GRPFOI
Les écosystèmes se restaurent

Ecological Effects of the Invasive Common Agama (Agama Agama) on Endemic and Native Comorian Geckos, Skinks and Iguana: Implications for their Conservation

May to october 2024

Introduction

During the months of May to october 2024, we conducted fieldworks for the project "Effects of biological invasions on the spatial distributions and population sizes of native and endemic reptiles of the Comoros". The fieldworks are aimed at:

(1) Collecting presence and absence data to predict the habitat suitability and spatial distribution of Agamas in the Grande Comoro Island.
(2) Collecting presence and absence data to predict the habitat suitability and spatial distribution of endemic and native reptiles of the island at a landscape scale.
(3) Assessing the effects of the invasion of the agama and the risks of extinction of endemic species in the Comoros.

Specifically, we prospected different localities and sites of the islands (residential zone, agroforest, forest, coastal zone), in sunny or partially cloudy weather, for the collection of ecological and climatic data, topographic, as well as data on the presence and absence of agamas and other native and endemic reptiles of the Comoros through different methods including the line transect method and sight survey. This data will subsequently be used to assess:

- Population sizes.
- Geographic range and limit of each species.

- ecological niches of Comoros lizards and their overlaps with the common agama.

1. Executive review of activities

From May to october, 29 localities and sites are prospected for reptile presences and absences data collection on the Grande Comoro Island: The Tables 1 succinctly summarizes the sites and localities prospected.

Tableau 1 : Activities carried out from May to october 2024

Objective	**Activities**	**Sites and localities**
Predict the spatial distribution of Agama and native and endemic reptiles on a landscape scale and study the effects of the Agama invasion and the risks of extinction of endemic species in the Comoros	Collection of data on the presence and absence of reptiles in different sites on the islands of Grande Comore	Ouhozi
		Hamboda
		Bahani
		Hahaya
		Oussivo
		Mbangani
		Diboini
		Itsandra
		Ntsoudjini
		Maoueni
		Ivembeni
		Djomani
		Chamlé
		Mdé, Vouvouni
		Dzahani Tsidjé
		Mohoro
		Bweni, Koimbani
		Dzahani Tsidjé
		Selea
		Moroni- Yako
		Madjoma dimani

		Koimbani Oichili
		Mutsamdou Oichili
		Ndzouani Mbadjini
		Bandamadji Domba
		Djoumoichongo
		Ouellah-Hamahamet,
		Hadjambou Hamahamet
		Mitsoudjé
Make an inventory of the progress of the work	Participation in the monthly meeting of the Group	meet.google.com
Establish a reptile database	Recording of collected data	Microsoft Excel

2. Results

During our surveys, the following materials and equipment were used for data collection:

- a field sheet for measuring information on reptiles.
- a GPS for recording the geographical coordinates of the species encountered;
- a Smartphone for taking measurements and photos.
- a tape measure for making the plots.
- a pen to record the information on the field sheet.

The inventory of reptiles is carried out in different types of habitats: forests, villages, plantation areas, agroforests and on coastal areas on rocky cliffs devoid of vegetation.

During our fieldwork, data were collected for five (5) species:

Trachylepis comorensis: this species is found in all types of habitats. It uses several supports such as soil, blocks of rock, plants, stone walls and stone walls

Figure 1 : Trachylepis comorensis

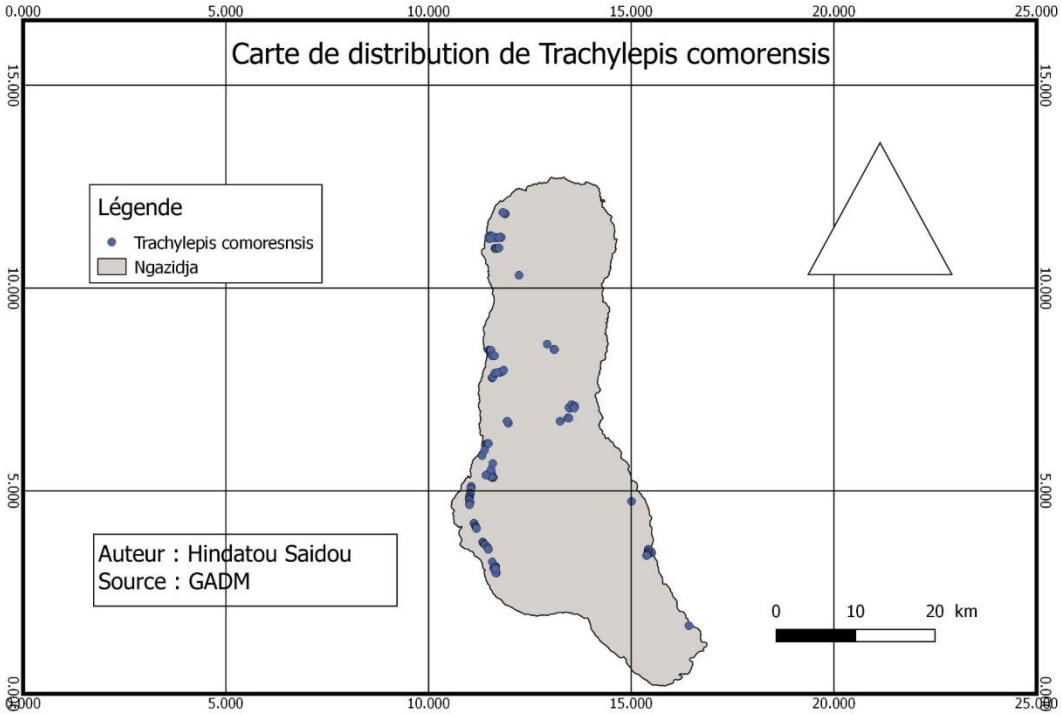

Figure 2 : Distribution map of Trachylepis comorensis

***Agama picticauda**:* an invasive species, found in almost all regions of the island of Grande Comore (Bambao, Mbadjini, Domba, Oichili, Hambou). It is very abundant and shares the habitat of other native and endemic species of the island. The absence of *Agama picticauda* is recorded in forests located at high elevation and in environments with a closed canopy.

Figure 3 : Female of Agama picticauda

Figure 4 : Male of Agama picticauda

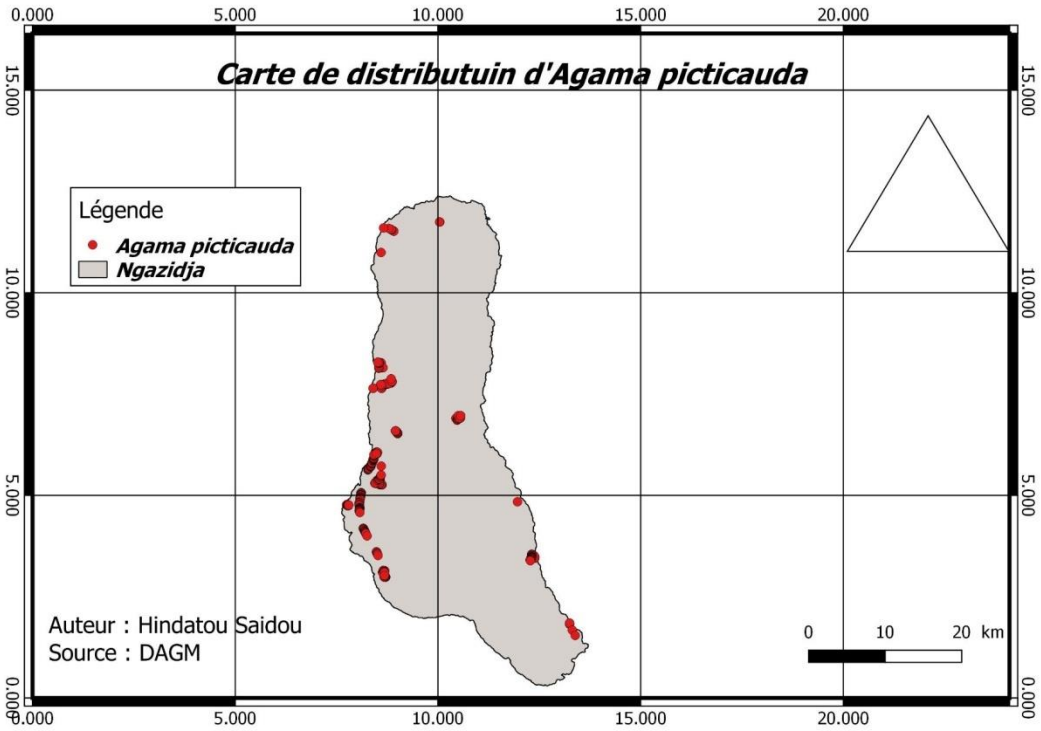

Figure 5 : Distribution map of Agama picticauda

***Phelsuma v-nigra**: species present in all environments and uses trees and walls as support. However, the species has a very particular preference for banana trees.*

Figure 6 : Phelsuma v-nigra

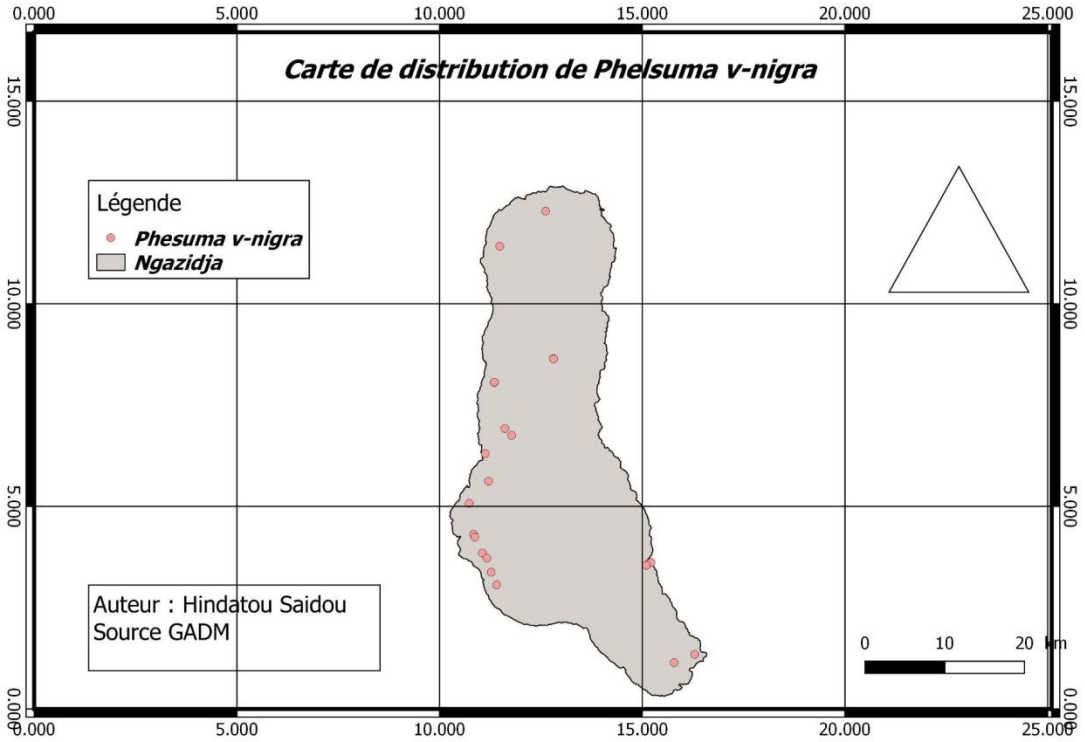

Figure 7 : Distribution map of Phelsuma v-nigra

***Phelsuma comorensis**:* species often observed in abundance in the forest of "La Grille", north of the Grande Comoro Island. It has been observed in different localities such as Diboini in the Hamanvou region and in the region of Mitsamiouli.

Figure 8 : Phelsuma comorensis

Figure 9 :Forest of « La Grille »

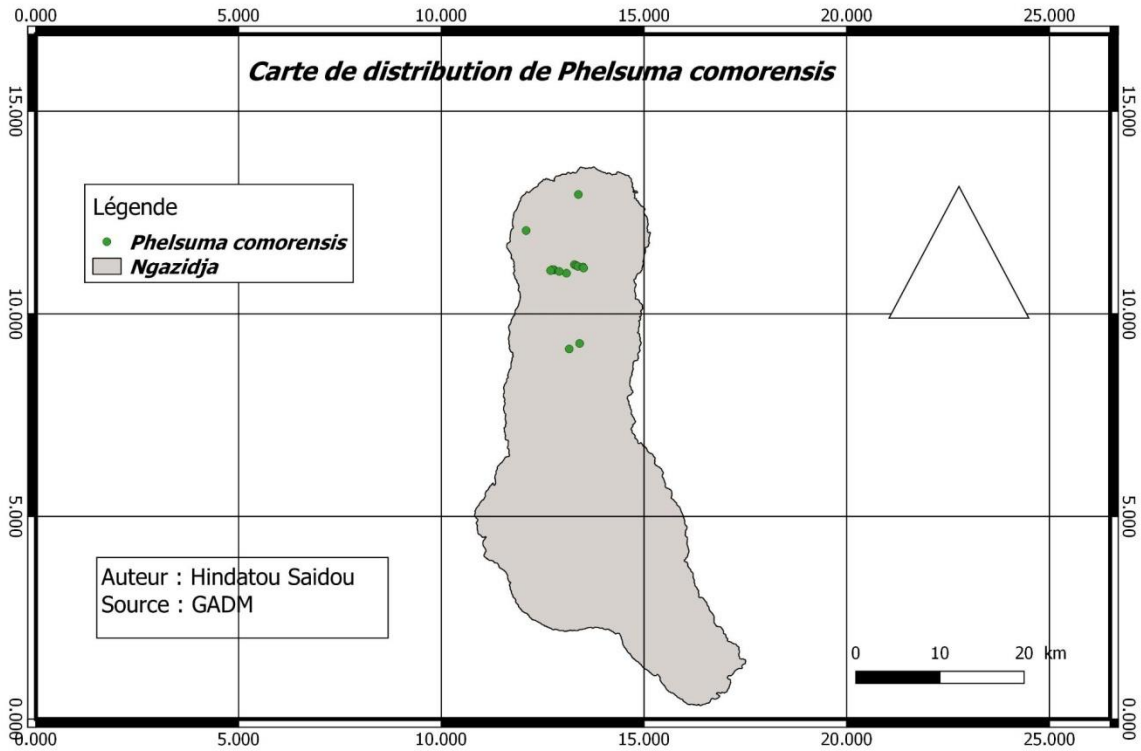

Figure 10 : Distribution map of Phelsuma comorensis

***Oplurus cuvieri comorensis**:* endemic to the island of Grande Comoro, the species has a very restricted geographic distribution. It has been observed exclusively at the level of rocky cliffs devoid of vegetation located in the North-East of the island of Grande Comore.

Figure 11 : Oplurus cuvieri comorensis

Figure 12 : Rocky cliffs located by the sea in Ouellah Hamahamet

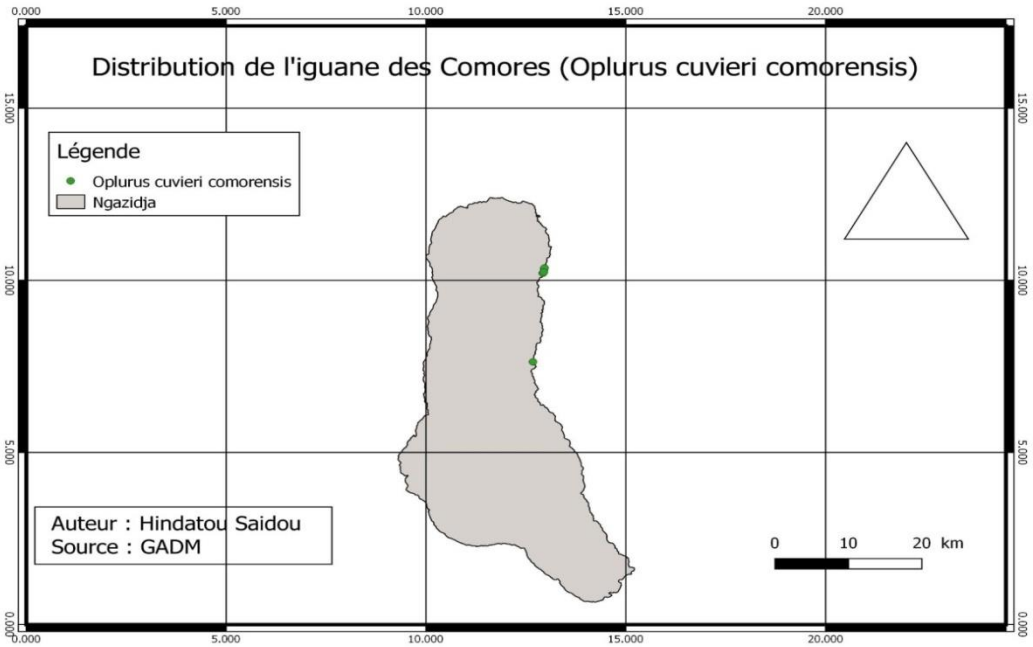

Figure 13 : Distribution map of Oplurus cuvieri comorensis

3. Encountered difficulties

During our field work we faced difficulties, among others:

- The weather conditions mainly heavy rain Reptiles, being cold-blooded species, their temperature depends strongly on that of the environment, they are therefore inactive at very low temperatures, the heavy rains have induced work reports.
- distrust of villagers in certain villages caused by false allegations concerning individuals who enter villages to contaminate water with products causing Cholera.
- suspicion of the villagers who took us for thieves wishing to sell their land due to the use of the tape measure in certain places

Figure 14 : creaction of a plot for counting reptiles in Djomani Mboudé

In the next three months, all regions of the Grande Comoro will be visited to have a representativity of the island to model the distribution of each species, estimated the global population abundance and predict habitat suitability and niche overlaps.

Conclusion

The work conducted from May to october allowed us to collect as much data as possible on the distribution of the introduced invasive species, *Agama picticauda* and the native and endemic diurnal reptiles of the Comoros. A total of 29 sites or villages were surveyed and 11 of them, *Agama picticauda,* is absent. Data collection was conducted by Hindatou Saidou, Mounir Soulé, Saoudati Maoulida under the supervision of Dr Mohamed Thani Ibouroi.