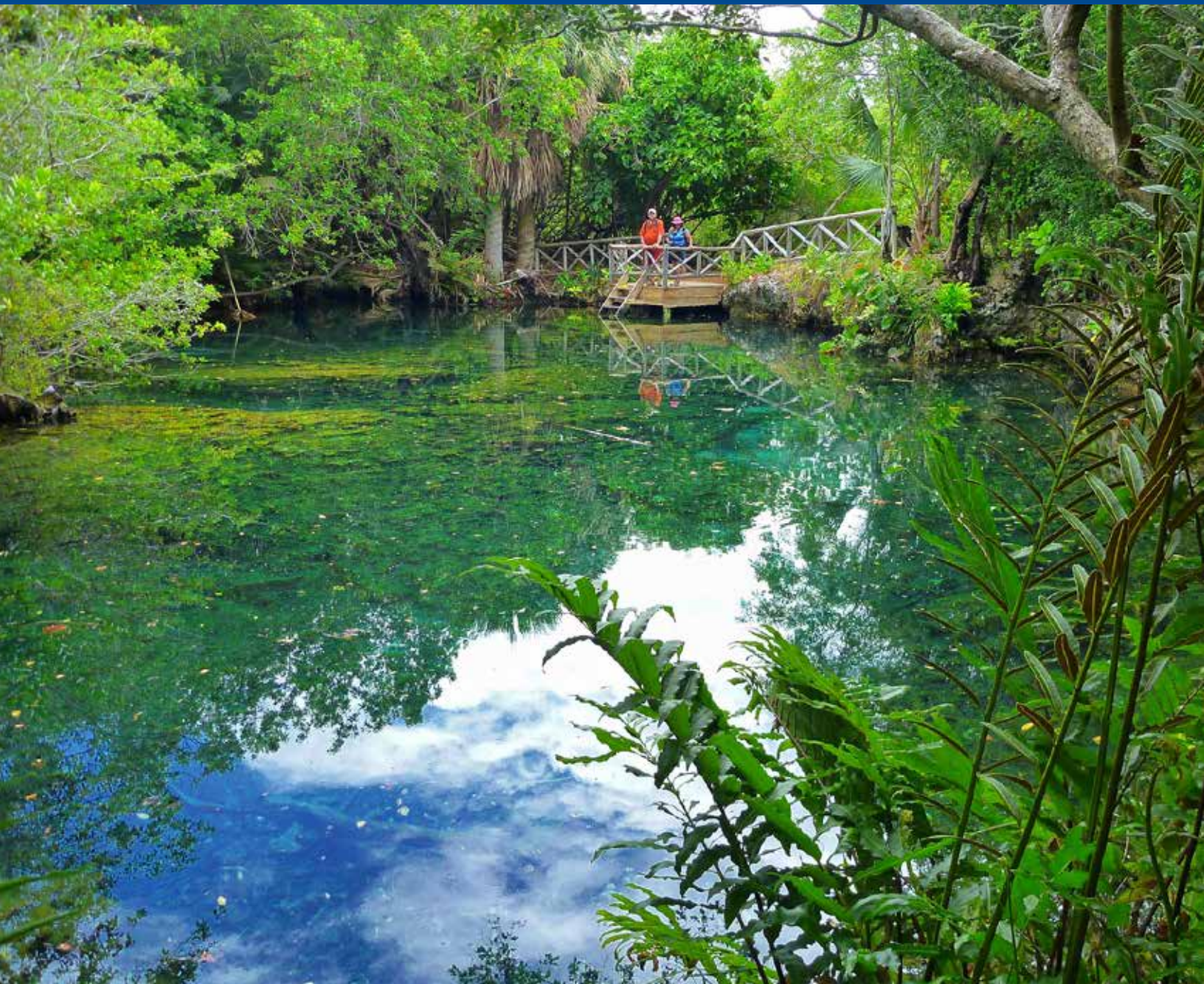




INTERNATIONAL INSTITUTE OF TROPICAL FORESTRY

RAPID ASSESSMENT OF TOURISM ACTIVITIES IN THE INDIGENOUS EYES ECOLOGICAL RESERVE, PUNTACANA RESORT & CLUB, DOMINICAN REPUBLIC



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TECHNICAL REPORT

RAPID ASSESSMENT OF TOURISM ACTIVITIES IN
THE INDIGENOUS EYES ECOLOGICAL RESERVE,
PUNTACANA RESORT & CLUB, DOMINICAN REPUBLIC

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In cooperation with:
The Puntacana Ecological Foundation

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DISCLAIMER

The authors' views expressed in this publication do not necessarily reflect the views of the United States Government.

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1.0 INTRODUCTION

Background

The Indigenous Eyes Ecological Reserve is 127 acres of lowland subtropical forest (Map 1), part of a 1,500 acre conservation area owned and managed by the Puntacana Ecological Foundation. Several freshwater pools (*manantiales* or “ojos”) exist in the Reserve, the result of long-term erosion of the underlying limestone karst topography. Over 500 plant and animal species are found in this area. Especially important species include the Hispaniolan hutia (*Plagiodontia aedium*) and Hispaniolan soldontante (*Solenodon paradoxus*), rare mammal species endemic to Hispaniola. The Ridgeway hawk (*Buteo ridgwai*), an endemic species, which is being reintroduced to this area, may be seen flying overhead or foraging for prey in the forest and open field areas.

Historically the Taino Indians, the pre-Columbian inhabitants of the island, used underground caves and springs for drinking water and ceremonies. The Taino called these springs “eyes” (*ojos*) in their language, which is the origin of the Reserve’s name.

The Reserve is open daily from sunrise to sundown for guests of the Puntacana Resort & Club and members of the Punta Cana community, who have free access. Visitors from other nearby resorts also visit the reserve primarily through guided tours.

In 2011 the Foundation developed a concession with a local tourism company to organize and manage guided tours in the Reserve and surrounding areas. Nine scheduled tours include brief stops to visit the Reserve daily except Sunday. All tour groups enter the Reserve on foot on the well-marked trails.

The guiding principles of the Puntacana Ecological Foundation include the following:

- Mission: Protect and restore the natural resources of the Punta Cana region and contribute to the sustainable development of the Dominican Republic.
- Vision: To influence and contribute to the rational use and respect for natural resources as a model for the development of destinations.
- Values: Social, Environmental, and Corporate Responsibility.

Existing Conditions

Resource Setting and Naturalness: The entire 127-acre area is an attractive, second-growth dry tropical forest that contains some introduced plant species but is natural-appearing. Obvious human influences include the various trails and their associated features, as well as wooden docks and walkways providing access to some of the larger ponds.

Primary Attractions: The key attractions for visitors are the 13 natural ponds (*manantiales* or *ojos*), three of which are available for swimming. All are accessible by a trail system.

Tourism Niches: Visits to the reserve are primarily “recreational” with some “educational” characteristics. Outdoor recreation involves enjoying nature, frequently with others, while relaxing and having fun, and with low physical risk and challenges. Educational tourism also involves some challenge and risk, but focuses more on learning and discovering nature through high-quality interpretation and in smaller groups.

Administrative Facilities and Site Management: Small, rustic kiosks are located at the two entrances to the Reserve. In addition to registering visitors, staff here provide orientation, answer visitor questions and sell snacks. There is also a small parking area for Segway scooters at the interior entrance and golf carts at the beach entrance.

Access: Access to the Reserve is by paved road at the interior entrance and concrete pathways at the beach entrance. Access within the Reserve is limited to foot traffic on well-defined trails. Access for people with disabilities is difficult and challenging.

Visitation: Monday through Saturday up to 300 tourists a week visit the Reserve with scheduled group tours. Segway scooter and catamaran tours come through the beach entrance and Side-by-Side motor tours use the interior entrance. The Segway groups of up to 20 people and 40 Side-by-Side customers go to Guamá pond and 40 catamaran customers stop at Cacibajagua pond. From March 2011 to April 2013, Segway tours visitation totaled about 27,290 persons and Side-by-Side tour visitation (which started in February 2012) totaled about 6,355. Little data are available for catamaran tours because this is a relatively new activity. In addition, guided private tours are offered by an interpretive guide for small groups.

Remoteness: Despite the relatively easy access and proximity to resorts, the area's feeling of remoteness is high.

Physical Risk and Challenge: Opportunities for wildland challenges, risk-taking, and testing of outdoors skills are low.

Social Encounters: The probability of encountering individuals and groups is very high and social interaction may be an important factor for some visitors (e.g., family or group outings).

Visitor Impacts and Visitor Management: All tour groups are escorted by guides who closely supervise visitors. The numbers, timing and origin of all visitors are recorded at the two entrances.

Recreation Classification: Although the Reserve exhibits characteristics of several different recreation opportunity zones defined by the ROVAP methodology (Wallace, et al. 2009), it perhaps fits best within Rustic Natural, which is defined as:

The biophysical/cultural environment appears to be fairly natural although it is possible to detect some evidence of human activity, including sustainable use of resources in some areas. The landscape could consist of a mix of natural and cultural traits. It can be accessed by a combination of roads and well-marked trails. Although there are opportunities for privacy, encounters and interaction with other users, area personnel, and local people is more frequent. It is more common to see big groups of people and commercial tours. It is possible to find visitor centers, self-guided trails, camping areas, and other infrastructure in designated areas. The infrastructure is designed and appropriate for more intensive use. Visitor control and rules are more present and visible along with opportunities for interaction and education. There is increased attention to visitor security and the protection of sensitive areas close to the attractions.

While it lacks evidence of sustainable use, cultural landscapes, visitor centers, and camping areas, such features --or similar ones-- are present nearby. Part of the difficulty in such a classification of the Reserve is its relatively small size and the lack of a larger context for evaluation.

Trails and Infrastructure: There are about 2.5 km of trails with a chipped wood and leaf tread surface with limestone rock borders, numerous trail directional signs, security railings and small bridges. At the four largest ponds there are deck platforms, walkways, stairways, benches, and trash/recycling containers. There are currently no other facilities in the interior of the reserve. However, in the future some type of toilet may be needed to protect water quality and the visitor experience.

Signage: There is a detailed map of the Reserve and surrounding areas at both entrances labeled "Mapa Fundación Ecológica Puntacana" (Photo 1). It shows the Indigenous Eyes Ecological Reserve and its trails and ponds as well as the Gri-Gri Ecological Park complex to the north and the numerous buildings of the Puntacana Resort & Club Hotel scheduled for demolition. Although well designed, it is complicated and has more information than is needed to orient visitors to the Reserve. There are also numerous signs along the trails with the names of ponds, giving general directions, and providing safety information about not touching toxic trees (Photo 2) .

Fieldwork

A Forest Service assessment team consisting of Jerry Bauer, Jerry Wylie and Bienvenida Bauer visited the area from 22-28 June 2013. The team walked the entire trail several times, first visiting in the early morning before the Reserve opened to observe the natural conditions before visitors arrived. They also visited the Reserve and stopped at the ponds in both the morning and afternoon on several week-days and on a weekend to observe visitor use and to hold informal interviews with visitors and residence owners. Team members observed and spoke with tourism groups (Segway and Side-by-Side vehicles), local resident family visits, and independent hotel visitors to get an understanding of their expectations, desired experiences, and satisfaction.

In addition, the team met with Jake Kheel, Puntacana Ecological Foundation Executive Director, and Matias Mut, concessioner manager, to discuss the tourism and conservation program.

2.0 RAPID ASSESSMENT

An assessment of the area's strengths, weaknesses, opportunities and threats is summarized in Table I.

Clearly, the primary attractions are the ponds (sinkholes) and their associated scenery, flora, and fauna, and the well-developed trail system that provides easy access, and the ability for visitors to swim in natural pools. Other significant strengths include the Puntacana Ecological Foundation which manages the Reserve and its tourism program, convenient access through two entrances and a good source of clients from foreign residents and the Puntacana Resort clients, as well as visitors from other local hotels.

Swimming is allowed in only three sinkholes, Guamá, Cacibajagua and Yauya. The Segway tour groups visit Guamá pond, while the Side-by-Side and the recently established Catamaran tour groups visit the Cacibajagua pond. Tourists also visit the Yauya pond, but in small groups and less frequently. Local owner-residents use all three sites for swimming and picnicking.

The negatives are relatively minor and can for the most part be easily corrected. There is no planning or defined objectives for general management or for environmental interpretation specifically; residential visitors could be better informed and educated about the tourism program and the benefits it brings to all users; the trail system is complicated and has some confusing signs (Photo 2); some decks need more frequent maintenance and improvements and there are no toilet facilities inside the Reserve. The nearest restroom to the interior entrance is at the tourism center about 100 m from the entrance. The nearest restroom to the beach entrance is near the water sport facility about 260 m from the entrance.

There are several opportunities that could enhance tourism in the Reserve in the future. These include guided photography tours, improved environmental interpretation through signs and guide training. It may also be possible to expand the trails and swimming opportunities by locating new sinkholes.

Potential threats to tourism in the Reserve primarily revolve around swimming at the three ponds. These include accidents, overcrowding, and contamination of the water. The issue of crowding is perhaps the most important and is addressed in more detail in the following section.

Table I - SWOT Rapid Assessment.

<p>Strengths</p> <ul style="list-style-type: none">• Attractive forest setting• Freshwater ponds & swimming• Private protected area status• Viewable wildlife• Well-built and maintained trails• NGO conservation foundation• Close to major hotels and resorts• Easy access• Signage	<p>Weaknesses</p> <ul style="list-style-type: none">• No management plan or defined objectives• No interpretive plan• Unfocused interpretive tour• Poor communication with stakeholders• Lack of toilets• Some decks need upgrading maintenance• Confusing trail signs• Complex trail system
<p>Opportunities</p> <ul style="list-style-type: none">• Nature photography with guides• Locating unknown sinkholes• Enhanced environmental interpretation	<p>Threats</p> <ul style="list-style-type: none">• Accidents and injuries• Overcrowding• Contamination of water quality

3.0 CARRYING CAPACITY AND VISITOR IMPACTS

The question of how many visitors the Reserve can accommodate may be viewed several different ways. Most experts agree that the concept of “carrying capacity” with a single correct number does not work well for recreation sites. This is like asking how many people can fit into a room; it depends on the kind of activity, for example the numbers of dancers or yoga students would vary tremendously, the quality of the experience desired and the level of impacts that are acceptable.

The Limits of Acceptable Change (LAC) methodology can be effective in addressing environmental and social impacts, especially when there are conflicting interests and many different stakeholders. However, LAC is not always a quick and easy solution, not always needed, and is not a replacement for good management and good judgment. In our opinion, LAC is not necessary in this case because the issues here are simple, the conflicts are minor, and the Foundation has the authority and resources necessary to effectively manage and control visitation. Environmental impacts, health and safety, and visitor satisfaction can be monitored and adjustments can be made to the numbers, timing, and supervision of visitors.

Environmental Impact

Resource damage and wildlife disturbance due to visitors are two criteria for assessing the environmental capacity of the Reserve. These impacts are currently very low because they are limited to the trails and ponds where swimming is allowed and because most visitors are accompanied by guides. Therefore, there is no serious depreciative behavior such as hunting, tree-cutting, or graffiti. Also, the trail surface is hardened, resistant to erosion, and suitable for large numbers of visitors. Some fish and turtles may be affected by people swimming and feeding them, but these are minor problems involving hearty, invasive species. Since impacts to wildlife appear to be minimal, we believe the environmental capacity to handle large numbers of visitors is “high” and requires no corrective action at this time. However, studies of the aquatic ecosystem could be undertaken to help determine if there are undetected impacts at this time (we are not aware of any studies of these ecosystems).

Water quality is another dimension of environmental capacity. The effects of sunscreen, deodorants and insect repellent on water quality and aquatic species is unknown. Testing is needed to determine the effects of these chemicals and human waste on water quality.

Health and Safety

The number and type of accidents are another way to measure recreation capacity and over-use. Since the number of accidents are low, no adjustment of visitor numbers is required at this time.

Psychological Factors

The quality of the visitor experience, or “psychological capacity”, can easily be monitored through negative comments. Although there have been a few complaints by residents who were disturbed by a large tour group at their favorite pool, this type of conflict can be avoided by publication of the tour schedule and advertising that there are no tours on Sundays. None of the three negative Trip Advisor comments out of the total of 60 reviews involved large group size or overcrowding. Therefore, we believe the psychological capacity of the Reserve to be “high” and does not require changes in management at this time beyond some education and information for residents.

Physical Capacity

Swimming area: The capacity for bathers in the Reserve can be estimated using standards for public swimming pools. All three ponds are more than large enough to handle the current maximum size for tour groups at 40 visitors, especially since not all visitors are swimmers. Standards for swimming pool capacity in the United States range from 15 to 30 square feet per person for areas over 5 feet deep and a Chinese standard recommends 2.5m/pp.

The most popular pool, Guamá, has a 30m x 40m swimming area with a triangular zone approximately 20m x 20m x 20m where most people congregate between the deck, the dead tree/submerged rock, and the jumping platform (Photo 3). This high-use area is approximately 173 square meters (1308 ft²) in size. Based on various swimming pool standards, Guamá's high-use triangular area could handle from 44 to as many as 87 people at one time. While some reduction in the maximum number should be made for safety near the diving platform, this could be balanced by having a few more people in other areas outside the triangle and in shallower water. Currently, the maximum group size of 40 is slightly below the most conservative standard for swimming pools, suggesting that there may be room to increase the size of groups as long as there is adequate safety supervision and deck space.

Each of the other two swimming pools, Cacibajagua and Yauya, have swimming areas significantly larger than Guamá's triangular zone, and would thus have even more swimming capacity.

Deck space: The approximately 8'x35' deck at Yauya has more than adequate space for large groups and is in excellent condition (Photo 4). However, the 12'x14' deck at Guamá is insufficient, especially when two tour groups overlap while one is leaving and the other is arriving (Photo 5). More space is needed for standing, seating, and viewing the pond, either a larger deck or a larger area with wood chips under the trees (Photo 6). The two wooden steps leading into the adjacent shady area are also dangerously slippery when wet. The wooden deck at Cacibajagua is small (7'x8') but is supplemented by a very large level area that can easily accommodate groups of over 40 people (Photo 7).

Table 2 – Summary of Visitor Capacity and Impacts.

Criterion	Status	Recommended Actions
Environmental Impacts	Few or no problems	Monitor water quality
Health & Safety	No serious issues	Add safety equipment at swimming ponds
Psychological Factors	Minor crowding complaints	Educate & inform residents
Swimming Capacity	Not exceeding limits	Supervise swimmers and control group schedules
Deck Capacity	Occasional over-use at Guamá when groups overlap	Expand the deck/staging area at Guamá

4.0 RECOMMENDATIONS

Recommendation #1 – Define Management Objectives

The Foundation needs to identify a desired future condition that is consistent with its mission, vision and values and provides specific management direction for the tourism program in the Reserve. The goal should address balancing visitation and the quality of the recreation experience and visitor safety while protecting the environment, conserving biodiversity, conducting scientific research, and avoiding conflicts between user groups.

SUGGESTED GOAL

Optimize visitation and the quality of the recreation experience and visitor safety in the Reserve while protecting the environment, conserving biodiversity, conducting scientific research, and avoiding conflicts between user groups.

Infrastructure improvements such as decks, railings, and signage should be rustic and employ natural materials and earth tone colors as much as possible to be consistent with the generally Rustic Natural classification. Similarly, any modifications of trees and vegetation along the trail and at the ponds should be kept to a minimum to preserve the natural setting and only be done when needed to protect the health and safety of visitors (For example, removing dangerous snags or trees fallen across the trail.) Some type of policy is also needed for managing invasive plants and animals in the Reserve. When ever possible invasive plants, such as the numerous noni trees, should be eliminated.

Recommendation #2 – Enhance Heritage Interpretation

Visitor experiences can be enhanced through high-quality interpretation of the Reserve's forest, sinkholes, wildlife and history. This can be done through personal interaction with trained guides or through interpretive signs. We recommend a plan be prepared to define interpretive objectives, including intellectual, emotional, and behavioral outcomes, identify a central message and supporting messages, and determine where and how these can best be presented. The plan should also provide final graphic designs any new interpretive signs. In addition, interpretive training should be provided for all guides who conduct tours in the Reserve.

A possible central message could focus on the importance of the interconnected freshwater pools formed by the underground river running through the limestone karst formation. Supporting sub-themes could include understanding the tropical dry forest, how the Taino used such underground springs, where the water comes from, and that it is the source of water used in the resort.

Recommendation #3 – Improve Signage and Maps

The entrance phase of the travel experience should welcome the visitor, be a transition from the travel phase, provide basic orientation, explain what there is to do and see, handle basic human needs such as refreshments, reinforce the central interpretive message, and convey a positive sense of place. Key questions to be answered here are Where am I? Where are the restrooms? Is this the right place? What is this place? Is it safe? What can I do here? and What do I need to know about hours, prices, and regulations?

The orientation map at the two entrances could be simplified and focus more on what visitors need to know, such as the trails, locations of the ponds and which ones are open for swimming, and approximate distances. Other information for the surrounding areas that is presented on the existing maps, such as the Resort and the details of the Foundation's complex, is not necessary and may obscure other critical information. (The existing sign would be more appropriate at the Foundation's main office.) In addition, it would also be useful to see photographs of one or more ponds, the forested trail, and wildlife. Since this is also the beginning of the connection phase of the visitor experience, this is also an important opportunity to provide some introductory environmental interpretation. Designs for new signs and maps should be provided in the sign plan.

The two portals are also the exit and commitment phase for those who have completed their visit and are leaving the Reserve. Here the objectives are to create a positive conclusion by saying “Thank You” and providing ways for visitors to contribute financially to the sustainable tourism program by purchasing souvenirs or snacks, and making donations to specific conservation and research projects. A donation box should include a description and photographs of specific projects this money will be funding.

Recommendation #4 – Improve Communication with Stakeholders

Families that own vacation homes in the Puntacana Resort are important stakeholders and frequent visitors to the Reserve, where they enjoy hiking the trails, relaxing on the decks, and swimming in the pools. A simple program of information and education can help reduce conflicts by informing residents when and where large group tours are scheduled during the week, and that there are no tours on Sundays. It should also remind them exactly how the tourism program enhances the Reserve and benefits all users through better security, interpretation, and infrastructure. This information can be sent directly to residents, shared through social media, and also displayed at the entrance kiosks.

Recommendation #5– Monitor Impacts and Visitor Use

Information on the numbers and timing of all visitors should continue to be recorded at the two entrances. In addition, water quality should be checked for human contamination and visitor satisfaction monitored through TripAdvisor and comments from tour clients and residents/owners. These baseline data should be used to identify potential problems that require changes in management to maintain desired conditions.

Recommendation #6 – Protect Visitor Safety

The Foundation must assure the safety of the visitors and have safety and rescue equipment readily available at all times in case of an accident, especially for the swimming ponds. This should consist of the following items. (For detailed specifications, illustrations and pricing of this equipment see www.lifeguardstore.usa)

- 1) Life guard Rescue Tube or Rescue Can – A floatation device with a strap used by a lifeguard in the water to pull a victim to shore.
- 2) First Aid Kit – First aid/emergency supplies should be brought by guides or kept close to the swimming areas so they are immediately available when needed.
- 3) Throw Rope – A 60-foot rope with float that can be tossed to someone struggling in the water and then pulled to shore.
- 4) Stokes litter – The stokes litter is designed to safely transport a non-ambulatory victim from the site of an accident to a safe location where emergency evacuation can take place.
- 5) Trauma Bag (First Aid Kit) - A red color, strong, durable, multi-pocket bag with shoulder strap. This bag should have first aid/emergency supplies. It should be at each Reserve entrance and carried in the Reserve by the guides for each trip so it is available when needed.
- 6) Walkie Talkies - Walkie talkies are an easy and economical means for communications between the guides in the field and the Reserve entrances or tourism center. They typically have a 1-5 km range and are available in most outdoor stores and on the Internet.

First-aid and CPR training should be provided to all guides who accompany groups to the ponds, and at least one guide should have specialized lifeguard training. In addition, we recommend an emergency plan be developed that clearly identifies the responsibilities of all guides and the proper emergency responses and phone numbers necessary for all likely scenarios. Evacuation routes for possible accident sites (i.e. ponds) should also be defined. Practice emergency drills should be held twice a year or when new guides begin working.

PHOTOGRAPHS



Photo 1. Maps at the entrances could be simplified to better orient visitors.



Photo 2. Some of the trail signs can be confusing. This one leading to two ponds should show both arrows pointing to the right.



Photo 3. The majority of bathers at Guamá congregate in the triangular area between the deck, the dead tree, and the jumping platform (not shown to the right).



Photo 4. At Yauya the deck is large and the water is shallow, making it perfect for groups with children.



Photo 5. The small deck at Guamá is frequently overcrowded.



Photo 6. The staging area adjacent to the small deck at Guamá should be expanded to provide more seating and viewing space for large groups.



Photo 7. Casibajagua has a small wooden deck and large level area to handle groups of up to 40 visitors.



Photo 8. Major trail junctions such as this would be a good place for a simple orientation map.

BIBLIOGRAPHY

Wallace, George, L. Lechner, D. Stoll, P. Newman, C. Juarrero, and J. Bauer. 2009. ROVAP, El Rango de Oportunidades para Visitantes en Areas Protegidas. Colorado State University and U.S. Forest Service International Institute of International Forestry.

MAPS

Map 1. Indigenous Eyes Ecological Reserve.

