A close-up photograph of mangrove flowers and leaves. The flowers are yellowish-green with five petals and a central stamen. The leaves are green and elongated. The background is a clear blue sky.

*The Green Book:
Tres Ríos, a Model of
Sustainable Tourism*



TRES RÍOS

TRES RÍOS, RIVIERA MAYA, MÉXICO

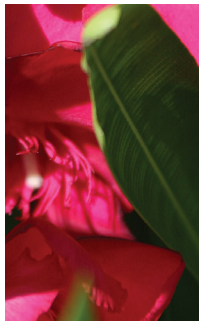
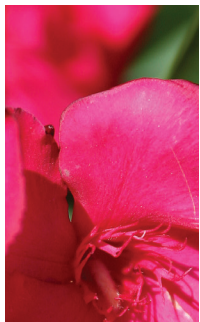
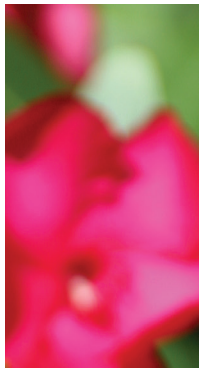




***The Green Book:
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January 2012

TRES RÍOS, RIVIERA MAYA, MÉXICO



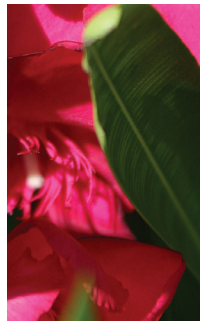
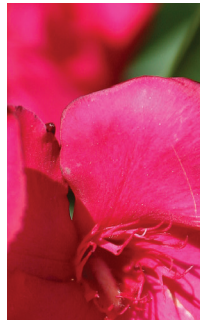
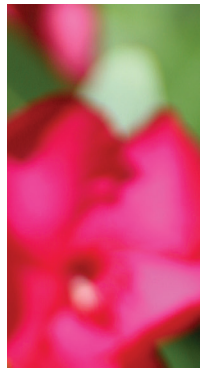
Hacienda Tres Ríos is Green Globe Certification's number one property for sustainability performance. From its inception through to daily operations, sustainability has been the guiding principle and the benefits are clear to see. Hacienda Tres Ríos demonstrates a seamless connection between the beauty of the natural environment and the sophistication of thoughtful design and innovative architecture.

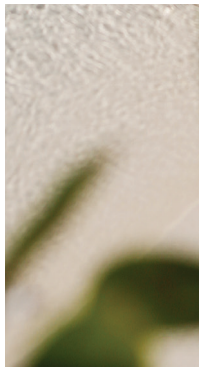
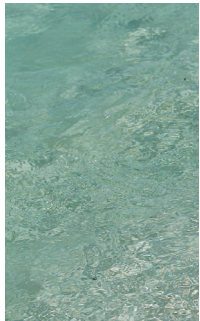
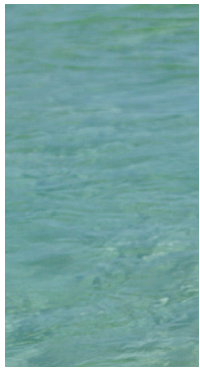
For both Hacienda Tres Ríos's guests and its host community, the benefits of sustainable tourism flow back and forward as consistently and naturally as the tides. The well-being, relaxation and entertainment offered by the resort bring guests from all over the world. Their enjoyment of all that the resort has to offer, translates into real contributions that protect the environment and engage and support the destination as a whole.

All people of the world agree that a holiday experience should be just as valuable and pleasurable for the guest as it is for the host. Hacienda Tres Ríos epitomises this essential philosophy and strives to be an inspiration to all.



Guido Bauer
CEO Green Globe Certification





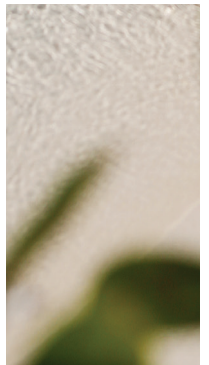
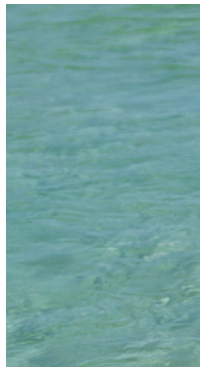
Tres Ríos believes the key to long-term success is development that carefully balances environmental needs and strives to bring economic prosperity, not just in the form of resort employment, but from a long-term partnership with local communities. As one of the few Mexican-owned family developments in the area, our ties here are strong and long-standing. Having been witnesses to the growth of tourism on the region from its beginning over 40 years ago, we want to see this paradise pass on to the next generations as rich and beautiful as it is today.

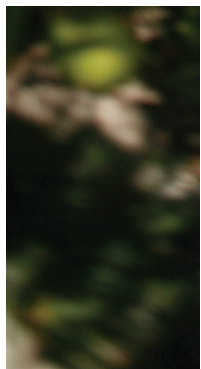
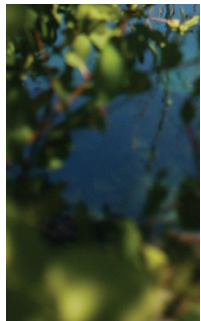
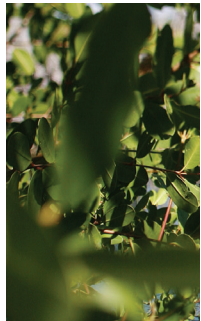
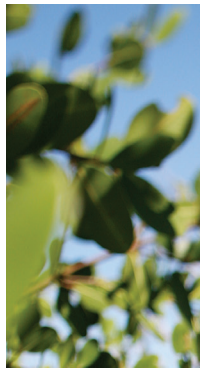
Tres Ríos is a model for economically sound, sustainable development, not just in the region but globally. Located in the heart of the Riviera Maya, it is a place where México's present joins its past and nature provides a unique backdrop for unforgettable vacations. Here, careful environmental stewardship and the needs of today's luxury traveler find harmonious balance through the use of environmentally friendly building practices and planning, state-of-the-art technology, and rigorous environmental standards that guard its exceptional beauty.

We hope this book will serve as a guide to others that tourism and sustainability can operate side by side – and that they must, if the tourism industry is to flourish. To our guests, we hope this book will give you a behind-the-scenes view of Tres Ríos and its first eco-luxury resort, Hacienda Tres Ríos.



Orlando Arroyo
CEO
Tres Ríos





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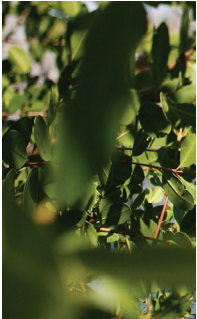
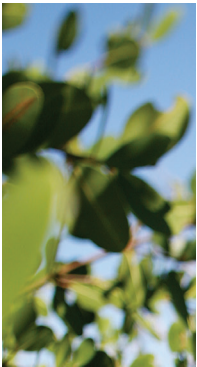
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Sustainable Development and Sustainable Tourism Development



The concept of *Sustainable Development* is relatively new in the world. It appeared for the first time in 1987 in a report for the United Nations and it was later applied to the tourism field in 2004 with the conceptual definition of Sustainable Tourism by the United Nations World Tourism Organization (WTO or UN-WTO).

In the report *Our Common Future*, better known as the *Brundtland Report* named after the Commission's chairwoman Gro Harlem Brundtland, the following was established:

*"Sustainable Development is development which satisfies the needs of the present without compromising the ability of future generations to satisfy their own needs"*¹

Speaking specifically about tourism, the WTO currently states in its Conceptual Definition published in its website² that "Sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments." And it defines the three aspects that should be in balance in order to ensure long term sustainability. (Fig. 1)

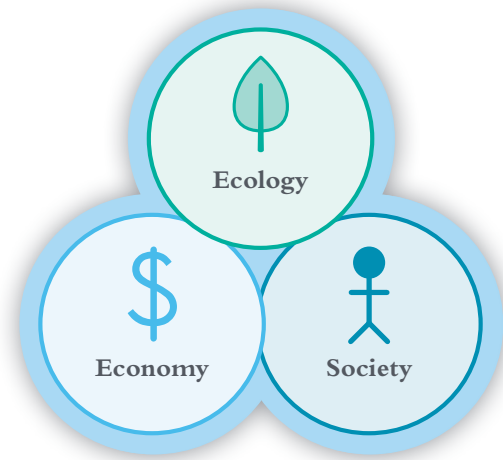


Fig. 1 The Three Elements of Sustainable Development

The WTO also requires sustainable tourism to use environmental resources in the development of tourist sites. By respecting the sociocultural authenticity of local communities and ensuring viable, long-term economic operations, it provides economic benefits for all concerned.

Finally, the WTO adds that "Sustainable Tourism should maintain a high level of satisfaction among tourists and ensure that they have significant experiences, thus raising their consciousness on matters of sustainability and encouraging them to follow sustainable tourism practices."²

Tourism Development in Cancún and the Riviera Maya

The creation and accelerated growth of Cancún since the 70s, as well as the dynamic development of the Riviera Maya since the mid 90s, has positioned the northern part of the state of Quintana Roo as one of the principal centers of economic growth in México.

¹ United Nations General Assembly (1987) Report of the World Commission on Environment and Development: *Our Common Future*. Transmitted to the General Assembly as an Annex to document A/42/427 - Development and International Co-operation: Environment. Retrieved on: 2009-02-15

² <http://www.unwto.org/sdt/mission/en/mission.php>



Hotel Zone, Cancún Q. Roo, 1986



Hotel Zone, Cancún Q. Roo, 2009



Playa del Carmen, Q. Roo, 1978 (R. Tineo Celaya, Playa del Carmen reporter)



Playa del Carmen, Q. Roo, 2008



Tres Ríos, Riviera Maya, 2007



Tres Ríos, Riviera Maya, 2009

The growth in this area has allowed the constant creation of jobs and better standards of living for hundreds of thousands of Mexican families who have emigrated from other regions of the country. This is how the population in the state has grown from 88 thousand people in 1970 to more than a million inhabitants in 2005.³

Tourism has also been fundamental in the development of a solid local economy, currently generating 91% of state production or Gross Domestic Product (GDP). It is also especially relevant for the national economy, since this part of México receives more than 30% of all foreign currency that enters the country through tourism.

Tourism development in Cancún and the Riviera Maya has generated great social and economic benefits for the state and the country. In the future, the supply of tourist services in the region will continue to rise and its participation in the economic development of México will be fundamental.

The growth of tourism development and urban infrastructure that this implies will generate ever-increasing pressure on the sustainable use of the environmental, economic and social resources in the area. This is the challenge that new tourism complexes must face and resolve.

Tres Ríos: A Sustainable Tourism Development

Conscious of the worldwide and local environmental challenges, the Riviera Maya region is finding new ways to make intelligent, efficient, and innovative use of resources. The Tres Ríos Development adopted a model of tourism development based on the establishment and application of solid environmental criteria in every aspect of the master plan.

In fact, this has been one of the essential characteristics of Tres Ríos: the integral application of sustainability guidelines and specifications starting with the design phase, moving through the construction stage, and continuing throughout the operational phase.

Tres Ríos is unique because it provides luxurious and quality experiences in conjunction with strict protection of the environment.

Based on the concept and principles of Sustainable Tourism Development, the Tres Ríos master plan contemplates the construction of five hotels, a marina and ecotourism park. The plan is to establish future vision of tourism growth in harmony with the environment, society, culture, and the local economy.

Thus Tres Ríos positions itself as a “model of Sustainable Tourism Development on a regional and national level”⁴ as recognized by the Mexican Secretary of Environment and Natural Resources.

3 Source: inegi.org.mx “síntesis.pps” 15 September 2009 <<http://www.inegi.org.mx/>>. Path: Información estadística; Fuente / Proyecto; Censos y conteos; Censo de población y vivienda 2005; Consulta de resultados; Síntesis de resultados.

4 On Tres Ríos as a Model of Sustainable Tourism Development, see Juárez P, 46

Sustainable Planning

Tres Ríos Sustainable Development Mission:

- To be a model of sustainable luxury tourism development in the Mexican Caribbean
- To make long-lasting, intelligent, and responsible use of natural resources
- To promote the long-term preservation of flora, fauna, and functions of the ecosystems in the area
- To apply the best available environmental practices to the operation stage
- To provide guests with high-value, luxury experiences
- To contribute to the social, economic, and cultural development of the region

The first step in any sustainable tourism project must be to establish the conceptual framework or rules that guide your work. It is important to identify the guidelines or central themes that direct the development of the project and to plan which course to follow in order to attain set objectives.

With this in mind, Tres Ríos established five guidelines, defined the Sustainable Development Mission, and determined the Environmental Planning and Management Route which would accompany all the projects in their different stages of growth.

The design of the projects, the construction of the infrastructure, and the operation of the facilities would thus have a clear guide for their development.

Mission of Sustainable Development

The Tres Ríos Sustainable Development Mission is focused on maintaining its leadership as a model of sustainable tourism development, channeling all its actions towards the rational use of resources, the preservation of ecosystems, the implementation of good environmental practices, the creation of high quality experiences for visitors, and the strengthening of its social responsibility.

Design and Construction Guidelines

In order to guide the proper design and development of the tourist projects which make up the Tres Ríos development, five guidelines were established:

1. **Environmental guideline.** Design, construct, and operate a tourist resort complex in harmony with the conservation and sustainable use of the ecosystems and resources of the region.
2. **Regulatory guideline.** Design, construct, and operate a tourist resort complex that strictly adheres to all the applicable statutory instruments.
3. **Architectural guideline.** Design a high-quality tourism model, whose infrastructure and services combine luxury with comfort, yet totally integrate into the landscape and environment.
4. **Commercial-tourist guideline.** Direct and operate a tourist resort complex aimed at a market segment interested in destinations that feature high environmental quality and a respect for nature.
5. **Social guideline.** Contribute to the global development of the region by generating social and economic benefits for the local population and the region.



Fig. 2 Environmental Planning and Management Route (GPPA - Ortiz, 2004)

Environmental Planning and Management Route

To ensure the fulfillment of the Tres Ríos guidelines and Sustainable Development Mission, the two-part Environmental Planning and Management Route (Fig. 2) was established to guide and direct all the sustainable development efforts of Tres Ríos.

In the first stage, Environmental Planning, steps were established to carry out the necessary studies for discovering and diagnosing the land's resources, to adjust the architectural and engineering designs, to carry out the environmental impact studies, and to obtain permits from the environmental authorities.

The second stage, Environmental Management, began with the operation of the Environmental Management System (EMS), overseen by the Tres Ríos Green Team, in order to guide the processes of the hotel construction and operation phases.

Environmental Characterization and Diagnosis

The first step on the planning route was to carry out a series of exhaustive studies that would identify the environmental characteristics of the more than 326 acres of land which make up the Tres Ríos land.

The initial objectives of the Environmental Characterization and Diagnosis stage were, to generate sufficient and adequate scientific information about land composition in order to define the environmental and technical specifications that contributed to the design of a sustainable tourism project.

Subsequently, this information allowed the establishment of environmental zoning in Tres Ríos, which identified the areas of less environmental quality, or value, as more

suitable for the placement and development of tourism construction. The information also identified those areas whose high-quality environmental attributes and ecosystems dictated their incorporation into the tourist project as conservation areas.

Environmental Studies

The Tres Ríos Green Team, a group of specialized scientists, was assembled in order to carry out the necessary environmental studies for the characterization and diagnosis stage. They specialized in such diverse areas as:

- a. Ecology and integral management of the coastal area and the reef
- b. Ecology and management of the coastal vegetation
- c. Ecology and management of the mangroves
- d. Ecology and management of the fauna
- e. Taxonomy, ecology, and management of the vegetation

As an example of the studies' importance, it is interesting to note that more resources were invested in the preliminary environmental studies than in the engineering and architectural projects of the Hacienda Tres Ríos Hotel itself.

The fauna characterization studies allowed us to identify 90 different species of land animals in Tres Ríos, including seven species of amphibians, 14 of reptiles, 54 of birds, and 15 of mammals. Birds make up the largest group of land animals, followed in order of importance by mammals, reptiles, and finally, amphibians.

- Jungle 1
- Ecotone (Jungle to Mangrove Transition) 2
- Mangrove 3
- Marsh 4
- Dune 5
- Infrastructure 6

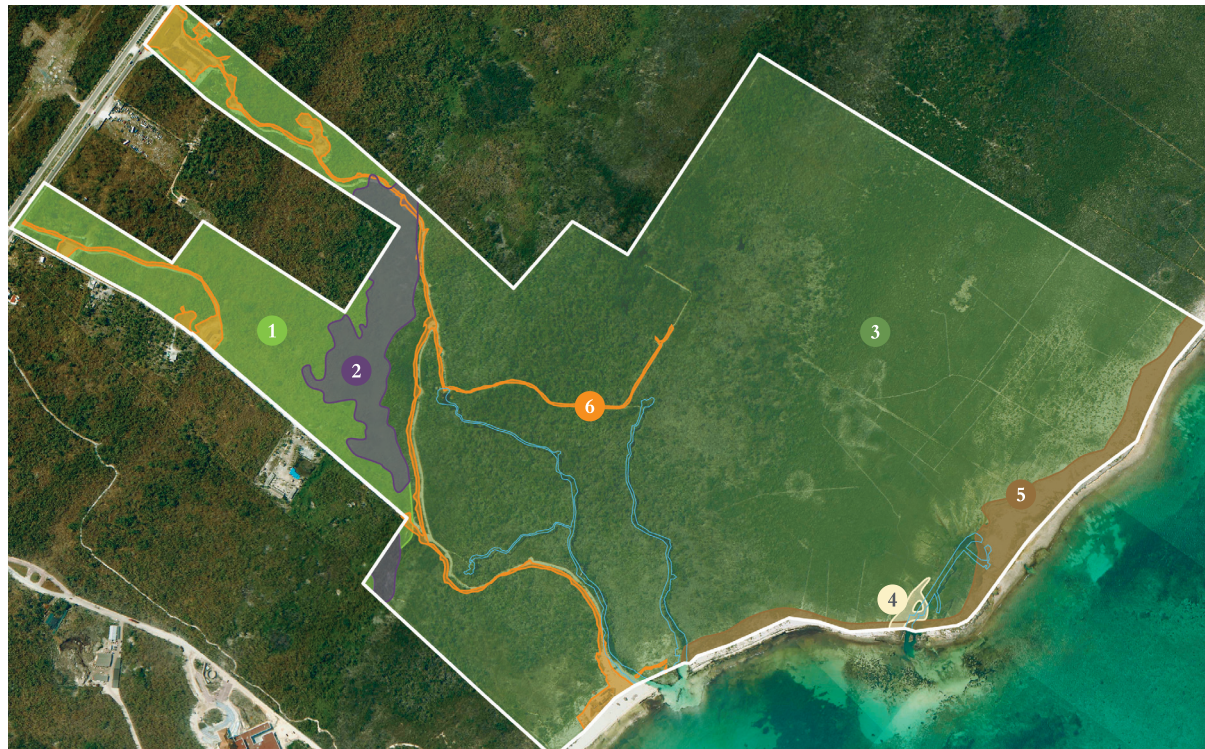
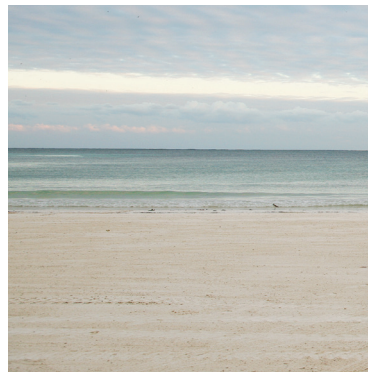


Fig. 3. Zoning: Environmental characterization and diagnosis of the land



Jungle, Tres Ríos



Dune, Tres Ríos



White Mangrove, Tres Ríos

Not only were animal characterization studies implemented, but flora studies of indigenous plants were also conducted. Experts performing the flora studies identified more than 120 species of plants throughout the jungle, jungle to mangrove transition, mangrove and dune ecosystems.

The geohydrology study also revealed significant findings. It identified water flow patterns which assisted in guaranteeing that the hotel design would not affect the surface flow of water in the mangrove zone. This also permitted the creation of a new water canal, which functions in a completely natural way, acting as a new ecosystem that attracts new bird species to the area.

Zoning

The environmental characterization and diagnosis of the land was implemented out based on the work of experts, the analysis of the geo-referenced aerial photography, and field studies. (Fig. 3)

The main objectives of this stage were:

- a. Identification of the natural units of the land
- b. Definition of the types of existing vegetation and their state of conservation or deterioration
- c. Identification of the current impact on ecosystems and existing land vegetation
- d. Definition of the legal and environmental restrictions on the land and the maritime zone

Based on this information, the appropriate areas were defined for the placement and construction

of the tourist resort, including areas required to be incorporated as conservation zones.

Considering the physical and geographic land characteristics, natural environment processes, and types of existing vegetation, it was possible to identify 12 natural and distinctively different sections of adjacent land in Tres Ríos (Fig. 4)

As a complementary effort, the same type of analyses previously used on land areas was applied to the maritime zone. As a result, it was possible to identify 11 natural coastal-sea sections on the seaside of Tres Ríos.

With the data obtained from studies and analyses, a zoning format was defined in which the potential areas for use and those for restriction were identified. These data assisted with the decision on where to build the Tres Ríos tourist resort.

Consequently, the location and design of the Hacienda Tres Ríos Hotel and future projects in the Tres Ríos master plan are governed by this zoning to conserve the ecosystems as best as possible and guarantee the area's environmental functioning.

Adjustments to the Projects and Master Plan Designs

It is important to mention that the architectural project of the resort changed eight times before the Green Team approved the design. Each project that is carried out in Tres Ríos must take into consideration a specific time for the necessary adjustments to be made, according to the environmental guidelines and the Tres Ríos Sustainable Development Mission.

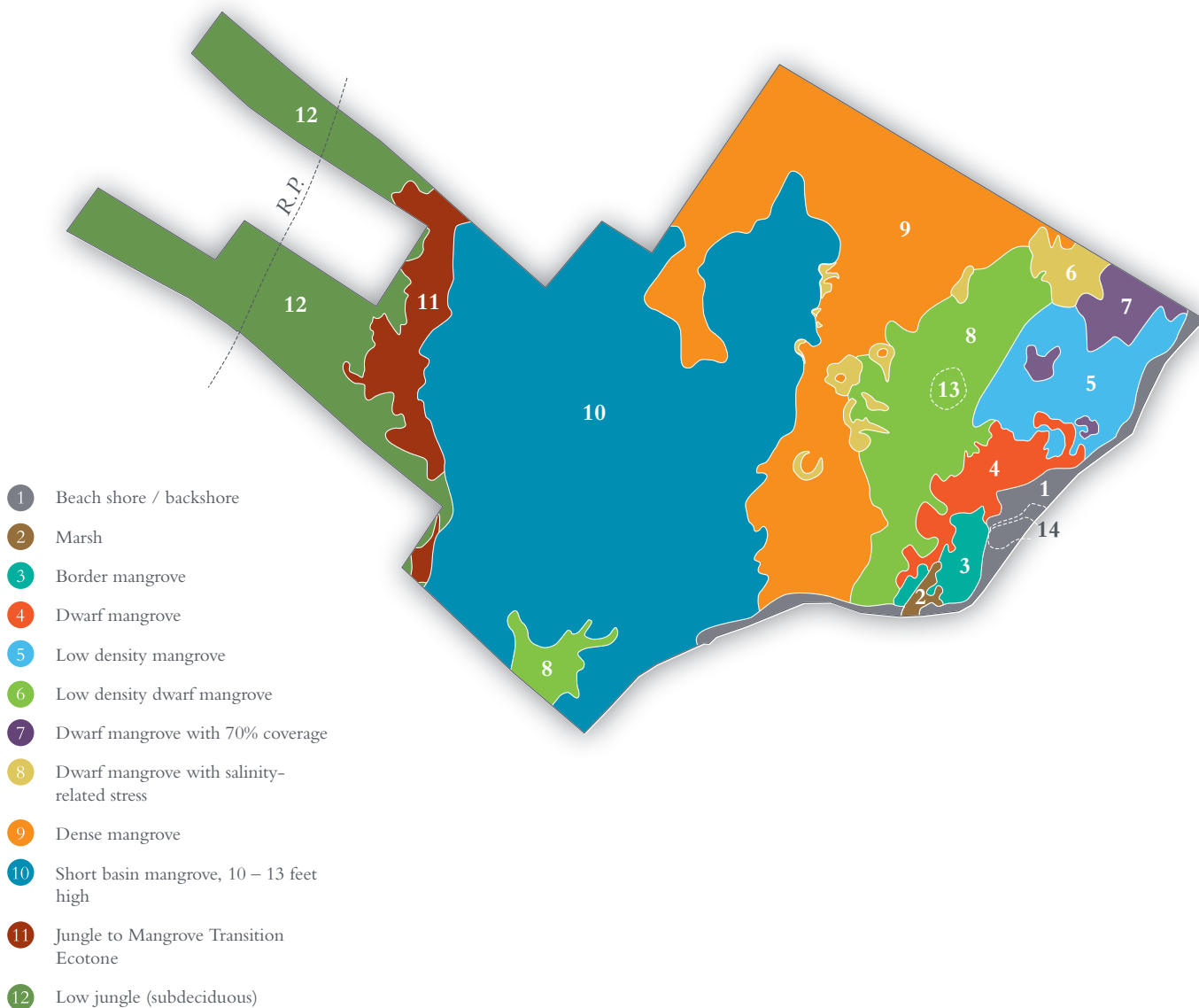


Fig. 4 Zoning: Natural Land Units at Tres Ríos (GPPA – Ortiz, 2004)

Environmental Impact Assessment Studies

In order to measure and control the environmental impact of the master plan on the area, studies were carried out in the fields of:

- a. Environmental planning
- b. Environmental impact assessment
- c. Environmental supervision and management
- d. Geomorphology, landscape ecology, geography, photo-interpretation, cartography, and natural risks
- e. Remote perception and digital aerial photogrammetry
- f. Geohydrology
- g. Architecture
- h. Engineering
- i. Geographical information systems
- j. Hotel investment and planning
- k. Environmental legislation and law

The last two stages of Tres Ríos' Environmental Planning and Management Route consisted of a number of actions related to the construction of a sustainable hotel and are addressed in detail in the next chapter.



Kayak in Río Selva, Tres Ríos



Mouth of Río Selva, Tres Ríos



Cenote Águila, Tres Ríos

Sustainable Design and Construction

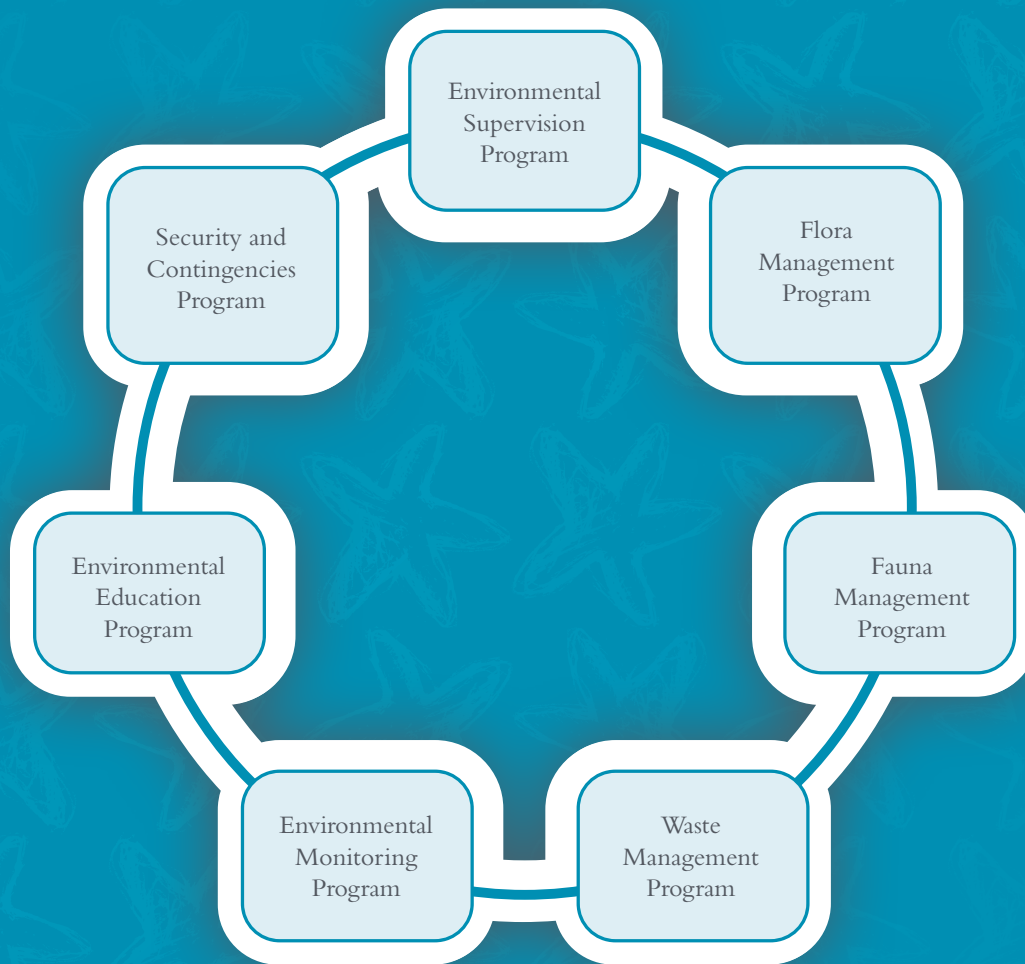


Fig. 5 Environmental Management System

In order to build and operate Hacienda Tres Ríos Hotel according to the project's Sustainable Development Mission, Tres Ríos created the Environmental Management System (EMS), a technical and scientific instrument to strictly supervise the sustainable management of all the environmental regulations, criteria and practices in the construction and tourism operation phases.

Environmental Management System Environmental Supervision

The system comprises seven programs and 27 subprograms implemented on a daily basis by an environmental supervisory team and a resident biologist. By adhering to the EMS, they implement, monitor, and supervise the methods of prevention and mitigation of environmental impacts, such as intense monitoring programs, reforestation, and management of conservation areas. (Fig. 5)

The main objectives of the EMS are:

- Construct and operate a responsible and committed tourist resort that ensures the conservation and sustainable use of the ecosystems, its natural design, raw materials, and related environmental services.
- Implement the impact management measures which have been designed to prevent, mitigate, restore, or eliminate, as necessary, the expected environmental impacts in each of the implementation stages of the project's development.
- Generate the mechanisms that permit the fulfillment of the sustainability criteria applied by Tres Ríos.
- Comply with strict federal and state environmental legislation and regulation applicable in Tres Ríos.

The Environmental Management System influenced development even before construction work began. In fact, the first people on the construction site were the 20 members of the Green Team directed by an environmental supervisor. Their aim was to find, tag, and save more than 2,700 plant species registered as either protected, threatened, or of significant value.

At the end of the construction of Hacienda Tres Ríos Hotel, the EMS staff rescued more than 10,000 plants which were transferred temporarily to the Tres Ríos nursery, and some time later, planted once again in the jungle and mangrove areas.

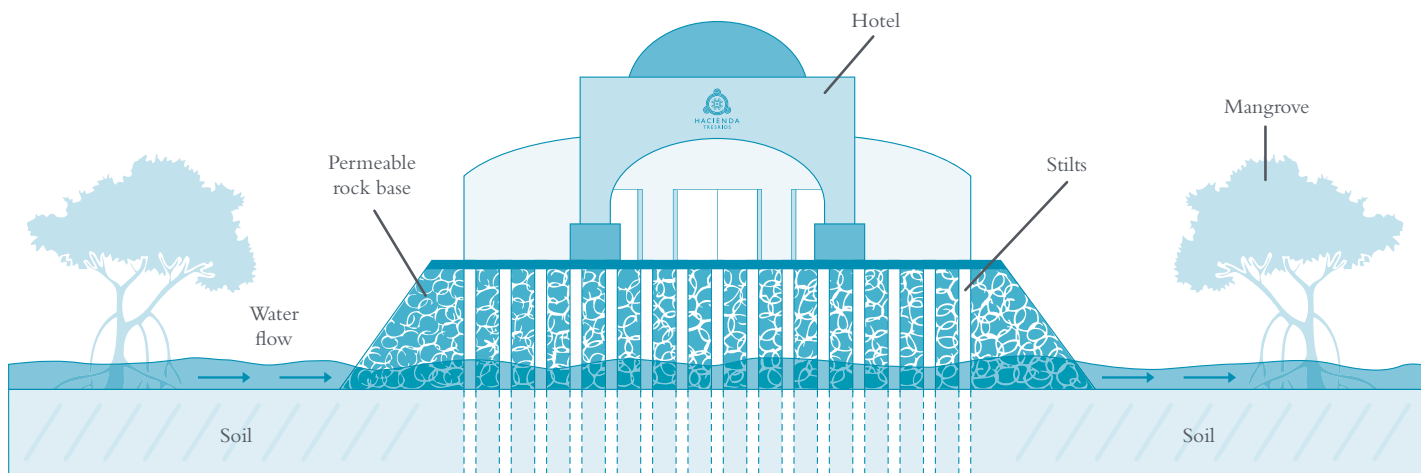


Fig. 6 Construction placed upon pilings to allow superficial water flows to continue

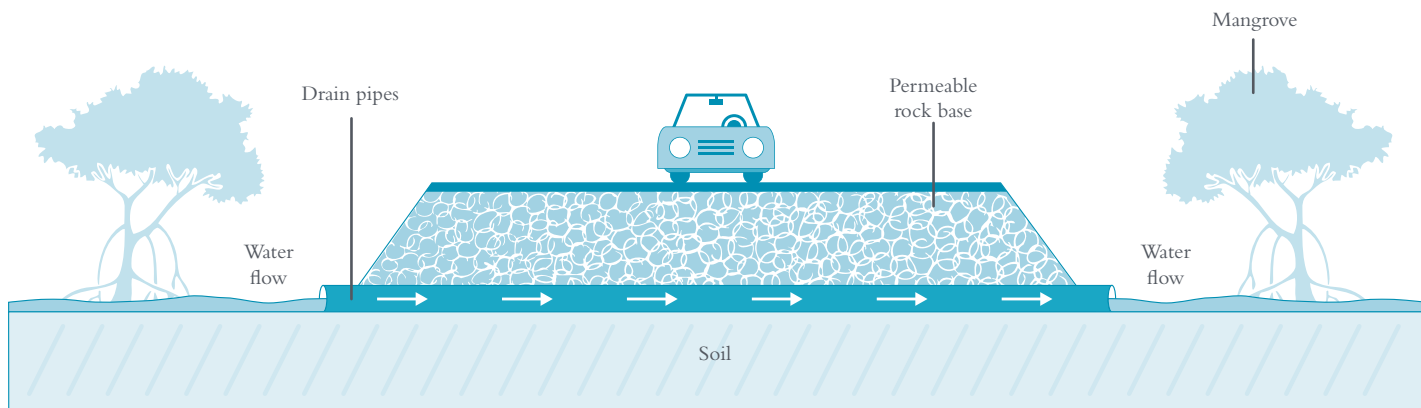


Fig. 7 Drain pipes under all roads

Criteria for Designing and Constructing a Sustainable Hotel

As a result of the work of environmental experts, environmental specifications were established to guide the architectural and engineering design of the Hacienda Tres Ríos Hotel. Working together with architects and engineers, design solutions were developed and the best available technologies were identified in order to fulfill the pre-established sustainability criteria. During construction, the Green Team worked closely with construction staff in an ongoing supervision process to ensure adherence to environmental regulations.

Low Impact Construction Criteria

Placement of the Infrastructure

In accordance with environmental zoning, the entire structure was placed in areas of low environmental value or areas negatively affected by natural events so as to have the least possible impact on the environment and to prevent destruction of local ecosystems. Impairment was avoided altogether in the dune areas. Instead, a program was implemented to reforest and rehabilitate the dunes that have been lost over the years through natural processes. In addition, construction was placed at least 65 feet away from cenotes and caves to preserve these natural wonders.

Surface and Underground Water Flow

A geohydrological study was conducted based on the property's water flow patterns. The Tres Ríos team developed various solutions with the aim of respecting the correct movement of these flows, which play a fundamental role in the balance of the ecosystems.

To maintain the natural surface water flow in the mangrove zones, all the buildings were constructed on more than 780 stilts that measure 16 to 98 feet deep. The construction was erected on a permeable rock base instead of a concrete slab platform. (Fig. 6)

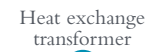
The ground floor of all buildings is almost ten feet above water level, which ensures the natural flow of water under the structures through the stilts and the permeable rock base.

Moreover, drain pipes are placed at least every 160 feet under all the roads. This measure allows the natural flow of water, nutrients, and fauna between ecosystems. (Fig. 7)

The central canal of the hotel was designed to take advantage of the natural flow of underground rivers on the property. Since these rivers carry water in and out, there is no need to use a water pump system to generate water flow.

Prefabricated construction

The impact of construction waste was reduced significantly by using parts that were prefabricated outside the area and then assembled on the construction site by using efficient cranes that operated in a fast and clean manner. This served to prevent the influx of large numbers of workers to the construction site reducing contamination from dust and debris.



Process 1: Tap Water Production and Supply

Objective: Avoid the use of fresh water

A, B → C → D → E → **F**

Process 2: Hot Water Supply

Objective: Reduction of fossil fuels usage to heat water by 70%

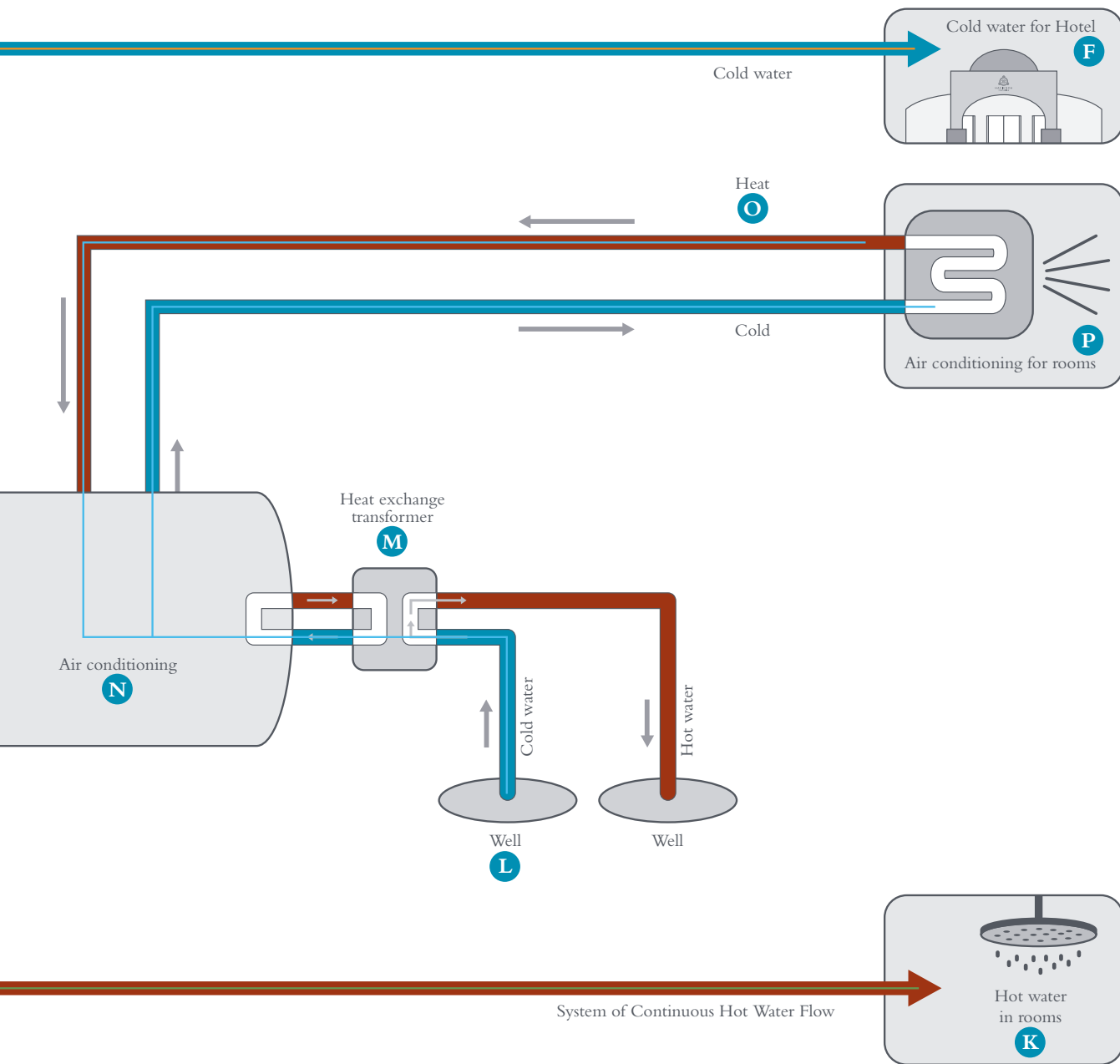
A, B → C → D → E → G → H → J → **K**

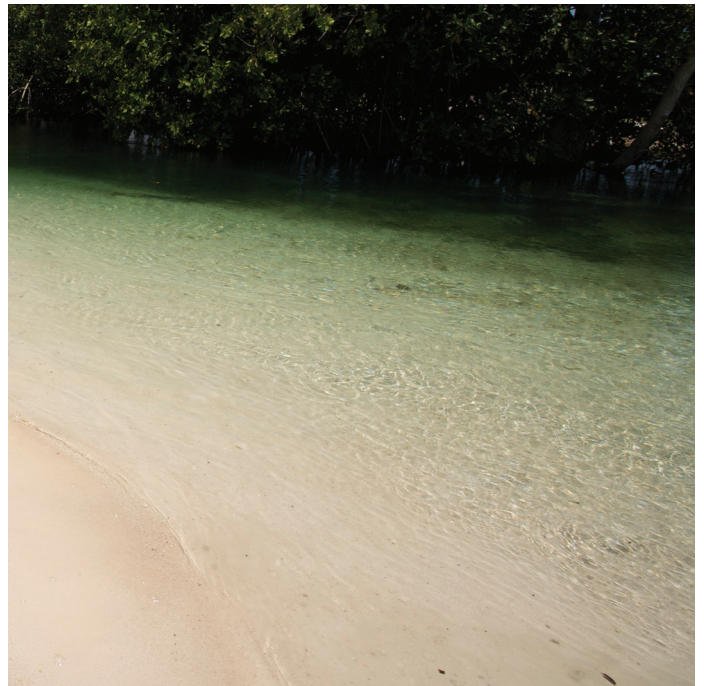
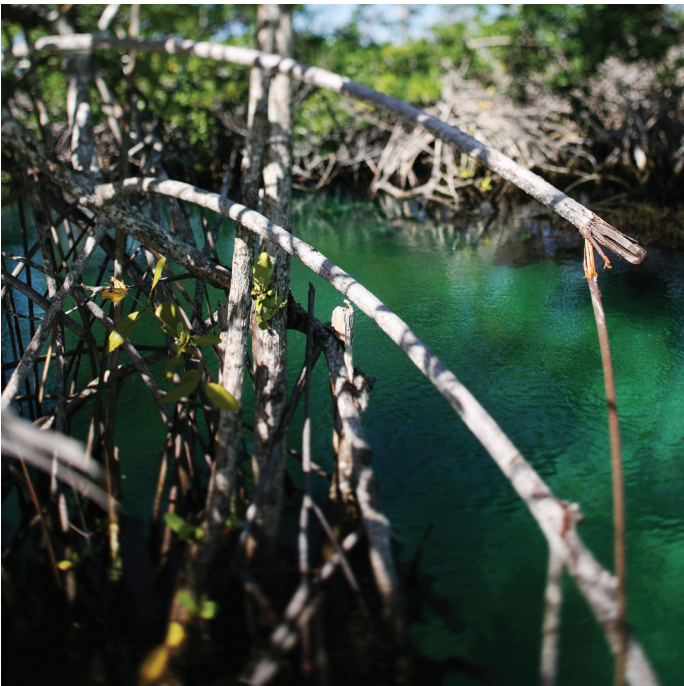
Process 3: Pre-cooling of A/C Equipment

Objective: To reduce energy consumption by 40%

L → M → N → O → **P**

Fig. 8. Technology for Water and Energy Efficient Use





Intelligent Use and Preservation of Natural Resources

Efficient Use of Energy

The hotel rooms have an architectural design that minimizes direct entry of the sun's rays. Additionally, energy use is optimized by the use of energy-saving light bulbs in nearly the entire hotel (70% less consumption). Other energy efficient measures include equipment automation, such as light sensors for turning room lights on and off, balcony door sensors for turning air conditioning on and off, and double paned windows for reducing energy consumption, among others.

Air conditioning systems at hotels in tropical zones traditionally consume the largest proportion of energy (50% of total energy use). The system at Hacienda Tres Ríos, however, consumes 40% less energy on its cooling by using high energy efficient centrifugal coolers. The cooling units are injected with cold water from a deep well, which pre-cools them via a heat exchange transformer. (Pg. 17-18, Fig. 8, Process 3)

All the heat that the air conditioning system extracts from the building (which is normally released into the atmosphere in traditional buildings) is captured by the heat exchange system, and used to heat all the water in the hotel, including the water in swimming pools. (Pg. 17-18, Fig. 8, Process 2)

Rational Use of Water

Our planet has an ever-increasing population of more than seven billion people. With fresh water a scarce commodity in the world, (less than five percent of water is fresh and 70% is frozen in the polar region) its sustainable use is an ever-increasing challenge.

Taking this challenge into consideration, Tres Ríos made the decision not to use any existing fresh water for consumption in the hotel. To do this, a desalination plant was installed to convert salt water into the highest quality, pure, fresh water. Thus all the fresh water used in the hotel is desalinated. (Pg. 17-18, Fig. 8, Process 1)

Additionally, the hotel follows diverse measures of rational water use. For example, air is injected into showers heads which reduces consumption by 40%; dual-flush toilets have two buttons, giving the option of half or full flush as needed; continuous hot water flow in the bathrooms enables hot water to reach the faucet within three minutes, so less water is wasted.



Reforestation Program, Tres Ríos Plant Nursery



Reforestation Program, Tres Ríos Plant Nursery



Before Reforestation Program, Tres Ríos 2007



After Reforestation Program, Tres Ríos 2009

Pollution Prevention

Most of the energy currently consumed by human beings comes basically from burning fossil fuels, which emit greenhouse gases. The gases contribute to the contamination of the air and to global climate change with potential, serious negative consequences. As a result, there's an urgency to act in a decisive manner that will save energy and reduce contamination for the good of the planet and its peoples.

Thanks to the use of heat interchanger systems, only 30% of the fuel normally required to heat the hotel's water is used. Therefore, instead of using large traditional boilers, only small heaters are needed, using the cleanest fossil fuel currently available: natural gas.

The disposal of solid and liquid residue is managed by authorized companies who manage, store, and dispose of dangerous waste as per the guidelines of the Waste Management Program.

During the construction stage, the Green Team carried out a program to recycle Polyethylene Terephthalate (PET) containers, which was fundamental to prevent contamination of the construction site.

Natural Areas, Flora and Fauna

Population growth in urban areas exerts pressure on the natural habitats of wild plants and animals. Sustainable development demands intelligent and enduring use of the ecosystems in order to preserve them for the future. Only by taking care of the environment can we guarantee the permanence of human beings on this planet.

As part of the Flora and Fauna Rescue Program, each and every one of the plants under threat or in danger of extinction was carefully removed from the site before construction and taken to the Tres Ríos Plant Nursery for safekeeping.

Based on environmental studies, policies for the careful monitoring of the natural resources were established – programs for monitoring flora and fauna, reforestation campaigns, and courses on environmental education, among others.

In the past three years, the Reforestation Program has cultivated more than 90,000 mangrove and jungle trees in the Tres Ríos Plant Nursery. The hotel currently occupies only five percent of all the Tres Ríos land, and the quality of the flora and fauna in its ecosystems is continually monitored.

*Sustainable Hotel Operation:
Environmental Best Practices*



Fig. 9 The 3 R's

After several years of work and efforts to ensure sustainability in the planning, design, and construction of the Hacienda Tres Ríos Hotel, the next logical step was sustainable operation.

The planning and construction stages were carried out within a certain time frame, but the operation phase will continue during the entire life of the hotel; and ensuring its sustainability is fundamental. The daily activities of a luxury hotel imply a series of challenges for the efficient use of energy, adequate management of resources, contamination prevention, environmental management, and social responsibility.

The best way to do this is by establishing an Environmental Best Practices System, in which sustainability criteria and guidelines are established for inclusion in the hotel's operation manuals.

This system of responsible operation is naturally complemented by the hotel's efficient and sustainable infrastructure. One of the great advantages of including sustainability criteria from the planning, design and construction phases is that it can detect, from the beginning, the need to invest in the installation of efficient and sustainable facilities, which would have been difficult to retrofit in the hotel that is already built. In this respect, our sustainable operation is based on our infrastructure and is strengthened by our best practices.

Just as efficient construction and operations can be found throughout Hacienda Tres Ríos Hotel, the Best Practices System incorporates numerous requirements that guide daily decision making in practically all operations, including the areas of food and beverage,

housekeeping, maintenance, purchasing, administration, storage rooms, and other areas.

The complete Best Practices System many specifications, which is why only some of these practices are mentioned in this publication. The previous chapter addressed the fields of efficient energy use, rational use of water, and pollution prevention, all of which are part of the hotel's best environmental practices in daily operations. In addition, here are some of the other best practices that have been implemented:

Comprehensive Waste Management and Environmental Education Programs

The implementation of a Comprehensive Waste Management Program and an Environmental Education Program from the Environmental Management System permits reduction of waste volume, reuse of products and recycling of materials. (Fig. 9)

This program includes, among others, several actions:

- Waste is separated in the kitchens and used for compost.
- Plastic, aluminum, glass, and cardboard items discarded in rooms and public areas are separated in the waste area for recycling.
- Food services schedule their production according to occupancy levels in order to reduce waste.
- The only buffet-style restaurant in the resort is Buffet Petit Gourmet, which means that only small and well presented portions are offered at the buffet table.



Buffet Petit Gourmet



Delicacies of the Pâtisserie



- Grease residue from the kitchens is sent to a certified processing company.
- Suppliers of fresh products such as fruits, vegetables, and eggs are obliged to deliver their products in reusable containers.
- Cleaning and hygiene products used in the hotel are biodegradable and environmentally friendly.
- The general use of straws is eliminated, and they are only given upon request.
- Disposable cups are replaced with reusable and recyclable, hard plastic glasses.
- Paper used in the hotel consists of at least 50% recycled fibers and is made without chlorine; both sides of paper are always used in the administrative offices.

Sustainable Training of Staff

The Environmental Education Program teaches sustainable guidelines and criteria to all staff members to make them part of a labor culture that is fundamental to the permanence and continuity of Environmental Best Practices.

Carbon Neutral Accommodations, Travel Green TM

Through the Travel Green Program, implemented by the hotel in collaboration with Sustainable Travel International (STI), guests have the opportunity to make their stay carbon neutral.

When guests invest only one dollar per room per night, this compensates for 33.6 pounds of greenhouse gas emissions and contributes to international reforestation projects through STI. Guests who wish to make their stay carbon neutral can accept the one dollar charge at check-in which is charged automatically at check-out.

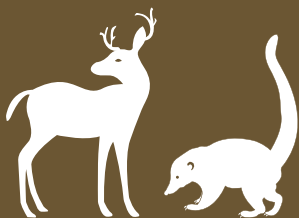




Prohibido hacer fogatas
Camp fires are forbidden



Prohibido encender
cerillos
*It is forbidden
to light matches*



Cuida la fauna
*Show respect
for the fauna*



Cuida la flora
*Show respect
for the flora*

Fig. 10 Tres Ríos signage

Green Areas

The hotel landscape was designed using local and adapted plants that need little watering, fertilizers, or pesticides. The bio-fertilizers establish a symbiotic relationship with the plants' roots, so they can better use the nutrients and water existing in the soil. Plus, green areas are irrigated with recycled water from the on-site treatment plant.

Signage

The Tres Ríos signposting communicates best practices with which guests can help during their stay at the hotel. (Fig. 10)

Social Responsibility

Ninety-five percent of the investment in supplies and personnel recruitment for the operation of Hacienda Tres Ríos takes place in México, benefiting the companies, workers, and communities of Quintana Roo and the Yucatan Peninsula.

The next chapter addresses the commitment of Tres Ríos to natural and human resources and social development.



Tres Ríos Plant Nursery

Social Development



Fig. 11 Environmental Education Program

As previously mentioned, sustainable tourism not only implies the optimum use of environmental resources, but also respect for the sociocultural authenticity of local communities. It promotes economically-viable and long-term operations, which provide economic benefits to all those involved, especially local communities where tourism development is taking place.

In its efforts to be socially responsible, Tres Ríos adopted some principles of social development, which incorporate three main aspects or elements: to preserve the local culture and traditions, to improve the standard of living in local communities, and to support the development of the local economy.

Tres Ríos also supports and collaborates in promoting the development of social projects, such as Kanché AC, Golden Years, Kuxtal, and Community Tours Sian Ka'an, with the objective of having direct, positive impacts on the economy, cultural traditions, and standard of living in local communities.

Golden Years Club

The Golden Years Club for the Elderly (Los Años Dorados de la Tercera Edad) was created in 1992 as a place in Cancun as an organization for seniors in Cancun, where they could develop different cultural, sporting, manual, and recreational activities. To date, the club has more than 200 members who attend daily and participate in activities such as singing, acting, dancing, sports, languages, computer science, and handcrafts, among others.

The association does not depend on government financing, meaning that private enterprise plays a very important role in its survival. The donations given to this club, which was initially directed by Doña Angelita

Marroquín, mother of one of the founders of the Tres Ríos family, is both in cash and in-kind.

The Golden Years Club for the Elderly is a model of sustainable assistance of international standards since elderly participation in activities significantly benefits their mental and physical health, improving their quality of life. The club not only acts as a place for promoting these activities but also as an important place for increasing active social integration.

Horseback Riding Therapy at Hacienda Andalucía, Polo Club and Equestrian Center

Horseback riding therapy is a therapeutic technique that takes advantage of the vibrations emitted by the horse when it walks as an auxiliary treatment for children and youths with different handicaps and ailments. The natural steps of the horse produce vibrations that are transmitted to the rider through the spinal cord at a frequency of 180 oscillations per minute, stimulating the rider's motor system and strengthening his or her muscles. Also, interaction with the horse offers multiple benefits for the rider: it improves levels of self-confidence and self-respect, and strengthens attention and mental concentration.

Tourists who stay at Hacienda Tres Ríos have free access to this complimentary treatment for their children with body paralysis problems, Down's syndrome, and autism, among others, so they can continue receiving therapy while enjoying their family vacation.



Participants and volunteers of Horseback Riding Therapy, September 2009



Horseback riding therapy is also available at the Hacienda Andalucía facilities, a sister company of Tres Ríos, which has specially bred horses trained for horseback riding therapy, under the supervision of specialized volunteers. Two weekly therapy sessions are offered on Wednesdays and Fridays from 10:00 am onwards.

Hacienda Andalucía has been offering this program to the children of Cancún for four years and now offers this service to tourists who visit the Mexican Caribbean.

Certified therapists who enjoy their vacation at Hacienda Tres Ríos can also be volunteers for this therapy during their stay, in order to receive feedback and offer their knowledge to participating minors with special needs.

Kuxtal Sian Ka'an

Hacienda Tres Ríos has initiated a cooperative support agreement with Kuxtal Sian Ka'an, for line of handicrafts from the Mayan communities near the Sian Ka'an Biosphere Reserve, which was named a UNESCO World Heritage Site. This brand of handicrafts encompasses eight companies in five communities close to the Sian Ka'an Biosphere Reserve and guarantees responsible management of natural resources, fair commercial practices, and promotion of the producers' cultural values.

The organizations that make up Kuxtal Sian Ka'an designed the strategy to market community products, seeking to improve quality and create commercial and environmentally responsible links between the region's producers and companies.

This initiative was strengthened through the auspices of the United Nations Foundation (UNF), enabling them to create a collective brand whose ideal is the direct benefit of local communities, the preservation of Mayan culture, and the conservation of biodiversity.

In order to make it easier for visitors to acquire these products, Hacienda Tres Ríos established a point of sale for Kuxtal in its gift shop, Confeti. As part of its cooperation with the local communities, the hotel is looking for new ways to incorporate these beautiful community products into other parts of the resort.

A percentage of each sale of Kuxtal Sian Ka'an products is assigned to the conservation of the Sian Ka'an Biosphere Reserve. Under the format of a non-profit organization, after recovering production, marketing, and promotional costs, the total returns are reinvested in the creation and reinforcement of new community companies.

Awards, Certifications and Alliances



SEMARNAT: Tres Ríos, a Model of Sustainable Tourism Development

From its beginnings, Hacienda Tres Ríos was named a model of sustainable tourism development in México and abroad when it was recognized by the Mexican government, in its publication, Reflections and Actions for Sustainable Tourism Development, Derived from the Evaluation of the Environmental Impact in the Mexican Caribbean: Punta Bete-Punta Maroma Environmental System, edited in November 2006 by the Department of the Environment and Natural Resources (SEMARNAT). The book highlights the objectives and guidelines for the design and environmental management of the Tres Ríos project, as well as some examples of the best sustainable tourism practices observed in the environmental planning, procedures and management stages.

Green Globe Certification

<http://www.greenglobecertification.com>

In March 2009, Hacienda Tres Ríos received the prestigious Green Globe Certification for its recognized sustainable tourism and environmental protection practices. The Green Globe International Certification seal accredits the resort as a tourist property that fulfills strict international standards of sustainability and environmental practices.

The tourist industry has used the Green Globe Certification since 1993. It is the most used standard worldwide. Green Globe International is the owner of the brand and an affiliated member of the United Nations World Tourism Organization. The WTTC (World Travel and Tourism Council) is a partner in Green Globe International.

The Green Globe Certification is an efficient paperless process, verified and accredited by certified external auditors and fulfills the requirements of the ISO/IEC 17021 NORM for bodies providing audit and certification of management systems. The certification is based on the documentation of the United Nations and the European Union as well as the standards of the ISO (International Standard Organization) standard 9001/14001. Green Globe is the leading certification in ecological matters in the travel and tourism industry and its worldwide network of suppliers. Distinguished companies with the Green Globe seal, as in the case of Hacienda Tres Ríos, can consider themselves sustainable.

Sustainable Travel International

www.sustainabletravelinternational.org

Hacienda Tres Ríos is a member of Sustainable Travel International (STI), a non-profit organization dedicated to providing education and public assistance services which allow travelers, tourist services suppliers, and related organizations to support environmental conservation and to protect cultural heritage, while promoting cultural exchange and economic development.

In addition to being an active member of STI, Hacienda Tres Ríos participates with this organization in the Travel Green program, through which guests at Hacienda Tres Ríos have the opportunity to make their stay carbon neutral.

The project must fulfill the standards of the Climate, Community and Biodiversity Alliance (CCBA), an association of non-governmental research institutions, companies and organizations (NGOs) such as the Rainforest Alliance, The Nature Conservancy,

Sustainable Forest Management (SFM), and Wildlife Conservation Society among others. The CCBA develops and promotes rigorous evaluation standards for carbon emissions on land. The CCBA standards identify climate change mitigation projects on dry land that simultaneously generate benefits for the climate, biodiversity, and sustainable development.

Presence in Forums and International Publications

In recent years, the presence and mention of Tres Ríos resort in prominent tourism forums and international publications has contributed to the broadcasting and propagation of a sustainable tourism culture around the world. Tres Ríos has had the opportunity to share its experiences in the construction, marketing, and operation of a sustainable tourism complex on several occasions.

World Travel Market, London 2008

In November 2008, Tres Ríos resort was invited to an international tourism forum during the World Travel Market that took place in London. During a presentation to government officials, business leaders, and tourism operators from all parts of the world, Mr. Arroyo Marroquín highlighted the importance of promoting and preserving the environment, including historic and social resources, as a form of implementing sustainable development in tourist destinations.

FITUR, Spain 2009

In February 2009, in the International Tourism Fair (FITUR) in Spain, Hacienda Tres Ríos was recognized as a model of sustainable tourism in the world of tourism and environmental protection. During the tourism trade show, considered one of the most important in Europe, Mr. Arroyo Marroquín was invited, along with other personalities from the field of international tourism, to participate on the panel: *Tourism and the Environment, A Sustainable Challenge?*, with the topic, *The Success of a Green Hotel*.

FITUR, Berlin 2009

At the International Tourism Fair in Berlin, which took place in March 2009, Rainforest Alliance, one of the best known associations in the world committed to preserving the environment, requested that Tres Ríos participate in a discussion panel on the importance of more business leaders investing in hotel construction and operations that support green tourism.

With the topic, *Dress your Business in Green to Make it Grow*, Arroyo Marroquín participated on the discussion panel about *Experience, Ecotourism and Adventure*, along with personalities from the United Nations Foundation and authorities and experts in this tourism segment from Costa Rica, England, Ecuador, and Peru. At the same event, Arroyo Marroquín delivered the presentation *Hacienda Tres Ríos – Constructing and Operating a Successful Green Hotel*.

NEW AWARDS AND RECOGNITIONS

• 2010

ARDA AWARDS

Amentities – Tres Ríos Nature Park & Tours – Gold
Resort Architecture – Hacienda Tres Ríos – Silver
Site Plan Design & Utilization - Hacienda Tres Ríos – Silver
Interior Design – New Resort Unit – La Herencia Villas – Silver
Signage – Hacienda Tres Ríos Signage – Silver
ARDA Recognition
Gold Crown Resort – Winner

TRIP ADVISOR

Travelers' Choice Top 10 Relaxation / Spa in the
Caribbean & Mexico – Winner

WORLD TRAVEL AWARDS

Mexico's Leading All-Inclusive Resort – Winner
Central America & Mexico's Leading Green Hotel –
Winner

TRAVEL AGE WEST WAVE AWARDS

Best New Property or Major Renovation, Mexico –
Editor's Pick Finalist

TRAVEL WEEKLY MAGELLAN AWARDS

Hotel and Resort - Overall - Eco-Friendly "Green"
Resort/Hotel – Gold
Hotel and Resort Elements - Luxury (Five-Star) -
Standard Room Design – Silver
Hotel and Resort Marketing – Web Marketing/
Advertising – "Name that Suite" Contest – Silver

SKAL ECOTURISM AWARDS

Rural Accomodations – Winner

DBA COMMUNITY ADVANCEMENT AWARDS

Best Project Hacienda Tres Rios – Winner
Best Developer Orlando Arroyo Sunset World/
Hacienda Tres Ríos – Winner

APPLE VACATIONS

Apple Vacations Awards 2010

2010 Certifications & Alliances:

Green Globe Certified
Sustainable Travel International
Socio Activo Asociación de Hoteles de la Riviera Maya
Distintivo H
Si lo Sueñas es Posible, Fundación Televisa

• 2011

ARDA AWARDS

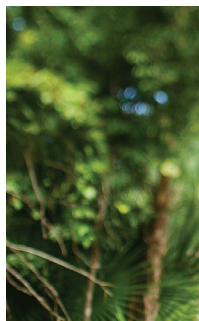
Green Sustainable Program within a Resort – Hacienda
Tres Ríos – Silver
Food & Beverage Program Manager / Team – Oscar
Orbe – Silver
ARDA Recognition
Gold Crown Resort – Winner

2011 Certifications & Alliances:

Green Globe Certified (obtaining the highest score in
history worldwide)
Sustainable Travel International
Socio Activo Asociación de Hoteles de la Riviera Maya
Si Lo Sueñas es Posible, Fundación Televisa

TRAVEL WEEKLY MAGELLAN AWARDS

Hotels & Resorts / Standard Room Design – Silver
Hotels & Resorts / Eco-friendly Hotel or Resort – Gold



Bibliography

CAPAGHC, 2005. Geohydrology study of the Tres Ríos eco-park land in Q. Roo. 57 p + Annexes.

Ecoturismo Tres Ríos S.A. de C.V, 2000. Expanded preventive summary of the Tres Ríos Development project, 108 p. + Annexes.

GPPA, 2004. Environmental impact report on the Hotel Sunset Tres Ríos. Consultores en Gestión Política y Planificación Ambiental S. C. 344 p. + Plans & Annexes.

GPPA-Flores-Verdugo, 2004. Environmental diagnosis of the mangroves at the Tres Ríos Complex: Criteria for management. Consultores en Gestión Política y Planificación Ambiental S. C. / Francisco Flores-Verdugo. 20 p. + Plans.

GPPA-Ortiz, 2004. Determining natural units for the land in the Tres Ríos Complex. Consultores en Gestión Política y Planificación Ambiental S. C. / Mario Arturo Ortiz Pérez. 4 p. + Plans.

Green Globe, 2009, Green Globe Certification Task List.

Juárez P. Ricardo, et al. Reflections and Actions for Sustainable Tourism Development, derived from the Evaluation of Environmental Impact in the Mexican Caribbean: Environmental System Punta Bete- Punta Maroma. Secretaría de Medio Ambiente y Recursos Naturales, Subsecretaría de Gestión para la Protección Ambiental, Dirección General de Impacto y Riesgo Ambiental. 46 p.

Sylvática, S. C., 1998. Study of the environmental characterization of the land at Tres Ríos. Ecoturismo Tres Ríos S.A. de C.V. 101 p.

Sylvática, S. C., 1999a. Special ecological study: Environmental impacts present on the land at Tres Ríos and adjacent maritime zone. 82 p.

Sylvática, S. C., 1999b. Special marine study: maritime zone beside the Tres Ríos land in Solidaridad, Quintana Roo. 139 p.

Further Reading and Web Links:

Green Globe Certification: <http://www.greenglobecertification.com>

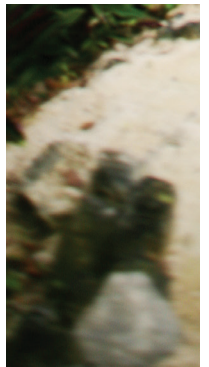
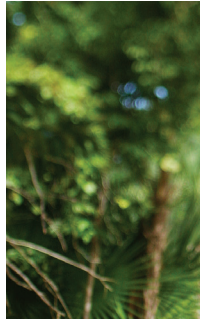
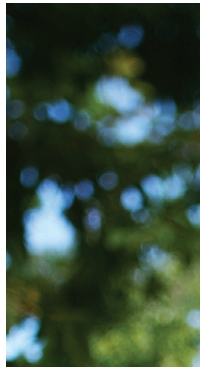
Hacienda Andalucía: <http://www.hacienda-andalucia.com>

Kuxtal Sian Ka'an: <http://www.kuxtalsiankaan.com>

National Institute of Statistics and Geography, INEGI: <http://www.inegi.org.mx>

Sustainable Travel International: <http://www.sustainabletravelinternational.org>

United Nations World Tourism Organization: <http://www.unwto.org>







HACIENDA TRES RÍOS

Carretera Cancún-Tulum, Km.54,
Tres Ríos, Riviera Maya, Quintana Roo 77760, México


T +52 (984) 877.2400

Reservations +52 (984) 877.2453

MEX (800) 262.9268 - USA (800) 224.4231

www.haciendatresrios.com



A close-up photograph of two mangrove flowers, likely from a mangrove tree. The flowers are yellow with prominent white stamens and are attached to a green stem. The background is a clear blue sky. The image is watermarked with the website address www.tres-rios.com.

www.tres-rios.com