

## Follow-up report 2

12/01/2021

**The event is ongoing. Weekly follow-up reports will be submitted.**

Sender	Country/territory	Report ID
Delegate of Greece	Greece	FUR_37526
Report reference	Event status	Self-declaration
COVID-19_MINK	On-going	No

### General information

Country or zone - Country	Disease - SARS-CoV-2 in animals (Inf. with)	Started on - 04/12/2020
Animal type - Terrestrial	Confirmed on - 08/12/2020	Causal agent - SARS-CoV-2
Disease category - Emerging	Reported on - 12/01/2021	Reason - Emerging disease

### Disease impact

Outbreak morbidity - 2.0	Outbreak mortality - 1.0
Zoonotic potential - Yes	Zoonotic potential description - To date, the Y453F mutation in the spike (S) protein of the virus, referred to as mink-related-variant, has been detected in sequenced SARS-CoV-2 genomes from 6 human cases directly related to mink (farm workers/owners). Presence of the Y453F mutation has been also confirmed in virus genomes from 3 farms so far. None of the other mutations described on the Rapid Risk Assessment of the 12th November 2020 from EU agencies (ECDC, EFSA, EMA) has been found up to now neither in humans nor animals. Sequencing of virus genomes from human and mink samples is ongoing

### Epidemiology

Source of the event or origin of the infection - Unknown or inconclusive

Epidemiological comments In total, 21 out of 91 mink farms have been tested positive for SARS-CoV-2 since the first outbreak was confirmed on 13/11/2020. At the same time, at least one human case has been detected in all 21 infected farms. Stamping out and official disposal of carcasses were only applied to the first confirmed farm. At that point, it was decided to stop culling animals. The whole country is practically considered a single zone. Movement restrictions (complete standstill for live animals) and strict biosecurity measures, including the mandatory use of personal protective equipment (PPE), have been imposed not only to the infected mink farms, but also to all fur farms in Greece. Reporting of increased mink morbidity and mortality to the veterinary authorities is obligatory at national level. When human vaccines become available, everyone who comes in close contact with mink (farm workers, owners, veterinarians) shall be included in the highest priority group to receive vaccination. In the framework of the one-health approach, veterinary and health authorities have been closely collaborating both at local and central level. Active repeated weekly surveillance (rapid tests and RT-PCR) is conducted by health authorities in all mink farm workers/owners. Results are notified directly to veterinary authorities which investigate every farm that is epidemiologically linked to a confirmed human case. In addition, veterinary authorities investigate every notification for increased animal morbidity and mortality. Oropharyngeal swabs are collected from the animals and tested with RT-PCR. Sequencing of virus genomes from human and mink samples is conducted.

### Control measures at event level

#### Domestic control measures

- Applied
- Surveillance within containment and or the protection zone
  - Surveillance outside containment and or the protection zone

- Movement control inside the country
- Zoning
- Traceability
- Quarantine

## Wild control measures

Applied

- Surveillance within containment and or the protection zone
- Traceability
- Quarantine
- Movement control inside the country
- Surveillance outside containment and or the protection zone
- Zoning

## Diagnostic

Clinical signs - No

Method of diagnostic - Diagnostic test

Test name	Category	Test type	Laboratory	Species sampled	Outbreaks	Tested from	Tested until	Result
Real-time polymerase chain reaction (real-time PCR)	Nucleic acid detection	Laboratory Test	Centre for Research and Technology Hellas (CERTH)	Mustelidae		08/12/2020		Positive
Virus sequencing	Genotyping	Laboratory Test	Centre for Research and Technology Hellas (CERTH)	Mustelidae		16/12/2020		Positive
Real-time polymerase chain reaction (real-time PCR)	Nucleic acid detection	Laboratory Test	Centre for Research and Technology Hellas (CERTH)	Mustelidae		18/12/2020		Positive
Real-time polymerase chain reaction (real-time PCR)	Nucleic acid detection	Laboratory Test	Centre for Research and Technology Hellas (CERTH)	Mustelidae		08/12/2020		Positive
Real-time polymerase chain reaction (real-time PCR)	Nucleic acid detection	Laboratory Test	Centre for Research and Technology Hellas (CERTH)	Mustelidae		08/01/2021		Positive
Virus sequencing	Genotyping	Laboratory Test	Centre for Research and Technology Hellas (CERTH)	Mustelidae		12/01/2021		Positive

## Quantitative data summary

Measuring unit - Animal

Species	Type	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Vaccinated	Outbreak morbidity	Outbreak mortality
Mustelidae	New	23700	3530	200	0	0	-	-	-
Mustelidae	Total	43800	7813	803	0	0	-	17.84	1.83
All species	New	23700	3530	200	0	0	-	-	-
All species	Total	43800	7813	803	0	0	-	17.84	1.83

Event morbidity - 2.0

Event mortality - 1.0

## Outbreaks

### 1000142955-Regional Unit of Kastoria

Outbreak reference - KASTORIA\_5      Started on - 31/12/2020      First administrative division - Epirus and Western Macedonia

Second administrative division - West Macedonia      Epidemiological unit - Farm      Geographic coordinates - 40.517,21.058

Third administrative division - Kastoria      Location - Regional Unit of Kastoria

Description of the affected populationThe animals are bred in a commercial farm for their fur. Suspicion was raised in the framework of surveillance activities following notification about a confirmed human case (farm worker) for COVID-19. Samples (oropharyngeal swabs) were collected from twenty animals and 1 out of 4 pooled samples was tested positive with RT- PCR. Mink showed no clinical symptoms and feed intake was not reduced. No mortality was observed.

Species	Type	Measuring unit	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Vaccinated
Mustelidae	New	Animal	3200	5	0	0	0	-
Mustelidae	Total	Animal	3200	5	0	0	0	-
All species	New	Animal	3200	5	0	0	0	-
All species	Total	Animal	3200	5	0	0	0	-

### 1000141549-Regional Unit of Kozani

Outbreak reference - KOZANI\_9      Started on - 11/12/2020      First administrative division - Epirus and Western Macedonia

Second administrative division - West Macedonia      Epidemiological unit - Farm      Geographic coordinates - 40.2862624,21.4396819

Third administrative division - Voio      Location - Regional Unit of Kozani

Description of the affected populationThe animals are bred in a commercial farm for their fur. Suspicion was raised in the framework of surveillance activities following notification about increased mink mortality. Samples (oropharyngeal swabs) were collected from ten dead animals and tested positive with RT- PCR. Infected mink showed respiratory symptoms and reduced feed intake.

Species	Type	Measuring unit	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Vaccinated
Mustelidae	New	Animal	-	-	-	-	-	-
Mustelidae	Total	Animal	3300	3300	400	0	0	-
All species	New	Animal	-	-	-	-	-	-
All species	Total	Animal	3300	3300	400	0	0	-

### 1000142957-Regional Unit of Kastoria

Outbreak reference - KASTORIA\_6      Started on - 31/12/2020      First administrative division - Epirus and Western Macedonia

Second administrative division - West  
Macedonia

Epidemiological unit - Farm

Geographic coordinates -  
40.496,21.144

Third administrative division - Kastoria

Location - Regional Unit of Kastoria

Description of the affected populationThe animals are bred in a commercial farm for their fur. Suspicion was raised in the framework of surveillance activities following notification about a confirmed human case (farm owner) for COVID-19. Samples (oropharyngeal swabs) were collected from twenty animals and 1 out of 4 pooled samples was tested positive with RT- PCR. Mink showed no clinical symptoms and feed intake was not reduced. No mortality was observed.

Species	Type	Measuring unit	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Vaccinated
Mustelidae	New	Animal	3000	5	0	0	0	-
Mustelidae	Total	Animal	3000	5	0	0	0	-
All species	New	Animal	3000	5	0	0	0	-
All species	Total	Animal	3000	5	0	0	0	-

### 1000141042-Regional Unit of Grevena

Outbreak reference - GREVENA\_3

Started on - 04/12/2020

First administrative division - Epirus and  
Western Macedonia

Second administrative division - West  
Macedonia

Epidemiological unit - Farm

Geographic coordinates -  
40.226447,21.440184

Third administrative division - Grevena

Location - Regional Unit of Grevena

Description of the affected populationThe animals are bred in a commercial farm for their fur. Suspicion was raised in the framework of surveillance activities following notification about a confirmed human case (farm worker) for COVID-19. Samples (oropharyngeal swabs) were collected from twenty animals and were tested positive with RT- PCR. Mink showed no clinical symptoms and feed intake was not reduced. Mortality did not increase. It was negligible and within the expected range based on the farm records, thus is considered unrelated to the outbreak.

Species	Type	Measuring unit	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Vaccinated
Mustelidae	New	Animal	-	-	-	-	-	-
Mustelidae	Total	Animal	4000	20	0	0	0	-
All species	New	Animal	-	-	-	-	-	-
All species	Total	Animal	4000	20	0	0	0	-

### 1000141001-Regional Unit of Kozani

Outbreak reference - KOZANI\_7

Started on - 04/12/2020

First administrative division - Epirus and  
Western Macedonia

Second administrative division - West  
Macedonia

Epidemiological unit - Farm

Geographic coordinates -  
40.2408,21.3978

Third administrative division - Voio

Location - Regional Unit of Kozani

Description of the affected populationThe animals are bred in a commercial farm for their fur. Suspicion was raised in the framework of surveillance activities following notification about a) increased mortality and b) a confirmed human case (farm owner) for COVID-19. Samples (oropharyngeal swabs) were collected from ten dead animals and all of them were tested positive with RT-PCR. Mink that died were relatively old and fat and showed mild respiratory symptoms and reduced feed intake. It is assumed that more animals were infected but their number cannot be calculated because of missing information.

Species	Type	Measuring unit	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Vaccinated
Mustelidae	New	Animal	-	-	-	-	-	-
Mustelidae	Total	Animal	2300	43	43	0	0	-

All species	New	Animal	-	-	-	-	-	-
All species	Total	Animal	2300	43	43	0	0	-

### 1000141542-Regional Unit of Grevena

Outbreak reference - GREVENA\_4      Started on - 13/12/2020      First administrative division - Epirus and Western Macedonia

Second administrative division - West Macedonia      Epidemiological unit - Farm      Geographic coordinates - 40.1871123,21.460993

Third administrative division - Grevena      Location - Regional Unit of Grevena

Description of the affected population The animals are bred in a commercial farm for their fur. Suspicion was raised in the framework of surveillance activities following notification about a confirmed human case (farm worker) for COVID-19. Samples (oropharyngeal swabs) were collected from twenty animals and were tested positive with RT-PCR. Mink showed no clinical symptoms and feed intake was not reduced. No mortality was observed.

Species	Type	Measuring unit	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Vaccinated
Mustelidae	New	Animal	-	-	-	-	-	-
Mustelidae	Total	Animal	3000	20	0	0	0	-
All species	New	Animal	-	-	-	-	-	-
All species	Total	Animal	3000	20	0	0	0	-

### 1000142951-Regional Unit of Kozani

Outbreak reference - KOZANI\_10      Started on - 24/12/2020      First administrative division - Epirus and Western Macedonia

Second administrative division - West Macedonia      Epidemiological unit - Farm      Geographic coordinates - 40.354,21.413

Third administrative division - Voio      Location - Regional Unit of Kozani

Description of the affected population The animals are bred in a commercial farm for their fur. Suspicion was raised in the framework of surveillance activities following notification about a) increased mink mortality b) a confirmed human case (farm owner) for COVID-19. Samples (oropharyngeal swabs) were collected from 3 dead and 7 symptomatic animals and tested positive with RT-PCR. Infected mink showed respiratory symptoms and reduced feed intake was observed.

Species	Type	Measuring unit	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Vaccinated
Mustelidae	New	Animal	3500	3500	200	0	0	-
Mustelidae	Total	Animal	3500	3500	200	0	0	-
All species	New	Animal	3500	3500	200	0	0	-
All species	Total	Animal	3500	3500	200	0	0	-

### 1000141038-Regional Unit of Kozani

Outbreak reference - KOZANI\_8      Started on - 04/12/2020      First administrative division - Epirus and Western Macedonia

Second administrative division - West Macedonia      Epidemiological unit - Farm      Geographic coordinates - 40.28438,21.45

Third administrative division - Voio      Location - Regional Unit of Kozani

Description of the affected population The animals are bred in a commercial farm for their fur. Suspicion was raised in the framework of surveillance activities following notification about a) increased mortality and b) four confirmed human cases (farm owner and workers) for COVID-19. Samples (oropharyngeal swabs) were collected from ten dead animals and all of them were tested positive with RT-PCR. Infected mink showed respiratory symptoms and reduced feed intake.

Species	Type	Measuring unit	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Vaccinated
Mustelidae	New	Animal	-	-	-	-	-	-
Mustelidae	Total	Animal	7500	900	160	0	0	-
All species	New	Animal	-	-	-	-	-	-
All species	Total	Animal	7500	900	160	0	0	-

### 1000142953-Regional Unit of Kozani

Outbreak reference - KOZANI\_11      Started on - 31/12/2020      First administrative division - Epirus and Western Macedonia

Second administrative division - West Macedonia      Epidemiological unit - Farm      Geographic coordinates - 40.348,21.567

Third administrative division - Voio      Location - Regional Unit of Kozani

Description of the affected population The animals are bred in a commercial farm for their fur. Suspicion was raised in the framework of surveillance activities following notification about a confirmed human case (farm worker) for COVID-19. Samples (oropharyngeal swabs) were collected from twenty animals and all 4 pooled samples were tested positive with RT-PCR. Mink showed no clinical symptoms and feed intake was not reduced. No mortality was observed.

Species	Type	Measuring unit	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Vaccinated
Mustelidae	New	Animal	14000	20	0	0	0	-
Mustelidae	Total	Animal	14000	20	0	0	0	-
All species	New	Animal	14000	20	0	0	0	-
All species	Total	Animal	14000	20	0	0	0	-



## Map legend

### OUTBREAKS REPRESENTATION ON MAP

#### OUTBREAKS NATURE

Single / Cluster

Domestic species



Wild species



Domestic & Wild



#### OUTBREAKS STATUS

Outbreak currently reported



Ongoing outbreak



Resolved outbreak



#### AGGREGATION REPRESENTATION

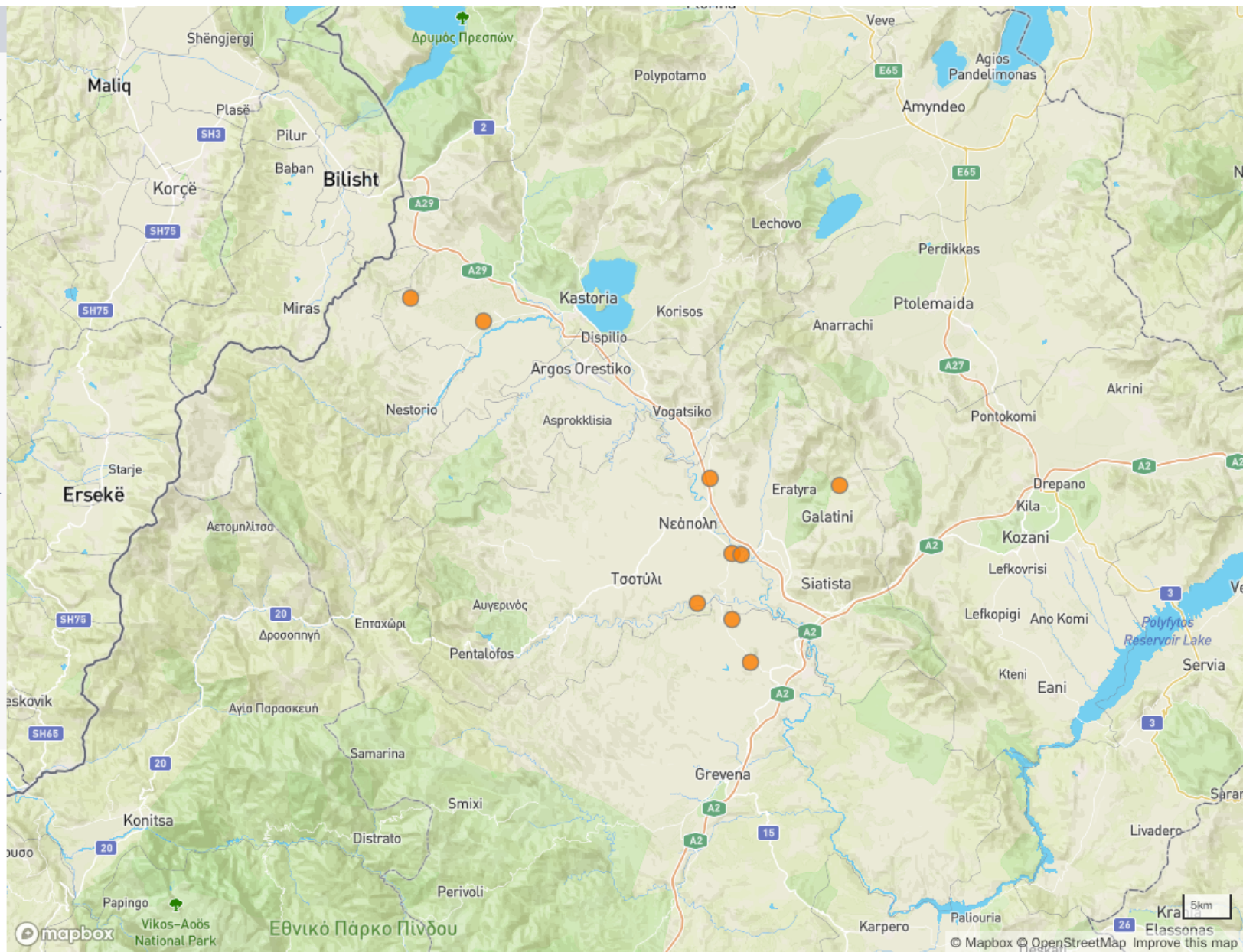
< 20 outbreaks



20 - 100 outbreaks



> 100 outbreaks



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