signage system

They would receive information about RCT's water conservation program by explaining and showing them the rainwater catchment system and the irrigation system with reused water.

They could also be invited to participate in certain Environmental presentations and practical activities such as beach clean ups and others.

The main ecosystems and environmental features corresponding to this environmental education method are:

- Coral reefs
- Marine life in general
- Beaches
- Mangroves
- Roatán´s vegetation
- Roatán's fauna
- Roatán´s water resources

The main objectives that can be achieved are:

- *To continue raising awareness*
- *To continue increasing sensitivity*
- *To continue improving attitudes*
- *To continue developing skills*
- *To continue encouraging participation*

Environmental training

RCT will implement an environmental training program using those valid and current conditions from SERNA's Environmental Licenses and Technical Reports corresponding to RCT's operational phase as the basis in order to enable each employee to carry out those environmental operating procedures of which they are responsible for to undertake.

The main ecosystems and environmental features corresponding to this environmental education method would depend on the specific employee responsibility.

The main objectives that can be achieved are:

- *To continue raising awareness*
- *To continue increasing sensitivity*

- *To continue improving attitudes*
- *To continue developing skills*
- *To continue encouraging participation*

Activities already carried out before the submission of this plan

- RCT's Environmental Consultant gave talks to the environmental coordinators of each contractor, who in turn conveyed the information to their subordinates.
- RCT participated in a Town hall presentation on declaring the Cordelia Bank a protected area.

REFERENCES

1.- Decreto 75-2010. Ley Especial de las Áreas Protegidas de las Islas de la Bahía. June 10, 2010

2.- Hungerford, H. R. and T. L. Volk. *Changing Learner Behaviour through Environmental Education*. World Conference on Education for All-Meeting Basic Learning Needs. Roundtable: Environmental Education: A component of Sustainable Development. United Nations. March 1990.