
SWEDISH
VETERINARY
AGENCY

Update on aPMV-1 detections in Sweden in 2024

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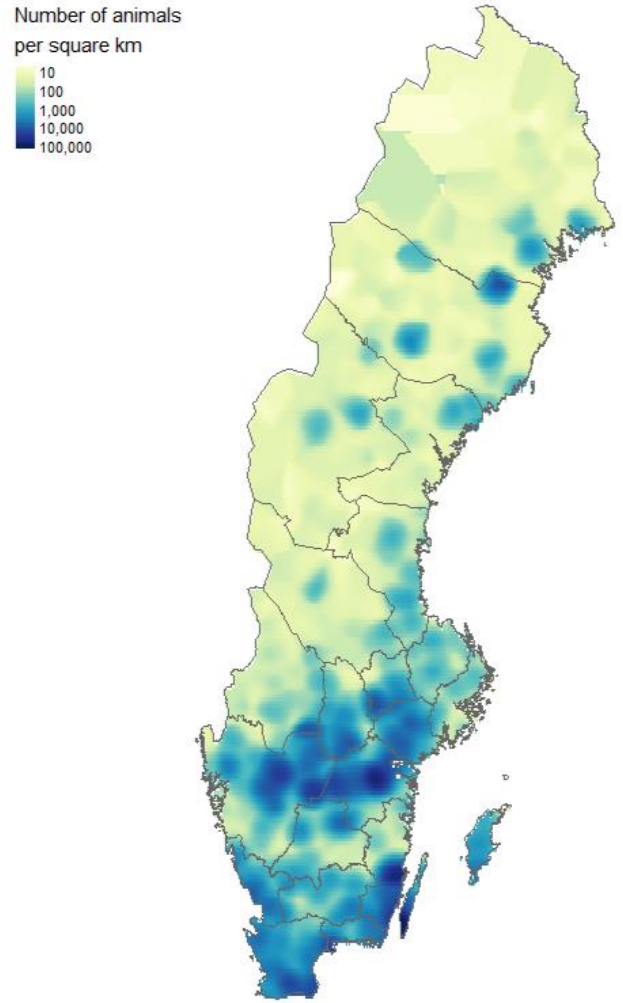
BACKGROUND

Poultry production in Sweden

- Approximately:
- 8,400,000 layers
- 2,400,000 pullets
- 11,000,000 broilers
- 90,000 turkeys

Source: The Swedish board of Agriculture census in June 2020



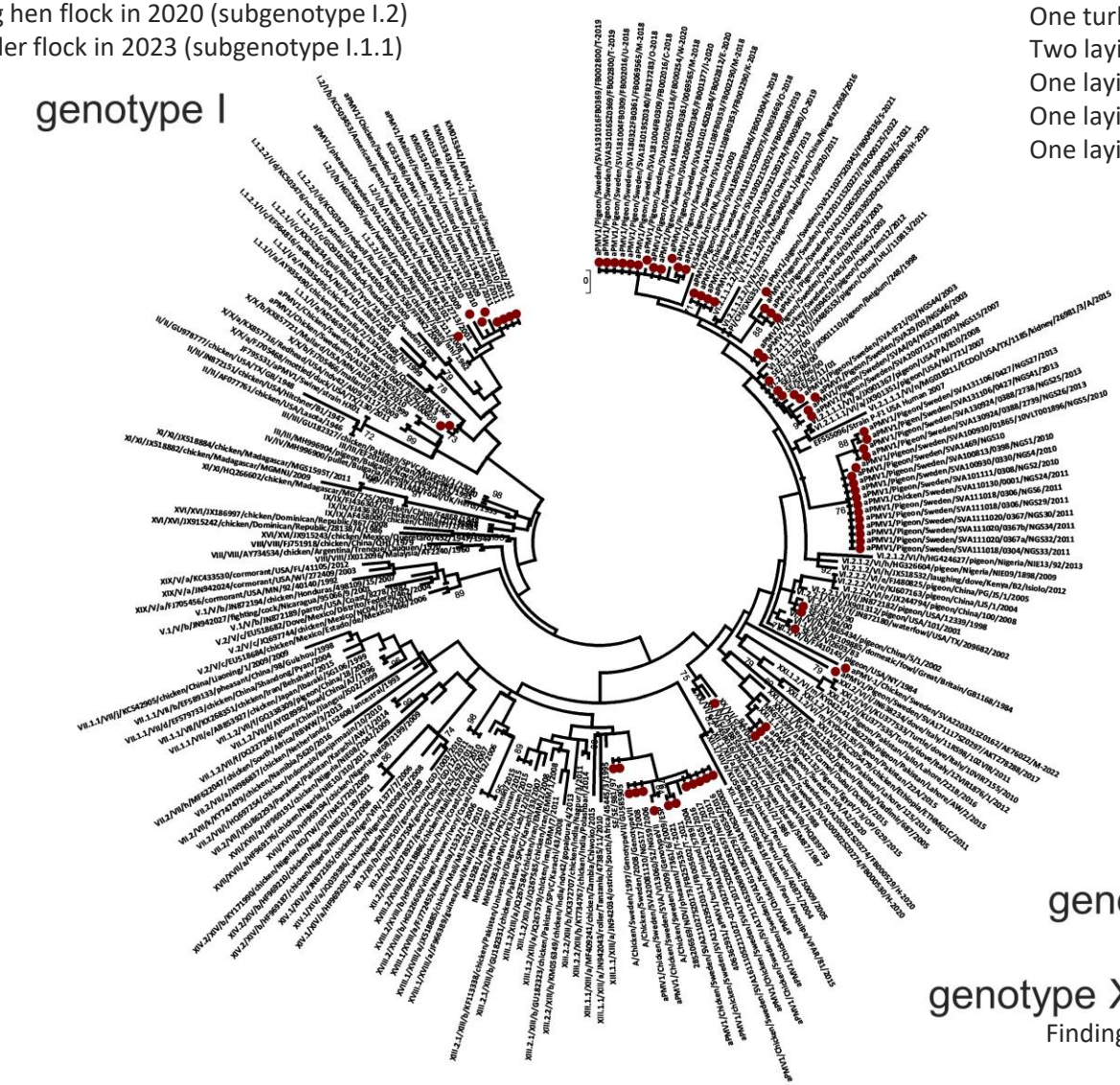
Source: Poultry register at Swedish Board of Agriculture
Map by Pascal Stiles

Background

- Sweden has a strict non-vaccination policy as regards to ND and has the status of a non-vaccinating country for ND according to EU legislation

- AI/ND-clinical suspicions/exclusion diagnosis ~20 times per year
    - usual symptoms presented at contact;
        - * Egg drop, bad egg quality
        - * Increase in mortality

. Singel location in 2006 (subgenotype I.1.1)
. Large spread among parents flocks one major breeding company in 2013 (subgenotype I.1.1)
. One laying hen flock in 2020 (subgenotype I.2)
. One breeder flock in 2023 (subgenotype I.1.1)



Annual findings among feral pigeons 2001-2022
One turkey breeder flock in 2003 (subgenotype VI.2.1.1.2.2)
Two laying hen flocks in 2011(subgenotype VI.2.1.1.2.1)
One laying hen flock in 2018 (subgenotype VI.2.1.1.2.2)
One laying hen flock in 2022(subgenotype VI.2.1.1.2.2)
One laying hen flock in 2024(subgenotype VI.2.1.1.2.2)

genotype VI

A large outbreak among broiler breeder flocks in 1995
(Sub genotype XX.1.1)

genotype XX

genotype XXI

Findings among feral pigeons 2020, 2022, 2023, 2024(subgenotype XXI.1.1, XXI. 2)

•1997, 2004, 2005, 2006, 2008, 2009, 2014, 2016, 2017, 2021 (sub-genotype XIII.1.1)

genotype XIII

Dimitrov, K. M. et al. (2019) 'Updated Unified Phylogenetic Classification System and Revised Nomenclature for Newcastle Disease Virus', *Infection, Genetics and Evolution*, 74: 103917

Outbreak-1 May 2024

The flock:

laying farm-free living indoors (in total, 230000 are kept in 10 barns).
Clinical signs;

- no mortality but a sudden drop in egg production-
a rapid up to 60% decrease compared to normal but transitory symptoms.

Laboratory investigation

Barn-5- 10 positive pools out of 24 tested/CT-value 34-39

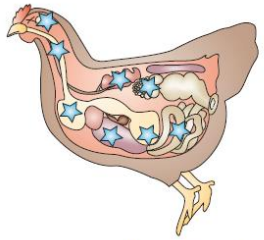
Barn-7- 9 positive pools out of 24 tested/CT-value 26-39

Barn 5 (39 weeks)					
	Intestinal	Oviduct	Trachea	Lung	Interp.
1	0	0	34,04	34,1349	Pos.
2	0	34,8325	0	0	Pos.
3	35,2043	33,2687	0	0	Pos.
4	36,2678	30,3005	0	36,9453	Pos.
5	0	0	0	32,1335	Pos.
6	0	0	0	0	Neg.
7	0	0	0	0	Neg.
8	29,8274	24,017	36,2111	37,4554	Pos.
9	0	34,5897	0	35,9798	Pos.
10	33,2174	31,859	0	35,1277	Pos.

Barn 7 (49 weeks)					
	Intestinal	Oviduct	Trachea	Lung	Interp.
1	38,7298	32,2083	0	36,4661	Pos.
2	0	37,6163	0	0	Pos.
3	0	0	0	0	Neg.
4	38,4344	0	36,2547	36,9479	Pos.
5	30,9069	24,1492	31,5798	36,7056	Pos.
6	40,4971	32,2493	0	0	Pos.
7	0	0	0	31,6315	Pos.
8	36,553	32,5045	0	37,366	Pos.
9	34,6198	29,1449	0	0	Pos.
10	31,664	28,4918	35,7009	0	Pos.

Pool swab samples				
	Age	Oropharyngeal	Cloacal	
Barn 1	26weeks	36,4292	35,1593	2 out of 8 pool -positive
Barn 2	26 weeks	37,8708	38,6326	2 out of 8 pool -positive
Barn 3	35 weeks	37,0796	Neg.	1 out of 8 pool-positive
Barn 4	35 weeks	Neg.	Neg.	
Barn 8	49 weeks	38,2904	36,1691	3 out of 8 pool positive
Barn 9	62 weeks		38,3395	1 out of 8 pool-positive
Barn 11	80 weeks	37,4503	38,1899	3 out of 8 pool -positive
Barn 12	58 weeks	Neg.	Neg.	

Lowest detected CT-Value



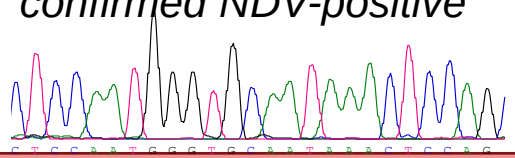
Cleavage site motif;

GG112-RRQRRFIGA-116

ELISA S/P%	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Barn 5	8		1			1				
Barn 7	4	1		1		1	1	2		

20240521
Samples from 60 individuals from respective barns pooled 5xtracheal/5xcloacal

confirmed NDV-positive



20240520
The owner contacted SVA

Egg drop in Two barns (nr. 5 and nr.7) changing colour and fragile eggshell

20240522

Protection zone (3 km) and surveillance zone (10 km)

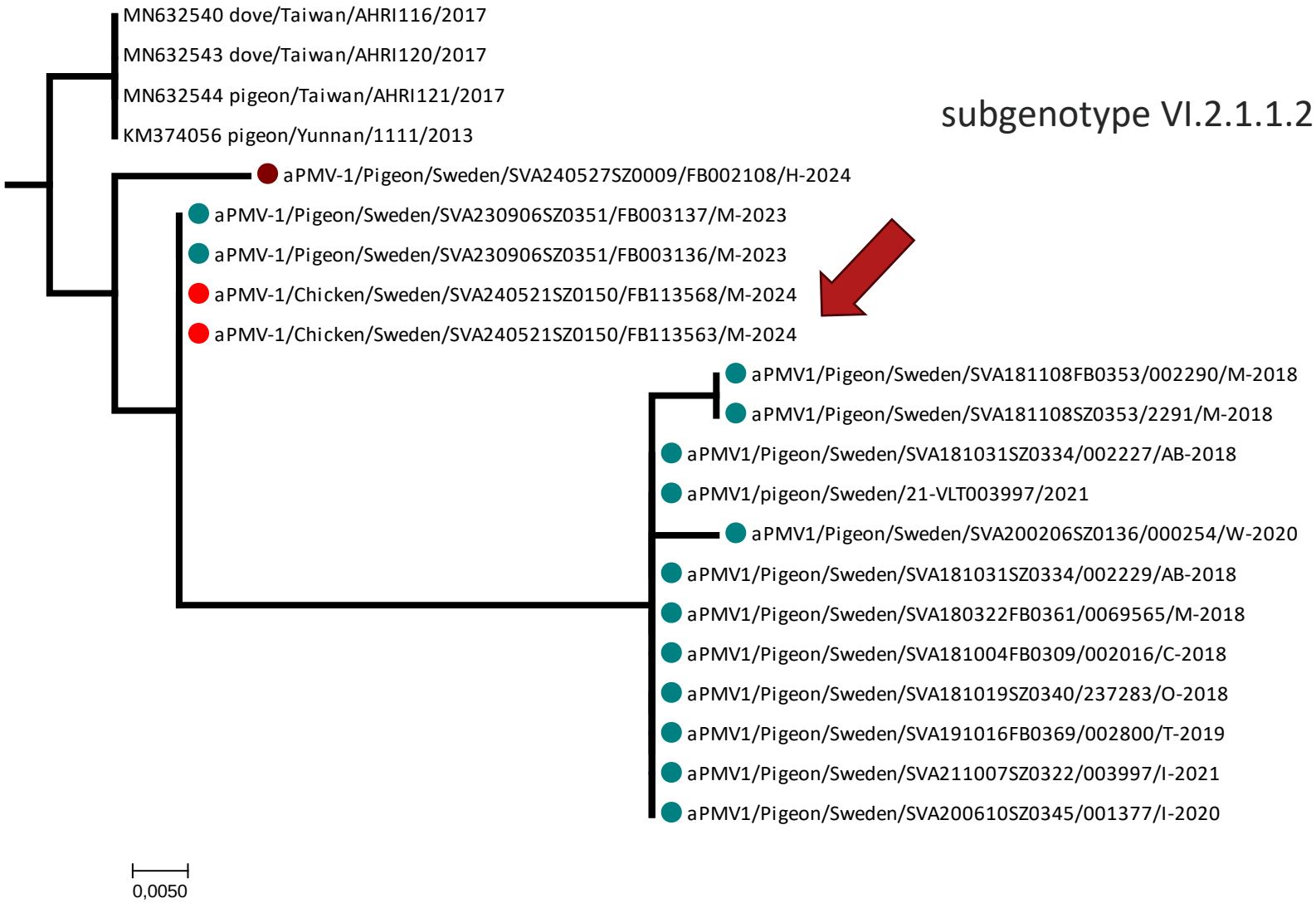
20240524

Stamping out

disposal of dead animals and products, cleaning and disinfection

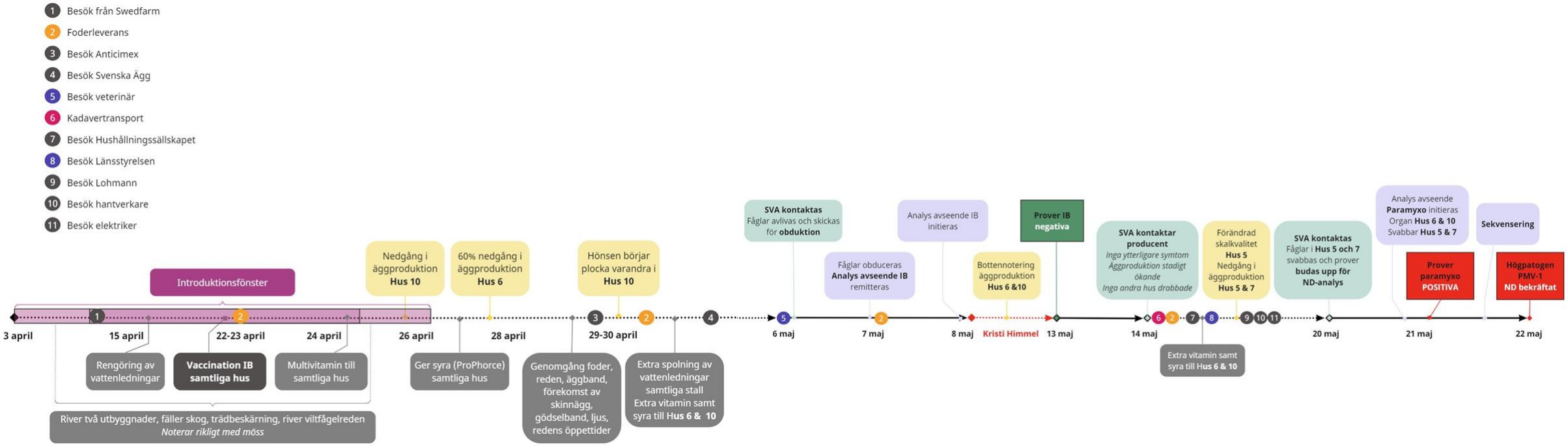
NDV-IP1-2024

Laboratory investigation



subgenotype VI.2.1.1.2.2

NDV-Epidemiological investigation



Uppdragsnummer	Ansvarig AVD	Hus/stall	aPMV-1 ELISA	aPMV-1 PCR	Numerisk resultat PCR (bästa)
U240507-0399	ALD	Hus 6		2 pooler POS av 6	31,18
U240507-0402	ALD	Hus 10		4 poler POS av 6	32,42
U240521-0150	MIK	Stall 5	1/10 POS	10 poler POS av 24	33,24
U240521-0150	MIK	Stall 7	4/10 POS	9 poler POS av 24	26,94

NDV-IP2

Around 140 ornamental pigeon
- green diarrhea
- incoordination and loss of balance
- mortality

MN632540 dove/Taiwan/AHRI116/2017
MN632543 dove/Taiwan/AHRI120/2017
MN632544 pigeon/Taiwan/AHRI121/2017
KM374056 pigeon/Yunnan/1111/2013
aPMV-1/Pigeon/Sweden/SVA240527SZ0009/FB002108/H-2024
aPMV-1/Pigeon/Sweden/SVA230906SZ0351/FB003137/M-2023
aPMV-1/Pigeon/Sweden/SVA230906SZ0351/FB003136/M-2023
aPMV-1/Chicken/Sweden/SVA240521SZ0150/FB113568/M-2024
aPMV-1/Chicken/Sweden/SVA240521SZ0150/FB113563/M-2024
aPMV1/Pigeon/Sweden/SVA181108FB0353/002290
aPMV1/Pigeon/Sweden/SVA181108SZ0353/2291/M
aPMV1/Pigeon/Sweden/SVA181031SZ0334/002227/AB-201
aPMV1/pigeon/Sweden/21-VLT003997/2021
aPMV1/Pigeon/Sweden/SVA200206SZ0136/000254,
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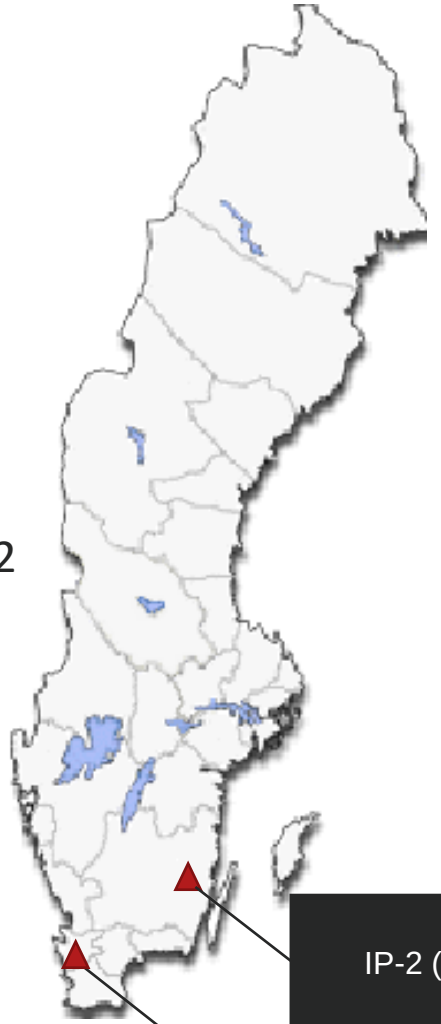
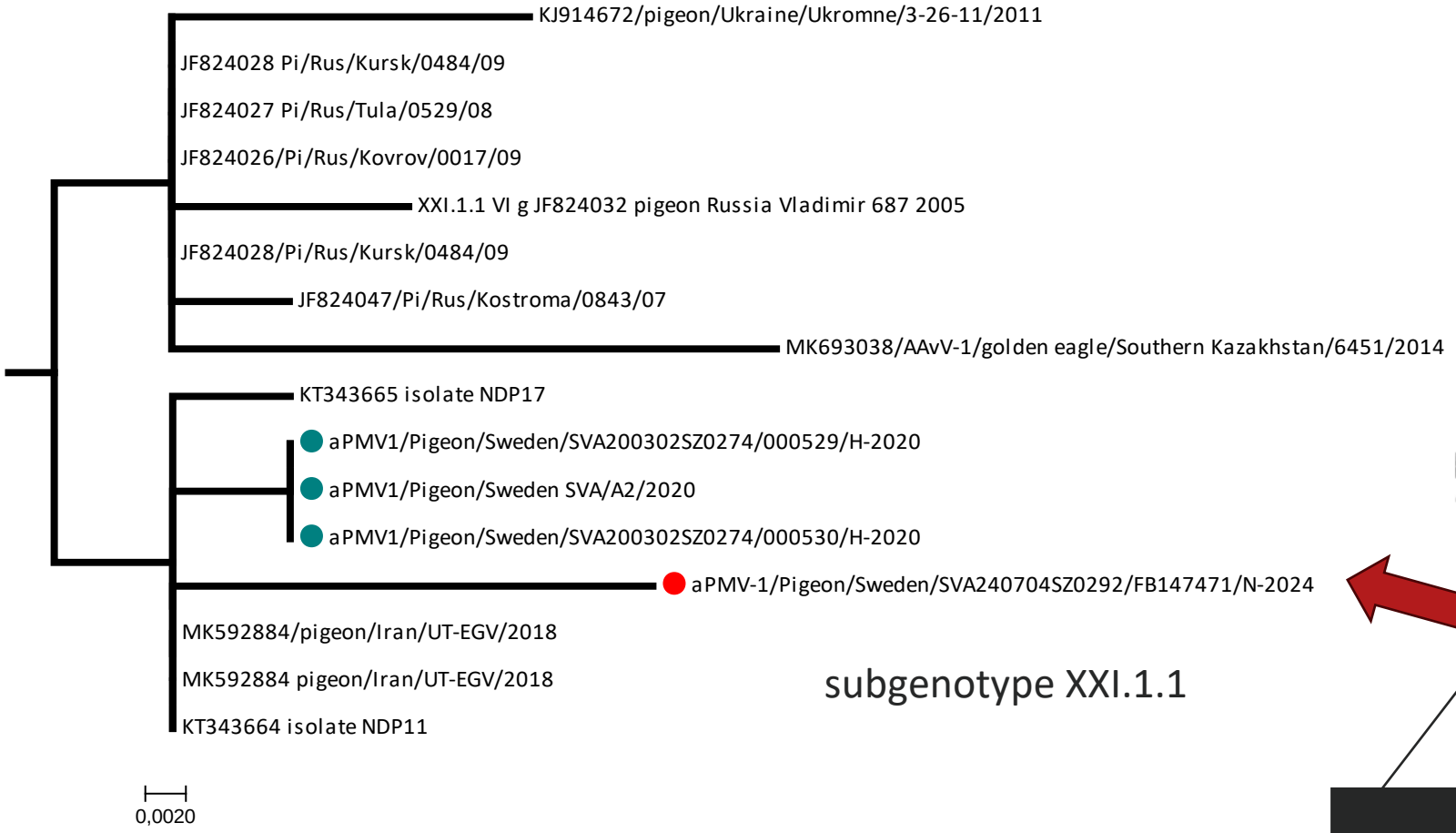
aPMV1/Pigeon/Sweden/SVA180322FB0361/0069565/M-20
aPMV1/Pigeon/Sweden/SVA181004FB0309/002016/C-2018
aPMV1/Pigeon/Sweden/SVA181019SZ0340/237283/O-2018
aPMV1/Pigeon/Sweden/SVA191016FB0369/002800/T-2019
aPMV1/Pigeon/Sweden/SVA211007SZ0322/003997/I-2021
aPMV1/Pigeon/Sweden/SVA200610SZ0345/001377/I-2020

subgenotype VI.2.1.1.2.2

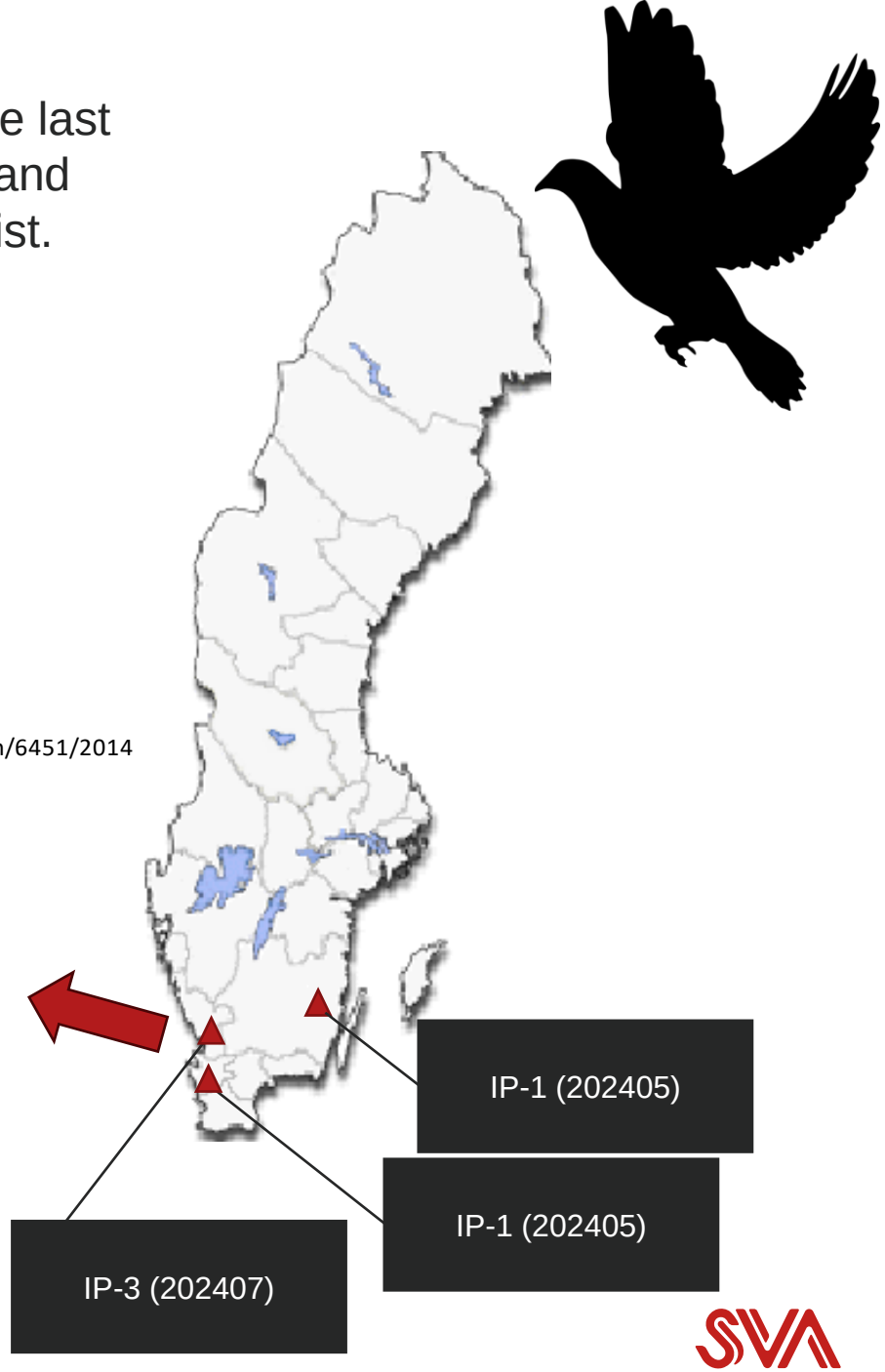


NDV-IP3

150 ornamental pigeons, where 10 animals died in the last 10 days. The birds have lost weight, stopped eating, and have swollen eyes, but no neurological symptoms exist.



subgenotype XXI.1.1



Summary

- In Sweden, “ pigeon Paramyxovirus” genotype VI 2.1.1.2.2 is endemic
- Spontaneus detection of genotype XXI 1.1 indicated repeated incursions into Sweden
- Genotype XXI 1.1 viruses were characterised as phenotypic virulent (meso-, velogenic) for chicken, whereas endemic VI 2.1.1.2.2 isolate display low virulence (lentogenic) phenotype
- Discrepancy between proteolytic cleavage site as a molecular marker and biological pathotype has to be considered for PPMV-1 and also viruses of genotype XXI 1.1
- The continued need for surveillance of APMV-1 in wild birds

thank you
danke
謝謝
ngiyabonga
teşekkür ederim
gracias
merci
obrigado
спасибо
Баярлалаа
рахмат
dziękuję
bedankt
sukriya
kop khun krap
go raibh maith agat
mochchakkeram
arigatō
dakujem
grazie
terima kasih
감사합니다
ありがとう
мерси
хвала
tapadh leat
dank je
hvala
mauruuru
sağolun
takk
taiku
ευχαριστώ
mersi
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kia ora
vinaka
blagodaram
misaotra
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paldies
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gracie
bayarlalaa
köszönöm
dankon
aciu
enkosi
sobodi
dekuji
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chnorakaloutioun
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manana
obrigada
murakoze
najis tuke
tanemirt
rahmet
diolch
dhanyavadagalu
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rahmat
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