



VOLUNTEERING MISSIONS

CETA' DIVING

UNDERSTAND MORE, CARE MORE

FOR **CERTIFIED SCUBA DIVERS**



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THE TUAMOTU ISLANDS

OASES OF BIODIVERSITY



The **Tuamotu Archipelago** - *population of 15,000 people* -, an area threatened by climate change and rising waters, contains **78 atolls** spread across an **800,000-square-kilometer** ocean surface. It has 800 square kilometers of land for 20,000 square kilometers of lagoon - *0.1% and 2% of its maritime area respectively* -, demonstrating **how fragile this oasis of aquatic biodiversity is**.

The Tuamotu atolls are characterized by their height, shape, exposure to the ocean, population, and the activities performed there. There are small, closed lagoons, both hypersaline and brackish, and large lagoons open to the ocean like **Fakarava**, which features the largest pass in French Polynesia at 1,600 meters, and even a raised coral atoll, **Makatea**.

Coral growth, which allows these small island reefs of only a few meters in altitude to exist, is directly affected by the slow and irreversible **acidification** of the oceans - *a 30% increase over two and a half centuries* -. Here, as anywhere else, **ecosystems are defenseless against commercial, demographic, and climate pressures**. Here, more than anywhere else, the status of the marine mammal populations is largely unknown.

Yet 350 kilometers from Tahiti in the northwest Tuamotu archipelago, the giant atoll of **Rangiroa** - 'Great Sky' in *Paumotu* -, a true oasis of life in the heart of the tropical Pacific, stretches its 170 kilometers of coral reefs, sands, and coconut trees around a **1,600-square-kilometer** area with waters so fish-laden that it has become one of the world's top diving destinations. The atoll's impressive size - *80 kilometers long by 20 kilometers wide on average* - and its two large passes, **Avatoru** and **Tiputa**, make it home to marine wildlife as exceptional as it is impressive.

A SANCTUARY



The **Polynesian Marine Mammal Sanctuary** was officially created on **May 13, 2002**. This **4.8-square-kilometer area** is one of the largest dedicated to whales and dolphins worldwide. The goal of wildlife sanctuaries is to protect the natural functioning of ecosystems and wild animal populations. However, the **20 species of cetaceans** that inhabit French Polynesian waters remain affected by activities such as **overfishing, bycatch, maritime traffic**, and an **unmanaged increase of wildlife tourism**.

THE NGO

RANGIROA DOLPHINS



'Rangiroa Dolphins' - RD - is a non-profit organization born in 2019 and based in the Tuamotu Islands. **RD** is dedicated to the conservation of Rangiroa bottlenose dolphins and their natural habitat. Our NGO has a fifteen-year experience of whale and dolphin monitoring in French Polynesia including twelve field seasons conducted along with ecovolunteers. Our main tools are **scientific research** and **education**.

Since 2009, RD's scientific director has been studying the **bottlenose dolphin** community inhabiting **Tiputa** waters, on the northern part of Rangiroa atoll. Her work focuses on the impacts of tourist activities on the dolphins' behaviours. Indeed, these animals are targeted daily by commercial and non commercial **'dolphin watching'** activities.

Literature and the media have endowed cetaceans with a reputation that predisposes people to expect friendly interactions with free-ranging dolphins. Amusement parks and aquaria where people can touch, feed, and swim with captive dolphins, enhance this reputation. The opportunism and adaptability of the bottlenose dolphin make it a focal species for cetacean tourism, especially when the dolphins remain **on small coastal areas**.

The popularity of marine mammal viewing activities can result in conservation and socioeconomic benefits for the animals and local communities alike if they are conducted responsibly and with care, in accordance with existing regulations that protect these iconic species. However, if such activities are not conducted appropriately, they can place marine mammals at significant risk of harassment, injury or death.

Some of the Rangiroa bottlenose dolphins were conditioned on the medium- to long-term to tolerate or seek out physical contact with scuba divers and snorkelers. Such a situation **raises concerns about the dolphins' welfare and other risks related to unmanaged interactions**.

These risks include:

1. An increase in the number of accidents involving dolphins and divers through, for example, 'pushy' behaviours or intimidation attempts from the dolphins and / or divers forgetting basic diving safety rules;

2. Disease transmission from the dolphins to humans, and vice versa;

3. A growing vulnerability to human activities of the dolphins that became too familiar to human presence - *loss of vigilance toward human activities* -, resulting in collisions with boats, propeller injuries, fishing gear entanglement, etc.;

4. Changes in ranging and social patterns;

5. The implementation of an 'open water amusement park' situation that lacks basic ethical and educational components.

THE **BOTTLENOSE DOLPHIN**



The **common bottlenose dolphin**, *Tursiops truncatus*, is distributed throughout the five Polynesian archipelagoes. However, the species is most regularly seen in **Rangiroa atoll** than in other Polynesian islands. In French Polynesia, adults can reach up to **3.3 meters** and weigh up to **450 kilos**. They are easily identified thanks to their stocky and grayish body prolonged by a thick rostrum.

The line of their mouth, curved upwards, gives them a 'smiling' appearance. Nevertheless, this morphological feature does not reflect the overall species' behaviours as these dolphins have an extremely complex social life and may display **affiliative** behaviours such as play and petting as well as **agonistic** behaviours - e.g. *intimidation, aggression*. The numerous marks, notches and scars visible on the adult males' bodies perfectly illustrate these animals' strength.

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<https://www.facebook.com/groups/dauphinsderangiroa/>

<https://www.facebook.com/dauphinsderangiroa/>

THE GOALS

OF THE MISSION



For many years, scuba divers have been encouraging **physical contacts** with Tiputa bottlenose dolphins, especially young individuals. Some of these dolphins are now very familiar with humans, making them particularly vulnerable to anthropogenic activities. Indeed, overconfident animals may easily be **injured** or **destroyed** if they display intrusive or aggressive behaviours toward humans.

Our long-term **research program** focuses on monitoring **demographic, social and ecological parameters** of the Tiputa bottlenose dolphin community, and **the dolphins' behaviours in the presence of scuba divers** to assess the risks associated with close regular underwater interactions.

Our **education program** focuses on sharing our results and recommendations with the general public and other stakeholders to help improving our relationships with wildlife.

Ceta'Diving allows volunteers to observe and better understand the dolphins' routine, and issues related to their conservation. Our volunteers help **RD sustaining its independent dolphin monitoring program**. RD is also involved in French Polynesian marine mammal conservation initiatives through collaborations with the *Center for Insular Research and Observatory of the Environment*, the *National Museum of Natural History*, and the *PÉLAGIS Observatory*. Finally, we are member of the *National Marine Mammal Stranding Network*.

The data collected help us:

- 1. Designing tools** used as part of our presentations dedicated to schoolchildren, tour operators, and the general public.
- 2. Writing and publishing** research papers.
- 3. Promoting ethical dolphin watching activities** through articles and interviews - *press, internet, radio, television* - or via documentaries like **Draw me a dolphin**, produced in 2012, **Polynesia, the secrets of paradise**, produced in 2016, **A season in Tahiti**, produced in 2017 or **The frontier of wildness**, produced in 2018.

WATCH THE MOVIE 'THE FRONTIER OF WILDNESS' >

<https://www.reelhouse.org/tom.t/aux-frontieres-du-sauvage/>

THE ACTIVITIES

OBSERVE, UNDERSTAND



CERTIFIED SCUBA DIVERS *

* **A level 1, Open Water PADI / SSI or equivalent diving certification** is the minimum required to participate in the scuba diving activities. You must also have a previous diving experience of about 15-20 dives at sea. Do not forget to bring your **credential** and **logbook**. In order to be able to enjoy the lagoon during free time, we advise you to bring your own **fins, mask and snorkel**. **It is prohibited to dive less than 12 hours before a domestic flight and less than 24 hours before an international flight.**

We will first meet **on Monday morning at 10:00 at the 'Teina and Marie' guesthouse** in Rangiroa where we will introduce **the team, location and safety tips**. The mission will then take place over **12 or 14 days**. On each day, there will be **one scuba diving trip dedicated to observing and collecting environmental and dolphin data**. Part of each day will be dedicated to **debriefings and comments on the data collected** as well as **training courses**. The mission will end **on the last Sunday morning**.

As part of our **underwater dolphin monitoring**, you will be proposed to participate in the **underwater video shooting** of the dolphins' behaviours. A briefing will be held before each dive to describe the dive spot, current sea and weather conditions, and remind everyone basic safety procedures. Each dive will then be debriefed. The divers will follow their instructor throughout the dive (i.e. for about **45 to 70'**). The total time spent at sea is approximately **60-90'** depending on the dive duration. The dive spot is located at about **5-10'** by boat from the diving center.

We strongly recommend you to bring your own underwater camera.

Shore-based dolphin sightings may also take place when the conditions are appropriate. Two times a day, **long breaking waves** - called 'mascaret' - resulting from the meeting of a tidal current coming out of the lagoon with ocean water run through Tiputa pass. This exceptional setting constitutes **a socialization ground for the bottlenose dolphins** that regularly come to surf and leap into the waves. These conditions are perfect to photo-identify the dolphins and get a distant glimpse of local tourist activities. **This activity will last about 1:30.**

THE MISSION IN PICTURES



CONVENIENCES



CONTACT

In Rangiroa > PAMELA CARZON / RD - CRIOBE - EPHE - PSL

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ACCOMODATION, MEALS AND TRIPS

RD works with the local guesthouse 'Teina & Marie' located close to the lagoon, Tiputa pass, the diving center, and our dolphin observatories on shore.

At 'Teina & Marie', volunteers can choose between **1. a dorm** including a shared bathroom, cold shower and access to electricity - **220V**, or **2. a private bungalow** with hot shower. **This guesthouse is typical from the Tuamotu Islands and may appear too « roots » for participants accustomed to higher standards.**

Breakfasts and **dinners are covered by the guesthouse.** Local meals are often based on **fish** but may be adapted for **vegetarian diets.** Individual **per diems are provided for lunches** when the mission starts. Depending on the teams, lunches may be cooked collectively or taken at local snacks. The shops are relatively stocked but **fruits and vegetables are scarce in the atolls.** You will have to wait for the freighter that comes from the Marquesas Islands to stock up on local fruit.

It is possible for participants to choose a higher standard accommodation located close to our study area (*Les Relais de Joséphine, Vaa i te Moana, Coconut Lodge, etc.*). **However, it is important to book well before the mission starts to ensure they will still have availability.**

RD works in partnership with the 'Rangiroa Diving Center', an ethical dive shop located next to the guesthouse.

COMMUNICATION

French Polynesia has modern infrastructures and exceptional amenities over an area as large as Europe. A good wifi connection is available at the guesthouse.

TRAVELLING TO RANGIROA

A biometric passport and an ESTA form are required for stopovers in the United States.

In Tahiti, international flights often arrive at night. You can spend a night at a local guesthouse, or at the *Motel* across from the airport. **When you are at the Tahiti International Airport**, you have to board a **Tahiti-Rangiroa domestic flight - 1:00 for a flight without stopovers**. A taxi sent by the Teina & Marie guesthouse will pick you up at **Rangiroa airport**. Each six-kilometer taxi ride to and from the airport lasts about five minutes.

F E E S

The participation fees include the taxi between Rangiroa airport and the guesthouse, accommodation in a dorm at the **Teina & Marie** guesthouse (or in a bungalow - *depending on the participant's choice* -), breakfasts and dinners, per diems for lunches, 10 dives at the **Rangiroa Diving Center**, supervision and training courses. They do not include the international and domestic flights to Rangiroa.

REQUIREMENTS

- > **Good physical and mental conditions.** No disease or treatment requiring proximity to hospitals.
- > **For the divers who did not dive for more than six months.** A security visit to an ENT and a refresh dive. You will have to show your **credentials** and possibly **logbook**.
- > **Good ability to live and work in a team**, to participate in cleaning and cooking.
- > Computer skills are appreciated.
- > **Adaptability, patience, thoroughness**, and **good mood** are welcome.

EQUIPMENT RECOMMENDED

- 1 travel bag
- 1 backpack
- 1 water bottle

ESSENTIAL

- Cap or hat
- Good sunglasses
- Non-toxic sun screen
- Mosquito repellent
- Swimsuit
- Light but covering T-shirts
- Light shorts, dresses or pants
- Waterproof jacket

AID KIT

- Biafine
- Antihistamines
- Antibiotic ointment tube
- Sea sickness remedy

STRONGLY RECOMMENDED

- **3- to 5-mm shorty** or **dive suit**
- **Lycra with long sleeves**
- Powerful **fins, mask** and **snorkel**
- Small socks - *to feel more comfortable into the fins*
- Action camera or other **underwater shooting equipment + fastening system**
- Laptop
- Hard drive

RISKS AND INCONVENIENCES

- > Sea water is always at perfect temperature - *between 25 and 30°C*. However, you should **beware of currents**, especially along channels. The diving area **is exposed to waves and swell** : be careful with sea sickness.
- > **Avoid swimming at night** or wearing shiny jewelry while swimming or diving near the reefs - *moray eels, barracudas*. We do not recommended swimming in areas where fish have been cleaned recently.
- > You should generally **avoid walking barefoot in the water**. **Beware of stonefish** and **do not touch the coral or other animals**. **Never collect live coral or shells**.
- > **Be careful of the sun, dehydration, and mosquitoes**.
- > Fresh water is a rare and precious commodity in the Tuamotu Islands. **Do not drink tap water**. Gallons of drinking water are available at the guesthouse and at the diving center.
- > **Please do not to feed stray dogs and cats** to avoid familiarizing them near the bungalows or kitchen, and remain vigilant with some dogs that can bite pedestrians and cyclists.

WEATHER CONDITIONS

French Polynesia enjoys a **warm, tropical climate**; the air and water temperatures are relatively stable throughout the year. The seasons are so similar to each other that it is easy to forget what month it is. However, there are two major annual seasons:

The rainy season > During Summer, from **November to April**. The climate is humid and hot - 29 to 35°C -, and the weather can be pretty unstable.

The dry season > During Winter, from **May to September**. The climate is milder - 26-29°C -,with more wind and a stable weather.

The inter-seasons > 'Fall' - April-May - and 'spring' - September-October.

In July and August, a 20- to 35-knot southeastern wind locally called *Mara'amu* can blow and give rise to strong waves.

FOR NON RESIDENTS

The **local currency** is the French Pacific Franc (XPF) which is indexed to the euro. **€ 1=XPF 119.33.**

Cash can be handy when you need to buy a sandwich or a drink. There are two ATMs at Rangiroa, **one at the airport** and **one in Tiputa village.**

A meal will cost about **XPF 2,000 / € 17** at a snack, and between **XPF 3,000 / € 25** and **XPF 6,000 / € 50** at a restaurant.

Rangiroa has a **dispensary**, two **doctors** and a **pharmacy.**

When you come from overseas, your luggage cannot exceed **30 kilos.**

The voltage used is **220V.**

Drugs are prohibited.

Most people use their free time to rest, swim, or explore the area.

PLEASE RESPECT WILDLIFE

In French Polynesia, there are **safety rules to respect with animals** in order to preserve their and your welfare on the long-term. **Please do not touch and / or feed wildlife!** Understand more to care more is a fundamental axis of our approach.