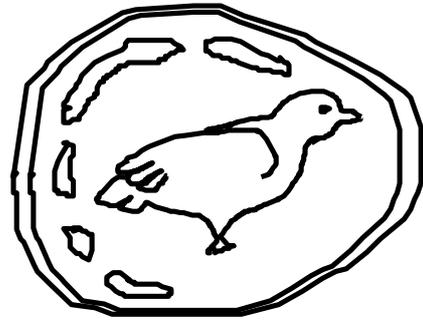


Société d'Ornithologie de Polynésie
MANU



Project Tuttururu : Follow-up Final Report

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Photo Denis Saulnier

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1. Introduction

In order to assess the situation of the ‘Tutururu’ or Polynesian ground-dove (*Gallicolumba erythroptera*), a critically endangered Dove of French Polynesia, two expeditions from Makemo and Mangareva islands allowed the visit of eight islands in the Tuamotu Archipelago, including five of them where the species was observed in 1922-23. Data were also collected on the Endangered Tuamotu sandpiper (*Prosobonia cancellata*) and on introduced predators as well. Single remaining populations of Polynesian Ground-dove and Tuamotu sandpiper were found at Tenararo, the only island with no introduced predators, as opposed to the 7 other visited islands (Blanvillain et al, in press).

The follow-up project proposed to initiate several conservation actions in collaboration with the Society which exploit the copra in the areas, for those two threatened bird species such as:

- Obtain through an eradication campaign at Vahanga (250 ha), an additional predator-free island in the areas, suitable at more or less short term for translocation of Polynesian ground dove and possibly for natural re-colonization by Tuamotu sandpiper (This island is at about 7 km from Tenararo);
- Protect Tenararo from human disturbance through the establishment of permanent guardian at Vahanga, and through the awareness of the local population, progressively trained to avoid rat introduction in an island and to respect its environment while exploiting copra through the rat eradication campaign conducted at Vahanga;
- Improve the knowledges on the reproductive pattern of the species and its behaviours, including its diet;
- Establish a captive security Polynesian ground dove population at Tahiti;
- Perform additional surveys;
- Through the publication of news about the Tutururu in the local press, stimulate further conservation actions at a local level i.e. the rat eradication in all the islands of the areas (i.e. Vahanga, Tenania and Maturei Vavao) and the final translocation of Ground-dove.

2. Methodology and results

2.1. Island protection

Copra farmers were present on Tenania all year round during this period, more for protect SCGA values than for bird protection. However, the regular implication of 15 copra farmers on Vahanga during the four rat eradication campaigns probably contributed to the global understanding of the impact of rats and other alien species on island native birds for the Acteon Group community. In the same way, this implication improved their knowledge on endemic species of birds and their importance for the international community.

2.2. Bird and predator survey

On Vahanga

Birds:

A small population of Ground dove was present on Vahanga during the study period:

- two males were identified in September-December 2000 by the seven peoples working on the island during a total of 16 days. The four farmers working for the eradication observed a female in December.

- Two solitary males and one solitary female as well as one pair of adult birds and one pair composed of one adult female and one immature male were observed during the second campaign by seven peoples during an 8 days period in July 2001. It was difficult to establish if this was related to the decrease of rodent density, a seasonal pattern of colonisation from Tenararo, or a seasonal decrease of bird's cryptic behaviour.

- In October 2002, no Tukururu or Titi were observed in 5 hours (and one night). But two Atoll fruit doves (*Ptilinopus coralensis*) were observed.

Predators:

The only introduced predator presents on Vahanga was the kiore (*Rattus exulans*), results on its capture are presented with the eradication attempt.

On Tenararo

Birds:

4 hours spent on 2 October 2000 allowed us (four observers) to see 13 groups of Tukururu for a total of 18 birds: four solitary females and one single male in the large motu, one female, two groups of two males together, one solitary female, two males and one female, one pair, one female and one male in the small islets areas.

4 hours spent on 21 July 2001 with three different observers allowed us to contact 11 groups of Tukururu for a total of 15 birds : one male, one female, one juvenile chased by an second one arrived latter, one male with two females, one male and one female, one juvenile, one male, one juvenile, one male, one female, one male i.e. 4 juveniles, 6 males and 5 females; 8 solitary birds, one pair, one trio and two birds chasing each other.

One and half days, 9 hours spent on 27 and 28 October 2002, allowed us to census:

- 35 Tukururu (16 females, 19 males, no juvenile)
- 341 Titi
- 35 Atoll Fruit Dove

An estimation of 50 (36-70) Tukururu was established for Tenararo.

Predators :

None of the 8 snap traps set during the night caught rats

On Maturei Vavao

The island was explored during two consecutive days, including one night.

Only two Titi were observed during this survey

One rat was also observed during the survey (species unknown) but none were observed during night transects.

On Rangiroa

A ten days expedition to Rangiroa island allowed us to rediscover Tukururu in two islets separated by one kilometre: 4 males were observed. The two islets were separated by one islet infested by rats. No rat was found in the two small islets.

The coloration of the gray patterns on the side of the male's head was lighter, suggesting that they could be different sub-species. The blue lagoon area (a touristic place including a lot of

Vini peruviana, usually threatened by ship rats, *Rattus rattus*) was also screened for Ground dove without success.

2.3. Rodent Eradication attempt on Vahanga

Those campaigns were undertaken with the participation of 5 young Tuamotu copra farmers and one adult from the SSGA paid by the French Polynesian government through different forms of low cost/granted employments given to SOP.

September to December 2000: first poisoning campaign (Caroline Blanvillain, Ray Pierce, Emma Craig, Jean Mahiti, Edmond Teano, Tonio Moearo, Martial Temano)

The island was cut in 214 lines every 25 (n = 63) or 50 (n = 151) meters and on each line a total of 1609 stations every 25 (n = 645) or 50 meters (n = 964) were placed.

Between 70 to 280 grams of poison baits were spread on the 1609 bait stations (the size of the island is of about 250 ha) and renewed according to bait consumption.

Poison was perched at one meter high because of hermit crabs that were present in an impressive amount in this island and eaten most of the baits despite all our efforts

A total of 465 kg of poison were spread in the island (less than 2 kg per hectare) during this period.

25 rats per 100 nights were caught during this period (about 500 nights of capture were performed).

January 2001: second poisoning campaign (Teivi Tehano, Joachim Kapihura, Ben Ami)

Three copra farmers, all SSCA volunteers, were supposed to renew bait stations and spread 500 kg of poison in all the stations of the island. They spread only 300 kg because 200 kg of intact poison baits were found at our arrival for the third campaign

July 2001: Third poisoning campaign (Caroline Blanvillain, Ray Pierce, Denis Saulnier, Rafael Itihura, Jean Mahiti, Edmond Teano, Norbert Teahuotaga)

With the participation of four Tuamotu copra farmers, between 12 and 19 July, poison was spread on 264 new lines (229 at 25 meters of interval and 35 at 50 meters). On those lines, poison baits were spread every 25 meters for a total of 2904 stations and 580 kg. The precedent lines were no more apparent.

About 14 rats per 100 nights (about 200 trap nights) were caught during this period.

September 2001 December 2001: fourth eradication campaign (Caroline Blanvillain, Rafael Itihura, Justin Tefau, Jean Mahiti, Edmond Teano, Norbert Teahuotaga)

200 gr of poison were spread every 25 meters in a total of 2904 bait stations and about 600 kg of poison

- Poison was spread in 58 lines of the first part of the island between 5-8 October
- Poison was spread in the 69 lines of the second part of the island (Motu areas) between 9-10 October
- Poison was spread in 57 lines of the big motu (third areas) between 11 and 31 October and in lines 59-75 between 8 - 11 November

- Poison was spread in 36 lines of the fourth areas between 11-31 October
- Between 11-25 November: lack of poison, some old poison remaining from first campaign was taken off some stations and distributed between the missing lines
- New poison arrived on 6 December
- Poison was spread in line 1-27 of the fourth areas between 6 and 7 December
- It was spread again all over the island between 6-9 December by the rest of the staff

49 rats were caught during 228 trap nights (21 rats for 100 trap nights) all around the island, with some repartition disparities.

22 October 2002 – 30 October 2002: control of the situation on Vahanga (Caroline Blanvillai, Chantal Serra, Claude Serra, Jean-François Buteau)

Unfortunately, the persistence of rats on Vahanga was evident on the Village areas and in one night four rats were seen by the four observers and 5 rats on 8 trap night were caught around us, in the village areas.

2.4. Constitution of Polynesian Ground-dove captive population

Thank to the help of the CEPA organisation, this grant allowed us to train Peva Levy at Bristol Zoological park (a park retained for its success in breeding Ground Dove) during one journey of one week in June 2000

In October 2002 two pairs of ground dove were captured on Tenararo and transferred on Tahiti in order to establish the captive population. Details of this operation are presented in Blanvillain et al, 2002. The French Polynesian Government funded this operation but confidentiality was asked.

The birds are held in captivity at Peva Levy's house.

2.5. Bird study and publications

- an article was written on the Tukururu (Blanvillain et al 2002)
- an article is in preparation on the Titi (Pierce and Blanvillain in prep)
- a book on French Polynesian bird is in preparation including Titi and Tukururu data (Blanvillain and Saulnier in preparation, Téthys Edition)

3. Discussion

This work allowed SOP to re-discover Tukururu population on Rangiroa, this population was supposed to be eradicated by strong waves in nineteen's (P. Siu, pers communication). However, only males were found. This let less hope for the future survival of this small population.

Tukururu were also found on regular basis on Vahanga. Is it a permanent population or birds landing from Tenararo ? Banding the birds on Tenararo and Vahanga may one day solve this question

The rodent eradication was a failure for several reasons, by decreasing importance we have:

- We were unable to raise complementary funds for reinforce the eradication attempts. As a consequence, the amount of poison available was not sufficient and during the fourth eradication attempts, end of poison and money was reached by SOP. Moreover, granted jobs

were of too short duration during the first attempt, the three guys of the second attempts were voluntaries, and probably lacked of motivation. The duration of the granted job of the third and fourth attempts was good but the money and the poison run out

- The lack of knowledge about one crucial point: the amount of poison necessary per hectare for eradicates rats on an island. This simple information was kept secret in all articles consulted and the experts contacted by the project leader, even Ray Pierce, were unable to communicate this information. As a consequence, it was very difficult to anticipate the real cost of the project and the amount of poison necessary.

- The lack of experience of the project leader in this area: only one attempt with enough poison and enough personal should have been better than those four successive insufficient attempts. Here again, the lack of help, advice from international community was frustrating because we tried really hard to succeed this eradication

- The amount of poison was probably insufficient (about 2 kg per hectares each time) and the amazing amount of hermit crabs resulted in the fact that they probably eaten most baits despite the solution consisting to perch baits on trees.

4. Recommendations

Establish the amount of poison necessary per hectare to eradicate the rodent before any other attempt.

Initiate Eradication only if sufficient money is available.

If possible remove as much as possible Hermit crabs before any attempts (temporarily).

5. Proposal

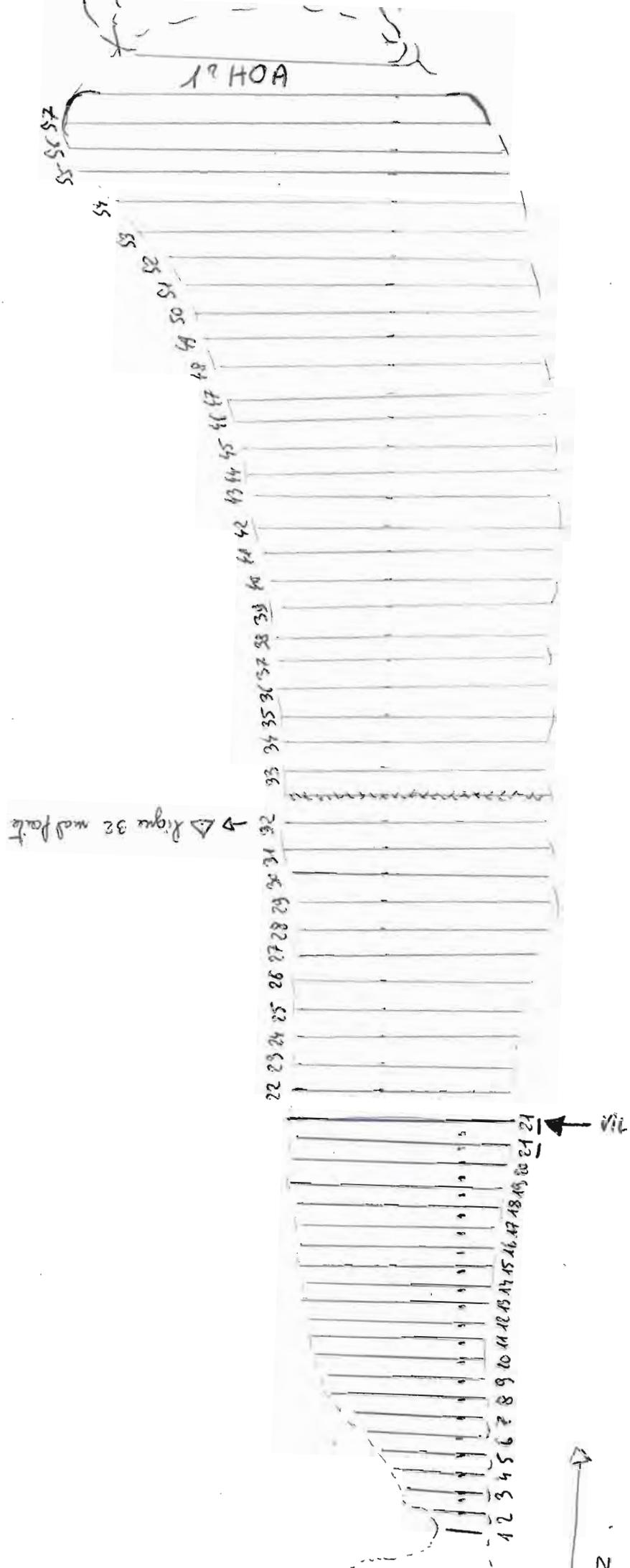
A proposition (50 pages) was written near European community in order to raise funds to perform the eradication attempt in better conditions and several sustainable development activities with the SSGA. It was unfortunately rejected.

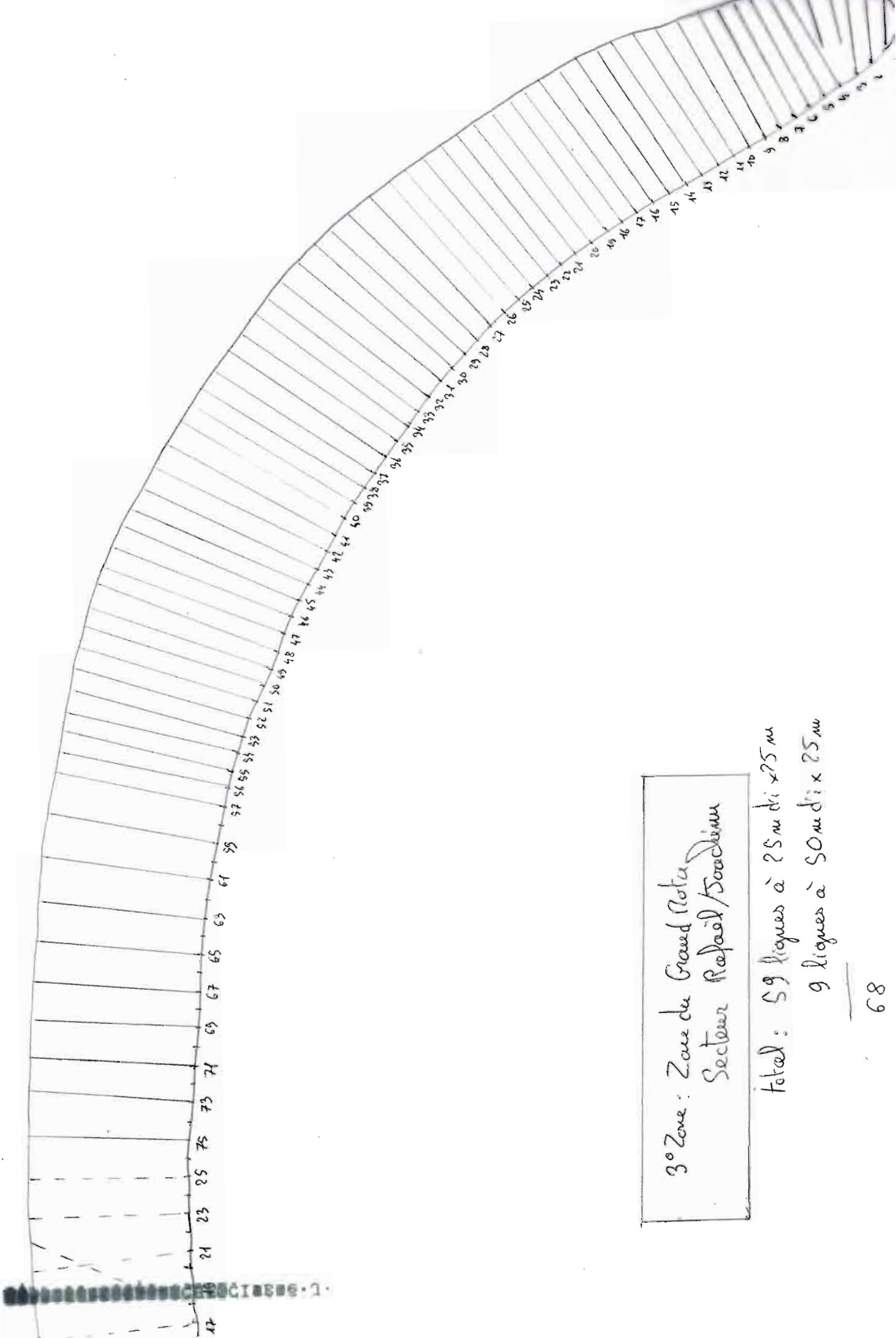
6. Acknowledgement

We would like to acknowledge the BP Conservation Program for its financial support, the Government of French Polynesia for its participation to young salaries and for the last expedition, the SCGA for its logistic and human support, and particularly father Joël Aumeran which support this project deeply, All the SOP voluntaries and people that participated to those expeditions, CEPA and Bristol Zoological park for its help for the training of Peva Levy, and probably many other peoples.

1^{re} Zone: Notu des Village

Total: 58 lignes à 25m d'intervalle x 25m





3^o Zone : Zone du Grand Noyer
 Secteur Raphaël / Soudan

total : 59 lignes à 25m di x 25m
 9 lignes à 50m di x 25m

4^o Zone : Zone du Grand Pota
 Secteur Edmae/Verbert

total : 43 lignes à 25 m di x 25 m
 26 lignes à 50 m di x 25 m
69

