

Tour: Location: Itinerary:

## **Outback Biology** Cairns & the Great Barrier Reef, Australia 10-days / 9-nights in destination + travel days

		OUTBACK BIC	OLOGY - F	AUSTRALIA		
Day	Morning		Afternoon		Evening	
2	Overnight Air Travel to Cairns, Australia; meals in flight					
3	Arrive Cairns, Australia; transfer to hotel, check-in and		nd enjoy!	Welcome, Safety & Orientation	Dinner & Fun Time	
4	Biodiversity Introduction, Mangrove Boardwalk Workshop & Creek Clean-Up		Botanic Gardens with Botanist	Plant Evolution Trail, The Gondwanan Heritage Garden	Dinner	Free Time
5	Insect Biology Workshop in Cairns Highlands		Crater Lakes National Park - Giant Trees & Crater Lake Hike		Bat Hospital & Sanctuary	Dinner
6	Platypus Spotting	Wet Tropics Fieldwork - Transects & Vegetation Profiles	Leaf Classification	Biodiversity Site / Bush Camping Set Up	Dinner, Insect Activity & Making Light Traps	
7	Environmental Debate	Rainforest Walk with an Indigenous Guide	Daintree Rainforest & Swim	Daintree Rainforest Observatory & Research Station	Dinner & Nocturnal Wildlife Spotting	
8	James Cook University Research Station Canopy Crane	James Cook University Research Station Service Project		"Future of the Reef" Marine Biology Great Barrier Reef Talk	Dinner	Free Time
9	Ferry to Fitzroy Island, Great Barrier Reef	Great Barrier Reef: Guided Snorkeling, Marine Science & Coral Watch Data Collection		Turtle Rehabilitation Center	Water Quality Testing	Dinner
10	Boat Ride to Great Barrier Reef	Great Barrier Reef: Snorkeling / Scuba & Fish Data Collection, Reef Data Collection, Oceanography & Service			Dinner	Free Time
11	James Cook University: Biology	ames Cook University: Biology Workshop / Marine Labs & Aquarium / Venomous Creatures & Mangrove Biome / Tropical Herbarium				Night Markets
12	Urban Challenge	e OR Service Project	Depart Cairns for Home			
13	Arrive Home					







As with all sample itineraries, please be aware that this is an "example" of a schedule and that the activities included may be variable dependent upon dates, weather, special requests and other factors. Itineraries will be confirmed prior to travel.







Lunch on own to accommodate flight variations, dinner included in Cairns

**Arrival in Cairns:** Welcome to Cairns! After clearing customs, you will be met at the airport by one of our Australian team. We will transfer to our hotel, get checked in and have our orientation and safety briefing.

**Accommodation:** Your accommodation is at a breezy award-winning hostel in the center of Cairns' restaurant and shopping district, and only a few blocks from the waterfront. Well shaded by tropical trees and plants, the hostel features an outdoor pool, pool table, large kitchen, guest laundry and free internet and Wi-Fi.



This afternoon you can explore the nearby Esplanade – a lively stretch of waterfront with night markets, occasional performers and an expansive swimming lagoon.





**Day 2 - Mangroves Talk / Cleanup; Botanic Gardens with Botanist; overnight Cairns**Breakfast, lunch & dinner included

Mangrove Boardwalk: Your first stop is the Jack Barnes Bicentennial Mangrove Boardwalk. This raised walkway takes you through this critical mangrove ecosystem which is the breeding ground for many important aquatic species. Your guide teaches you about the interesting aspects of mangrove systems and their

importance to the Great Barrier Reef. You learn how mangroves deal with a lot of salt in their diet, how they act as the baby nurseries of the Great Barrier Reef and why both humans and the reef rely on these complex systems.

**Creek Cleanup:** Next you visit one of the creeks that makes its way to the ocean via the mangrove ecosystems. Unfortunately, household rubbish also often makes its way into these creeks and so today you will be grabbing gloves and garbage bags to do your bit to clean up the waterway. You tally your "rubbish results" at the end and the team with the top results gets a prize.



**Botanic Gardens with Expert Botanist:** Later today an expert botanist/entomologist leads you through what is considered one of the best tropical gardens in the world. Here you learn the colors insects can see that humans can't, how plant veins indicate its era and why the eerily-named Corpse Flower attracts thousands of visitors every few years.





Plant Evolution Trail: Tracing a loop through the Gondwanan Heritage Garden, you witness how plants



evolved as the continents pulled apart. You also learn how plant and insect interactions influenced the evolution of flowers. You meet descendants of plants that turned into our present coal beds, which ones killed Aborigines slowly over time, and the plant that was recently discovered in the Daintree Rainforest that was thought to have been gone forever. You also discover how, by a strange twist of geological fate, the Wet Tropics UNESCO World Heritage Area became the oldest continually growing rainforest on earth.

Day 3 - Crater Lakes, Giant Trees, Aboriginal Guided Rainforest Walk & Bat Hospital Breakfast, lunch & dinner included

Crater Lake and Curtain Fig Tree: This morning you take a walk at Lake Eacham at Crater Lakes National Park, an ancient volcanic crater—or maar—now protected in a national park. A track around the lake passes through several different rainforest communities, offering you an opportunity to glimpse some of the area's endemic species. You will look for Boyd's Forest Dragons, turtles and birds of paradise, after which you can take a plunge in the cool clear waters of the crater. You also pay tribute to a local high-profile resident — the massive curtain fig tree and learn how these giants straight out of Lord of the Rings eerily "strangle" their hosts.





Aboriginal Guided Rainforest Walk & Tree Kangaroo Spotting: You continue on to a special swathe of rainforest, an area important to the Ngadjon indigenous people. This highland rainforest boasts a rainbow of bird life and mammals and is the only region in the world to spot the elusive Lumholz tree kangaroo, or mupee. Your local Ngadjon Aboriginal guide takes you into his country, and you listen to the lively stories of his ancestors, discover an explosive volcanic history and learn the regional "bush tucker" (food) that was yummy to eat. By participating in this walk, you are helping the community by supporting indigenous employment and pride in culture. This in turn promotes cultural sustainability.

**Bat Hospital:** Later you visit the Tolga Bat Hospital to discover the cuddly side of bats. Fruit bat pups are brought in when they are afflicted by tick paralysis or when their mothers have died or become too ill to feed them. Volunteers at the hospital nurse the bat pups back to health and then release them into the wild. The hospital also serves as a sanctuary for bats who have retired from zoos. Bats are a very misunderstood animal; a visit to the hospital will give you a whole new understanding and appreciation of them – they are actually a very vital part of our environment.



**Accommodation**: Tonight's Eco tourist park is in the Cairns Highlands in a peaceful holiday park with a sparkling swimming pool. Cabins are single-gender with ensuite toilets.





# Day 4 - Platypus Spotting, Ecosystem Evaluations, Transects and Vegetation Profiles, Insect Study with overnight Bush Camp

Breakfast, lunch & dinner included

**Platypus Spotting:** After sunrise this morning you watch the resident platypus swim and dive at Petersons Creek.



**Rainforest Fieldwork:** Next you visit Wongabel State Forest. Here with a wildlife and ecology expert you evaluate biodiversity along a transect, using quadrats that you learn to set up. You learn how to assess vegetation

composition, structural complexity, canopy structure, and ground cover. You then sketch a vegetation profile after using field tools like a DBH tape.



**Leaf Classification:** The next activity is designed to give you the skills to identify aspects of leaves and to determine dominant leaf categories and thus rainforest type. Being able to know what type of leaf you are looking at while in the field is vital to identify the species of tree and it can also be used to classify the type of rainforest that you're in.

**Biodiversity Site:** This afternoon you'll ascend to 164 acres of private property that boasts a mosaic of ecosystems including riparian rainforest, open eucalyptus woodlands, melaleuca wetlands, billabongs and complex ecotones, and used as film



location site by the BBC. This site is perfect for biology studies and for comparing ecosystem structures within a very short radius. Hosting you is an expert entomologist who has discovered five new species of glowworm and worked with famed naturalist David Attenborough.

**Field Guides:** Field guides, 101 Animals of the Wet Tropics and 101 Plants of the Wet Tropics are yours to keep and give you a background about regional and endemic species.



**Accommodation:** You camp on the property 60-meters away from the gentle Rifle Creek. Although this is Aussie bush camping, creature comforts are available: toilets, showers, fire circle, a refreshing swimming hole and an abundance of fresh locally grown food for delicious meals prepared on site. Tents and sleeping pads are provided. If you prefer a non-camping possibility, Tourist Cabins are available, simply let us know so we can check availability and include costs.

**Evening - Insect Activity and Making Light Traps:** With your entomologist you review basic insect biology, see some examples of local insects, and reflect on the adaptations that help these animals to survive in their environment. Then you learn how to easily fashion an insect light trap as a way to catch and study the insects.





Day 5 - Ecosystem Evaluations, Water Quality Testing, Daintree Rainforest and Nocturnal Animals Evening Activity; overnight Daintree Rainforest Research Station

Breakfast, lunch & dinner included

**Ecosystem Evaluation Woodlands:** This morning you continue your ecosystem evaluations, but the woodlands environment stands in stark contrast to the rainforest you evaluated yesterday.

**Water Quality Measurements:** With your guide you discover the language of water and what it says about the creatures that can survive in it. You take water quality measurements involving indicators like pH, nitrate and phosphate levels. Testing for these elements may reveal the presence of fertilizers or biological extremes, which will also aid in your discussion about species survival rate and eutrophication.





Daintree Rainforest and Swim: Then you cross into the incomparable Daintree Rainforest, the jewel in the crown of the Wet Tropics. For biology students, this is an important area for study: this area of the country has the highest concentration of primitive flowering plant families in the world, Australia's rarest mammal (the Murina florious bat) and 13 species of birds found nowhere else on earth. You enjoy a refreshing swim in a clear "crocfree" rainforest swimming hole.

**Daintree Rainforest Observatory & Research Station:** Next you arrive at the Daintree Rainforest Observatory, an eco-monitoring site and research station with wet and dry labs. It lies in the heart of the Daintree Rainforest and claims the highest biodiversity of anywhere in Australia! You get a safety orientation and then a presentation about the significance of this rainforest and about the important research happening here.



**Accommodation:** Your lodging for the night is in the brand-new facilities at the station. Rooms are single gender, four- and six-bed rooms. These

have access to a communal industrial kitchen and an amenity block nearby provides laundry, bathroom and shower facilities.



**Evening - Nocturnal Wildlife Spotlighting Activity:** Tonight, with your guide, you can roam the rainforest to spot the Daintree's elusive crepuscular and nocturnal creatures as they come to life as the sun sets. Your guide knows what signs to look for during this spotlighting exercise, and you may have a chance to meet the Northern Brown Bandicoot, Bennett's Tree Kangaroo, or the striped possum as it leaps onto the rainforest's giant fan palms.





Day 6 - JCU Research Station, Canopy Crane & Reef Presentation; overnight Cairns

Breakfast, lunch & dinner included

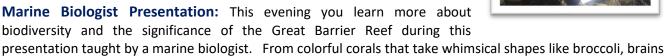


**JCU Canopy Crane:** The James Cook University research station is also home to a tower canopy crane. After a safety orientation, you climb into a suspended gondola with the crane operator. The crane then ascends over the rainforest canopy, and can swing 360 degrees, surveying 1 hectare of the incredible biodiversity that has earned the Daintree UNESCO World Heritage status. This research station is only 1 of 3 of its kind existing in the tropics. (Students must be at least 16 years old for crane participation. Activity runs Monday-Friday only. Students younger than 16 may participate on a zipline adventure).

**Ecosystem Evaluation Daintree Rainforest:** While you wait your turn in the crane, you also divide into small groups and conduct an ecosystem evaluation of tropical lowland rainforest. Surrounding the research station, several trails traverse various elevations and rainforest growth at various stages of succession. These trails provide avenues for you to experience primary and secondary rainforest, rainforest reforestation, as well as a dynamic creek.

**Water Quality Measurements:** In the creek you continue with your water quality measurements, with which you can discover the presence of toxicants such as insecticides, herbicides and metals. These measurements provide you with information on what may be impacting freshwater systems.

You then return to Cairns in the late afternoon.



and baskets to a host of fish such as the chocolate-dipped damsel, the Picasso triggerfish and the giant Maori



wrasse, you learn how to identify the most common creatures at the reef. You find out about threatened species and coral predators--such as the Crown of Thorns—and the consequences of climate change and human activity on the reef. More importantly, you learn about the real hazards at the reef (like the innocent-looking cone shell) versus the imagined ones (like scary sharks) fueled by Hollywood myths. You leave with a greater understanding of the reef environment and an appreciation of the natural wonder you are about to experience.





#### Day 7 - Fitzroy Island Great Barrier Reef & Turtle Rehabilitation Center

Breakfast, lunch & dinner included

**Ferry Ride:** This morning you are ferried to the pristine Fitzroy Island. A fringing coral reef surrounds the island, part of the inner Great Barrier Reef, providing a sheltered home for a kaleidoscope of marine life: colorful corals, parrot and lionfish, turtles, cuttle fish, rays and giant clams.





**Guided Snorkeling:** With full use of snorkel gear for the day, you can walk right into the water to explore the magnificent reef system that surrounds the island. Your marine naturalist leads you to underwater examples of biodiversity, parasitism, and commensalism as well as examples of the reef's most interesting features.

**Marine Science:** Your marine biologist gives you in-water assignments, to be followed by discussions on observations. Topics can include, but are not limited to: coral biology, fish populations and behavior, invertebrates, endangered species, coral diseases, coral predators and threats to the reef, human impacts on the reef and climate change.

Coral-Watch Data Collection: In the afternoon you engage in an activity that addresses concerns over climate change and coral bleaching. During this exercise you find out more about how and why coral bleaches. You learn how to identify different kinds of coral, match its colors to a waterproof chart, and then record what you observe in teams of two. The data then goes back to the University of Queensland's Coral Watch scientists, where they analyze the results over time and look for any long-term trends. Your results also go into a database to track bleaching around the world, and your group receives a graph of your results.





**Turtle Rehabilitation Center:** During your visit you also visit the island's Turtle Rehabilitation Centre where a collection of volunteers help save sick and injured sea turtles by looking after them until they are ready to be released back into the ocean.

**Water Quality Testing:** This afternoon you measure water quality using chemical tests. Small World Journeys collects these tallies from each group that visits Fitzroy Island so we can log this data, analyze the results over time, and look for any long-term trends.





Day 8 - The Outer Great Barrier Reef Snorkeling and Data Collection with Marine Biologist; overnight Cairns
Breakfast, lunch & dinner included



**Boat Ride to Reef:** Your day begins with an air-conditioned catamaran ride to the outer Great Barrier Reef, a UNESCO World-Heritage site and one of the most biodiverse spots on the planet. Your marine biologist presents what you are likely to see at the reef and introduces the Eye on the Reef program, which involves instruction on how to complete the Rapid Monitoring Survey.

**Snorkeling and Data Collection:** Upon arrival, you dock at a floating pontoon, and an underwater universe greets you.

During a guided snorkel tour with your marine biologist, you can expect to see a rainbow of hard and soft corals, turtles, and a variety of fish species including butterfly fish, giant Maori Wrasse, parrot fish, and the ever-popular clown fish, also known as "Nemo".

**Data Collection & Service:** Next you receive in-water training on how to conduct the Great Barrier Reef Marine Park Authority's Rapid Monitoring Survey for the Eye on the Reef program. Your marine guide points out key features of the reef ecosystem, answer any questions, and conduct a



practice survey with group. Then during a timed snorkel session, you record your underwater findings. Your guide and waterproof slates help you identify a host of marine life and calculate benthic zone coverage. Most importantly, you look for signs of coral bleaching and coral predators which greatly affect the health of the reef. Your data is then collected and contributes to the central reporting system used by the Great Barrier Reef Marine Park Authority (GBRMPA) to manage the long-term sustainability of this UNESCO World Heritage area.







Semi-submarine and glass bottom boat tours, underwater observatory, and marine life touch tank are all available for you to enjoy. The double-story pontoon also has something that no one else does..... a long and fun slide that finishes in the waters of the reef. Lunch today is a tropical buffet served on the boat.

Scuba Diving is available, at extra cost. Please let us know if your group is certified and would like to participate.





## Day 9 - JCU Labs, Herbarium and Mosquito Research Facility & Environmental Debate; overnight Cairns Breakfast, lunch & dinner included

**Biology Seminar:** Today you head to James Cook University for a biology-focused workshop. JCU is Australia's highest-ranked university in environmental science and offers marine biology studies not found anywhere else. Through a custom-designed interactive workshop today you have the opportunity to engage with world leading researchers and equipment.

Marine Labs & Aquarium: Popular with film crews, the marine labs at JCU boast one of the world's best sites for capturing marine creatures on camera. Sophisticated equipment placed in the tanks



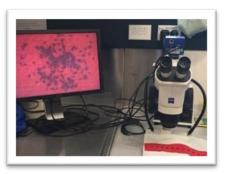


allows for observing and filming animal behavior up close. Additionally, JCU's unique circular tank allows for a simulated current and the careful study of jellyfish. You meet staff who are on the cutting edge of marine science research, learn how they "milk" fish for venom, and about the latest findings in the development of anti-venoms.

**Venomous Creatures & Mangrove Biome:** Here you meet unusual and deadly creatures such as sea horses, baby crocodiles, cone shells, the lethal chironex jellyfish, and the extremely rare lung fish, found in captivity only at JCU. The cast members of Finding Nemo live here too. You also

investigate a working model of a mangrove biome, an important tool for studying effects on water quality and salinity as well as climate change mitigation.

**World Class Herbarium:** Books upon books of pressed and preserved plant species decorate JCU's Tropical Herbarium, where you are invited in as privileged guests. The Herbarium is a biologist's delight; it boasts over 160,000 specimens, cutting edge facilities for processing and curation, as well as research. Highlights include viewing the Spirit Room, do-it-yourself area for plant enthusiasts, and the very special specimens collected by Sir Joseph Banks aboard Captain Cook's first voyage to Australia.



State-of- the-Art Mosquito Research Facility: Next you step into a 'green-house' style laboratory designed to replicate the

preferred Australian breeding ground of the mozzie! You peer into microscopes to investigate larvae and discover from scientists what experiments they are performing to control the spread of tropical diseases, such as dengue fever and malaria. You also learn how volunteers offer themselves up as "meat" for science.





**Environmental Debate:** This afternoon you participate in a debate which focuses on issues of development and effects on biodiversity. Students are given background information and a summary of the Environmental Impact Statement (EIS) about a major resort development proposed for Cairns and then given different roles to play of community members. This requires evaluating projected economic, social and environmental impacts as well as proposed sustainability efforts and then arguing for or against the development. This is a fun way for you to get involved with all sides of an



environmental debate with a real-life example that has gained significant national media attention.

#### Day 10 - Optional Urban Challenge OR Service Project

Breakfast included; departure day

After breakfast this morning, you have free time for last-minute shopping or souvenir purchases. If you leave later in the day, you can choose one of the following options:

**Optional - Urban Challenge:** If you have an afternoon flight, you can choose to spend the morning souvenir shopping, swimming at the lagoon or participating in Small World Journeys' Urban Challenge! The Urban Challenge is a fun team-building exercise that allows students to learn more about the history, nature, art and culture of Cairns. Small group teams compete against time in this treasure hunt-type activity in Cairns central business district. This is a popular activity for students and the winning team gets a prize!

#### OR

**Optional - Service Project:** Alternatively, you can participate in a service project for the homeless by making special bags for a local charity using upcycled materials. You then put food and hygiene items in the bags that are most needed by those living on the street (at own cost). "Rosie's Friends on The Street" is a not-for-profit organization that will then distribute the packs you make. In addition, a representative from Rosie's will speak to you about how members of the Cairns community become homeless, and how your gift will help. No worries if you aren't the best at arts and crafts – the bags are easy to make, and you'll feel good doing it too.





Later, we start to say goodbye to this incredible experience and the people who have changed our lives over the past 10-days. We'll transfer to the Cairns airport and get ready for our flight home.





## Q & A

#### Do we need a visa to visit Australia?

All visitors to Australia need a visa, with the exception of visitors from New Zealand. An Australian entry visa, commonly known as an ETA (Electronic Travel Authority) will let you spend up to three months in Australia. In most countries it is easily obtained and is usually free of charge. There is no need for you to visit an Australian diplomatic office to submit an application, and you do not need a stamp or label in your passport. Upon check in at the airport, the airline agent will be able to confirm your ETA electronically.

All visitors will also need a passport, valid for at least six months after the planned return date.

#### What kind of food will we have?

We understand how important food is to young people – and heaps of it! A typical breakfast will be a continental breakfast including juices, cereals, toast & jams (and optional vegemite!) and a typical packed lunch will be a meat and salad, sandwich, drink, chips, biscuits and a piece of fresh fruit. Café lunches and dinners will vary, but we place a big emphasis on variety and healthful options.



## What is your safety record?

We have had hundreds of students travel with us, and our safety record is excellent. Ask us for teacher references specifically regarding safety.

Safety is absolutely our number one concern at all times. We carry a first aid kit in our vehicles, as well as on the guide's person when in remote areas. We do everything in our power to make sure each trip is as safe as it can possibly be.

## Where will we sleep?

We choose accommodation for our educational groups that is safe and clean. Options range from sleeping in tents at well-appointed campgrounds to budget hotels and youth hostels – selected according to your budget and itinerary. At some accommodation it is possible to cook group meals yourselves.

Whenever possible, we use locally-owned accommodation options to keep income in the community. We have a 24-hour mobile number that parents may ring at any time during their child's trip if there is an emergency, and we will also provide the group coordinator with contact details of where the group is staying each night.

## What about sharks or jellyfish?

The ocean is home to sharks, but the ones you may encounter at the Great Barrier Reef are small and pose little threat to swimmers. In fact, divers and snorkelers often consider themselves lucky to spot one of these shy, magnificent creatures. Australia's famed Great White sharks prefer cold water, and therefore are not found at the Great Barrier Reef.

Stingers, also known as box jellyfish, breed in estuaries and are rare at The Great Barrier Reef. Therefore, they do not pose a big threat to snorkelers or divers. Stingers are only a consideration on the beaches between November and April, and most of the local beaches have stinger nets so that people may still swim.





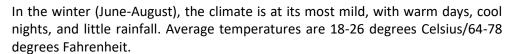


#### How do we travel?

You travel in comfortable well-maintained air-conditioned vehicles with a seat belt for every passenger. We have a Toyota Coaster bus for groups with 13-24 participants. If the group is larger than 24, we hire additional vehicles. Our guides all have a state-issued Driver's Authority (DA) and must have a special bus license to drive our vehicles.

#### When is the best time to visit Cairns and what is the weather like?

Cairns is a tropical place, and outdoor activities can be enjoyed year-round. In the summer (December-February), the weather is at its warmest and wettest. You can expect hot days with occasional tropical storms, producing lush green hillsides and plenty of waterfalls. Average temperatures are 23-31 degrees Celsius/73-87 Fahrenheit.







## What qualifications do your guides have?

Our Cairns guides have a government-issued "Blue Card" that is only given after an extensive background check and allows them the ability to work with children. Each guide also has a Senior First Aid and CPR certification and government-issued Driver's Authority.

Many of our educational adventure guides have higher degrees in environmental science, marine biology or experiential education, and there is one thing which unites them: a love for teaching young people about the outdoors. We choose guides with extensive experience having worked with young people. We will take into consideration your educational objectives and assign one of our guides who will be the best match for your group.





## **OUTBACK BIOLOGY - AUSTRALIA**

**Minimum Booking Numbers:** 16 students

What's Included: Roundtrip international flights

9-nights' accommodation in Australia:

- 6-nights at a central Cairns hostel (4-6 share rooms with ensuite, single gender)
- 1-night Highlands Tourist park (4-share dorm-style rooms with ensuite, single gender)
- 1-night bush camping
- 1-night JCU Research Station cabins (4-share single gender rooms with shared bathrooms)

Tents, sleeping bags and sleeping pads

Field guides for each student

Mask, fins, snorkel and wetsuit use

5-meters square of Daintree rainforest adopted in your group's name through Rainforest Rescue

Marine park taxes and levies

Carbon offsetting through Sustainable Travel International (STI) for a carbon-neutral trip

Airport transfers & group transportation to activities

Breakfasts, lunches & dinners daily starting with dinner on your night of arrival in Australia and ending with breakfast on your day of departure from Australia (dependent upon flight times)

All inclusions as shown in the above itinerary:

- National guide on Days 2,3,4, 5, 6 and 9
- Marine Biologist on Day 7
- University researcher and scientist talks

24-hour emergency cover

What's Not Included: Lunches on travel days

Fully comprehensive insurance (mandatory)

Transfers to/from home airport

Cost of visas, full or collective passports

Cost of inoculations or medication required for travel

Sightseeing / Entertainment Options not shown in Itinerary

Hotel incidental deposits & bills – meals, mini-bar items, recreation

charges, purchases billed to room,

Any gratuities – drivers, maid/ bellman services, local guides

As always, our staff are always available to you to answer any questions you may have regarding programming. If we may serve you in any way, please do not hesitate to contact us.



