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# Rabies situation in SEA

Kinley Choden

WOAH SRR SEA

**ASEAN Rabies Consultation Meeting**  
**Revision of the ASEAN Rabies Elimination Strategy**  
2-4 May 2023, Bali Indonesia

# Source – All info and data

- ASEAN – Tripartite Rabies Meeting: Towards Rabies Elimination in ASEAN, 4-6 Dec 2018, Hanoi, Vietnam
- ARES Review: Virtual Consultation Meeting, Jan 2023
- ARAHIS Database
- WAHIS Database

## Overview (Year 2022)

Country	National plan for rabies control, elimination, or prevention	Rabies as priority zoonosis	Dog vaccination coverage	Reported number of human cases (2022)	Reported number of dog cases (2022)
Brunei	Yes	Yes	<10%	0 (rabies-free)	0 (rabies free)
Cambodia	Yes (to be finalised)	Yes		Not available	No
Indonesia	Yes	Yes	<10%	96	1279
Lao PDR	Yes	Yes	90% (Sarawak)		
Malaysia	Yes	Yes	20%	16	44
Myanmar	Yes	Yes	33%	39	
The Philippines	Yes	Yes		~250 (2021 data)	245 (partial data)
Singapore	Yes	Yes		0 (rabies free)	0 (rabies free)
Thailand	Yes	Yes	39%	3	239
Viet Nam	Yes	Yes		69	100

# Brunei

## National Action Plan (NAP) for Rabies

The NAP for Rabies has been developed at the direction of JTF for Zoonosis.

It sets out relevant action items to be implemented by responsible agencies to ensure continued maintenance of rabies-free status in Brunei Darussalam and preparation for the risk of introduction from neighboring countries.

The NAP focuses of 4 key themes:

1. Prevention and Control of Rabies in Animal Population
2. Prevention and Control of Rabies in Humans
3. Ensuring Public Awareness of the Disease
4. Strengthening legal framework for Rabies Prevention and Control

## Veterinary Laboratory Capacity

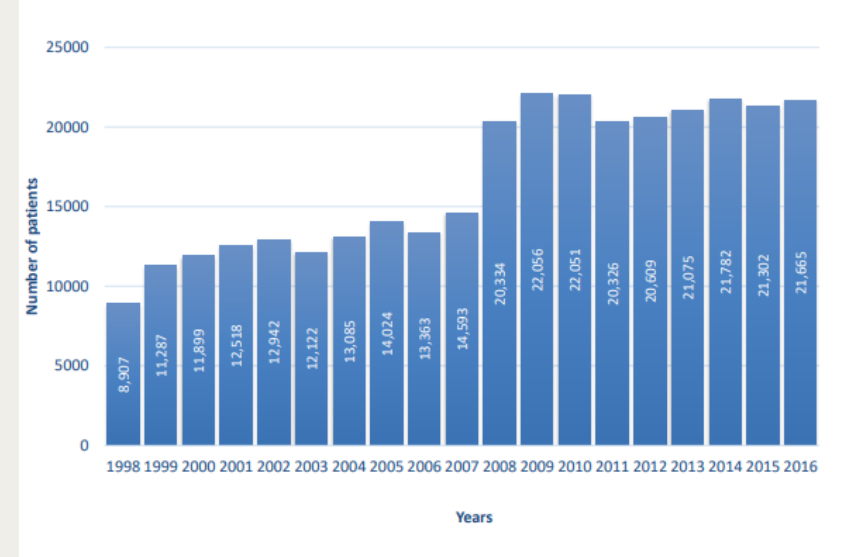
National Veterinary Laboratory, Terunjing is able to conduct Rabies confirmatory testing using:

- RT-PCR testing (On-going).
- Direct Rapid Immunohistochemistry test (DRIT) for detection of Rabies Virus Antigen (To start by the end of 2023).

# Cambodia

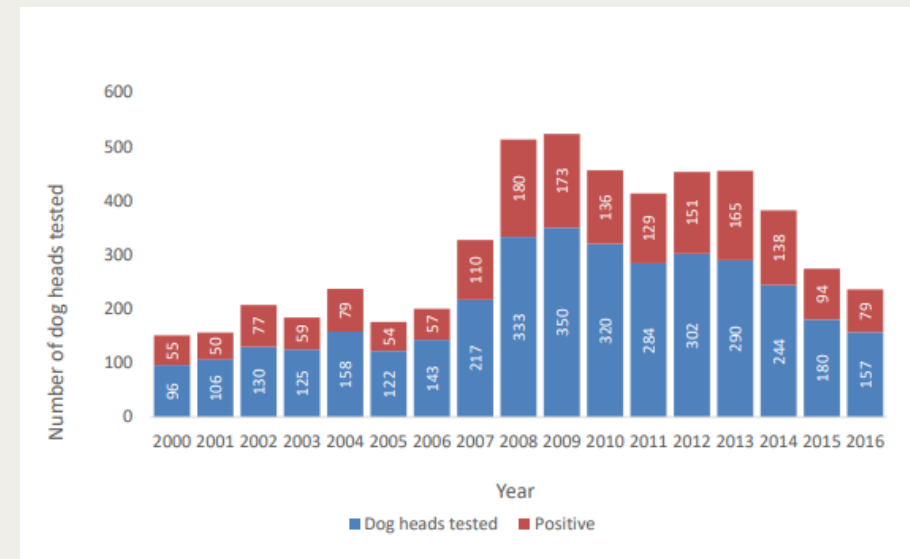
## Rabies Epidemiology

- Rabies identified in dogs, cats, cows and monkeys
- Of those bitten in 2021, 62% were bitten by dogs, 37 % by cats, 0.5% by monkeys, 0.5% other species
- Canine slaughterhouse samples found 1.89% samples rabies positive, more evidence needed for transmission link



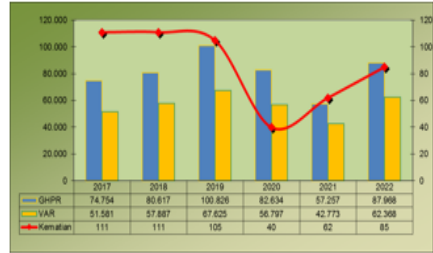
## Rabies in Humans

- In excess of 87 human deaths have been recorded as rabies between 1998-2022
- Suspected rabies cases will be admitted to Calmette Hospital or Angkor Hospital for Children
  - But often hospice care at home is chosen by family
- Clinical diagnosis and history are more frequently used
  - Acute, progressive neurological signs with history of an animal bite
- Underestimation highly likely
- Ly et al estimated a human incidence of 5.8/100,000 people = 810 per year in 2007
- Hampson et al estimated a human incidence of 2.9/100,000 people = 446 per year in 2015



# Indonesia

## Rabies in Indonesia



Human rabies cases



- 26 from 34 provinces are endemic
- Human death in average are 126/year
- Rabies cases in animals average 1.200 cases/year

## Update Rabies in Indonesia

- In 2022, Rabies cases were reported in 15 provinces, namely North Sumatra, West Sumatra, Bengkulu, Jambi, Lampung, Riau, West Kalimantan, Central Kalimantan, Bali, NTB, NTT, West Sulawesi, South Sulawesi, Central Sulawesi and North Sulawesi
- The highest case in April 2022, 126 Rabies Cases. Bali Province is the province with the highest cases in 2022 about 522 cases
- Surveillance for the last 3 years from 2020 until 31 October 2022, there was an increase in cases from 2020 (670 cases) to 2021 by 91% (1284 cases), in 2022 cases decreased by 45% (709 cases)

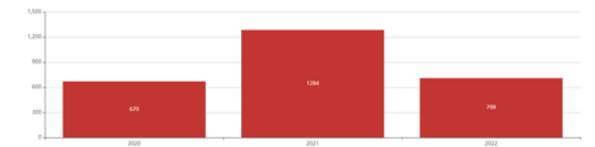
Jumlah Hewan Terdampak Rabies Nasional Tahun 2022



Peta Distribusi Kejadian Rabies Nasional Tahun 2022



Jumlah Hewan Terdampak Rabies Nasional 3 tahun terakhir



Tabel Jumlah Hewan (ekor) Terdampak Semua Penyakit Nasional Tahun 2022



## Status of national plans for rabies control and elimination

- National Strategic Plan on Prevention and Control of Rabies from 2020-2024
- National Taskforce Committee on Prevention and Control of Rabies
- Development of Rabies vaccine guidelines
- Distribution of 1500 doses of Rabies vaccine to high-risk provinces for free to health care settings
- Development of teaching lessons and guidelines on rabies prevention and control, integrating them into primary and lower secondary school teaching curriculum in Xayabury province
- Celebration of Rabies Day



## Recent rabies surveillance data for human and animal populations (at national and sub-national level).

- Rabies included as one of the 18 national notifiable diseases in the national surveillance system since 2018.
- Memorandum of Understanding (MOU) between the Ministry of Health and the Ministry of Agriculture and Forestry for the exchange of information on 5 prioritized zoonotic diseases, rabies is one of them
- Quarterly meetings for the exchange of lessons learned between the national laboratory of human and animal health.



### Rabies Outbreak Situation, 2018

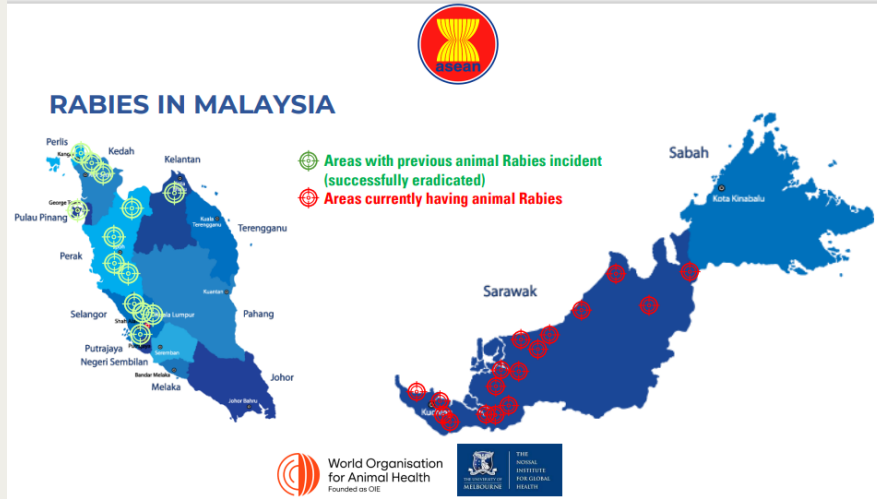
Province	No. of District	No. of sample	No. of positive	% of positive
Vientiane cap	5	25	13	52%
Champasak	5	11	10	90.91%
Xiengkhouang	1	1	1	100%
Savannakhet	1	1	1	100%
Sekong	1	1	0	00%
<b>Total</b>	<b>13</b>	<b>39</b>	<b>25</b>	<b>64.1%</b>



### Rabies case in Human

Year	Province	# of Deaths
2015	2	3
2016	2	2
2017	3	4
<b>Total</b>		<b>9</b>

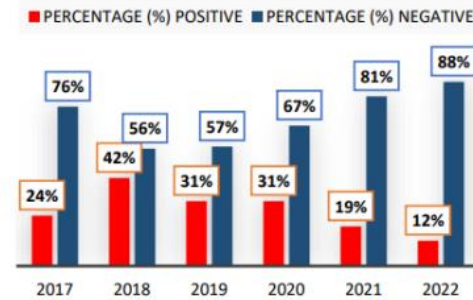
# Malaysia



## ANIMAL RABIES SURVEILLANCE

A. For Sarawak (Update 10<sup>th</sup> Jan 2023)

Rabies Sampling Percentage (%)



YEAR	TOTAL SAMPLE	POSITIVE SAMPLE			NEGATIVE SAMPLE				
		DOG	CAT	OTHERS	DOG	CAT	OTHERS	TOTAL	
2022	364	38	6	0	44	295	22	3	320
2021	572	95	13	0	108	420	33	10	463
2020	582	159	24	0	183	347	36	7	390
2019	591	146	38	0	184	295	38	6	339
2018	625	242	18	0	260	314	32	4	350
2017	307	67	6	0	73	212	19	2	233
<b>TOTAL</b>	<b>3,041</b>	<b>747</b>	<b>105</b>	<b>0</b>	<b>852</b>	<b>1,883</b>	<b>180</b>	<b>32</b>	<b>2,095</b>

as of 10 January 2023

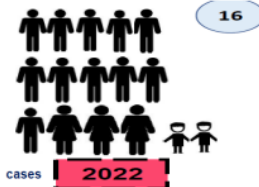
### SARAWAK RABIES STATUS UPDATE

23<sup>rd</sup> December 2022

YEAR	TOTAL SAMPLE	POSITIVE SAMPLE			NEGATIVE SAMPLE			
		DOG	CAT	OTHERS	DOG	CAT	OTHERS	TOTAL
2022	364	38	6	0	294	22	3	319

Source: DEPARTMENT OF VETERINARY SERVICES SARAWAK

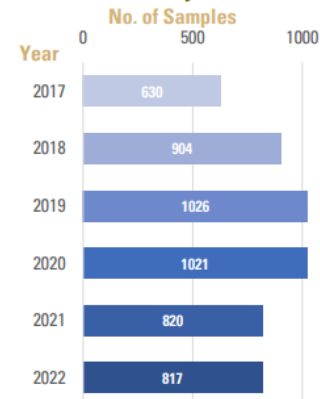
- 2022, 16 human cases reported (14 Sarawak & 2 Selangor)



Source: MOH Malaysia

## ANIMAL RABIES SURVEILLANCE

A. For Peninsular Malaysia & Sabah (via National Animal Surveillance Programme, update Dec 22)



**ALL SAMPLES NEGATIVE**

Total no. samples collected (based on Risk assessment)  
\*excluding outbreak response samples



# Myanmar



## Status of national plans for rabies control and elimination

- Rabies, one of the neglected tropical diseases, is endemic in Myanmar
- A priority disease for both human and animal health

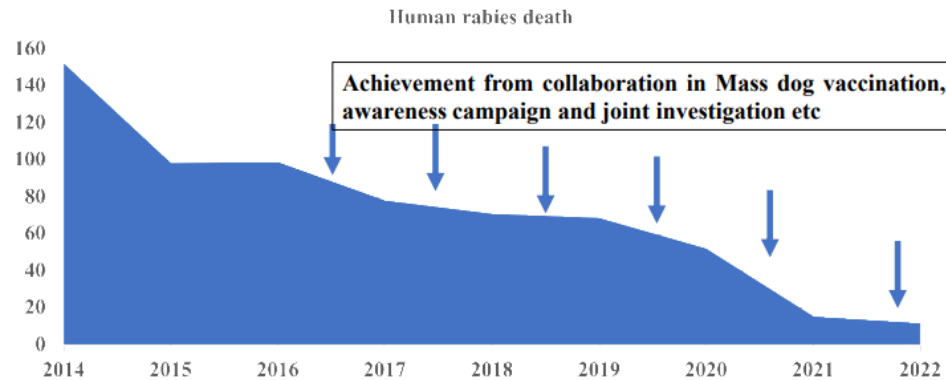
Areas	261228 sq miles
Population	52 Milloin
Distriinct	72
Townships	330
Villages	64917

Dog Population	1.9 million (According to the 2019 Livestock Inter census report)
Estimated total dog population is 6-7 millions including stray dogs.	
Stray Dog	70%
Human Dog Bites Annually	150,000
Animal Dog Bites Annually	Unknown
Annual Human Rabies	241
Human Mortality	39 rabies death in 2022 (declining year after year since 2014 )
PEP	135,000
Annual Animal Rabies	Dog, Cat, Horse, Pig
Burden	Unknown



## Status of national plans for rabies control and elimination (Cont:)

### Achievement



## Status of national plans for rabies control and elimination (Cont:)



Region/State	Doses of dog rabies vaccine administered in the past 12 months
Nay Pyi Taw Union Territory	5,802
Kachin State	1,800
Kayah State	700
Kayin State	930
Chin State	580
Sagaing Region	1,115
Tanintharyi Region	3,050
Bago Region	3,077
Magway Region	4,367
Mandalay Region	3,400
Mon State	1,300
Rakhine State	2,110
Yangon Region	1,950
Shan State	8,635
Ayeyarwady Region	2,200
<b>Total</b>	<b>41,016</b>

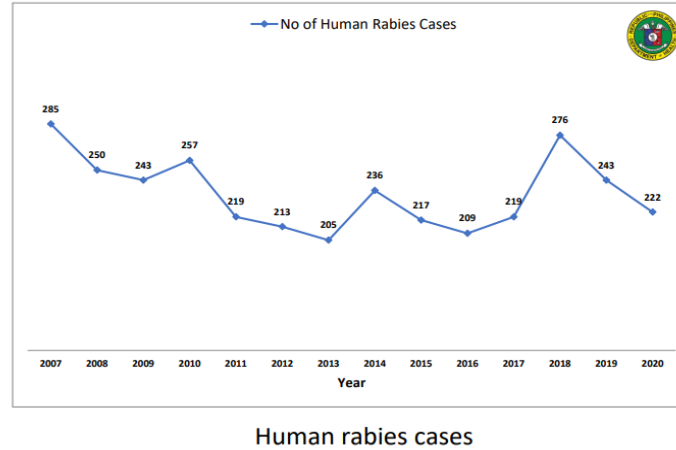
**Dog Population Vaccination Coverage 20.25%**

### Mass Dog Vaccination in 2022



# Philippines

- Rabies: neglected zoonotic disease; fatal but vaccine-preventable.
- It is responsible for deaths of 250 Filipinos yearly; children are often bite victims and bites mostly coming from dogs (DOH, 2021)
- Control of rabies from the source (dogs) is more cost effective than controlling in humans.
- One Health Approach is essential in the implementation of rabies prevention and control.



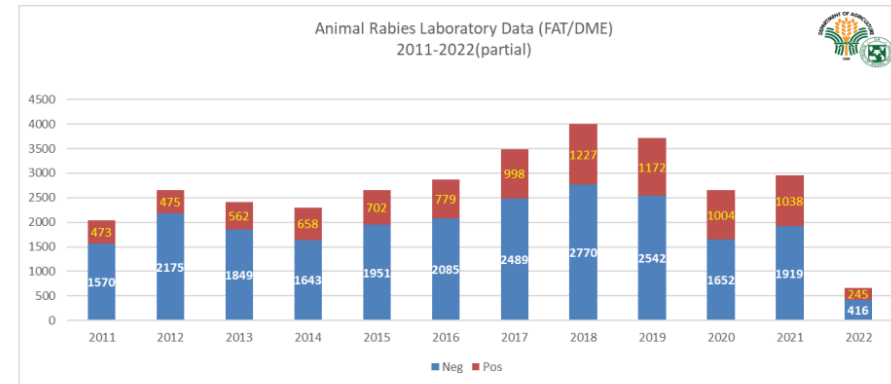
## Animal Rabies

**92%** of positive samples are from canine

**43%** of rabies cases have identified owners

**85%** of rabies cases were either free-roaming or occasionally roaming

BAI, 2021



# Singapore

## Regular On-going Preparedness for Rabies

### About Rabies

Singapore has been rabies-free since 1953. However, we must remain vigilant, particularly when travelling overseas, as rabies can still be found in other countries.

**WHAT IS RABIES?**

- A deadly viral disease that can infect all mammals
- The virus attacks the nervous system and damages the brain
- If left untreated, infected animals and humans can die from it
- Transmitted through saliva from an infected animal, usually through a bite or scratch
- Preventable in both humans and animals through vaccination and timely treatment after exposure

**SIGNS OF RABIES IN DOGS**

- Abnormal behavioural changes, e.g. unprovoked aggression, disorientation, unusual rhythms
- Paralysis, trembling, lack of muscle coordination
- Salivates
- Excessive salivation or mouth foaming, difficulty in swallowing

**SYMPTOMS OF RABIES IN HUMANS**

- Fever, headache, general weakness or discomfort
- Hyperaesthesia or muscle paralysis
- Starcases
- Confusion, hallucinations, agitation, anxiety
- Insomnia and hydrophobia (fear of water)

**SHOULD I WORRY IF MY PET IS BITTEN OR SCRATCHED BY ANOTHER ANIMAL IN SINGAPORE?**

As Singapore has been rabies free since 1953, the risk of your pet being infected with rabies is low. However, you should still bring your pet to a veterinarian for medical attention promptly.

**WHAT SHOULD I DO IF I HAVE BEEN BITTEN OR SCRATCHED BY AN ANIMAL?**

Wash the wound with soap and water for a minimum of 15 minutes immediately after the incident. Should the saliva of an animal come into contact with the eyes, nose and/or mouth, it is important to thoroughly wash the affected areas. After washing, contact a doctor as soon as possible and inform the doctor that you have been bitten or scratched by an animal.

If you suspect that an animal has rabies, report the incident to the Animal & Veterinary Service as soon as possible at 1999-429-6900.

### About Rabies

Singapore has been rabies-free since 1953. However, we must remain vigilant, particularly when travelling overseas, as rabies can still be found in other countries.

**HOW DO WE KEEP SINGAPORE RABIES-FREE?**

The Animal & Veterinary Service (AVS) implements precautionary measures, including dog licensing to ensure traceability and strict import controls to curb the smuggling of animals —which may carry rabies —into Singapore.

AVS also conducts Ops Vox Lycop, an annual rabies vaccination exercise at coastal fish farms and selected offshore islands of Singapore. Vaccination is one of our best defences against rabies and by vaccinating at least 75% of the at-risk dog population, we can reduce the risk of a rabies outbreak in Singapore.

**YOU TOO CAN DO YOUR PART TO KEEP SINGAPORE RABIES-FREE:**

- Obtain pets from reputable and legal sources (i.e. licensed pet shops/ferms, shelters)
- Obtain the relevant import permits and health certificates if importing an animal
- Ensure your pet dogs are licensed and microchipped for traceability
- Avoid contact with animals if you are travelling overseas where rabies is prevalent. Discuss with your doctor to see if you require rabies vaccination prior to travel. The rabies vaccine is available at public hospitals and some local clinics that offer travel vaccinations.
- Rabies vaccination is not compulsory for pets in Singapore. But if you are travelling with your pet, other countries may require your pet to be rabies vaccinated. Speak to your vet to find out more.

If you suspect that an animal has rabies, report the incident to the Animal & Veterinary Service as soon as possible at 1999-429-6900.



## Status of national plans for rabies prevention, control and elimination

### Rabies Prevention

- Horizon Scans and Monitoring of News Alert
- Import regulations for dogs and cats, based on rabies risks of exporting country
- Animal Quarantine Centre, complemented with Home Quarantine
- Biosurveillance of wildlife, dogs and cats including clinical surveillance
- Surveillance for human cases
- Vaccine stockpile
- Annual vaccination exercises targeting high risk population groups
- Dog population management (Trap-Neuter-Release-Manage), and licensing
- Rabies contingency planning and TTx
- Prevention and Response to Smuggling of Dogs and Cats
- One Health disease investigation and preparedness



# Thailand



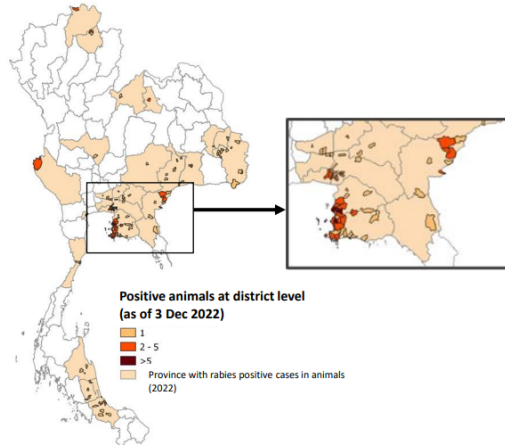
## RABIES SITUATION IN ANIMALS - 2022

Total number:

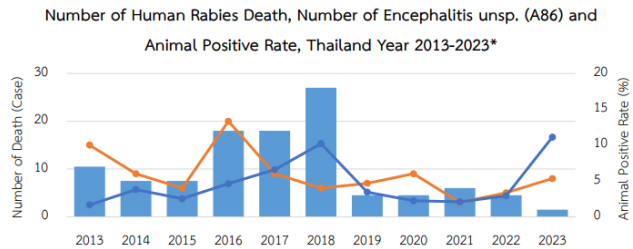
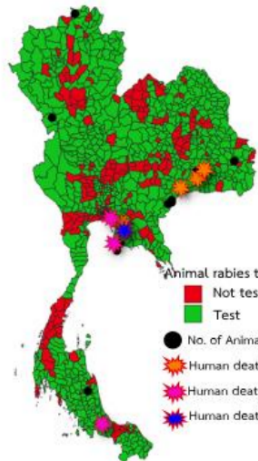


### Provinces with highest no. of positive animals

- Chonburi (E)	88
- Songkhla (S)	16
- Chachoengsao (E)	15
- Ubon Ratchathani (NE)	12
- Samutprakarn (C)	12
- Sa Kaeo (E)	12
- Rayong (E)	8
- Buriram (NE)	6
- Phatthalung (S)	5
- Samut Songkhram (C)	5

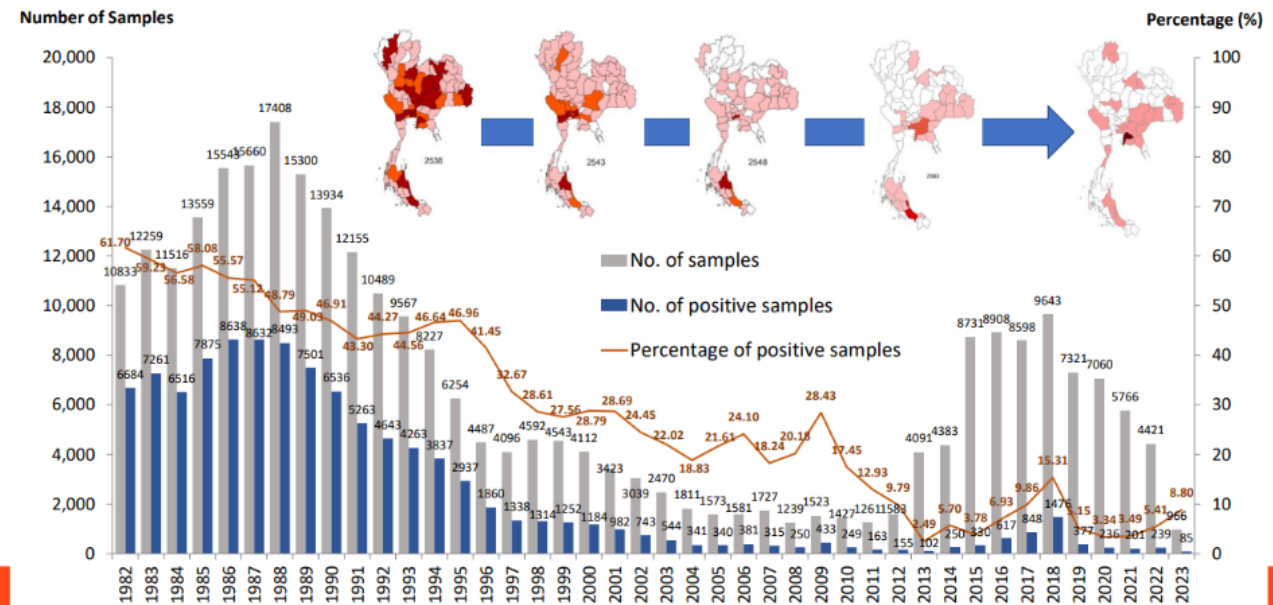


## RABIES SITUATION IN HUMAN - 2022



- As of 16 January 2023, 1 human rabies death was reported in Chonburi province, where is the same province that was reported 1 death in 2022.
- Male, 40 Years-old, Thai, Freelance.
  - Behavior: Slept on the road during drinking and always plays with animal.
  - Unclear exposure ie. Duration, Animal, Site of exposure (severly itchy at the left posterior auricular area before death).
  - On 5 April 2022, 1 animal positive was reported in the adjacent village.

## Rabies situation in animal in Thailand

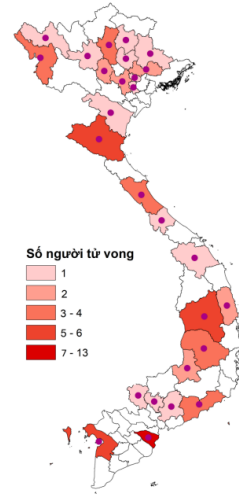


# Vietnam



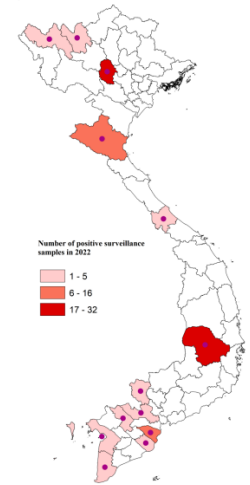
## RABIES SITUATION IN HUMANS

Content	2019	2020	2021	2022
Death by Rabies	81	78	42	69
Number of provinces	32	35	22	27
PEP	546.979	495.677	498.192	525.630



## RECENT RABIES SURVEILLANCE DATA IN ANIMALS

Year	Province	Sample	Positive	Positive rate (%)
2017	10	543	41	7.55
2018	19	574	28	4.88
2019	21	612	40	6.54
2020	14	213	61	28.64
2021	11	126	57	45.24
2022	13	214	100	46.70



## RABIES SITUATION IN ANIMALS

Content	2019	2020	2021	2022
Dog population	7.5 mill	7.6 mill	7.1 mill	7.0 mill
Number of outbreak provinces	15	13	11	27
Vaccination rate of dog	51.32 %	52.04%	37.57%	39%
Vaccination rate at over 70% (% of provinces/cities)	18/63 (28.57%)	21/63 (33.33%)	8/60 (13.33%)	11/63 (17.0%)
Vaccination rate below 50% (% of provinces/cities)	31/63 (49.21%)	30/63 (47.62%)	41/60 (68.33%)	41/63 (66.0%)



## RECENT RABIES SURVEILLANCE DATA FOR HUMANS

Year	Province	Sample	Positive	Positive rate (%)
2017	26	41	16	38.1
2018	21	32	11	34.4
2019	13	22	7	33.3
2020	18	26	10	38.5
2021	14	20	8	40.0

# Animal Rabies in SEA, 2014-2022 (Source: WAHIS)

Countries

8

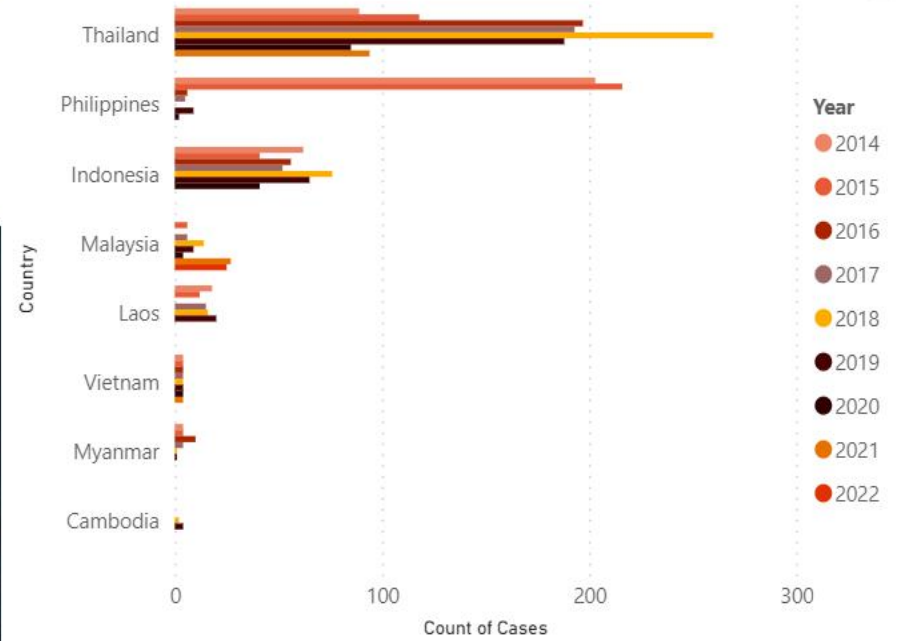
Cases

2292

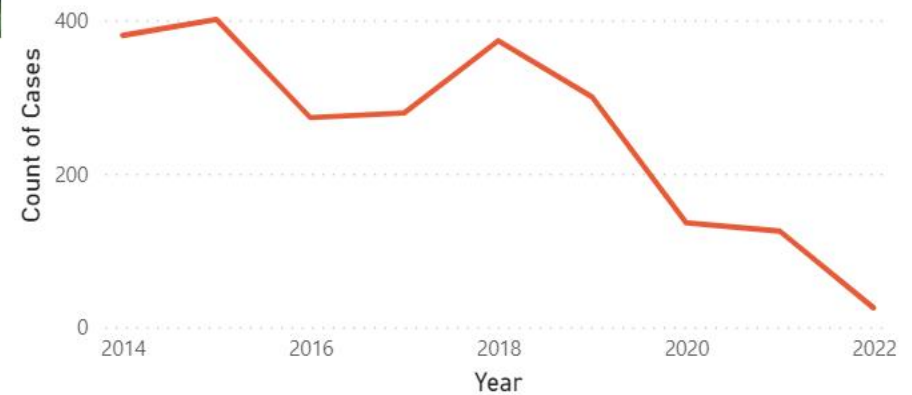
Total outbreaks

1885

Count of Cases by Country



Count of Cases by Year



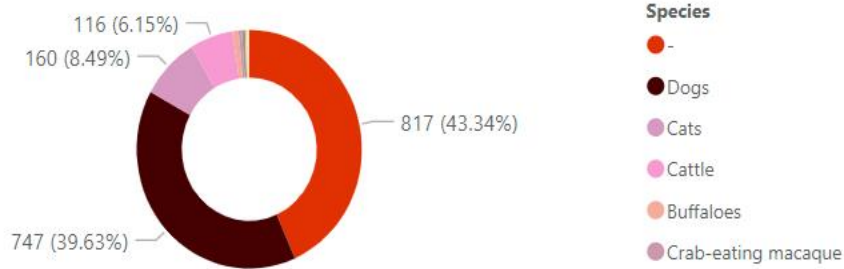
Country

All

Year

All

Count of New outbreaks by Species



# Rabies, Thailand 2018 - 2022, extracted from ARAHIS

Provinces affected

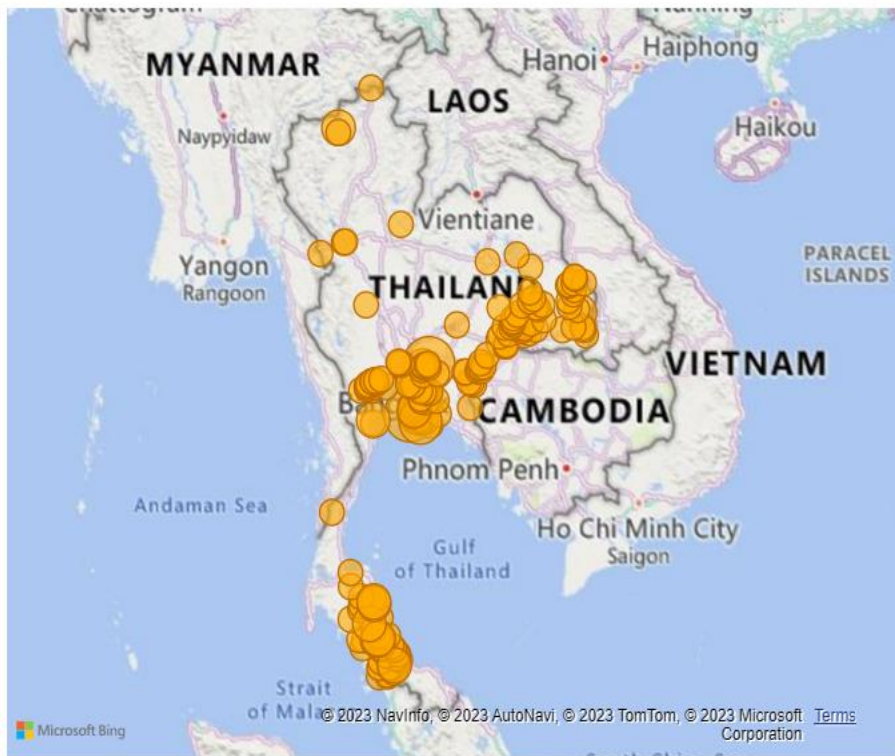
35

Cases

242

cases by Year, latitude and longitude

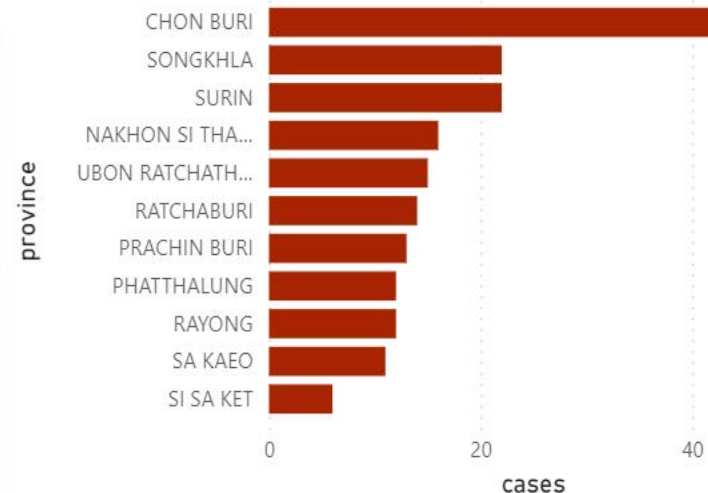
Year ● 2020



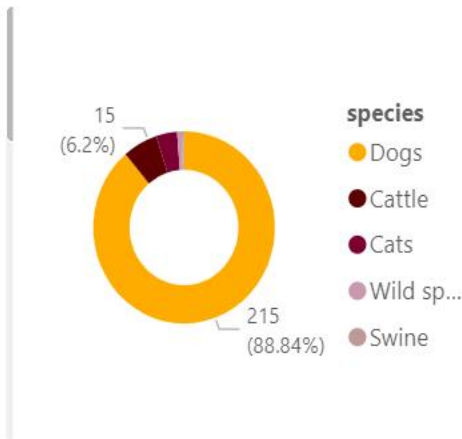
Year and Month



cases by province

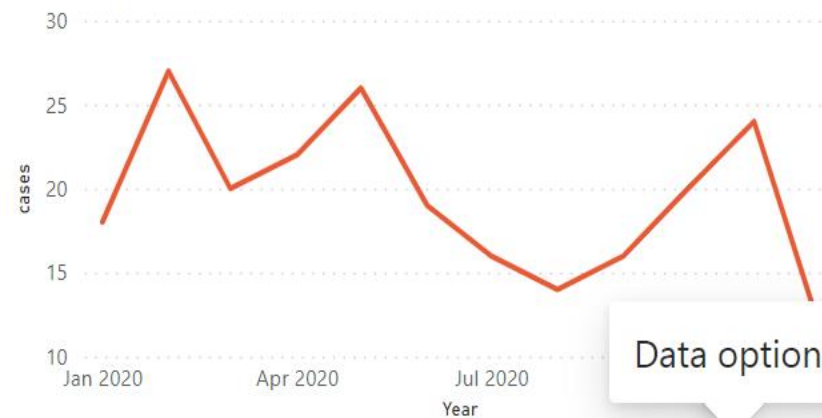


Count of cases by species



Year  
 2018  
 2019  
 2020  
 2021  
 2022

cases by Year and Month



Data options

# THANK YOU

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Contact details

Other information



This event is supported by the Australian Government

