Decision support scheme conducted for *Anoplophora glabripennis* in Treviso, Italy

Part A: Key information and selection of measures
A1. Basic information

A1.1 - Pest common name
Asian Longhorn Borer ALB

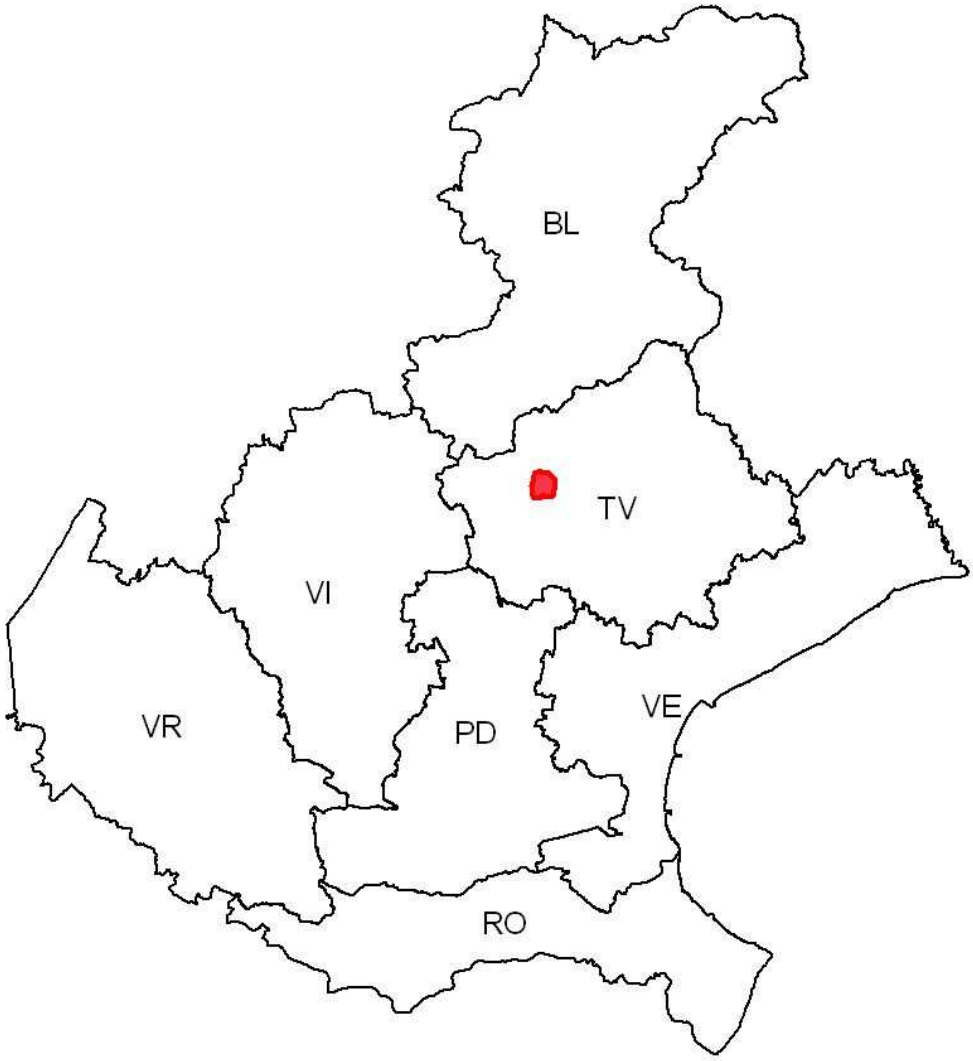
A1.2 - Scientific name
Anoplophora glabripennis

A1.2b - Indicate the type
arthropod

A1.3 - Stage(s) of the life cycle present
all

A1.4 - Location (attach maps if available)

Urban areas in the municipalities of Cornuda, Maser, Crocetta del Montello, Pederobba, Caerano San Marco, District of Treviso, Veneto Region, Italy



A1.5 - Habitat type
I2 : Cultivated areas of gardens and parks

A1.6 - Hosts
broadleaved trees: Acer, Betula, Ulmus, Salix, Prunus, Aesculus are the preferred ones

A1.7 - Is a pest risk assessment already available for this or a closely related organism? (Please indicate in justification: reference,risk assessor, date, institute, country, and whether it is appropriate to this particular case?)
yes
EPPO PRA 98/6451, report 99/7406

A1.8 - Is a contingency plan already available for this or a closely related organism? (Please indicate in justification: reference,risk assessor, date, institute, country, and whether it is appropriate to this particular case?)
no
General information about contingency is available in:
Vettorazzo M, Zampini M, Coppe M, A Battisti, M Faccoli, 2010. Infestazione di Anoplophora glabripennis in Veneto. Acer, 3-2010: 57-60.
Haack et al. 2010: Managing Invasive Populations of Asian Longhorned Beetle and Citrus Longhorned Beetle: A Worldwide Perspective. Annu. Rev. Entomol. 55:521–46.

A2. Key factors to consider based on the current situation

A2.1 - What is the extent of the infested area(s)?
Medium
Level of uncertainty: low
Started about 2005 in an area of Cornuda, undetected until 2009 and spread during this period over an area of about 8 x 8 km, with more than 1,000 trees infested out of about 15,000 potential hosts.

A2.2 - What is the size of the outbreak population(s)
Medium
Level of uncertainty: low
Population initially high but now (2011) at low density because of eradication measures (all the 1,000 infested trees were removed, although the detection power is between 80 and 90% so there could be infested trees left).

A2.3 - What is the reproductive capability of the current population?
Medium
Level of uncertainty: low
Before the detection in 2009 the number of infested trees has grown of a factor 4 each year. After the eradication measures the population has stopped to grow but it is still persistent in undetected trees.

A2.4 - What is the natural spread capacity of the organism/current population?
Low
Level of uncertainty: medium
Adults fly over short distances, however the risk that humans transport infested wood is high. Information campaign is required to avoid such risk

A2.5 - What is the spread capacity of the organism/current population due to human activity?
High
Level of uncertainty: medium
One additional spot (Maser) was detected in 2010 and originated from transportation of gardening material from the infested area.

A2.6 - How easy is the organism to detect?
Difficult
Level of uncertainty: medium
Well trained staff is required to detect oviposition scars, tree climbing often necessary. In the best situation about 10% of the trees go undetected.

A2.7 - How easy is the organism to identify?
With some difficulty
Level of uncertainty: medium
Possible confusion with other wood boring beetles if galleries only are visible (Zeuzera pyrina, Saperda charcarias).

A2.8 - How long has the species been present?
more than one year
Level of uncertainty: low
Since 2005 based on dating of callus around oldest emergence holes.

A2.9.1 - [Economic damage] What damage is the pest currently causing?
Major
Level of uncertainty: low
Tree death occurs 2-4 years after the infestation, depending on beetle density

A2.9.2 - [Environmental damage] What damage is the pest currently causing?
Minor
Level of uncertainty: low
Urban area, trees can be replaced with non susceptbile species.

A2.9.3 - [Social damage] What damage is the pest currently causing?
Major
Level of uncertainty: medium
There is a large social impact on owners of gardens and managers of public parks.

A3. Additional key factors to consider based on the risk assessment
A3.1 - How likely is it that subsequent introductions of the organism may occur?
High
Level of uncertainty: low
Wood packing material is very abundant in the area because of intense trade.

A3.2.1 - [Economic damage] What is the damage potential of this pest?
Major
Level of uncertainty: low
Same habitat occurs all around the infested area

A3.2.2 - [Environmental damage] What is the damage potential of this pest?
Moderate
Level of uncertainty: high
Could have a high impact if it will colonise susceptible trees growing in the nearby forests, but preliminary assessment have shown it doesn't.

A3.2.3 - [Social damage] What is the damage potential of this pest?
Major
Level of uncertainty: medium
Expansion of the outbreak would pose a serious concern to the whole of Veneto Region because the landscape is very similar and susceptible trees are everywhere.

A3.3 - How large an area is still available for colonization?
Very large
Level of uncertainty: low
There are no geographical limitations to the spread.

A3.4 - Uncertainty summary based on the current situation and the risk assessment (Copy output from visualizer tool and paste into the comment box)

NB: Larger points (bubbles) on the chart represent greater uncertainty

A4. Definition of the risk management area
A4 - Define the risk management area to be considered in this assessment. I.e. the area beyond the immediate outbreak defined in A1.4.
The risk management area has been defined as the area in a radius of 2 km from each infested tree, as

this is the maximum distance that a beetle can fly.
Level of uncertainty: medium

A5. Feasibility of eradication, containment or suppression
A5 - Based on the current situation and the information from the risk assessment, is it already clear that no action is appropriate? If yes: justify your decision to take no action
If no or uncertain: continue by selecting and evaluating appropriate measures.
No
Level of uncertainty: low

A6. Selection of measures

A6 - List the eradication containment or suppression measures that may be appropriate for the pest in the current situation. Select from the proposed list or enter other candidate measures(free-text)

- Removing infested leaves or branches

Part B: Comparison of measures
B1. Comparing the attributes of different risk management measures to determine their applicability in the current situation
Scoring matrix for comparing the attributes of different risk management measures to determine their applicability in the current situation

- Removing infested leaves or branches

B1.1a - Objective
Eradication

B1.1 - What is the likelihood that the measures will be successful?
moderately likely
Level of uncertainty: medium
Depends on improvement in detection methods.

B1.2 - How long will this management measure take to be successful?
more than one year
Level of uncertainty: low
With the present detection power it will take at least 5-6 years before eradication is achieved.

B1.3 - How difficult will it be to apply this measure taking into account enforcement, resources and operational factors?
With some difficulty
Level of uncertainty: low
Access to private gardens may pose a problem, although it can be overcome by an information campaign to the population.

B1.4 - How high are the direct costs of the management measure?
Moderate
Level of uncertainty: medium
Cost of eradication measures is important but in the long run inferior minor to costs of detection.

B1.5 - How high are the indirect costs of the management measure?
Major
Level of uncertainty: low
Indirect costs consist mainly of replacement of killed trees and loss of the function of the ornamental trees until they grow to the same size.

B1.6 - How high are the environmental impacts?
Minor
Level of uncertainty: low

B1.7 - How acceptable is the measure likely to be to the public?
Minor opposition
Level of uncertainty: medium
Requires careful campaign of information.

B1.8 - Uncertainty summary for proposed measure (Copy output from visualizer tool and paste into the comment box)

NB: Larger points (bubbles) on the chart represent greater uncertainty

B1.9 - Scoring matrix for comparison of candidate measures

Measures available	Objective	Efficacy			Costs		Acceptability and safety	
		B1.1 - What is the likelihood that the measures will be successful?	B1.2 - How long will this management measure take to be successful?	B1.3 - How difficult will it be to apply this measure taking into account enforcement, resources and operational factors?	B1.4 - How high are the direct costs of the management measure?	B1.5 - How high are the indirect costs of the management measure?	B1.6 - How high are the environmental impacts?	B1.7 - How acceptable is the measure likely to be to the public?
removing infested leaves or branches	Eradication	moderately likely	more than one year	With some difficulty	Moderate	Major	Minor	Minor opposition

Legend

greater likelihood of success/lower cost/fewer confounding issues				lower likelyhood of success/high cost/many confounding issues

B2. Detailed evaluation of the most appropriate scenario
The questions are considered again, but in the context of the final, selected strategy, i.e. the package of measures for action.

B2.0 - Strategy (may include a combination of measures selected from B1):
eliminate infested trees as long as they are detected, combined with a campaign to inform stakeholders and invite them to report cases to the authority and to a strict surveillance network

B2.1 - What is the likelihood that the measures will be successful?
likely
Level of uncertainty: low

B2.2 - How long will this management measure take to be successful?
more than one year
Level of uncertainty: low

B2.3 - How difficult will it be to apply this measure taking into account enforcement, resources and operational factors?
Difficult
Level of uncertainty: low

B2.4 - How high are the direct costs of the management measure?
Major
Level of uncertainty: low

B2.5 - How high are the indirect costs of the management measure?
Major
Level of uncertainty: low

B2.6 - How high are the environmental impacts?
Minor
Level of uncertainty: low

B2.7 - How acceptable is the measure likely to be to the public?
Minor opposition
Level of uncertainty: low

B2.8 - Uncertainty summary for final strategy

NB: Larger points (bubbles) on the chart represent greater uncertainty

B3. Detailed analysis and justification of selected measure(s)

B3 - Describe which measure or combination of measures you propose for eradication, containment and suppression and why you have chosen this strategy. If you consider that more than one strategy would be viable, these options should be evaluated to help the decision-makers. Also describe why other potential options are not considered to be viable. In most cases, the merits of the optimal strategy or strategies can be best illustrated by comparing them with an evaluation of no action and the most stringent action, e.g. crop or habitat destruction.

During outbreak situations and when situations are changing, it is important to review the scheme and your justification accordingly.

The only option available is the combination of:
- surveillance of every susceptible tree in the area, with climbers when required (extend survey to spots of forest area near the outbreak)
- elimination of infested trees
- information campaign to the stakeholders to report new cases both inside and outside the infested area