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Genomic Surveillance in the Philippines: An Outbreak Investigation



2024 Population =
119,106,2224

Human deaths = **200-300** yearly



1,159,711 bite
cases
8:10 dog-human
ratio

Dog vaccination coverage = **53.3%**



National Rabies Prevention and Control Program

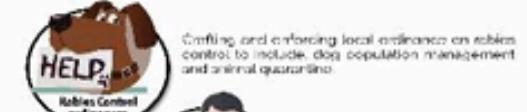
- Post-Exposure Prophylaxis (PEP) and Pre-Exposure (PrEP)
- Mass Dog Vaccination
- Health Promotion



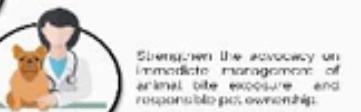
RABIES PROGRAM GOAL:

Eliminate human rabies by the year 2030.

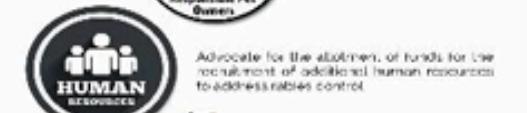
The Local Government can support the program goal by:



Crafting and enforcing local ordinance on rabies control to include, dog population management and animal quarantine.



Strengthen the advocacy on immediate immunization of animal bite exposure and responsible pet ownership.



Advocate for the allotment of funds for the recruitment of additional human resources to address rabies control.



Implement high density dog immunization against rabies on a yearly basis.

Para sa karangalan ng importasyon, makakapag-uugayin sa pinahamakapit na Animal Bite Treatment Center o Health Facility sa iyong lugar.



Universal Health Care
Alamin mo kasanan ka sila

Official DOH Partner
711-1001
711-1002

Rabies National Reference Laboratory – RITM



Rabies Laboratory from JICA project

Confirmatory Testing/ Surveillance / Outbreak Response

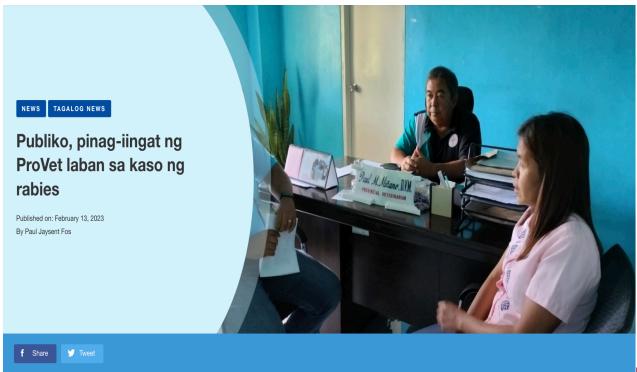
1. DFAT
2. Nested PCR
3. Sequencing
4. Serology : RFFIT, ELISA (commercial kit)

Trainings

1. Intensive DFAT Training
2. Human Rabies Specimen Collection

EQAS

Rabies in the Philippines



NEWS TAGALOG NEWS

Publiko, pinag-iingat ng ProVet laban sa kaso ng rabies

Published on: February 13, 2023

By Paul Jayent Fos

Share Tweet

COONGAN, Romblon (PNA) - Pinag-iingat ng Office of the Provincial Veterinarian (ProVet) ang publiko laban sa dumating kaso ng rabies sa isla ng Tablas, Romblon lalo na sa mga bayan ng Santa Maria, San Agustin, Alcantara, at Odongan.

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NEWS

Rabies cases, deaths increase in 2023 — DOH

By RICHA NORIEGA, GMA Integrated News

Published March 10, 2023 4:45pm

Filtered By: Topstories

At least 14 individuals, mostly children, in San Fernando, Pampanga were bitten by a dog which local authorities later found positive for rabies.



GMA NEWS ONLINE
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NEWS

Fourteen individuals bitten by rabid dog in Pampanga

Published June 11, 2023 9:29pm

Filtered By: Topstories

At least 14 individuals, mostly children, in San Fernando, Pampanga were bitten by a dog which local authorities later found positive for rabies.



Ilocos Norte declares rabies outbreak

By Leilanie Adriano

May 29, 2023, 8:56 pm

Share Share 0



DOG VACCINATION. A dog gets vaccinated against rabies in Laog City in this undated photo. The province of Ilocos Norte declared a rabies outbreak on Monday (May 29, 2023), following five deaths affecting 53 barangays, mostly in the city of Batac and the town of Pacay. (Contributed)

LAOG CITY - Ilocos Norte on Monday declared a rabies outbreak in the province, following five deaths in 53 barangays, mostly in the city of Batac and the town of Pacay.

"The outbreak declaration is meant to maximize the whole community to take action as we aim to vaccinate the 66,000 dogs in the entire province," said Provincial veterinarian Loida Valenzuela in defending the passage of the draft Provincial Resolution 2023-05-155 during a session of the Sangguniang Panlalawigan (SP) or provincial board on Monday.

To arrest the spread of rabies,

Ilocos Norte best PESO performer in Region 1

Magnitude 5.6 earthquake jolts parts of Northern Luzon
Laog fishers affected by dredging project get cash aid
Ilocos Norte's young math wizard wins Golden Cup Award

South Korea helps PH produce high-quality rice seeds

Dengue cases in Ilocos

Related Stories

- Ilocos Norte best PESO performer in Region 1
- Magnitude 5.6 earthquake jolts parts of Northern Luzon
- Laog fishers affected by dredging project get cash aid
- Ilocos Norte's young math wizard wins Golden Cup Award
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- Dengue cases in Ilocos

Romblon Outbreak



2020 Population = 308,985

Rabies Outbreak = 2011

Rabies- free = 2018-2021

Rabies Outbreak = 2022



1,737 bite cases (2023)

Dog vaccination coverage = > 15%



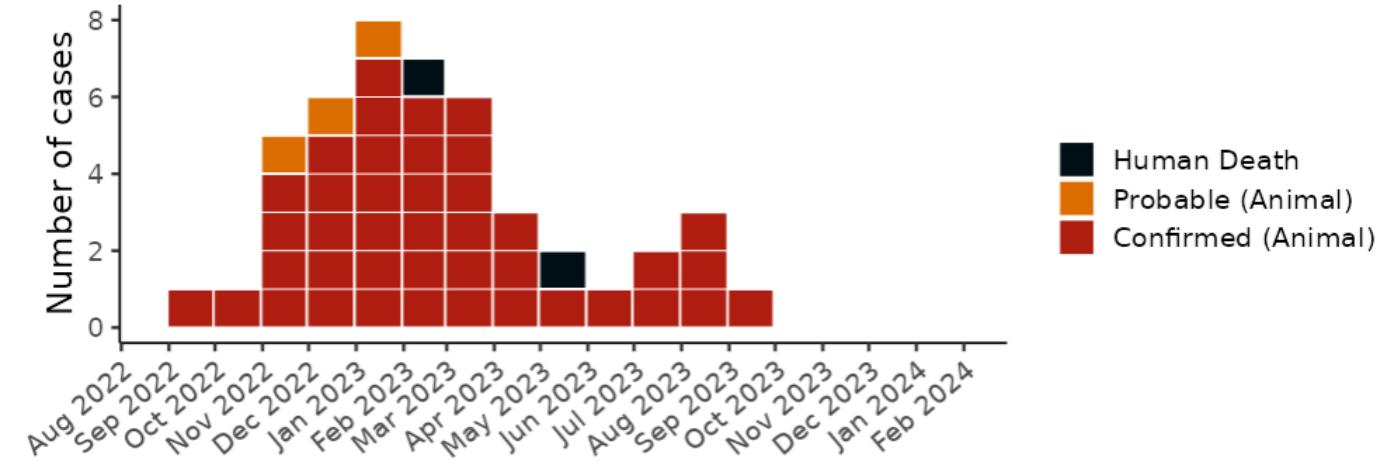
Identifying the Index Case

Index Case

	Case #1	Case #2	Case #3	Case #9
Municipality	Santa Maria	San Agustin	Santa Maria	Alcantara
Confirmed case	No (probable)	Yes	Yes	Yes
Biting animal	Dog	Dog	Dog	Dog
Date of biting incident	Nov. 12, 2022	Nov. 14, 2022	Nov. 18, 2022	Sept. 30, 2022
No. of bite victims	1	2	3	1
Status of biting animal	Killed and consumed (Nov. 12)	Expired (Nov. 17)	Killed (Nov. 18)	Expired (Oct. 1)
Sample collected	No	Yes	Yes	Yes
Confirmation test	--	DFAT (Nov. 23)	RDT (Nov. 21) DFAT (Nov. 22)	DFAT (Dec. 7)



Romblon Outbreak

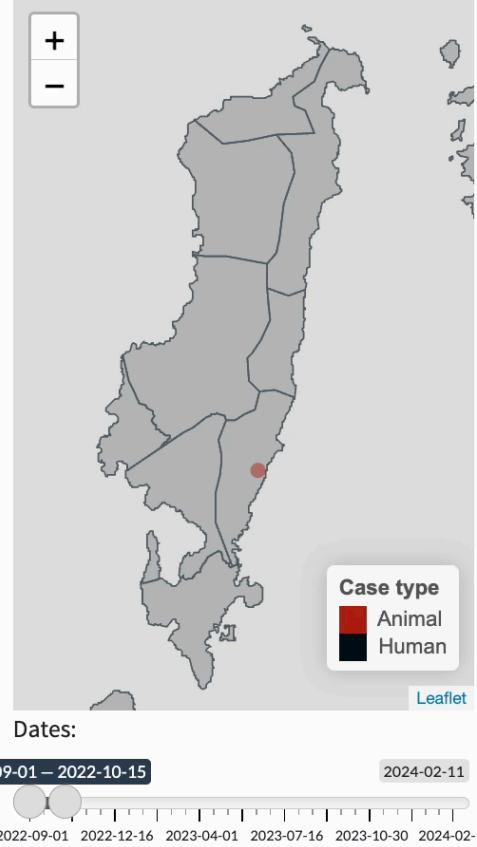


Romblon Outbreak



2.2 Location of reported rabies cases in Romblon province

Animal and Human cases in Romblon province from 01 Sep 2022 to 15 Oct 2022

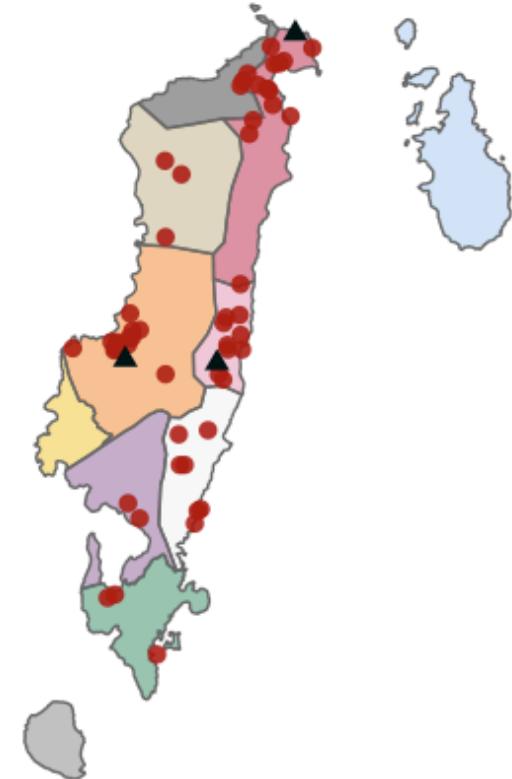


Case Type

- Animal
- ▲ Human

Municipality

- | |
|-------------|
| Alcantara |
| Calatrava |
| Ferrol |
| Looc |
| Odiongan |
| Romblon |
| San Agustin |
| San Andres |
| San Jose |
| Santa Fe |
| Santa Maria |



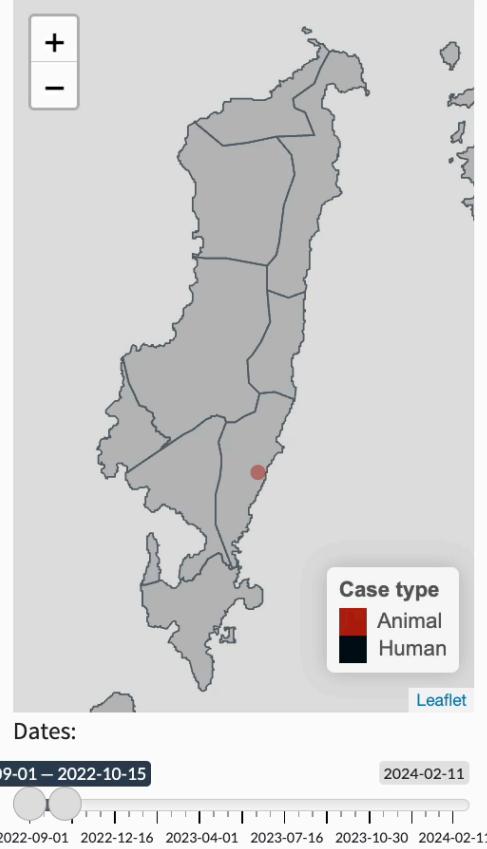
46 animal cases
2 human cases

Romblon Outbreak



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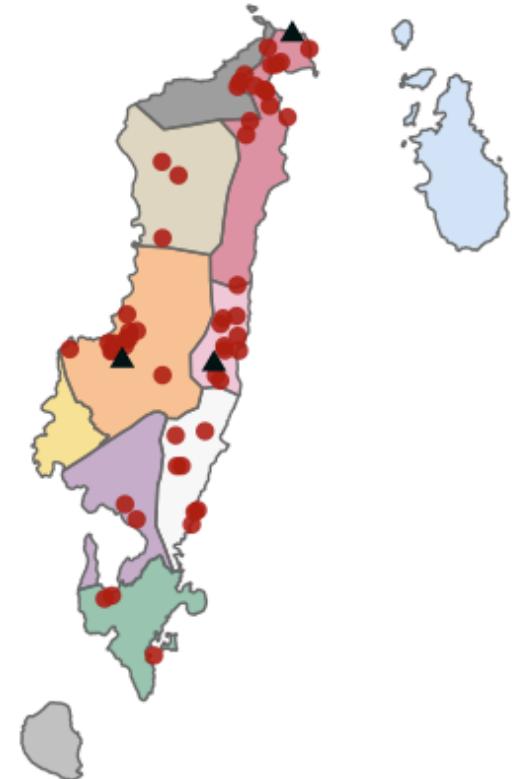


Case Type

- Animal
- ▲ Human

Municipality

- | |
|-------------|
| Alcantara |
| Calatrava |
| Ferrol |
| Looc |
| Odiongan |
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| San Jose |
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| Santa Maria |



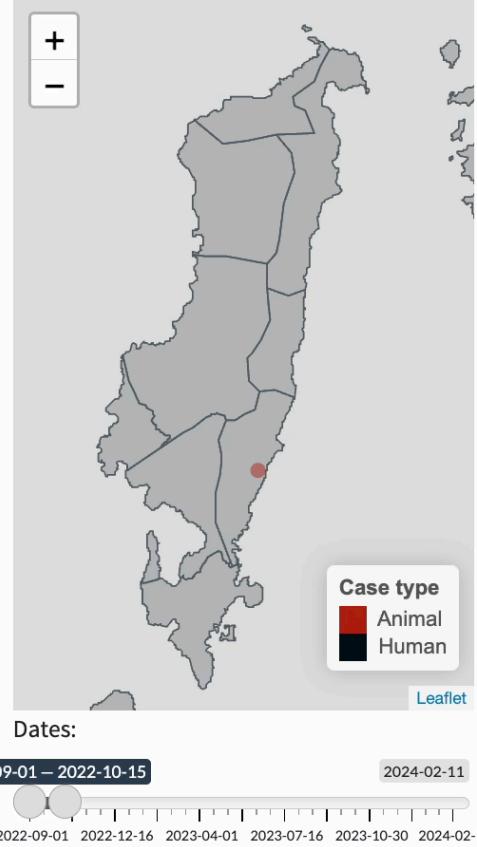
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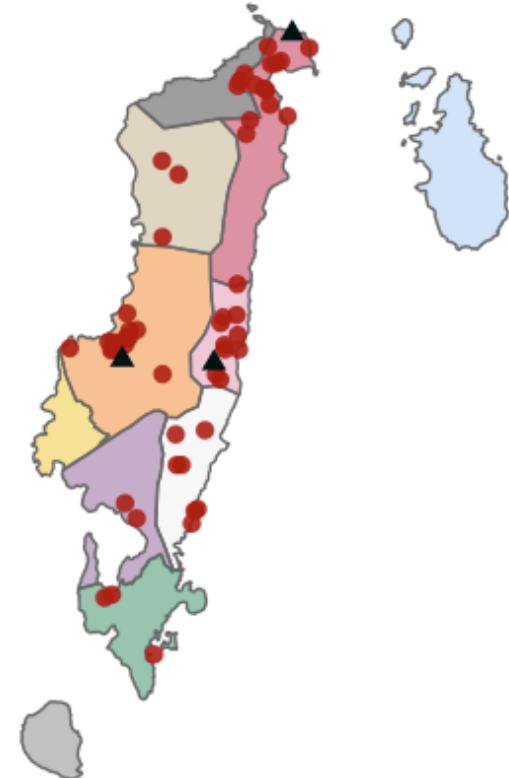


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Municipality

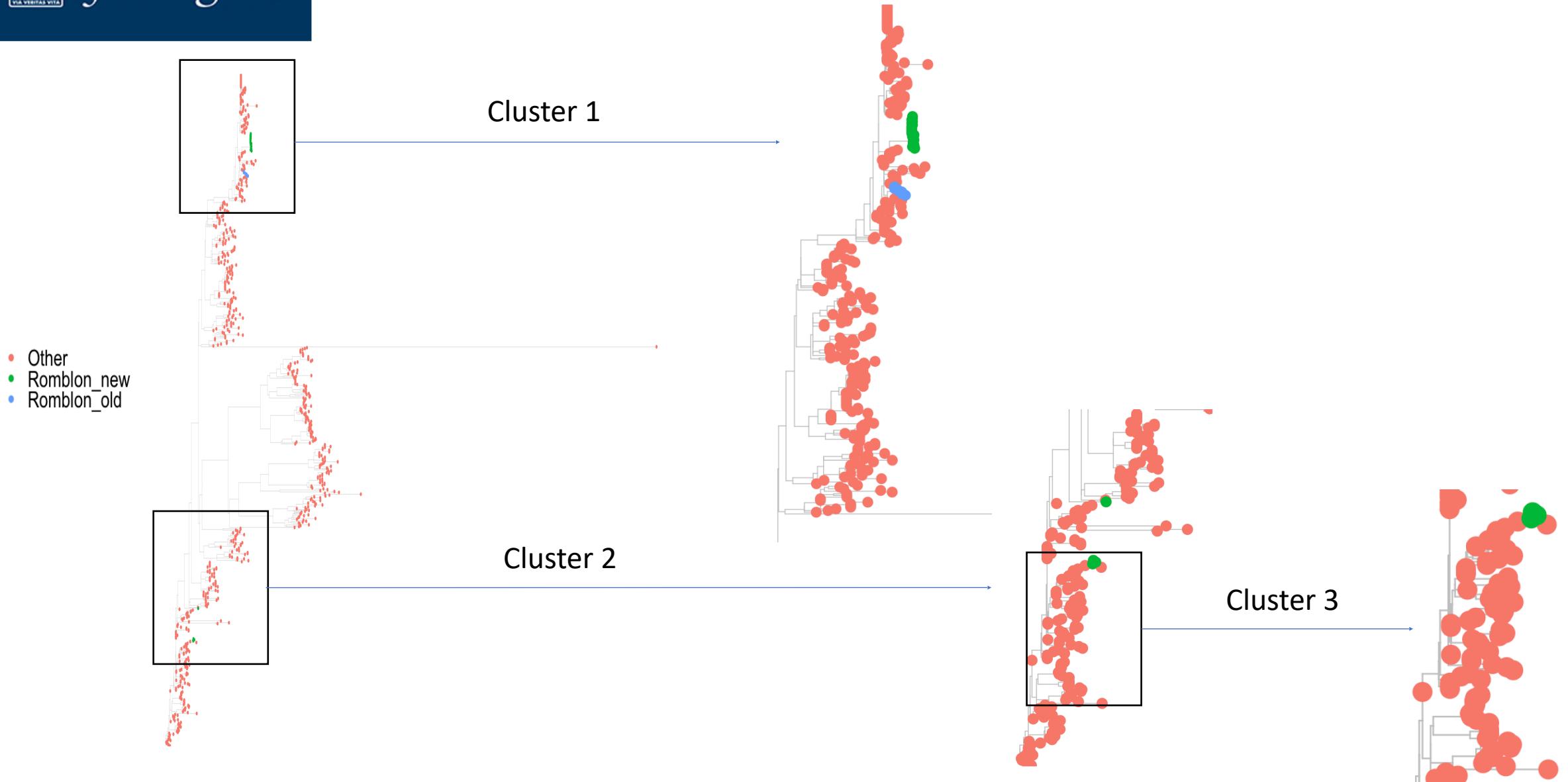
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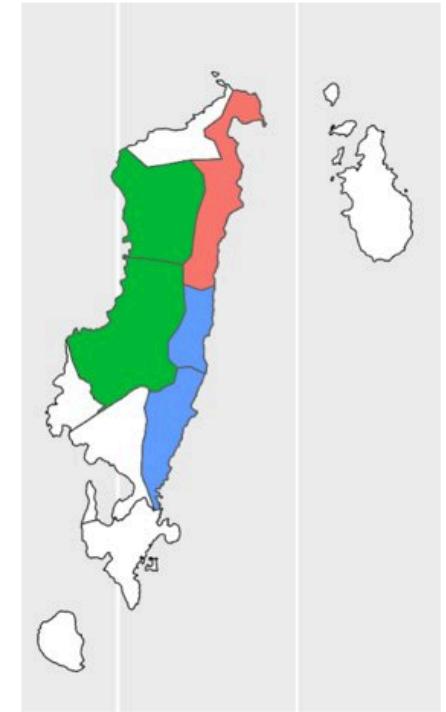
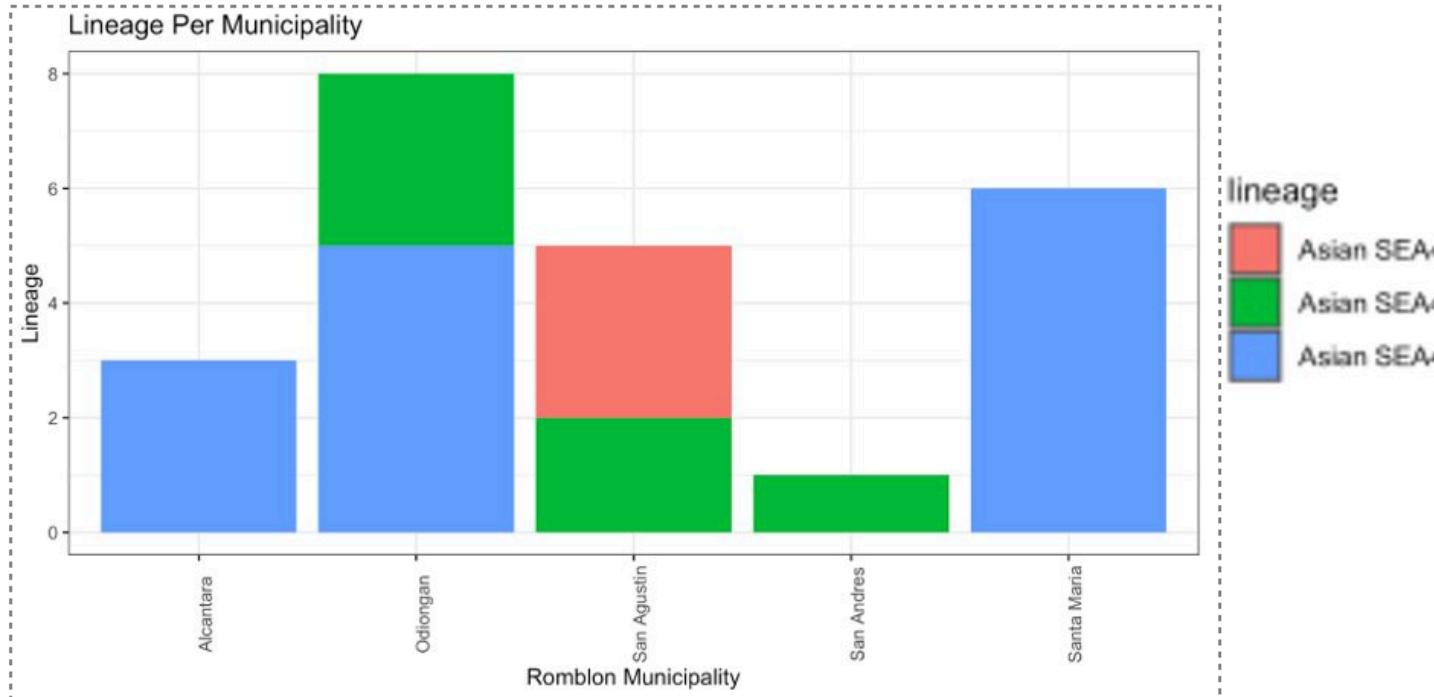
46 animal cases
2 human cases



Phylogenetics of Romblon Outbreaks



MADDOG Lineage Assignment



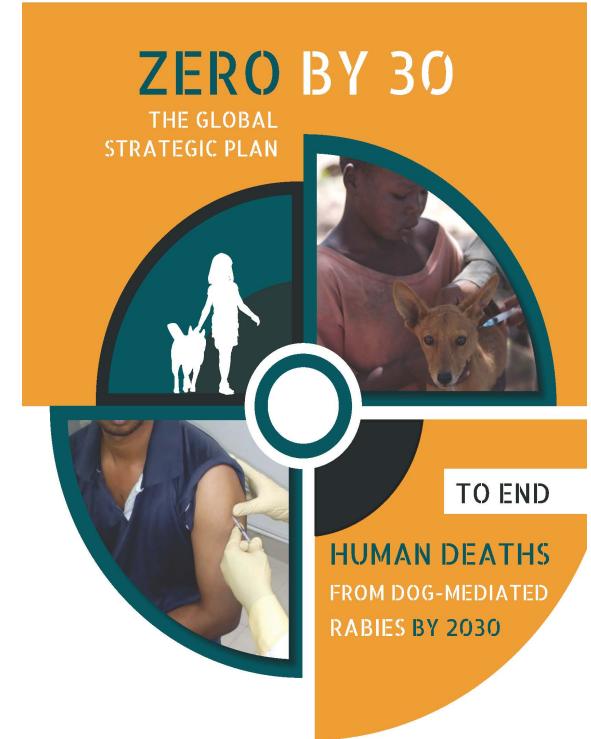
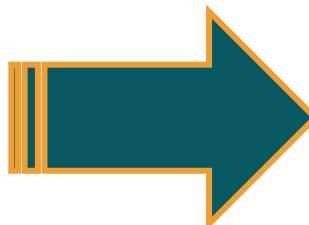
- 23 samples from October 2022 – March 2023
- Samples from 5 municipalities / 8 municipalities with cases
- Animal samples only

* Lineage color in map shows predominant lineage per municipality

What Genomic Surveillance Answers

We want to know:

1. Possible source and time of introduction into previously rabies-free declared area
2. Are outbreaks introductions, or continuously circulating undetected lineages?
3. Is the outbreak coming from a single or multiple introductions?



Food and Agriculture Organization of the United Nations

OIE
WORLD ORGANISATION FOR ANIMAL HEALTH

World Health Organization

Global Alliance for Rabies Control

Acknowledgement

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Kirstyn Brunker, PhD

Collaborators:

RITM: Veterinary Research Division
FETPAFI: SPEEDIER Team
RADDL: Region I – Region XIII

Katie Hampson's Rabies Team



Thank you!

#UofGWorldChangers
   @UofGlasgow