



## The HOMED survey.

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### Page 1: Welcome

## HOMED - Holistic Management of Emerging Forest Pests and Diseases.

HOMED is a European Union funded project to develop scientific knowledge and practical solutions for the management of emerging native and non-native pests and pathogens threatening European forests.

Forests account for around 40% of the total land area in Europe and provide numerous benefits to people and the environment. These include marketed products such as wood, and also ecosystem services of great value from an ecological, political, social and cultural perspective. Among these are water resource management, preservation of biodiversity, climate change mitigation, recreation and health benefits, cultural heritage and protection from soil erosion. In the last decades, a growing list of introduced non-native pests and pathogens (PnPs) have been causing dramatic losses to European trees and forests that threaten the continued provision of these benefits.

This questionnaire aims to identify your concerns and experiences regarding emerging forest pests and pathogens. Specifically we would like to know about:

- 1) pest and pathogen awareness
- 2) current management techniques
- 3) expectations for improved management tools

Your feedback will be used to develop better tools to reduce the risk to European forests from emerging pests and pathogens.

In total, the survey consists of 7 sections. At the end of the survey, you will be able to download the survey questions with your answers for your records. Many thanks for your participation.

For more information about the HOMED project, please visit <http://homed-project.eu>

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## Participant information statement

The study is being conducted by HOMED project - Holistic Management of Emerging Forest Pests and Diseases - an EU Horizon 2020 research and innovation programme under grant agreement No 771271 . You have been selected to take part in this questionnaire survey as a person interested in tree health. Your participation in the survey is entirely voluntary, and you can opt out at any stage by closing and exiting the browser. The only personal data asked for are your name and email to enable us to contact you in case you request further information about the outcome of this study. These personal data will be stored separately from the research data and will be processed in accordance with the General Data Protection Regulation 2016 (GDPR) and the Data Protection Act 2018. Your name and email will be held securely at Coventry University and will only be viewed by the HOMED survey team. You are free to withdraw your questionnaire responses from the project data set at any time up to 2 months after submitting your response by emailing [samantha.green@coventry.ac.uk](mailto:samantha.green@coventry.ac.uk). The response data will be used with the aim of developing better management tools and techniques for forest health in Europe, and in the production of formal research outputs (e.g. journal articles, conference papers, theses and reports). By responding to the questionnaire, your consent to take part in the study is assumed and you agree to the use of anonymised quotes in publications. For further information, or if you have any queries, please contact [samantha.green@coventry.ac.uk](mailto:samantha.green@coventry.ac.uk). If you have any concerns that cannot be resolved through the lead researcher, please contact Coventry University Research Centre Ethics Lead, Dr. Adrian Evans([Adrian.evans@coventry.ac.uk](mailto:Adrian.evans@coventry.ac.uk)). This survey has been received and approved through the formal Research Ethics procedure at Coventry University. Thank you for your participation in this survey. Your help is very much appreciated.

1. I have read and understood the above information. I agree to take part in this questionnaire survey about emerging forest pests and diseases. I confirm that I am aged 18 or over. \* Required

Yes, I agree.

## Page 2: About your work

This HOMED project questionnaire is concerned with observations and opinions about emerging forest/tree/timber pests and pathogens in Europe from people who have an interest in tree health. Please answer for your own, personal remit. So about you:

2. Which country are you mainly working in? \* *Required*

3. What is the focus of your work? Please choose all that apply.

- Plant nursery
- Gardens or amenity horticulture
- Landscape architecture
- Forest and tree management
- Forest and tree health survey
- Plant health law enforcement
- Forest authority organisation
- Scientific research
- Policy making - related to forests
- Nature Conservation NGO (non-governmental organisation, not for profit)
- Timber trade
- Volunteer or interested citizen
- Woodland or forest owner
- Consultancy
- Education
- Arboretum
- Importer of plants
- Other

3.a. If you selected Other, please specify:

4. What is the predominant focus of your own work, with regard to forest pests and diseases? You may select more than one if needed.

[+ More info](#)

- Prevention of entry at border
- Early detection/rapid response
- Recording
- Control and management
- Adaptation
- Restoration
- Education
- Research
- Not applicable
- Other

4.a. If you selected Other, please specify:

5. What is the scale of your work? Please choose one that most accurately represents the scale (size) of your activities relating to emerging forest pests and pathogens.

6. Are the trees your work is concerned with, mostly in rural or urban environments?

Please don't select more than 1 answer(s) per row.

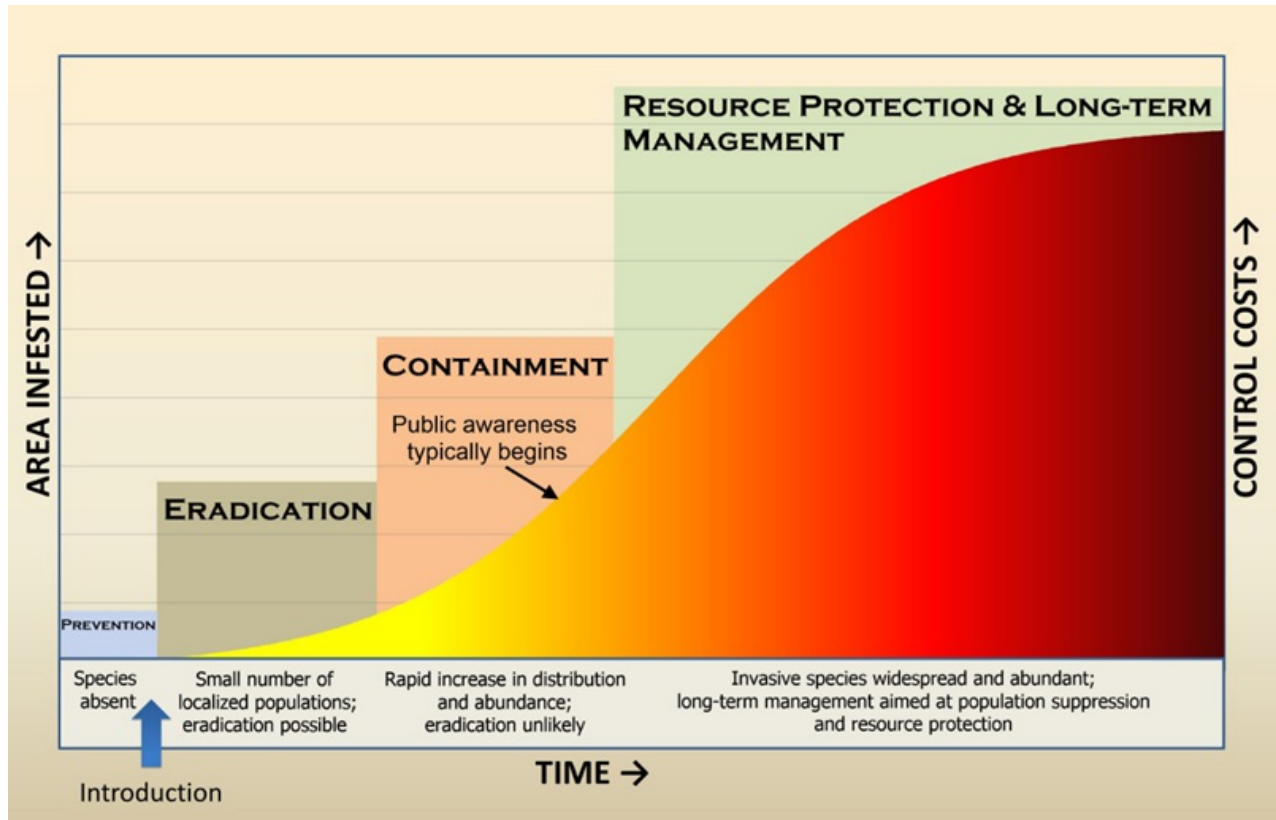
	Completely rural	Mostly rural	Mostly urban	Completely urban	Not applicable
The trees in my areas of work are:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Page 3: Your current emerging Pest and Disease concerns

The HOMED project is focused on emerging forest pests and pathogens. In this section we would like to find out about the new pests and pathogens (PnPs) you find the most concerning. We would like to capture your experience of the invasion level of named emerging forest pests and pathogens, that you are encountering in your work.

The diagram below shows a curve of typical invasion stages.

**Source:** The Invasion Curve: adapted from Invasive Plants and Animals Policy Framework, State of Victoria, Department of Primary Industries, 2010



The 'invasion curve' shows that the area infested can increase with time, whilst the eradication possibilities become more limited with time. The sooner a new pest or pathogen is detected and managed, the higher the likelihood of eradication and the simpler the prevention of further spread.

7. Which emerging forest pests and pathogens (PnPs) are you experiencing? Please choose all that apply. NB Some are rare, it's normal not to know all of them!

		What is your experience of its invasion level? * Required
Asian longhorn beetle ( <i>Anoplophora glabripennis</i> )		Please select <input type="text"/>
Box tree moth ( <i>Cydalima perspectalis</i> )		Please select <input type="text"/>

Asian chestnut gall wasp ( <i>Dryocosmus kuriphilus</i> )	Please select
Oak processionary moth ( <i>Thaumatococcus processionea</i> )	Please select
Douglas-fir needle midge ( <i>Contarinia pseudotsugae</i> )	Please select
Emerald ash borer ( <i>Agilus planipennis</i> )	Please select
Eucalyptus snout beetle ( <i>Gonipterus platensis</i> )	Please select
Black twig borer ( <i>Xylosandrus compactus</i> )	Please select
Oak lace bug ( <i>Corythucha arcuata</i> )	Please select
Shot-hole borer ( <i>Euwallacea fornicatus</i> )	Please select
Pine wood nematode ( <i>Bursaphelenchus xylophilus</i> )	Please select
Pine pitch canker ( <i>Fusarium circinatum</i> )	Please select
Pine red band needle blight ( <i>Dothistroma septosporum</i> )	Please select
Pine brown spot needle blight ( <i>Lecanosticta acicola</i> )	Please select
Root rot fungi ( <i>Heterobasidion irregulare</i> )	Please select
Phytophthora ramorum	Please select
Ash dieback ( <i>Hymenoscyphus fraxineus</i> )	Please select
<i>Xylella fastidiosa</i>	Please select

8. Have you experienced the following three PnPs in your work? (They have differing distributions throughout Europe.)

	How long have you had it?	Please choose the main method of management you use. * Required	How effective do you find your main chosen management method? * Required
Asian Longhorn Beetle ( <i>Anoplophora glabripennis</i> )	Please select	Please select	Please select
Oak processionary moth ( <i>Thaumatococcus processionea</i> )	Please select	Please select	Please select
Phytophthora ramorum	Please select	Please select	Please select

8.a. If you know, please indicate how much money you spend on this PnP per year. (Please total the associated costs including surveillance, eradication, communication, control.) If not, please move to question 9.

If known, for each PnP, please type currency, and total costs per year.	Please type size of area, in hectares.
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Asian Longhorn Beetle ( <i>Anoplophora glabripennis</i> )	<input type="text"/>	<input type="text"/>
Oak processionary moth ( <i>Thaumatococcus processionea</i> )	<input type="text"/>	<input type="text"/>
Phytophthora ramorum	<input type="text"/>	<input type="text"/>

9. Are there other new, exotic invasive tree pests and diseases you are concerned about? Please list them here, with your perception of their invasion level in your area, (and costs involved, if known):

10. Are there other methods or approaches you use, or rely on, for the management of new, exotic pests and pathogens? Please list them below.

## Page 4: Your expectations for improvements to management tools

This section concerns your opinions about making improvements to management tools to help with tree health.

First, we will look at which tools you currently use for **detecting and identifying** new forest pests and pathogens (PnPs), and ask about your expectations for improved management tools.

Next, we ask about which tools and methods you currently use for **management** of new, emerging PnPs, and your expectations for improved management tools and methods.

### 11. What tools or methods do you currently use for **detecting and identifying** new, emerging forest pests and pathogens?

	* Required		Please list the main ones you use	Please share your comments and suggestions for future development
	I use this	I don't use this		
Social media	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Plant Health policies and advice	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Tree health websites	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Apps for recording and identifying emerging forest and timber pests and pathogens	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Citizen science projects - to monitor or report tree health	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Books	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Research publications	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>



Posters of emerging pests/symptoms on display at ports or work places	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Tree health experts, or tree health advisory service	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Trapping devices during transport	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Monitoring of pests and pathogens in affected areas	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Drones with multi-sensors for infected trees	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Sentinel plantings	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Prediction models for pest and pathogen spread	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Identification of genetic markers for any new threatening species	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
In-situ molecular diagnosis methods	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Other handheld devices	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>

11.a. Please list any other methods you use to detect and identify new, emerging tree pests and pathogens emerging in your country.

11.b. Please comment on any other methods for detecting or identifying new, emerging tree pests and pathogens that you would like to see developed, or would like to have access to.

12. What tools or methods do you currently use for **managing** new, emerging forest pests and pathogens?

	* Required		Please list the ones you use	Please share your suggestions or comments for future developments
	I use this	I don't use this		
Biosecurity practices on site	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Physical control methods	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Biological control methods	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Chemical control methods	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Clear-cut zones applied locally at the scale of outbreak range	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Drones with multi-sensors, processors and sprayers for infected trees	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
Disposal of infected trees or tree parts	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>

Plant health policies and advice



**12.a.** Please list any other methods you use to manage and prevent new, exotic tree pests and pathogens.

**12.b.** Please comment on any other tools or methods, bodies or regulations for managing emerging forest pests and pathogens that you would like to see developed, or would like to have access to.

## Page 5: Staying in contact

Thank you for your time and assistance doing this survey. It is much appreciated.

Your responses form part of a bi-directional flow of information between stakeholders and scientists, to better identify the needs of actors in charge of tree and forest protection against emerging and invasive biotic threats. Your responses will help the HOMED project develop better tools for holistic management of Europe's trees and forests from new, emerging pests and pathogens. The tools developed will be evaluated by a stakeholder panel to meet actors' needs, based on cost-effectiveness criteria.

This section is about staying in touch about the findings:

13. If you would like to receive the results of this survey, please tick the box and provide your name, email address and organisation name.

- I would like to receive the results of this survey
- I would not like to receive the results of this survey

14. Your name: *Optional*

15. Email: *Optional*

16. Organisation: *Optional*

17. Would you be willing to participate in a panel that will work together to discuss your expectations for new tools and to evaluate the relevance of tools proposed by the HOMED project, for better management of emerging forest pests and pathogens? If so, please tick the box, and provide your name, email address and organisation above.

- I would like to participate in the HOMED stakeholder panel, and have provided my name, email address and organisation above.
- I would not like to participate in the HOMED stakeholder panel



## Page 6: HOMED communications

This section is to find out about your HOMED communications preferences:

18. What type of HOMED-related outputs would you like to receive? \* Required

- Press releases
- Scientific publications
- Abstracts
- Practitioner guidelines
- Policy recommendations
- None of these

19. How often would you prefer to receive HOMED updates, highlights and news? \* Required

- Monthly
- Every 2 months
- Quarterly
- Biannually
- Annually
- Not at all

20. Which social media channel do you prefer to use? \* Required

- Facebook
- Twitter
- LinkedIn
- YouTube
- Instagram
- None
- Other

20.a. If you selected Other, please specify:

21. What type of communication channels would you prefer to use for receiving our exciting HOMED results? \*

Required

- Social media
- E-newsletters
- Forums, events and conferences
- Project website
- None
- Other

21.a. If you selected Other, please specify:

Can you think of someone else interested in the HOMED results? Share our email [pressoffice@pensoft.net](mailto:pressoffice@pensoft.net) with them!

## Page 7: Thank you for taking part in this survey!

Thank you.

For any further information on the HOMED project, updates on the survey results and contact details please follow the link below.

<http://homed-project.eu/>

You can also find us on Twitter, [@ProjectHOMED](#) where we will keep you updated about the progress of the HOMED project.

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## Key for selection options

### 2 - Which country are you mainly working in?

Afghanistan  
Albania  
Algeria  
Andorra  
Angola  
Antigua and Barbuda  
Argentina  
Armenia  
Australia  
Austria  
Azerbaijan  
Bahamas  
Bahrain  
Bangladesh  
Barbados  
Belarus  
Belgium  
Belize  
Benin  
Bhutan  
Bolivia  
Bosnia and Herzegovina  
Botswana  
Brazil  
Brunei  
Bulgaria  
Burkina Faso  
Burundi  
Cabo Verde  
Cambodia  
Cameroon  
Canada  
Central African Republic (CAR)  
Chad  
Chile  
China  
Colombia  
Comoros



Congo, Democratic Republic of the  
Congo, Republic of the  
Costa Rica  
Cote d'Ivoire  
Croatia  
Cuba  
Cyprus  
Czechia  
Denmark  
Djibouti  
Dominica  
Dominican Republic  
Ecuador  
Egypt  
El Salvador  
Equatorial Guinea  
Eritrea  
Estonia  
Eswatini (formerly Swaziland)  
Ethiopia  
Fiji  
Finland  
France  
Gabon  
Gambia  
Georgia  
Germany  
Ghana  
Greece  
Grenada  
Guatemala  
Guinea  
Guinea-Bissau  
Guyana  
Haiti  
Honduras  
Hungary  
Iceland  
India  
Indonesia  
Iran  
Iraq  
Ireland  
Israel  
Italy  
Jamaica  
Japan  
Jordan  
Kazakhstan  
Kenya  
Kiribati  
Kosovo  
Kuwait  
Kyrgyzstan

Laos  
Latvia  
Lebanon  
Lesotho  
Liberia  
Libya  
Liechtenstein  
Lithuania  
Luxembourg  
Madagascar  
Malawi  
Malaysia  
Maldives  
Mali  
Malta  
Marshall Islands  
Mauritania  
Mauritius  
Mexico  
Micronesia  
Moldova  
Monaco  
Mongolia  
Montenegro  
Morocco  
Mozambique  
Myanmar (formerly Burma)  
Namibia  
Nauru  
Nepal  
Netherlands  
New Zealand  
Nicaragua  
Niger  
Nigeria  
North Korea  
North Macedonia (formerly Macedonia)  
Norway  
Oman  
Pakistan  
Palau  
Palestine  
Panama  
Papua New Guinea  
Paraguay  
Peru  
Philippines  
Poland  
Portugal  
Qatar  
Romania  
Russia  
Rwanda  
Saint Kitts and Nevis

Saint Lucia  
Saint Vincent and the Grenadines  
Samoa  
San Marino  
Sao Tome and Principe  
Saudi Arabia  
Senegal  
Serbia  
Seychelles  
Sierra Leone  
Singapore  
Slovakia  
Slovenia  
Solomon Islands  
Somalia  
South Africa  
South Korea  
South Sudan  
Spain  
Sri Lanka  
Sudan  
Suriname  
Sweden  
Switzerland  
Syria  
Taiwan  
Tajikistan  
Tanzania  
Thailand  
Timor-Leste  
Togo  
Tonga  
Trinidad and Tobago  
Tunisia  
Turkey  
Turkmenistan  
Tuvalu  
Uganda  
Ukraine  
United Arab Emirates (UAE)  
United Kingdom (UK)  
United States of America (USA)  
Uruguay  
Uzbekistan  
Vanuatu  
Vatican City (Holy See)  
Venezuela  
Vietnam  
Yemen  
Zambia  
Zimbabwe

**5 - What is the scale of your work? Please choose one that most accurately represents the scale (size) of your activities relating to emerging forest pests and pathogens.**

Worldwide  
Europewide/continent wide  
Nationwide  
Sub-national/regional  
Between 10 square km to regional size  
100-999 hectares  
1-99 hectares  
Less than 1 hectare

**7.1.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.2.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.3.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.4.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.5.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.6.a - What is your experience of its invasion level?**

I don't know this PnP

PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.7.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.8.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.9.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.10.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.11.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.12.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread

PnP was present, now eradicated  
Not applicable

**7.13.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.14.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.15.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.16.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.17.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**7.18.a - What is your experience of its invasion level?**

I don't know this PnP  
PnP absent  
PnP present, restricted distribution  
PnP widespread  
PnP was present, now eradicated  
Not applicable

**8.1.a - How long have you had it?**

- Not applicable
- less than a year
- 1-2 years
- 3 years but <5 years
- 5 years or more
- I don't know

**8.1.b - Please choose the main method of management you use.**

- Not applicable
- Biosecurity on site
- Early detection/rapid response
- Surveillance and monitoring
- Eradication
- Control and management
- Education and awareness raising
- No management

**8.1.c - How effective do you find your main chosen management method?**

- Effective
- Partially effective
- Not effective
- Effective with other methods
- I don't know
- Not applicable

**8.2.a - How long have you had it?**

- Not applicable
- less than a year
- 1-2 years
- 3 years but <5 years
- 5 years or more
- I don't know

**8.2.b - Please choose the main method of management you use.**

- Not applicable
- Biosecurity on site
- Early detection/rapid response
- Surveillance and monitoring
- Eradication
- Control and management
- Education and awareness raising
- No management

**8.2.c - How effective do you find your main chosen management method?**

- Effective
- Partially effective
- Not effective
- Effective with other methods
- I don't know
- Not applicable

**8.3.a - How long have you had it?**

- Not applicable
- less than a year
- 1-2 years
- 3 years but <5 years
- 5 years or more
- I don't know

**8.3.b - Please choose the main method of management you use.**

- Not applicable
- Biosecurity on site
- Early detection/rapid response
- Surveillance and monitoring
- Eradication
- Control and management
- Education and awareness raising
- No management

**8.3.c - How effective do you find your main chosen management method?**

- Effective
  - Partially effective
  - Not effective
  - Effective with other methods
  - I don't know
  - Not applicable
-