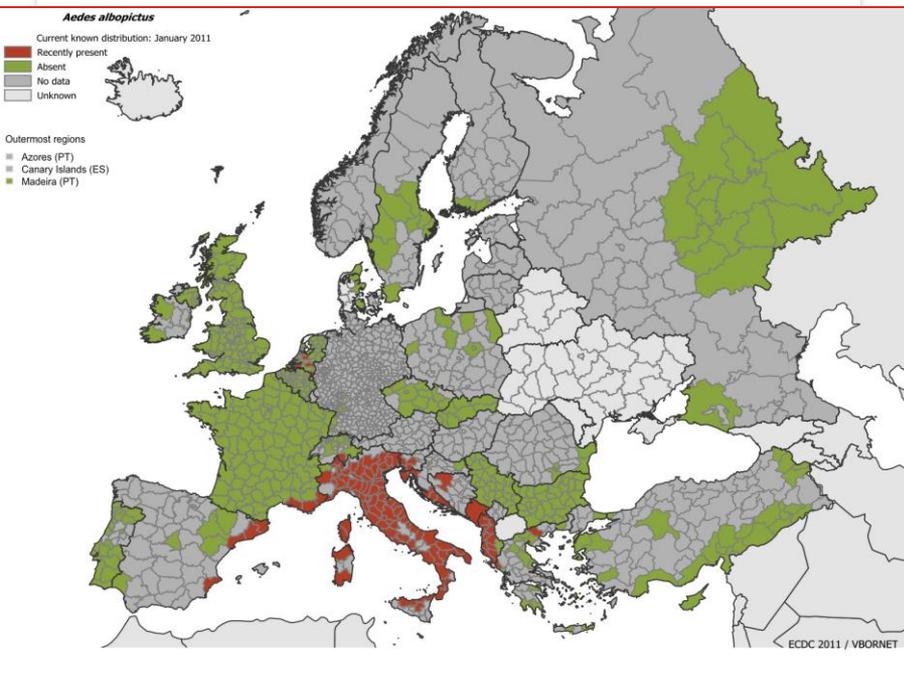




## Pan European maps of Vector Borne diseases



Marieta Braks

On behalf of WP4



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## European Network for Arthropod Vector Surveillance for Human Public Health

<http://www.vbornet.eu/>

### Project design

- WP1 - Secretariat, (Belgium)
- WP2 - Science watch and technical support (UK)
- WP3 - Vector surveillance and distribution maps (Belgium)
- WP4 - Strategic consultation group/public health (Netherlands)

**Aim:** Integrated approach in surveillance of vector-borne diseases in Europe

### Deliverables

- Database/network of Public Health Experts interest for VBD
- Questionnaire on VBD Surveillance in Europe
- Strategic Paper Surveillance of VBD
- **Pan European maps of VBDs**
- Interventions -> vector control





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● WP4 - Strategic consultation group/public health, (Netherlands, Marieta Braks)

- Focal points Northern (Sweden, Marika Hjertqvist)
- Focal points Western (Netherlands), Marieta Braks)
- Focal points Central (Czech Republic, Zdenek Hubalek)
- Focal points Southern (France, Renaud Lancelot)
- Focal points Overseas (France, Didier Fontenille)
- Focal points other vectors (France, Frederic Pages)





## Issues for ECDCs Pan European approach to VBD's

- VBDs belong to different contexts in different countries
- Priorities for surveillance/interventions depend on the context of VBD
- To determine the context of a VBD, data is needed from each country
- The quality of data depends on the quality/ level of the VBD surveillance feedback system of country
- Quality/Level of VBD surveillance feedback system depends on perceived urgency of local governments

**VBORNET aims to assist ECDC and member states in their assessments of VBD**



## **Deliverables**

- Database/network of Public Health Experts interest for VBD
- Questionnaire on VBD Surveillance in Europe
- Strategic Paper Surveillance of VBD
  
- Pan European maps of VBDs
- Interventions -> vector control

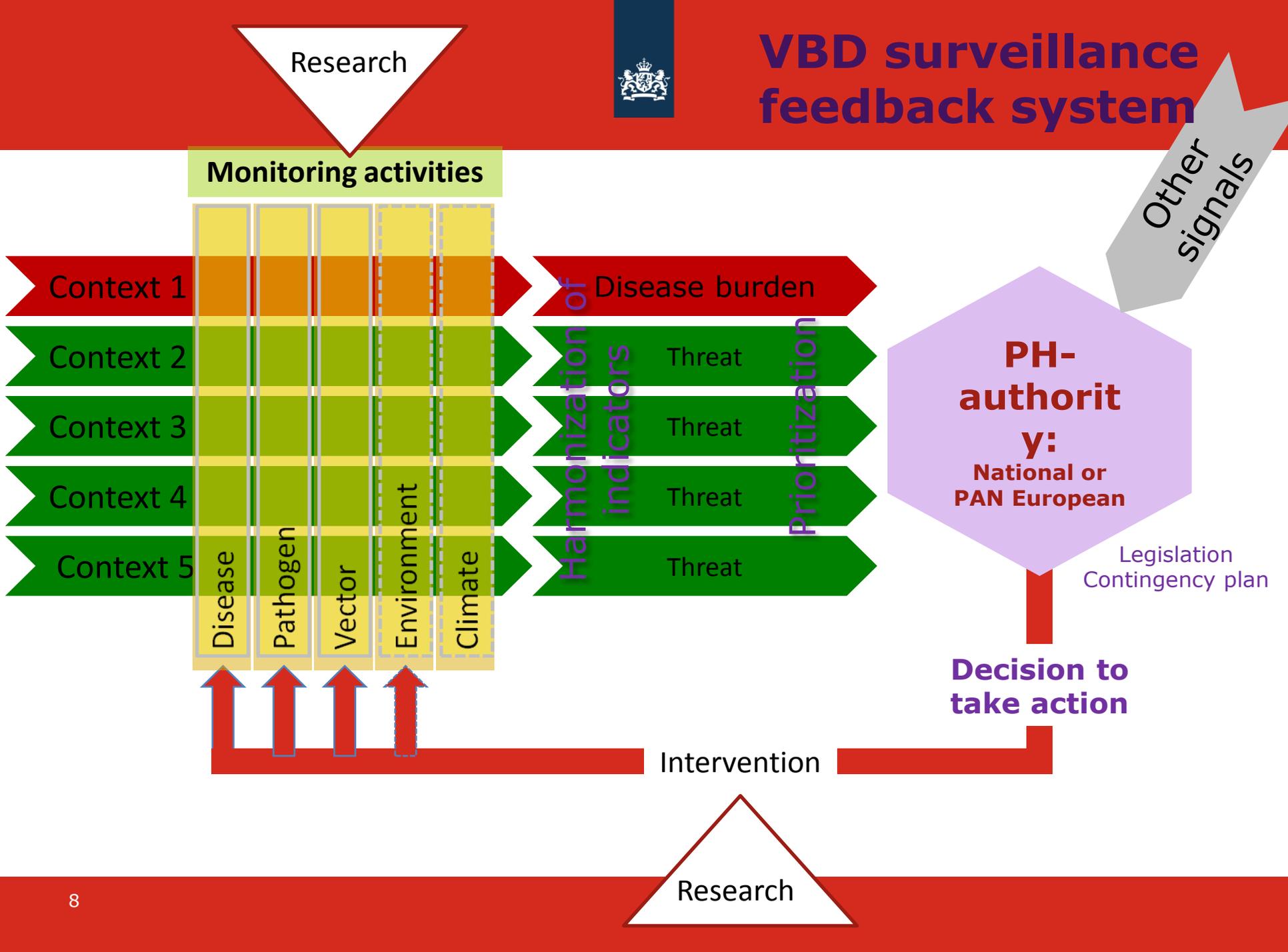


## **Deliverables**

- Database/network of Public Health Experts interest for VBD
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# VBD surveillance feedback system



Research

Monitoring activities

Context 1

Context 2

Context 3

Context 4

Context 5

Disease

Pathogen

Vector

Environment

Climate

Disease burden

Threat

Threat

Threat

Threat

Harmonization of indicators

Prioritization

**PH-authority:**  
National or PAN European

Other signals

Legislation  
Contingency plan

**Decision to take action**

Intervention

Research



# Surveillance and intervention

Essential data per member state?



## Different types of VBD context

based on the current presence (√) or absence (-) of disease (endemic human cases), pathogen or vector

Context	Endemic disease	Pathogen	Vector	
1	√	√	√	Disease burden
2	-	√	√	Threat
3	-	-	√	
4	-	√	-	
5	-	-	-	

\* Endemic infections with human cases.



## Different types of VBD context

based on the current presence (√) or absence (-) of disease (endemic human cases), pathogen or vector

Context	Autochth. case	Pathogen	Vector	
1a	√ every yr	√	√	Disease burden
1b	√not every yr	√	√	
2	-	√	√	Threat
3	-	-	√	
4	-	√	-	
5	-	-	-	

\* Endemic infections with human cases.



## Essential data per member state

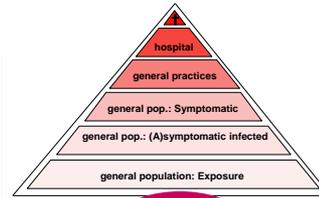
Country x	VBD
	Context
<b>Mosquito-borne diseases:</b>	
Chikungunya	x
Dengue	.
West Nile Fever	.
Rift Valley Fever	.
<b>Tick-borne diseases:</b>	
Tick-borne encephalitis	.
Crimean-Congo haemorrhagic fever	.
Lyme borreliosis	.
Tularaemia	.
Rickettsiosis	.
<b>Sandfly-borne diseases</b>	
Leishmaniasis	.
Sandfly fevers	.

Endemisch	Pathogeen	Vector	context
v (ey)	v	v	1a
v (ney)	v	v	1b
~	v	v	2
~	~	v	3
~	v	~	4
~	~	~	5



## Essential data per member state

Country x	VBD
	Context
<b>Mosquito-borne diseases:</b>	
Chikungunya	X
Dengue	.
West Nile Fever	.
Rift Valley Fever	.
<b>Tick-borne diseases:</b>	
Tick-borne encephalitis	.
Crimean-Congo haemorrhagic fever	.
Lyme borreliosis	.
Tularaemia	.
Rickettsiosis	.
<b>Sandfly-borne diseases</b>	
Leishmaniasis	.
Sandfly fevers	.

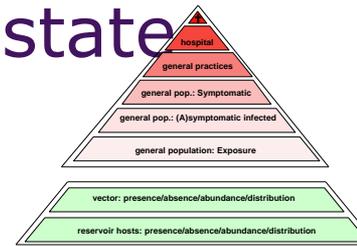


Endemisch	Pathogeen	Vector	context
v (ey)	v	v	1a
v (ney)	v	v	1b
~	v	v	2
~	~	v	3
~	v	~	4
~	~	~	5



# Surveillance and intervention

## Essential data per member state



Country x	VBD
	Context
<b>Mosquito-borne diseases:</b>	
Chikungunya	X
Dengue	.
West Nile Fever	.
Rift Valley Fever	.
<b>Tick-borne diseases:</b>	
Tick-borne encephalitis	.
Crimean-Congo haemorrhagic fever	.
Lyme borreliosis	.
Tularaemia	.
Rickettsiosis	.
<b>Sandfly-borne diseases</b>	
Leishmaniasis	.
Sandfly fevers	.

Endemisch	Pathogeen	Vector	context
v (ey)	v	v	1a
v (ney)	v	v	1b
~	v	v	2
~	~	v	3
~	v	~	4
~	~	~	5

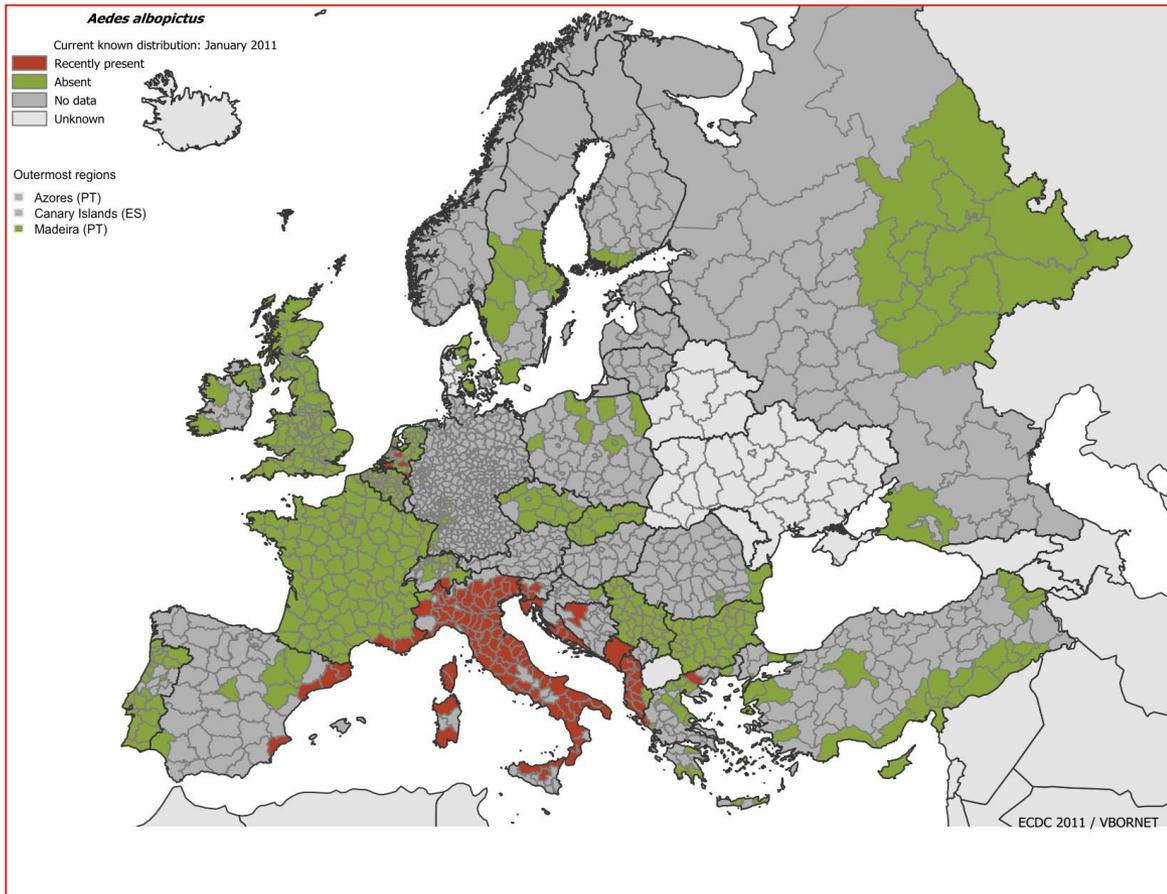


## Essential data per member state

Country x	VBD
	Context
<b>Mosquito-borne diseases:</b>	
Chikungunya	x
Dengue	.
West Nile Fever	.
Rift Valley Fever	.
<b>Tick-borne diseases:</b>	
Tick-borne encephalitis	.
Crimean-Congo haemorrhagic fever	.
Lyme borreliosis	.
Tularaemia	.
Rickettsiosis	.
<b>Sandfly-borne diseases</b>	
Leishmaniasis	.
Sandfly fevers	.

vector: presence/absence/abundance/distribution

Endemisch	Pathogeen	Vector	context
v (ey)	v	v	1a
v (ney)	v	v	1b
~	v	v	2
~	~	v	3
~	v	~	4
~	~	~	5



# Pan European maps



- One pan European map for each VBD

Endemisch	Pathogeen	Vector	context	color
v (ey)	v	v	1a	purple
v (ney)	v	v	1b	red
~	v	v	2	orange
~	~	v	3	yellow
~	v	~	4	green
~	~	~	5	grey

- Easy overview of situation
- Using decision rules for simplification
- Details in fact sheets



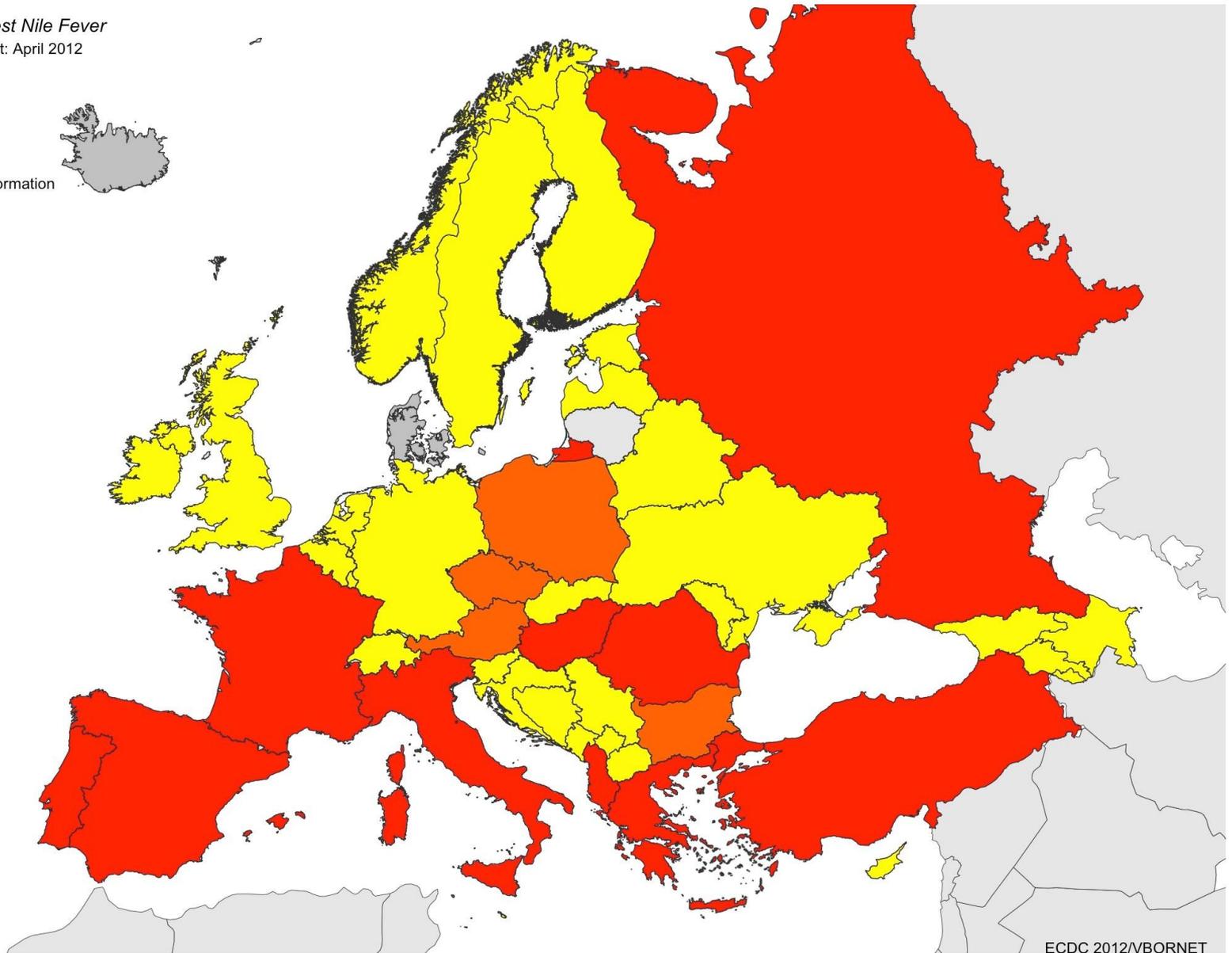
# Decision tree

	CASES		PATHOGEN				VECTOR	
Disease	locally acquired human cases		<b>Infected</b>	<b><u>Infected</u></b>	<b>Infected</b>	<b>Infected</b>	<b>main vector</b>	<b>main vector</b>
	every year	not every year	human imported	Reservoir1	reservoir2	vector	Species1	species2

*West Nile Fever*

Context: April 2012

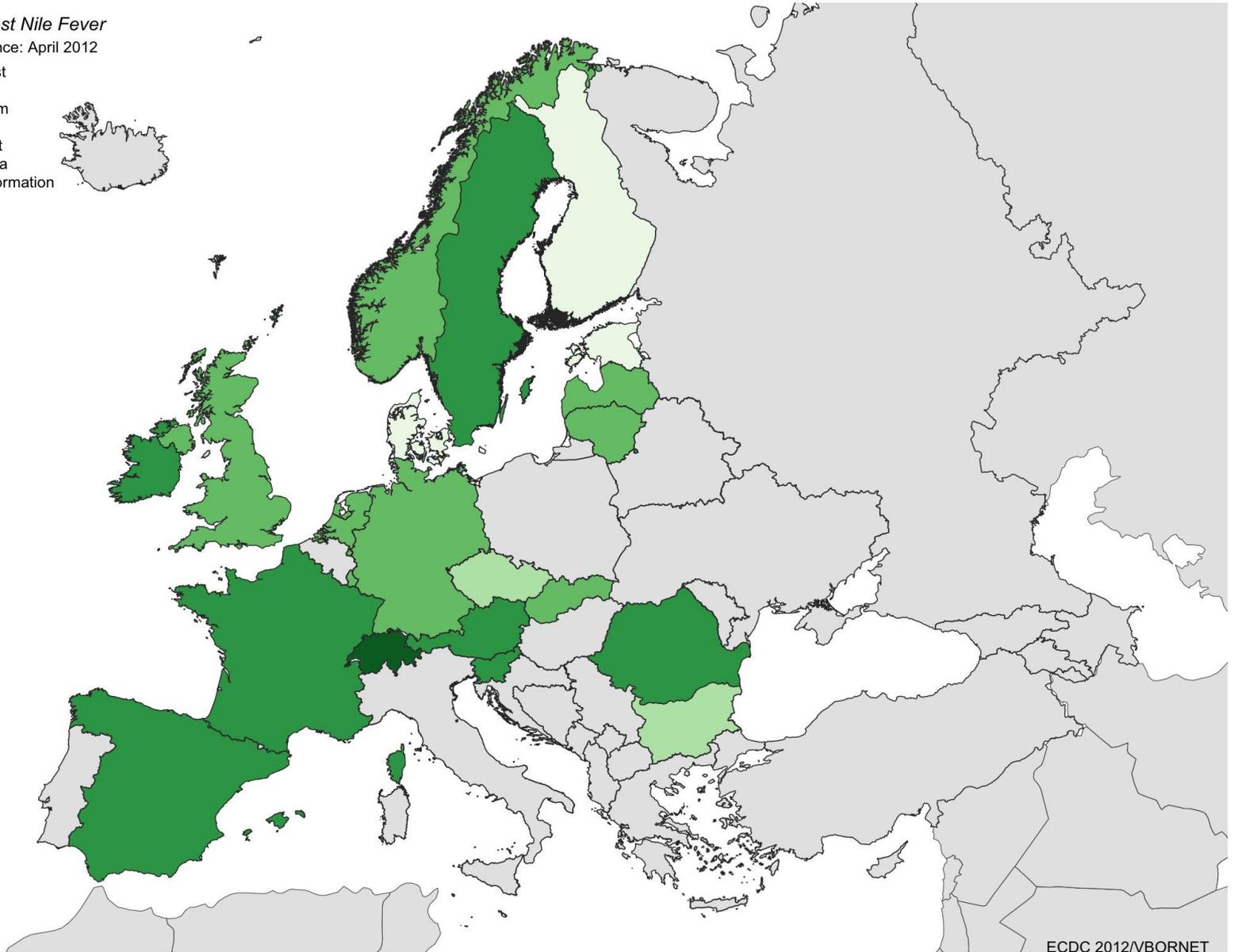
- 1a
- 1b
- 2
- 3
- 4
- 5
- No information



*West Nile Fever*

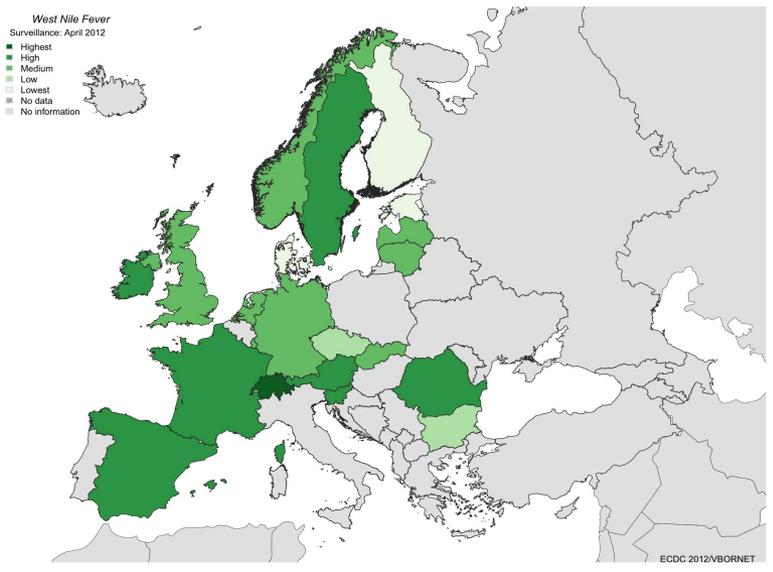
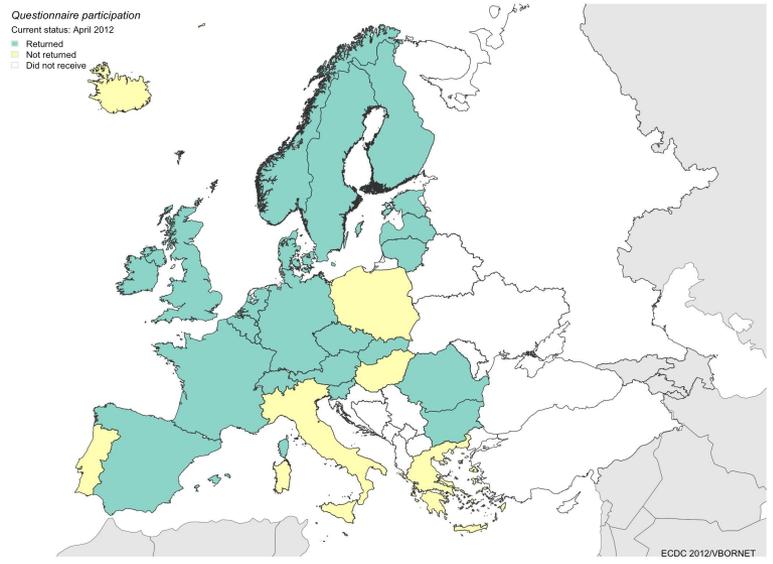
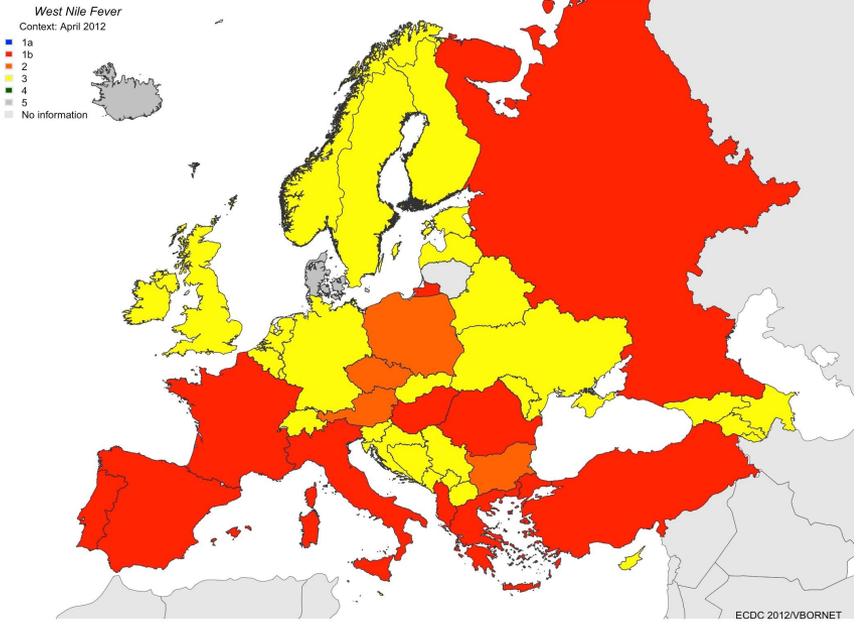
Surveillance: April 2012

- Highest
- High
- Medium
- Low
- Lowest
- No data
- No information





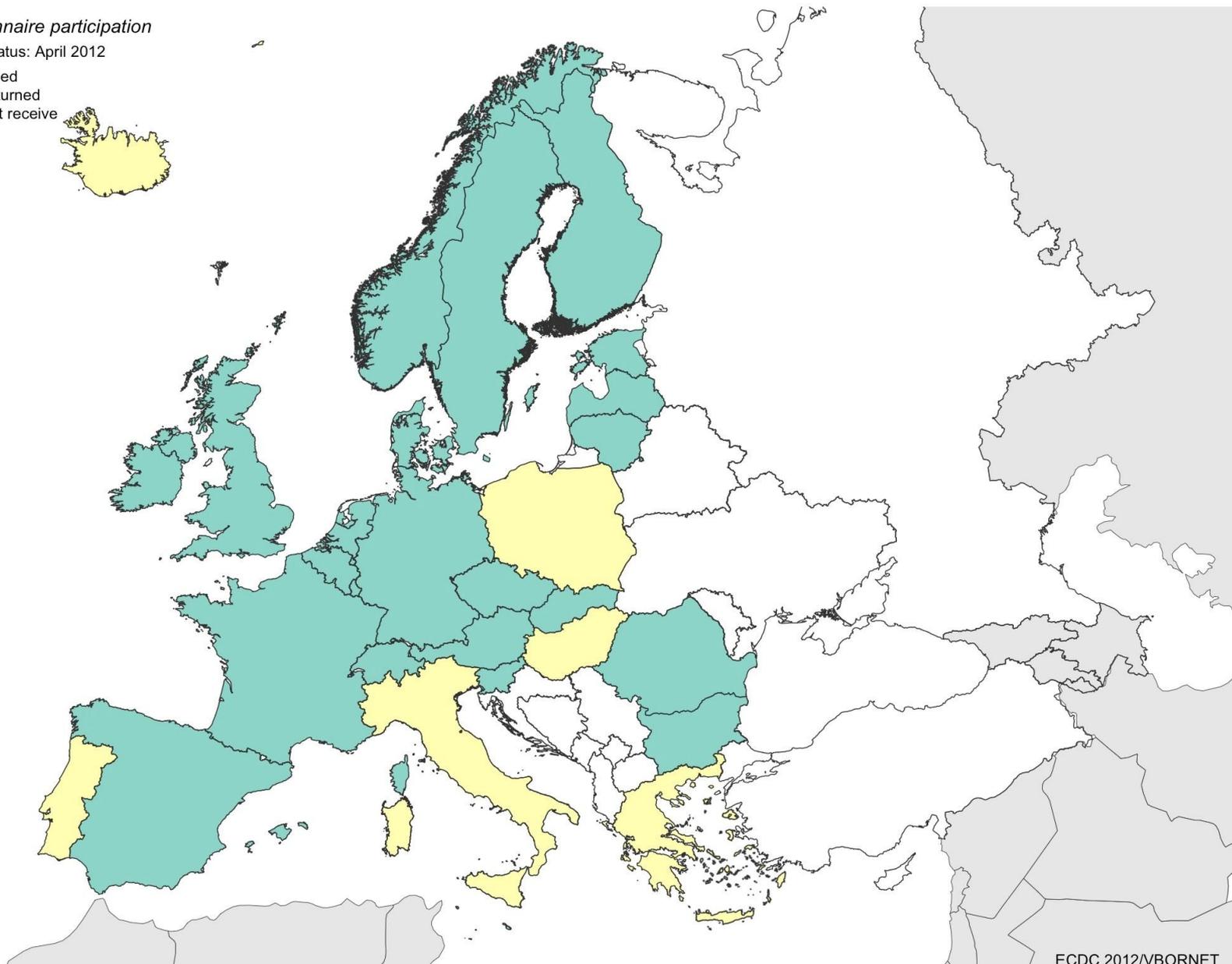
# WNV



*Questionnaire participation*

Current status: April 2012

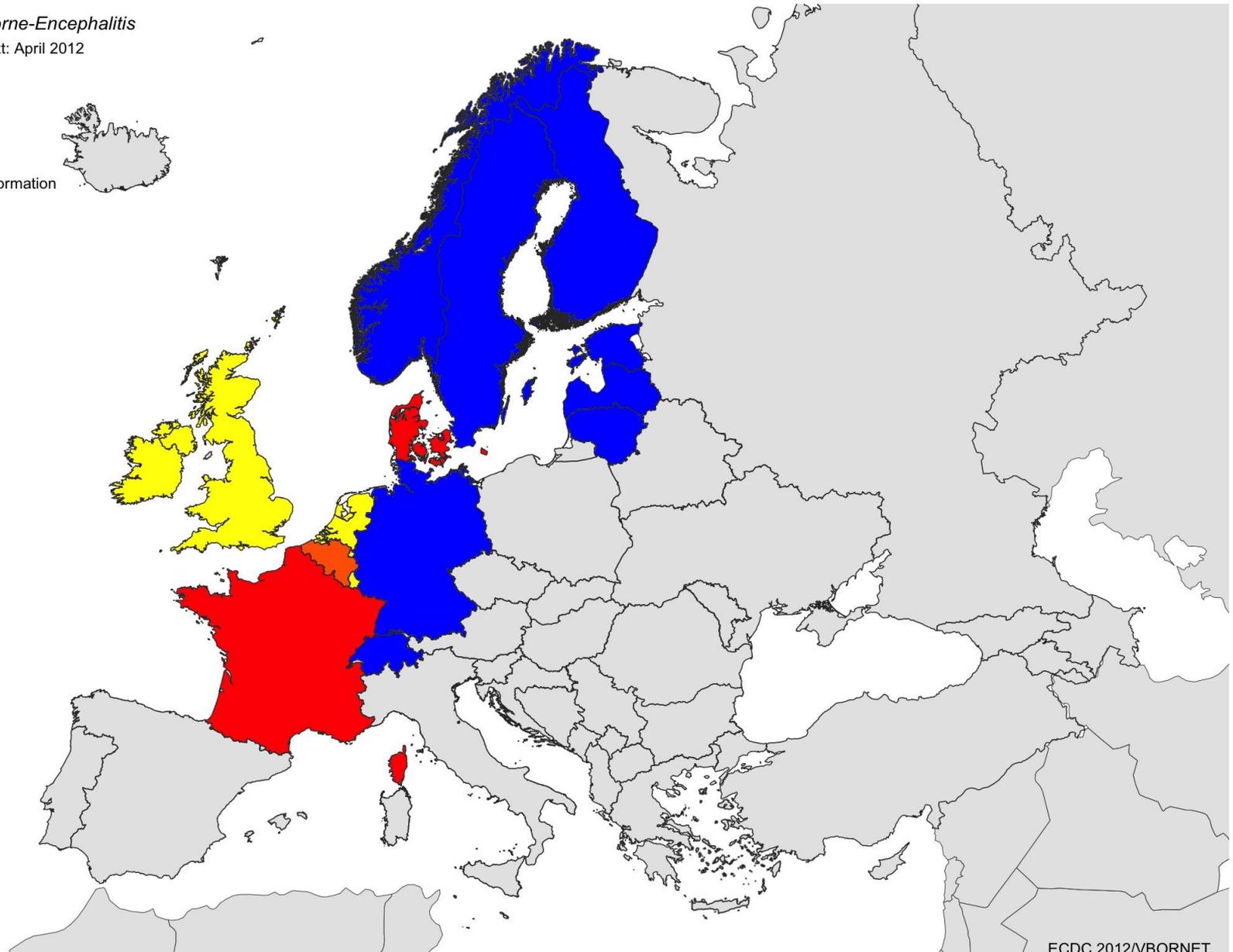
- Returned
- Not returned
- Did not receive



*Tickborne-Encephalitis*

Context: April 2012

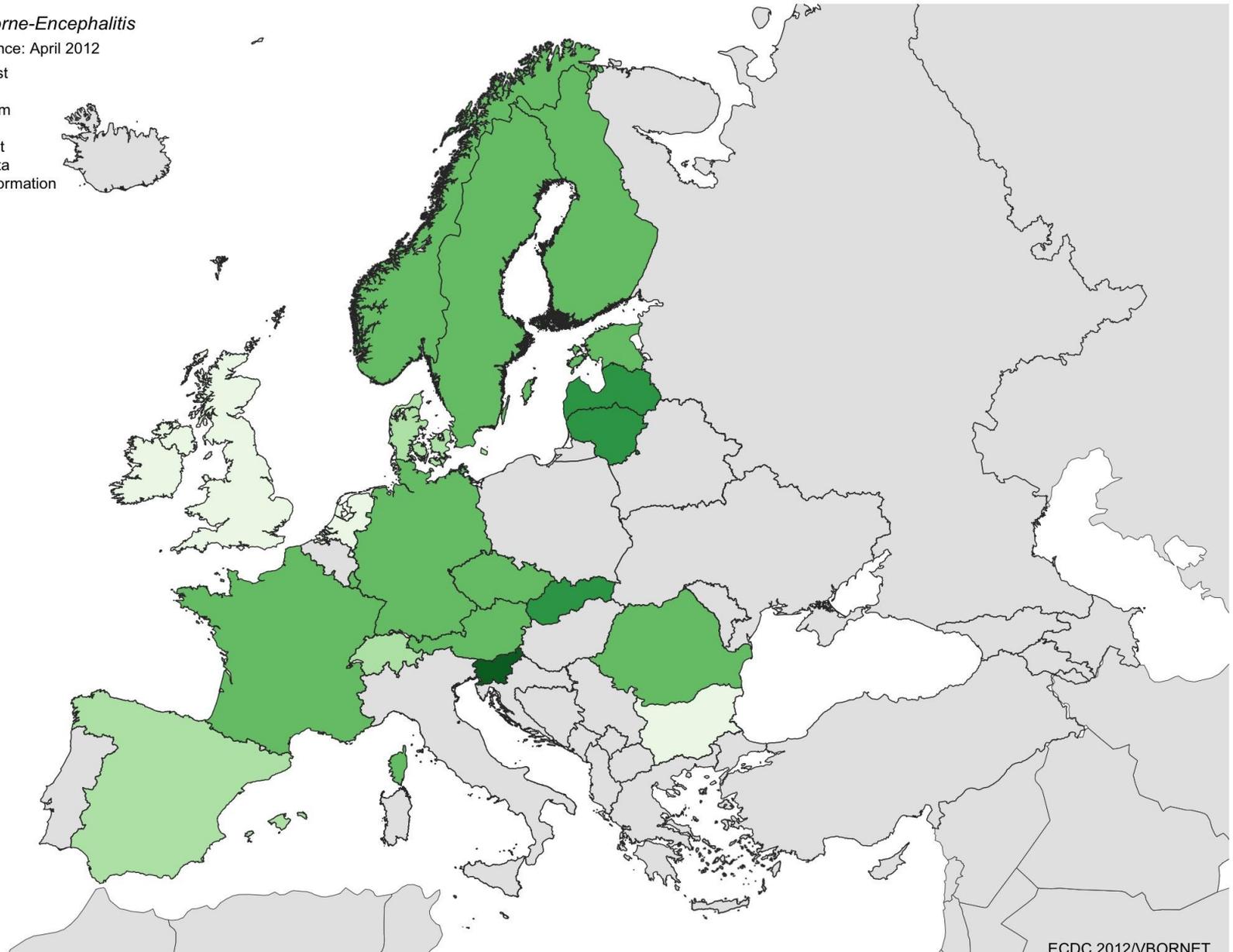
- 1a
- 1b
- 2
- 3
- 4
- 5
- No information



*Tickborne-Encephalitis*

Surveillance: April 2012

- Highest
- High
- Medium
- Low
- Lowest
- No data
- No information

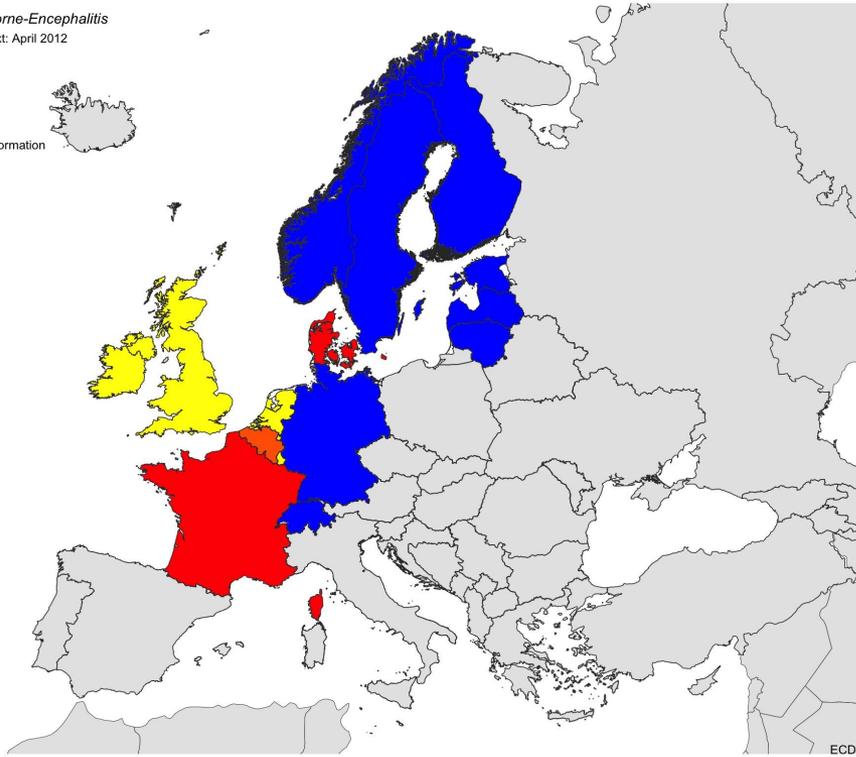




# TBE

Tickborne-Encephalitis  
Context: April 2012

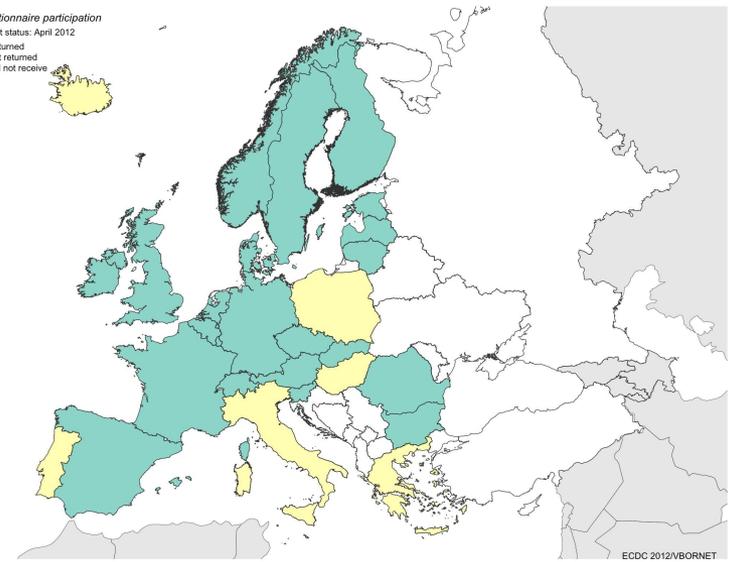
- 1a
- 1b
- 2
- 3
- 4
- 5
- No information



Questionnaire participation

Current status: April 2012

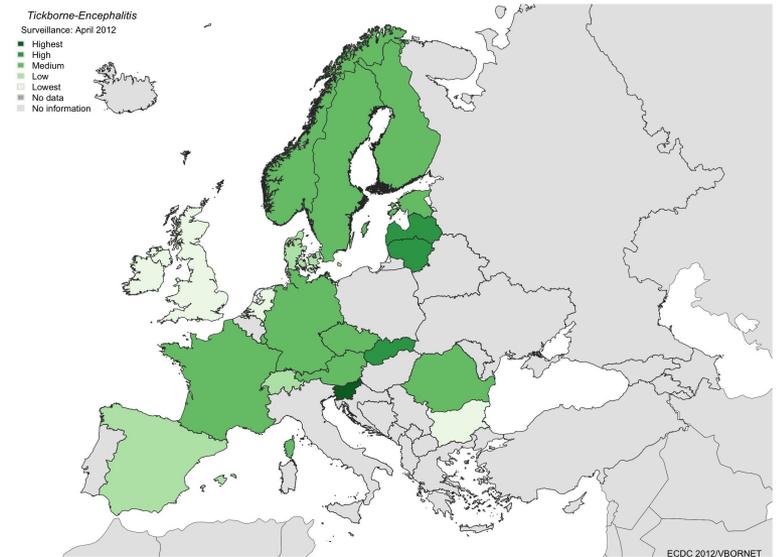
- Returned
- Not returned
- Did not receive



Tickborne-Encephalitis

Surveillance: April 2012

- Highest
- High
- Medium
- Low
- Lowest
- No data
- No information





# VBD surveillance feedback system

