ENVIRONMENT - BIODIVERSITY

THE NORTH PROVINCE ENGAGES IN...

THE CONSERVATION OF THE FAIRY TERN IN NEW CALEDONIA

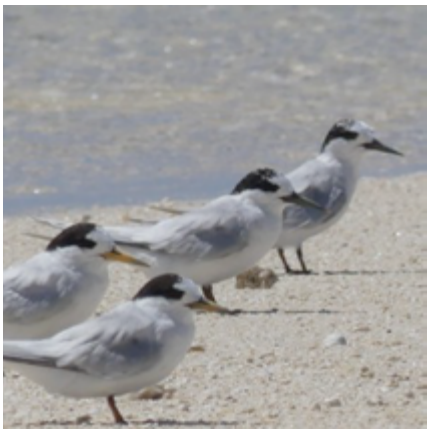
PROVINCE NORD
DE LA
NOUVELLE-CALÉDONIE

BEST
VOLUNTARY SCHEME FOR BIODIVERSITY AND ECOSYSTEM SERVICES IN TERRITORIES OF EUROPEAN OVERSEAS

KEY FIGURES

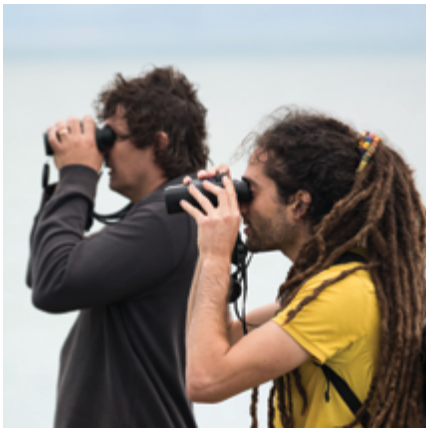
180

pairs of fairy tern nest and breed on the islets of the northwest. The total population of New Caledonia is about 200 pairs.



80%

is the reproductive failure rate. Only 2 to 3 out of 10 eggs lead to a flying young adult.



17

islets in the northwest represent the breeding area of the fairy tern since 2006.

11.5

million francs (XPF) in funding from the European Union for the Nereis project.

68

is the number of days a scientist spent on Magone Islet to monitor a breeding season of a colony of 90 individuals.

138

days dedicated to monitoring the colonies of fairy tern during the 2018 breeding season (project manager, nature rangers, scientists, volunteers).

25

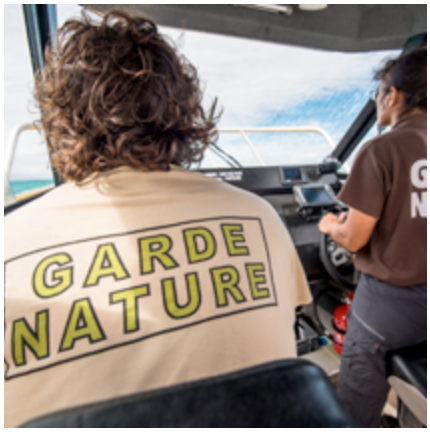
public meetings or events held in 2018 to raise awareness about the Nereis project.

2,500

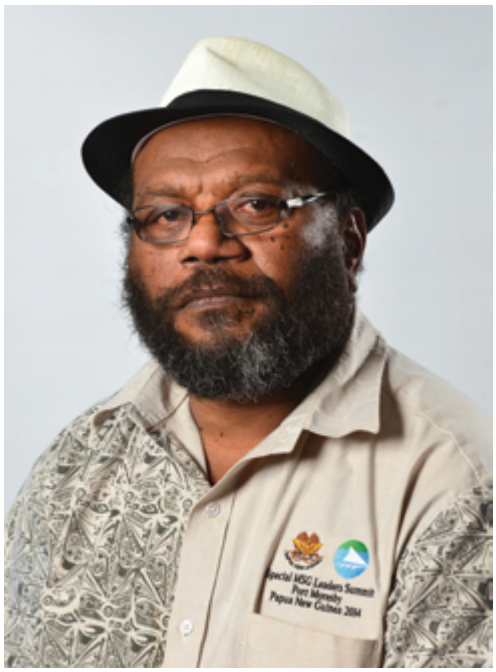
leaflets handed out to the public and partners.

700

facebook followers for the Nereis project (end 2018).



EDITORIAL



Victor Tutugoro,

2nd Vice-President of the Assembly of the North Province in charge of the environment

It is a small bird that is barely noticed when it gathers in small breeding groups on some of the islets in the Northwest. Another endemic species, 400 birds at most, of which almost nothing was known. Thanks to the support of the European Union, a short but intense program has made it possible for us to make a great deal of progress in knowledge and awareness.
Through this program, which will be continued by the province, the people of Koumac and Bwapanu (Kaala-Gomen) municipalities have also invested in the protection of the fairy tern, which is becoming an emblem for this area. The work carried out has shown that human disturbance is the main threat. It may seem unbelievable, but our mere presence in the wrong place at the wrong time compromises the survival of an entire species.
The fairy terns are like many treasures of our biodiversity, almost invisible in our daily lives, yet they are part of our exceptional millennial heritage. It was declining from our indifference, while simple actions can improve the situation, as often our ignorance is the cause of many problems, and small changes in our daily behaviors are the most effective solution.
This booklet summarizes a year of intense activity for the conservation of the small fairy tern in the Northern Province.

BEST 2.0 European program

The scientific name of the fairy tern is *Sternula nereis*, hence the name of the Nereis project. The «Nereis» project of the North Province is supported and funded by the BEST 2.0 program of the European Union. This program is dedicated to supporting European Overseas Countries and Territories (OCTs) in the promotion of biodiversity conservation, the use of natural resources and ecological services, and the ecosystem approach to climate change adaptation and mitigation. In 2017, the amount made available for the call for proposals « Small Grants 2017 » was 153 million francs (XPF).

Following the submission of a project to protect the fairy terns of the northwestern lagoon, the North Province received funding of **11.5 million francs** (XPF).

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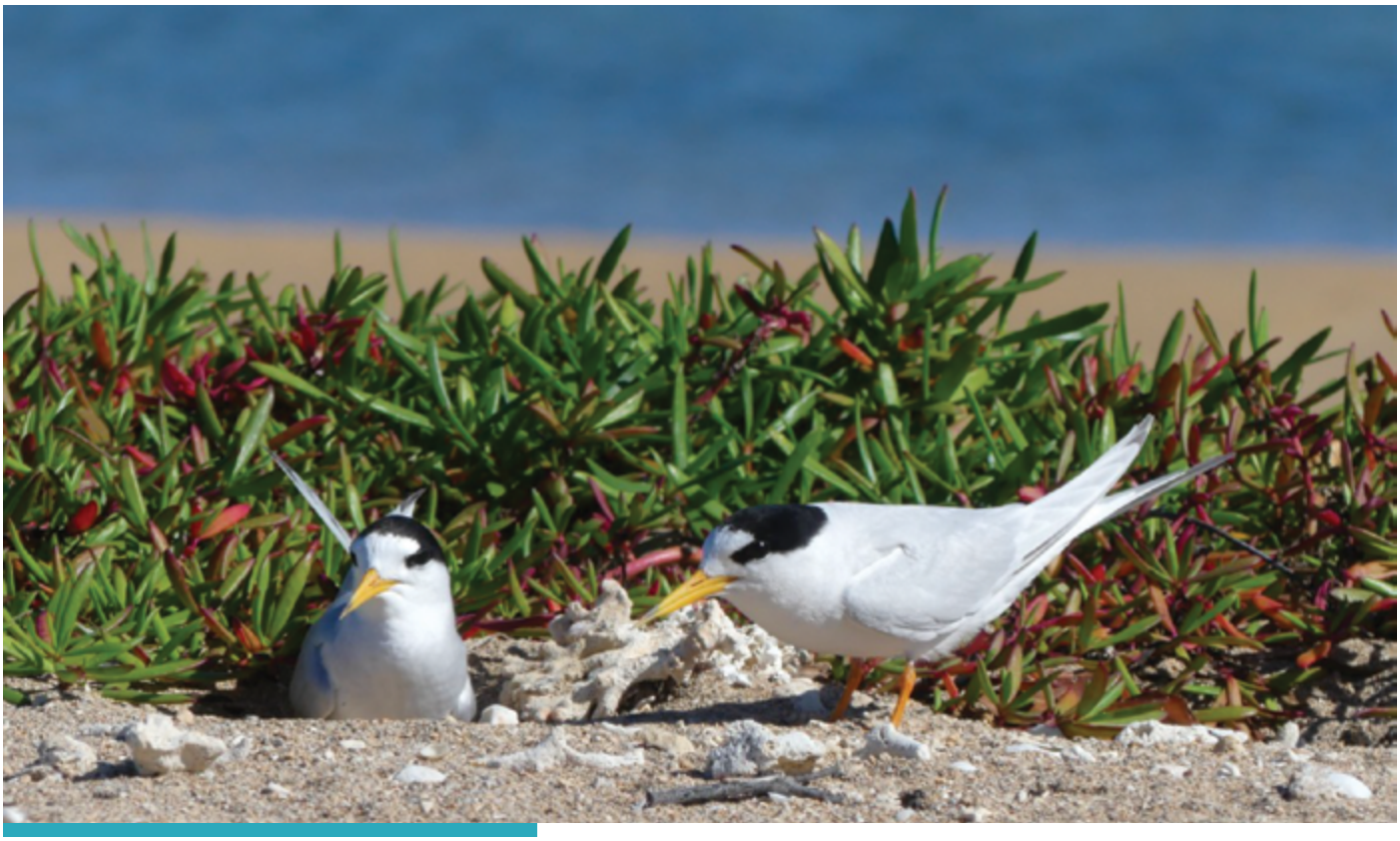
THE FAIRY TERN: A MAJOR CHALLENGE FOR THE CONSERVATION OF THE LAGOON'S BIODIVERSITY

Since January 2018, the North Province is strengthening its action plan to safeguard a seabird, the fairy tern, whose subspecies « exsul » is endemic to New Caledonia and threatened with extinction. The project, funded by the European Union, was carried out on the coastal islets of the northwest, where the largest number of this bird is found in the world. Explanations...



A pair of fairy terns.

The biodiversity of New Caledonia, together with its terrestrial and marine ecosystems, are internationally recognized as exceptional. The archipelago also harbors the second largest barrier reef in the world. It surrounds a 40,000 km² lagoon, 60% of which was classified as a World Heritage Site in 2008. This sanctuary is home to nearly 1,700 species of coastal fish, 2,000 species of mollusks and 30 species of seabirds.

Did you know?

Due to its high concentration of endemic species and high level of threats, New Caledonia is one of 34 biodiversity hotspots in the world.

A rare endangered species!

But many species are threatened with extinction. Among them is the fairy tern, a southwest Pacific bird, whose subspecies « exsul » nests only in New Caledonia. Its population is estimated at 200 breeding pairs, more than 75% of which nest on 17 islets in the region of Koumac and Bwapanu (Kaala-Gomen), making this area the most densely populated in the world for this subspecies. A few islets in the south host the rest of the population. Today, this endemic bird is almost extinct because its population size is very small and its reproductive rate extremely low. How can we improve the situation? (see pages 6-7).

180

is the number of fairy tern pairs that nest and breed on islets in the northwest.

Facts

Listed as vulnerable

Currently listed as a « vulnerable species » by the International Union for the Conservation of Nature (IUCN), the conservation status of the fairy tern is in the process of changing for « Endangered », which is the last stage before extinction.

A strong commitment and involvement of all

The North Province, in charge of the environment and nature conservation, wanted to take up this major challenge and tackle the conservation of the fairy tern, which is the emblem of the Koumac and Bwapanu (Kaala-Gomen) region, the treasure of a lagoon, and also the flagship of a strong and committed environmental policy.

« The North Province secured funding of 11.5 million francs »

To achieve this, the North Province submitted a project to the European Union and obtained, through their BEST 2.0 program (cf. box on page 8), funding of 11.5 million francs (XPF) to implement an ambitious action plan for one year.

The Nereis project ran from January 2018 to January 2019 and had several objectives:

- To better understand the living and reproductive habits of the fairy tern;
- To reduce human disturbance on the colonies;
- To reduce and even eradicate predation pressure on eggs and chicks by rodents;
- To assess the predation pressure by other birds;
- To monitor reproduction;
- To raise awareness among lagoon users about the conservation of the fairy terns;
- To assess and promote the project at the local and regional level.

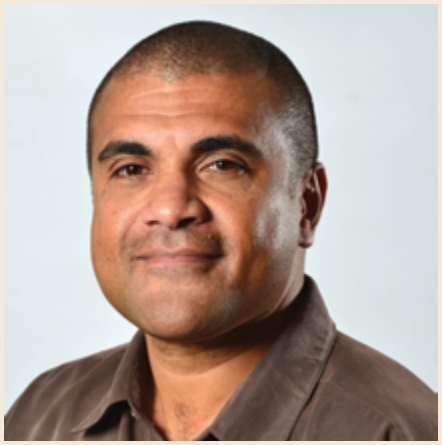
Magone Islet, Koumac municipality.

An expert eye

« In conservation ecology, concentrating human, logistical and financial resources on a single species, such as the fairy tern, may seem surprising, but it makes sense when dealing with so-called «umbrella» species, which is the case of the fairy tern. Because they occupy large territories for nesting and feeding and have very strict ecological requirements, it is necessary, in order to protect them efficiently, to preserve their habitat, in this case, their breeding islets. As a result, their protection generates many beneficial cascading effects on all the other species that live on these islets. »

Eric Vidal, IRD Research Director

3 questions to



Dominique Levy
Director

Economic Development and Environment Directorate (DDEE)

What assessment can you make after a year of implementation of the Nereis project?
Very positive. First, we have improved our knowledge of the ecology of this bird. A total of nearly 140 man-days were devoted to field observations by our agents, scientists, and volunteers. Better knowledge makes it possible to implement better conservation strategies.

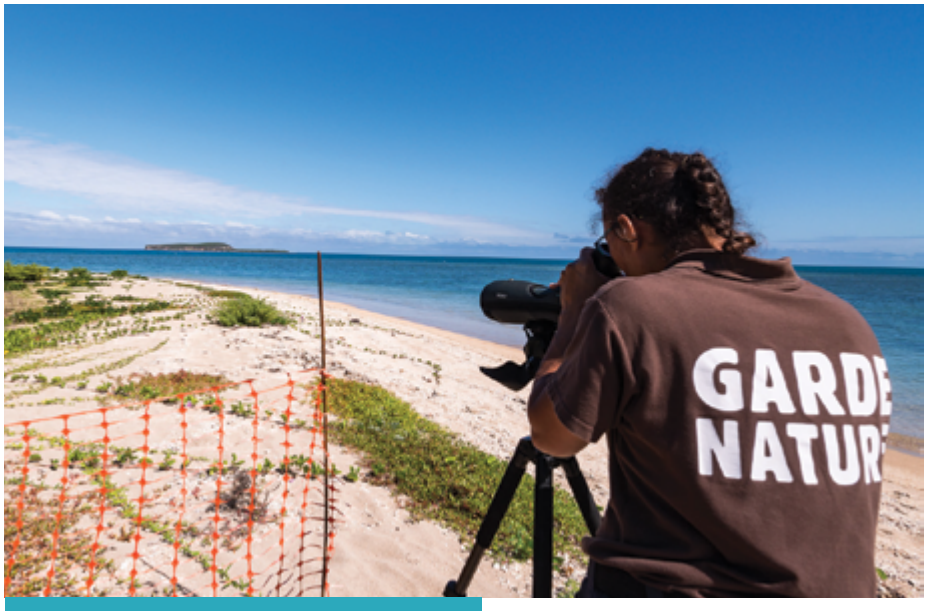
Another reason for satisfaction?
Yes, the mobilization of the population of Koumac and Bwapanu (Kaala-Gomen). We presented the « Nereis ambassador » project during public meetings and events. Municipalities, environmental and water-sport associations have fully joined and supported us at different levels. Several schools have carried out very beautiful educational projects. In short, the local population is well aware and has become widely involved, which is an essential factor for the success of the project.

What will happen after this first year?
Saving an endangered species is a long process that requires constant efforts by all. Our objective will be achieved when the fairy tern population in the northwest islets becomes much larger and its breeding dynamics is more positive. The North Province will continue to leverage resources each year, particularly during the critical breeding period, and will continue to play a leading role, alongside partners and the population.

A SEABIRD UNDER STRICT SURVEILLANCE

During the critical breeding period, a scientist followed the fairy tern colony on Magone Islet for two months. The nature rangers followed those of Cayao Islet and the rest of the lagoon. They collected valuable information, including threats that lead to significant reproductive failure. Overview...

Pascal Villard is a skilled ornithologist and a « Robinson » scientist. Doctor in Animal Ecology, he was mandated by the North Province to monitor the fairy tern colony on Magone Islet. Between June and October 2018, at the peak of the breeding season, the expert set up a discreet camp on the islet, where one of the largest colonies of terns had made their home this year. During 68 days he was a privileged observer of the abundant life of this coral islet, located 7 kilometers off Koumac.
Sheltered by the vegetation, the scientist examined, from morning to evening, all the facts and gestures of one of the rarest seabirds in New Caledonia, as well as those of its winged and legged neighbors, who were more or less benevolent. His supplies were supervised and ensured by the nature rangers.



Remote counting and observation of a colony, Magone Islet.

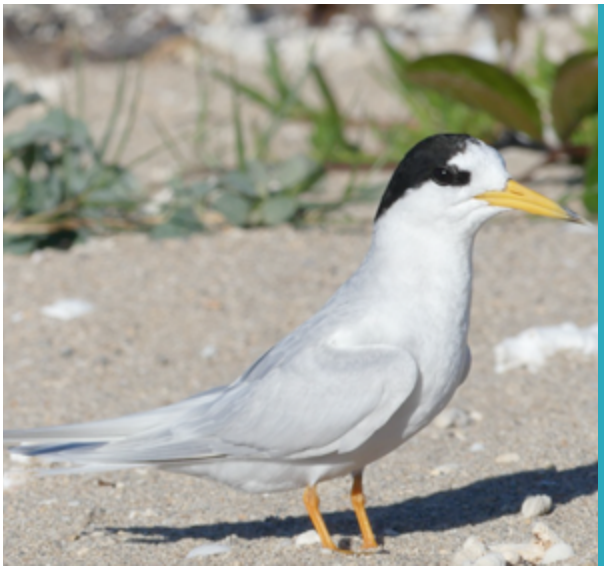
A close look at reproduction

The first fairy tern surveys in the Northern Province were carried out in 2006. For over a decade, COS[1] and the North Province, who had been monitoring populations on an intermittent basis, warned on the seabird reproductive failure.
« *With the BEST program, the North Province wished to implement a strategy to monitor a full reproduction cycle. This is a first in New Caledonia, and an essential approach to better understand what is happening* » explains Jean-Jérôme Cassan, adjunct at the Environmental Impact and Conservation Department.

Take-off

The Magone colony counted up to 90 pairs of fairy tern occupying a breeding area of 150 m². « *Since the pairs were not synchronous in mating, I was able to observe all the phases of reproduction at the same time. Between egg laying and the first flight of a young, it takes 47 to 48 days. This is the period when breeding pairs and their offspring are the most vulnerable. There are also many neighborhood conflicts linked to the promiscuity of nests* » adds Pascal Villard.

[1] Caledonian Ornithological Society.



Identity card

The fairy tern of New Caledonia

Scientific name: *Sterna nereis* ssp. *exsul.*
Geographical distribution: About fifteen islets in the northwest and about ten in the south.
Population in 2018: 200 pairs scattered in small colonies of a few dozen individuals.
IUCN status: Vulnerable.
Adult morphological characteristics (breeding plumage): Black neck and cap, dark brown eyes, light grey back and wings, the rest of the body is white.
Diet: Piscivore (small fish and squids).
Nesting period: From May to September in the North Province.

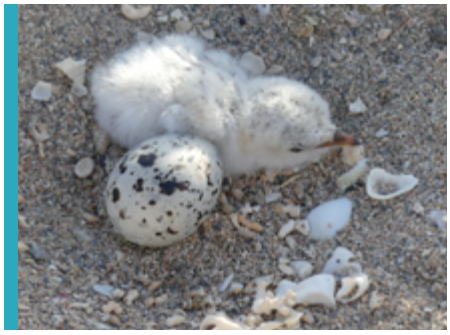
Repeated failures

Of the 54 eggs laid by the colony, the scientist counted a total of 35 failures. Only 8 eggs resulted in flying young adults. The fate of 11 eggs could not be established due to the lack of individualized tagging. « *These results set the reproductive failure rate at a very high level, in the order of 80%. This figure is not very compatible with the survival of the subspecies exsul in the short and medium term unless we reverse the trend. One of the best ways to do this is to drastically reduce threats* » says Jonathan Coll, Nereis Project Manager.

« I was the guardian of the islet for more than two months. The deployment of protective nets by rangers around the colony, and the awareness campaign informing boaters of the critical period and sites reduced disturbance to the colony. But there have been far too many more. The slightest engine noise, the slamming of objects on board the boats or people passing nearby, caused the entire colony to flush. A disaster was narrowly averted the day we intercepted a dog that had just been released and was on the outskirts of the colony ».

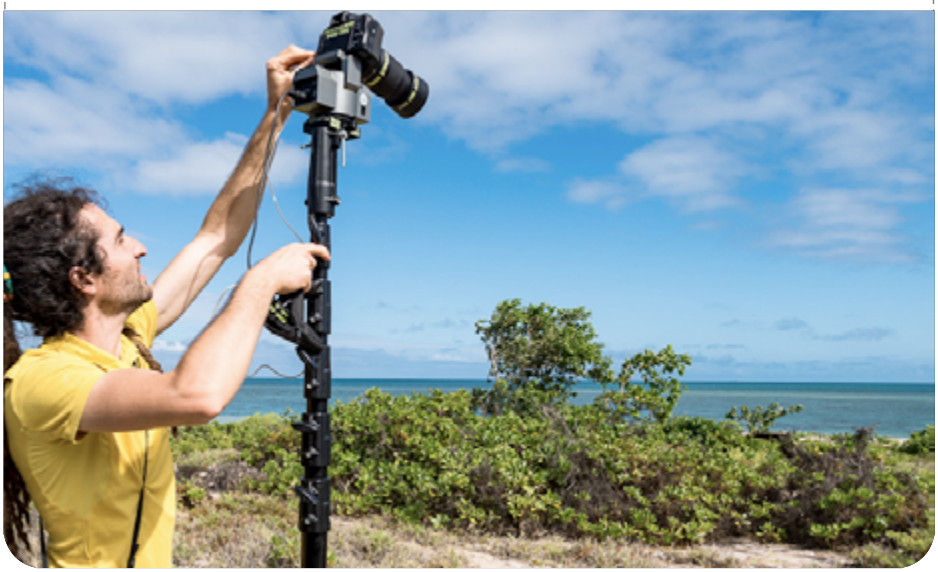
« Of the 54 eggs laid, only 8 resulted in a flying young adult »

However, the challenge of this unprecedented monitoring was also to reveal the causes of such a reproductive failure. For Pascal Villard, several factors come into play, but the one that has the greatest impact is undoubtedly human disturbance.



New technologies in support

As part of the Nereis project, the North Province acquired a mast and photographic equipment to count breeding terns in photographs and to keep away from the colonies. This tool has proved to be very interesting because, in addition to minimizing disturbance, the comparison of data shows that counting using the photo device is more accurate in most cases. In addition, rangers and some volunteers were trained in the use of a new mobile application, created specifically by the North Province IT department. It is dedicated to seabirds in New Caledonia and allows data on terns to be recorded directly in the field so that trends over several years can be obtained in the future.



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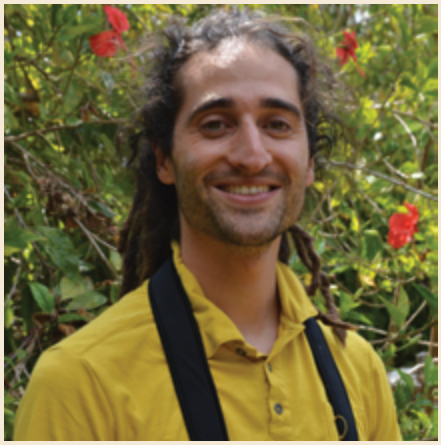


Jonathan Coll
Nereis project manager, North Province

During the 2018 season, you supervised the monitoring of the fairy tern colonies. How are they doing?
The number of birds is stable, which is encouraging. Every week of the breeding season, we visited the northwest islets with the rangers and we were able to make a global assessment of the situation. Two islets, Magone and Cayao, hosted colonies, and out of the one hundred eggs laid on these two islets, only 16 to 19 young adults flew away. The reproductive failure rate is 80%.

Why such a failure rate?
The natural reproductive success of the fairy tern is relatively low, but human disturbance makes the situation even worse. For example, on Pouh Islet, we observed a colony settling for two consecutive weeks. But seven days later, the terns were gone. On the same day, while searching for evidence on the islet, we discovered a high density of dog tracks. The latter probably disturbed the colony and caused the failure of its establishment.

Can we still save the fairy tern?
Yes, absolutely, particularly by maintaining our efforts to raise awareness among lagoon users, who must keep following our recommendations, and refrain from landing and bringing dogs on the breeding islets.

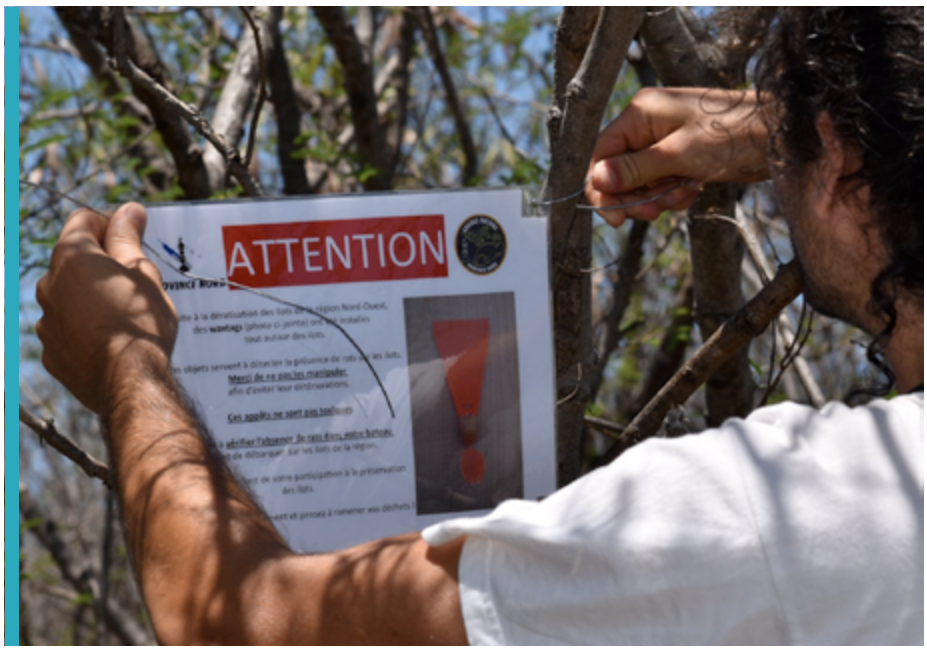
TOGETHER WE CAN ACT AND MITIGATE THREATS

Rodent predation and human disturbance are the factors most frequently associated with reproductive failure of the fairy terns. Concrete measures have been taken to assess and mitigate these threats. Overview...

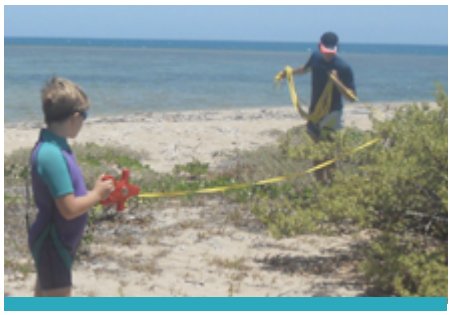
Rodents (rats, mice, field mice), which are illegal companions of navigators, have colonized 80% of the world's islands. As they became invasive, they have contributed to the extermination of many local plant and animal species. This is why the islets of the northwestern coastal zone were subject to large-scale derating campaigns, conducted by COS between 2008 and 2012, with the support of the North Province and the Packard Foundation. Six years after the last derating operation, what is the situation? Do rodents still occur on some islets?

A tooth for a tooth

To conduct the investigation, in October, *« Nereis brigades »* deployed non-toxic baits on 11 islets[3] in the northwest. «We followed a precise protocol for deploying a network of more than 350 baits made of peanut-flavored wax and called *« wax tags »*, explains Jonathan Coll. Rats, attracted by the smell, bite the wax and leave teeth marks. *« We plan to check the baits before the next breeding season and will implement a rat trapping strategy if there is any sign of their presence. However, we are optimistic because no evidence of predation on eggs or chicks, by rats, was observed during the breeding season ».*



Placing an information sign where a non-toxic rat bait is located.



The baits are arranged according to a precise protocol and a pre-designed network by young volunteers from the sailing school trained in this technique.

To avoid re-infestations, lagoon users must be careful not to transport illegal rodents.

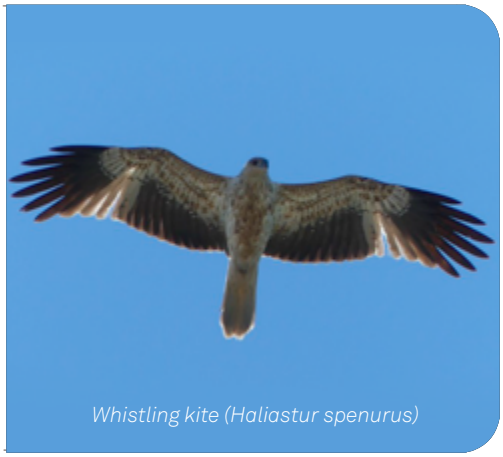
358

« wax tags » deployed to detect signs of rodents on 11 islets in the northwest.

[3] The rangers and the coordinator of the Nereis project were responsible for 9 islets. Two Koumac partners, the Nîxûmwâk environmental association and the sailing school at the Pandop nautical base, deployed baits a the two remaining islets.

On the tracks of predatory birds

Natural predators are a low threat and their attacks do not compromise the reproduction of the fairy tern, as long as the colonies are not disturbed. This is the conclusion of ornithologist Pascal Villard's observations. After two months of scrutinizing the tern colonies on Magone Islet, the expert identified two in-flight attacks of adult tern by a peregrine falcon, the capture of a chick and a young flying adult by a whistling kite and one suspected nighttime egg pilferage by a buff-banded rail. This level of predation is part of the natural dynamics.



Whistling kite (Haliastur spenurus)

Do not disturb

Since rodents cannot be incriminated at this time, the North Province has focused its efforts on decreasing human disturbance. *« Breeding is a period when terns are particularly sensitive and vulnerable. Human landings are the primary cause of reproductive failure. Even worse, a single dog can cause a real massacre »* warns Jean-Jérôme Cassan of the DDEE. Hence, pairs of terns that are disturbed during nesting abandon their nests and the brood does not survive. Deprived of parental protection, eggs and chicks are rapidly burned by the sun or are at the mercy of predators.

« Pairs disturbed during nesting abandon their nests and the brood does not survive »

To alleviate this pressure, the priority was to raise awareness among lagoon users about the positive impact of seemingly insignificant practices. For example, not landing on certain islets during the breeding season or abiding withareasthatareprohibitedorreported. *« We deployed information and protection tools, and conducted a communication campaign before, during and after the breeding season to inform the residents of the North Province on the procedure, particularly users of the lagoon »* says Jonathan Coll. Large masts, indicating that people should not land, will be installed next season.

« Our main objective is not to prohibit or punish, but to convince people that by being vigilant and responsible, everyone can contribute to rescue an endemic species that is part of our natural heritage. For the fairy tern, minor changes to our behavior can save a species on the verge of extinction. The municipalities of Koumac and Bwapanu (Kaala-Gomen) are involved in this initiative and fully support it. They adopted the little fairy tern as an emblem of their involvement in natural heritage conservation » says Jean-Jérôme Cassan.

The right behavior during the breeding season

I keep away from the islet

My dog stays at home

I abide by the protecting nets

Key figures

1 Facebook page Nereis project

3 Informative signs: at the southern entrance of Koumac (4x3m), at the entrance and exit of Bwapanu (Kaala-Gomen)

1,000 stickers handed out

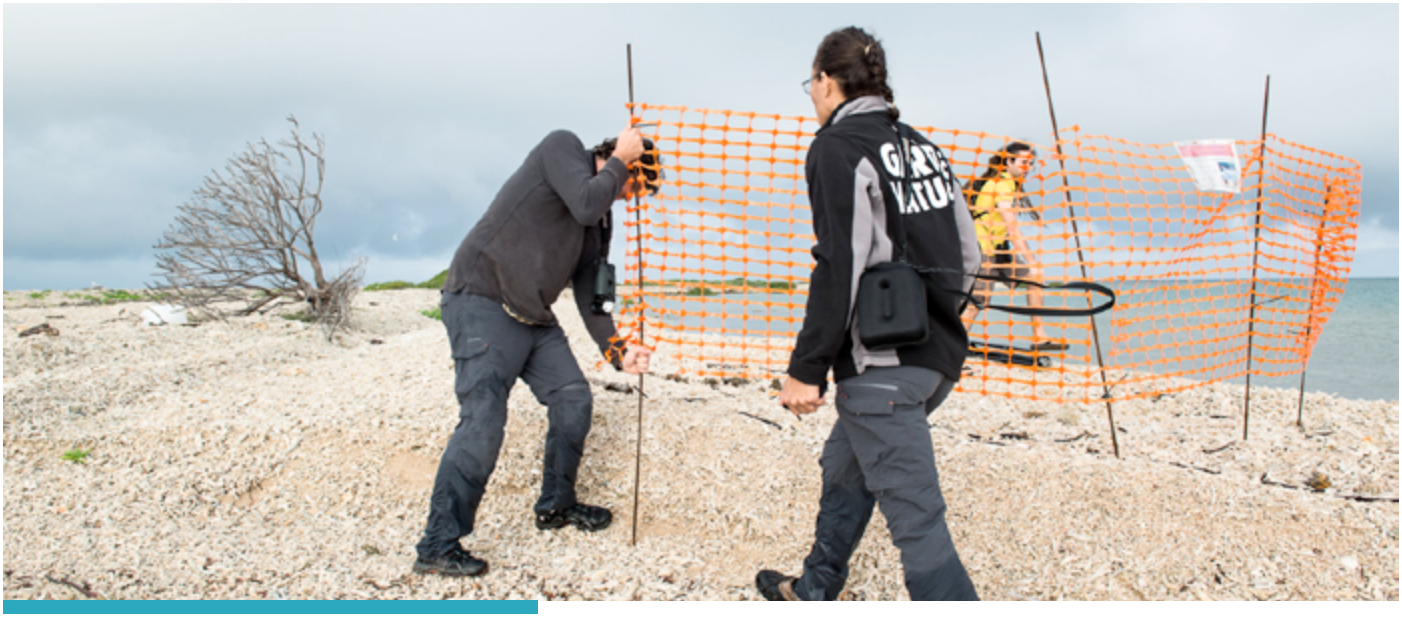
50 posters displayed in administrative and public places

2,500 leaflets handed out to the local population

3 days of counting and monitoring of colonies open to the public

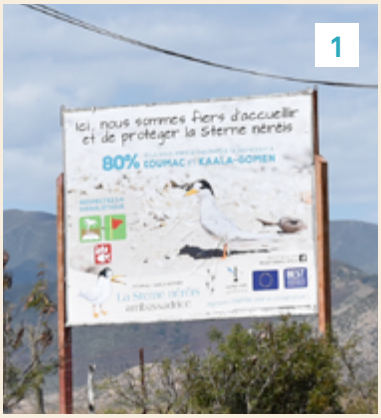
3 public events: the science festival, the Koumac fair, 24 hours of innovation

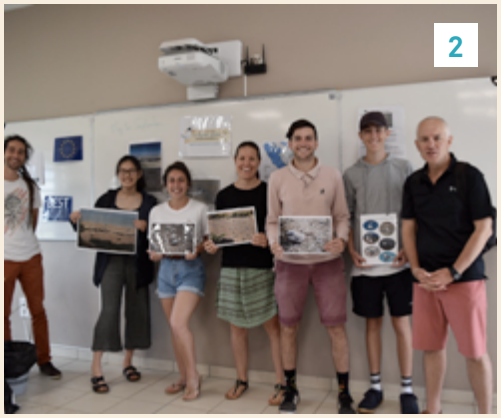
17 Actions in schools of the North Province

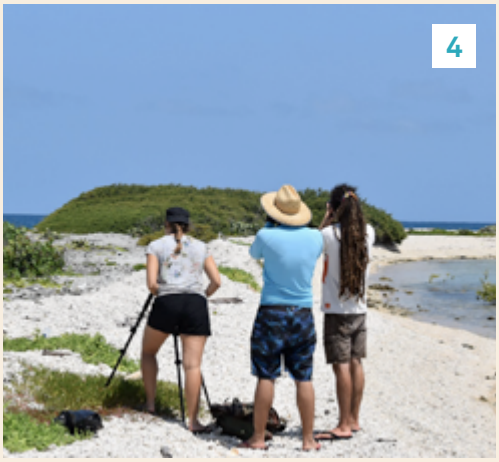


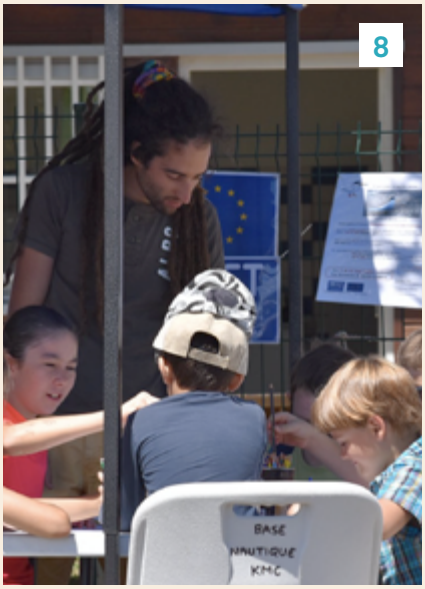
The rangers set up protective nets to signal an area whose approach must be avoided at all times.

A look back at the mobilization of the population of Koumac and Bwapanu (Kaala-Gomen), informing partners, raising public awareness, and educational projects.









1. Information and awareness display panel erected at the entrance to Koumac in August 2018.
2. Science festival, Michel Rocard High School (Pouembout), October 2-3.
3. Presentation of the project and the scale models made by the students during the Koumac fair, September 21-23.
4. Counting nests with volunteers on Cayao Islet.
5. Event on the tern's secrets at the Pagou tribe, in partnership with the Koumac media library.
6. Raising awareness at Kaala-Gomen primary school, building a scale model of Cayao Islet.
7. Training on the identification and counting of the fairy tern at the Koumac media library, September 6, 2018.
8. Raising awareness at the sailing school during the event « Femmes à la barre » (Women at the helm), September 1, 2018.

FEEDBACK

Jean-Jérôme Cassan,
Adjunct at the Environmental Impact and Conservation Department of the North Province

« We have intensified information meetings, handed out leaflets, displayed posters in public places, rallied many partners, participated in events such as the science festival and the Koumac fair, and supported very beautiful educational projects. In total, more than a hundred hours of exchanges, information, and explanation. The result is very positive because, on the ground, there is a growing awareness, a strong enthusiasm, and the feeling that the fairy tern is becoming an emblem of the region. These awareness-raising efforts will have to be continued, and the beneficial effects will take time, but the 2018 results are positive ».

Amandine Aiglin,
President of the association Nîxumwâk Environment in Koumac

« As soon as the Nereis project was presented to us, we wanted to collaborate with the North Province. The volunteers of the association were trained in bird counting and participated in colony monitoring operations. We have also systematically communicated all the information to our network. This project is very important for the conservation of our lagoon's biodiversity. It provides the residents of Koumac and Kaala-Gomen with a better understanding of the issues and importance of protecting this highly vulnerable endemic bird as well as engaging in the right behaviors ».

HIGHLIGHTS 2018

May

Start of the fairy tern breeding season

Public meeting at the Koumac Town Hall to present the project

Colonies settle at Cayao and then Magone. Setting up protective nets in October

June

Public meeting at the Kaala-Gomen Town Hall to present the project

July

Photo exhibition at the Koumac Music Conservatory

Communication at the Koumac media library during the week of the underwater world

August

Drawing contest at the Koumac media library

Meeting for the presentation of the project to the Council of Elders, Boarat Chiefdom

September

Training of volunteers in bird counting

Event on the website « our planet reviewed »

Event at the Pagou tribe

Public meeting at RSMA

Koumac fair

October

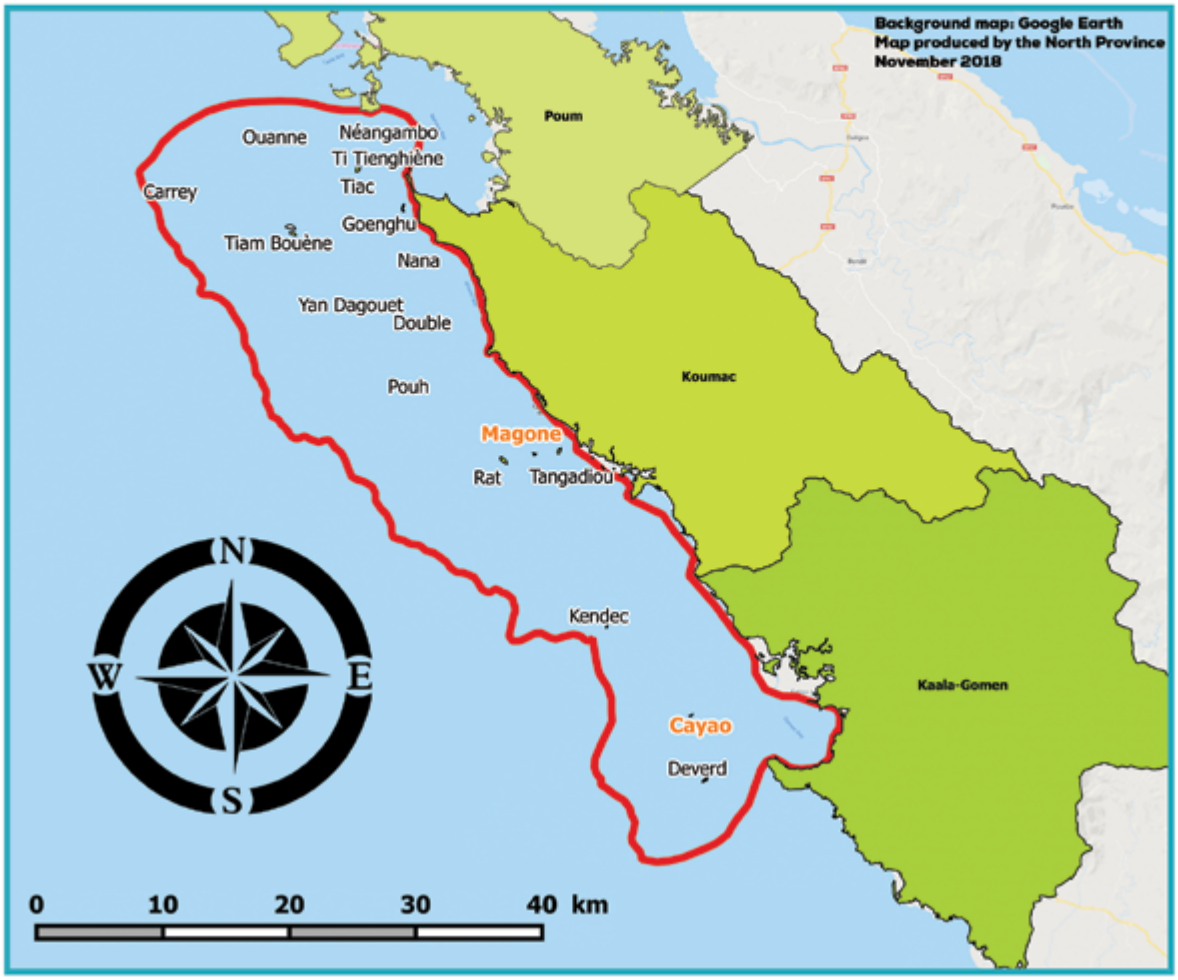
End of the breeding season

Use of non-toxic bait to detect the presence or absence of rats

Science festival at Pouembout high school

MAP OF THE ZICO AREA IN THE NORTHWEST

FAIRY TERN BREEDING SEASON 2018



Poum
Koumac
Kaala-Gomen
Breeding islets 2018
ZICO islets
ZICO northwest boundaries

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