



DASS

Direction des Affaires
Sanitaires et Sociales

Entomological border surveillance under the International Health Regulations (IHR) 2018-2022

Unité d'entomologie médicale de la DASS-NC

22/03/2022

Presented by: Arnaud CANNET

International Health Regulations (IHR)

Surveillance of international entry points (IEP)

The DASS-NC is the local focal point of the IHR, and has had in-house entomological expertise since 2018.

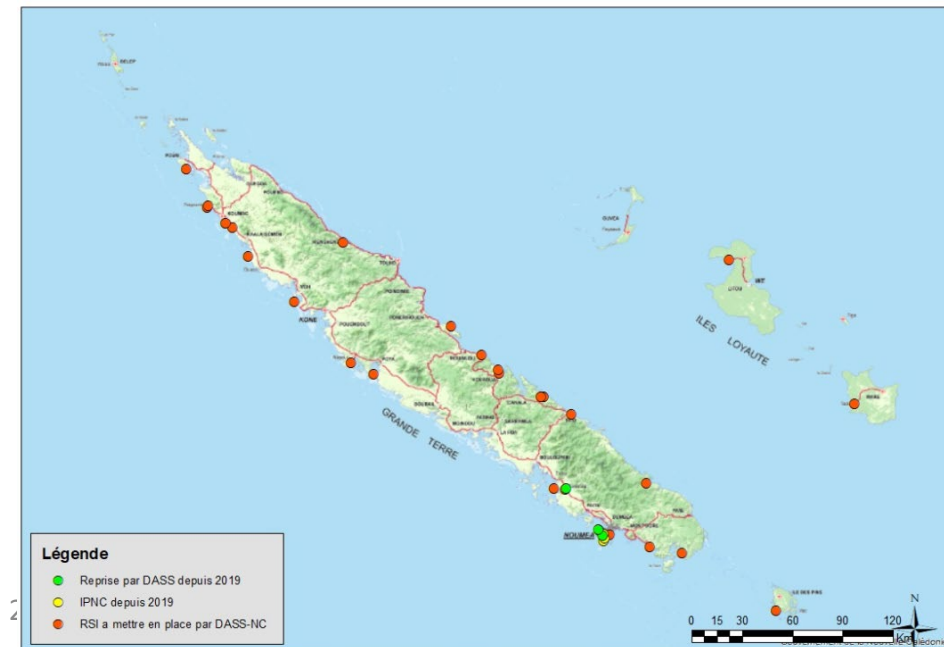
It must implement the IHR for each IEP in the territory.

General objective of the IHR: to prevent any introduction and export of pathogenic agents that may pose a risk to public health.

Entomological objective: monitor the risk of introduction and export of mosquitoes within a radius of at least 400 m around IEPs.

The **main IEPs in the territory** are monitored (DASS-NC and Institut pasteur de Nouvelle-Calédonie)

We aim to set up entomological **monitoring of the last 26 IEPs in New Caledonia** (secondary IEPs, example: mining ports)



International Health Regulations (IHR)

Method and results

We only have 2 agents who carry out surveillance missions and all identifications (adults and larvae)

In parallel with the IHR, an inventory of the species present on the territory is in progress.

Weekly port and airport missions

For adults: CDC light trap coupled with BG- sentinel. We use CO2 as an attractant.

For larvae: Gravid Aedes Trap (GAT) and/or search in breeding sites

Results:

Between 40,000 and 95,000 mosquitoes captured and identified per year.

Creation of an illustrated identification key for adults and larvae

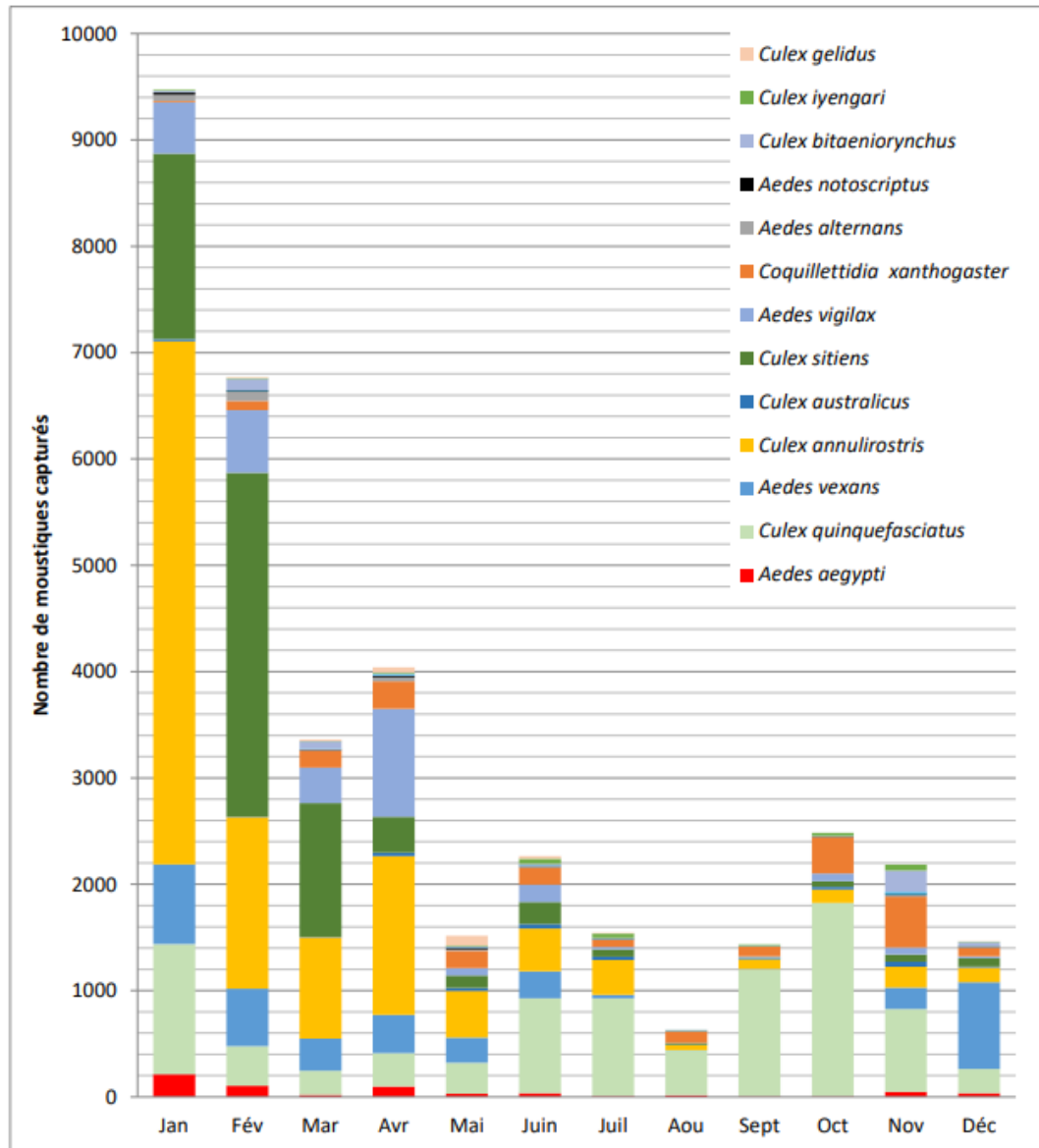
Highlights:

Since 2017, three exogenous species have been detected

- *Aedes scutellaris*, success of the eradication plan, never found since
- *Anopheles bancroftii*, eradication plan interrupted because species present over a large part of the territory.
- *Culex gelidus*, present in several municipalities

It's not excluded that updating the inventory involves the discovery of other exogenous species.

International Health Regulations (IHR)



Example of mosquito species captured and identified at New Caledonia International Airport in 2021.

International Health Regulations (IHR)

Difficulties encountered, prospects:

Difficulties encountered

- Large volume of identified mosquitoes, sometimes damaged (rubbed).
- Difficulties in obtaining precise identification keys in countries linked to New Caledonia
- too few species present in Genbank (genetic identification) to confirm the presence of an introduced species.
- Few specialized staff (2 agents)

Prospects

- Extend monitoring to multiple mining ports
- Develop collaborations on the territory, in particular with the Medical Entomology Unit of the Pasteur Institute of New Caledonia
- Involve more the administrative managers of the EIP.

Entomological surveillance is often focused on *Aedes* vectors, but the example of New Caledonia shows that all genera must be given special attention (*Anopheles*, *Culex*, etc.).

It would be interesting for surveillance organizations to make mosquito identification results available for countries or regions directly linked to New Caledonia (alert system, exchange platform...)