

**Appendix 2. Revision of the questions on the environmental impact of the EPPO PRA scheme**  
*Version for plant*

**Q6.08: How important is the environmental impact caused by the plant within its current area of invasion?**

**N/A, Minimal, minor, moderate, major, massive**

General Concept:

In this question we rate the current environmental impact in other invaded regions that can be used as an indicator for determining the potential environmental impact in the PRA area (Q6.09). If the species has not invaded any other area, or if the invasion is too recent and too little is known about its ecology in the invaded areas, this question cannot be answered properly, assuming that no additional investigations can be undertaken during the time available for producing the PRA. The assessor may also choose to answer these questions based on well-studied closely-related species or on data for the target species from the region of origin. Although the concept of the “environmental impact” of a native species on native biodiversity and ecosystems is debatable, in some cases recently expanding native species clearly have an environmental impact, resulting from climate change, habitat change, change in disturbance regime or ecological mismanagement (e.g. various weeds such as Canada thistle are now expanding in their native range, etc.). Nevertheless, the assessor should take into account that the environmental impact of a pest in its region of origin is often a very poor predictor of potential impact in regions where it has been introduced. In particular, the absence of any obvious environmental impact in the region of origin should not be considered as a predictor for a low impact in a new area.

When data on impact are available in several invaded regions, priority should be given to impact observed in regions that are most closely related, geographically and eco-climatologically, to the PRA region. However, data from other regions should not be excluded. For example, when performing a PRA on an invasive plant for the entire Europe, data on impact already observed in Europe should be given priority, but information from other regions should also be provided. In any case, the assessor should specify the region where the information on impact has been gathered.

**6.08.0A Based on the above, do you consider that the question on the environmental impact caused by the pest within its current area of invasion can be answered?**

**If Yes:** Go to 6.08.01

**If No,** but information is available for the native area of the plant, Go to 6.08.01.

**If No:** answer N/A for 6.08 and Go to 6.09.0C,

The plant has to be assessed for three categories of impact using several indicators that need to be rated. The precise region (and whether invaded or native) and the species (target species or closely-related species) for which the question is answered should be clearly described by the assessors.

The subquestions to be answered are organized as follows:

Negative impact on native biodiversity

6.08.01. To what extent does the plant cause a decline in native species populations and changes in communities of native species?

6.08.02. To what extent does the plant hybridize with native species?

Alteration of ecosystem processes and patterns

6.08.03. To what extent does the plant cause physical modifications of habitats?

6.08.04. To what extent does the plant cause changes to nutrient cycling and availability?

6.08.05. To what extent does the plant cause modifications of natural successions?

6.08.06. To what extent does the plant disrupt trophic and mutualistic interactions?

Conservation impacts

6.08.07. To what extent does the plant occur in habitats of high conservation value?

6.08.08. To what extent does the plant threaten rare or vulnerable species?

For each of the indicators, a rating is given based three choices: *Low*, *Medium* or *High*. Information is provided for each indicator on the meaning of these scores.

For each answer, the associated uncertainty should also be assessed, the possible options are *Low*, *Medium* or *High*:

*Low*: the assessor has low uncertainty that the rating is correct (i.e. the impact has been studied and measured, or the invasion status and bio-ecological characteristics of the plant as well as the characteristics of the invaded habitats allow the assessor to be highly confident of the accuracy of the rating).

*Medium*: The assessor has moderate uncertainty that the rating is correct (i.e. the impact has been studied but some contradictory results have been identified, or the invasion status and bio-ecological characteristics of the plant as well as the characteristics of the invaded habitats allow the assessor to be moderately confident of the accuracy of the rating).

*High*: The assessor has high uncertainty that the rating is correct (i.e. the impact has been studied but the results are contradictory, or the invasion status and bio-ecological characteristics of the plant as well as the characteristics of the invaded habitats do not allow the assessor to be moderately confident of the accuracy of the rating).

### Negative impact on native biodiversity

*Note 1*: The word “native” in “native species” or “native biodiversity” throughout Questions 6.08 and 6.09 should be understood in a broad sense, i.e. it should also include species that have been naturalised for centuries and that play an important role in the ecosystems or local cultural heritage, such as walnut (*Juglans*) or chestnut (*Castanea*) in Europe. The assessor may also include other, more recently introduced beneficial organisms such as exotic plants that play a role in ecosystem services, e.g. plants used against erosion.

*Note 2*: If possible, all mechanisms of impact on native biodiversity should be considered, but only the mechanism providing the highest score and lowest uncertainty is kept for the scoring of the indicators. Mechanisms of impact may include, among others:

Competition with native vegetation for limiting resources: Invasive plants are, simply by occupying a large amount of space in invaded habitats, expected to impose a significant impact on the native vegetation through competition for space, light, water and nutrients. For example, the tall and densely growing alien *Fallopia* species shade out native plant species.

Allelopathy: Allelopathy is defined here as a chemically mediated interference competition between co-occurring plant species, including both direct effects of the chemicals and indirect effects of the chemicals that are mediated by the soil microbial community or other biota. Allelopathy is considered as an important mechanism for the invasion success of various alien invasive species, including *Ailanthus altissima*, *Solidago canadensis* or exotic *Fallopia* species.

Impact of vegetation changes on higher trophic levels: Changes in plant communities also alter communities at higher trophic levels. For example, because alien *Fallopia* species are poorly colonized by resident invertebrate herbivores, invasion by *Fallopia* species reduces diversity and productivity of invertebrate communities, and, as a consequence, the fitness and density of vertebrates that rely on invertebrates as food source.

Changes of ecosystem processes: Change of ecosystem patterns and processes (as described in subquestions 6.08.03 to 6.08.06 below) may indirectly affect native vegetation. For example, increased nitrogen availability caused by nitrogen-fixing alien species such as *Robinia pseudoacacia* and *Acacia* may reduce the competitive performance of local plants and favour others. Also, changes in fire regime and pollination services may have serious impacts on native community structures. Physical and chemical modifications of habitats may also have an impact on invertebrate and microbial soil communities.

Disease vector: Alien plants can act as a vector of plant diseases affecting native vegetation. For example, in Europe, the sudden oak death *Phytophthora ramorum* is spread mainly by the trade of exotic ornamentals such as *Viburnum* spp. and *Rhododendron* spp.

**Pesticide use:** An intensive use of non-specific pesticides over wide areas may affect native biodiversity, in particular when used in natural or semi-natural habitats (e.g. forests, wetlands). For example, herbicides used to control invasive *Fallopia spp.* have lethal effects on amphibians.

**Hybridization:** Hybridization between an alien and a native species or sub-species may affect the genetic integrity of native species or sub-species. For example, the Spanish Bluebell *Hyacinthoides hispanicus* successfully hybridizes with the native bluebell *Hyacinthoides non-scripta* in the UK

**6.08.01. To what extent does the plant cause a decline in native species populations and changes in communities of native species?**

**Low extent, Medium extent, High extent**

<b>Level of uncertainty:</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
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<b>Rating guidance</b>	
<b>Low</b>	<p>The decline in native species populations and changes in the composition and structure of the communities of native species has been studied but not observed. If no study has been carried out to determine the level of impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, a decline in native species is unlikely. In particular it can be assumed that species that never build large and dense populations have low impacts on native species.</p> <p>Examples: <i>Oxalis stricta</i> is found in disturbed or man-made habitats without making dense populations, suggesting that it has a very limited effect on native species. <i>Ambrosia artemisiifolia</i> mainly colonises bare soils and is unlikely to outcompete other plant species. The impact of the invasive seaweed <i>Sargassum muticum</i> on a low intertidal macroalgal assemblage was assessed at a rocky shore in Spain and was found to be negligible.</p>
<b>Medium</b>	<p>A decline has been observed in native species populations and/or change in the composition and structure of the communities of native species, but the decline or change is not persistent and is limited in area. If no study has been carried out to determine the level of impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, the impact level is considered to be medium. In particular species that are able to build large and dense but not persistent populations have a medium impact on native species.</p> <p>Examples: <i>Senecio inaequidens</i> occasionally invades semi-natural areas in dense populations but mainly in open areas because it is a relatively weak competitor. <i>Azolla filiculoides</i> forms dense monospecific mats of floating plants that can eliminate submerged plants and algae and reduce populations of animals beneath the mats, but these effects tend to be transient and well localised</p>
<b>High</b>	<p>A decline has been observed in native species populations and/or changes in the composition and structure of the communities of native species, and the impact is likely to be widespread within the habitats occupied by the species and persistent at least if no management option is taken. If no study has been carried out to determine the impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, the impact level is considered to be high. In particular it can be assumed that species with a known ability to build large, dense and persistent populations have high impacts on native species.</p> <p>Examples: <i>Crassula helmsii</i> and <i>Ludwigia grandiflora</i> form dense and persistent populations in water bodies, strongly competing with native species. <i>Fallopia japonica</i> produces large monospecific populations that cause local decline of native plants. In Florida, <i>Melaleuca quinquenervia</i> forms very dense stands, reducing plant and wildlife diversity. In Australia, <i>Mimosa pigra</i>, by converting open sedge wetland to shrubland, caused the loss of native plant and animal communities. <i>Heracleum mantegazzium</i> reduces plant species diversity as compared to non invaded areas in the Czech Republic.</p>

**6.08.02. To what extent does the plant hybridize with native species?**

**Low extent, Medium extent, High extent**

<b>Level of uncertainty:</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
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<b>Rating guidance</b>	
<b>Low</b>	<p>Hybridization with native species has been searched but has not been observed. If no study has been carried out, then hybridization with native species is considered to be very unlikely to occur (e.g. no taxonomically closely-related native species occur in the invaded region or hybridization is never observed in this taxonomic group).</p> <p>Examples: There is no European congeneric species of <i>Pueraria lobata</i> and, thus impact by hybridization with native species in Europe is not possible. <i>Prunus serotina</i> has been present in Europe for a long time, where many native <i>Prunus</i> spp. occur, but hybridization has never been observed</p>
<b>Medium</b>	<p>Hybridization with native species has been observed in the field or in the lab, but the hybrid has a lower fitness and does not replace the native species. If no study on hybridization has been carried out, hybridization is considered possible because of the presence of taxonomically closely-related species in the invaded area belonging to genera in which hybridization has been observed.</p> <p>Examples: In North America, the European <i>Lythrum salicaria</i> may hybridize with the local <i>L. alatum</i> and, although pollen transfer result in much lower seed set than conspecific pollination, this may still have an effect on populations on the native species.</p>
<b>High</b>	<p>Hybridization with native species has been observed in the field and the hybrid has a high fitness and is replacing, or is able to replace the native species.</p> <p>Examples: Very successful hybrids include, for example, <i>Spartina alterniflora</i> X <i>S. foliosa</i> in the San Francisco bay or <i>Hyacinthoides hispanica</i> X <i>H. non-scripta</i>. The hybrid <i>Populus</i> x <i>canadensis</i> threatens <i>Populus nigra</i>. The European shrub <i>Crataegus monogyna</i>, naturalized in Canada, causes abortion of 97% ovules of native <i>Crataegus punctata</i> by fertilizing with its own pollen, hence drastically reducing seed set of the native species. the Spanish Bluebell <i>Hyacinthoides hispanicus</i> successfully hybridizes with the native bluebell <i>Hyacinthoides non-scripta</i> in the UK,</p>

Alteration of ecosystem patterns and processes

*Note:* Only the impact on natural or semi-natural habitats should be considered when assessing the impact on ecosystem processes and patterns. However, natural and semi-natural habitats have to be considered in a broad sense, i.e. every habitat that is not under constant human management. It includes all EUNIS habitat types 1 (<http://eunis.eea.europa.eu/habitats-code-browser.jsp>), except I (Regularly or recently cultivated agricultural, horticultural and domestic habitats) and J (Constructed, industrial and other artificial habitats). For example, grasslands that are regularly mown are included as well, but not those that are repeatedly re-seeded.

**6.08.03. To what extent does the plant cause physical modifications of habitats** (e.g. changes to the hydrology, significant increase of water turbidity, light interception, alteration of river banks, changes in fire regime, etc.)?

**Low extent, Medium extent, High extent**

<b>Level of uncertainty:</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
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<b>Rating guidance</b>	
<b>Low</b>	<p>The physical modification of habitats has been studied but not observed. If no study has been carried out to assess the impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, a physical modification of habitats is unlikely.</p> <p>Examples: <i>Ambrosia artemisiifolia</i> is very unlikely to cause physical modification of habitats.</p>
<b>Medium</b>	<p>A physical modification of habitats has been observed but the impact is not persistent and limited in area. If no study has been carried out to assess the impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the</p>

	invaded habitats, the impact level is considered to be medium. Examples: <i>Azolla filiculoides</i> forms dense monospecific mats of floating plants that reduce light interception and photosynthesis for submerged plants. However, these dense populations tend to be transient and well localised.
High	A physical modification of habitats has been observed and the impact is likely to be widespread within the ecosystem where the species is present and persistent if no management option is undertaken. If no study has been carried out to assess the impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, the impact level is considered to be high. Examples: <i>Eichhornia crassipes</i> blocks waterways. <i>Hydrocotyle ranunculoides</i> alters the physico-chemical properties of water. <i>Fallopia japonica</i> causes erosion of river banks.

**6.08.04. To what extent does the plant cause changes to nutrient cycling and availability (e.g. significant changes in nutrient pools in topsoils or in water)?**

**Low extent, Medium extent, High extent**

<b>Level of uncertainty:</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
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<b>Rating guidance</b>	
Low	Changes in nutrient cycling have been studied but not observed. If no study has been carried out to assess the impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, a change in nutrient cycling is unlikely. Examples: <i>Oxalis stricta</i> is found in disturbed or man-made habitats without making dense populations, and, thus, it is unlikely to change nutrient cycles and availability in semi-natural ecosystems.
Medium	Changes in nutrient cycling have been observed but the impact is not persistent and limited in area. If no study has been carried out to assess the impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, the impact level is considered to be medium. Examples: <i>Lemna</i> spp. may temporarily modify water nutrients. <i>Azolla filiculoides</i> can form dense floating monospecific mats at the surface of water bodies that reduce gas exchanges, causing the predominance of respiratory activities and the reduction in dissolved oxygen in water beneath the mats. However, these dense populations tend to be transient and well localised.
High	Changes in nutrient cycling have been observed and the impact is likely to be widespread within the ecosystem where the species is present and persistent if no management option is undertaken. If no study has been carried out to assess the impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, the impact level is considered to be high. Examples: <i>Robinia pseudoacacia</i> , <i>Acacia</i> spp. and <i>Lupinus polyphyllus</i> increase nitrogen soil content. <i>Carpobrotus</i> spp. modify soil organic contents because of low decomposition rate. Invasive nitrogen-fixing plants and trees that produce dominant populations are likely to score high.

**6.08.05. To what extent does the plant cause modifications of natural successions (e.g. acceleration or temporary freezing of successions)?**

**Low extent, Medium extent, High extent**

<b>Level of uncertainty:</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
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Rating guidance	
Low	A modification of natural succession has been studied but not observed. If no study has been carried out to assess the impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, a modification of natural successions is unlikely. Examples: <i>Ambrosia artemisiifolia</i> rarely establishes in natural plant communities, except on bare soil. Therefore, it is highly unlikely that it will modify natural successions.
Medium	A modification of natural succession has been observed but the impact is not persistent and limited in area. If no study has been carried out to assess the impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, the impact level is considered to be medium. Examples: In Central Europe, <i>Acer negundo</i> is a competitive pioneer plant but it is usually replaced in the course of succession by more shade-tolerant species.
High	A modification of natural succession has been observed and the impact is likely to be widespread within the ecosystem where the species is present and persistent if no management option is undertaken. If no study has been carried out to assess the impact, according to available information on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, the impact level is considered to be high. Examples: <i>Prunus serotina</i> and <i>Rhododendron ponticum</i> impede the natural rejuvenation of forest trees. <i>Buddleja davidii</i> and <i>Robinia pseudoacacia</i> are highly competitive pioneer plants in their invasive range. They hamper habitat recolonisation by native trees and shrubs.

**6.08.06. To what extent does the plant disrupt trophic and mutualistic interactions** (e.g. through the alteration of pollinator visitations - leading to a decrease in the reproductive success of native species-, allelopathic interactions, strong reduction of phytophagous or saprophagous communities, etc.)?

**Low extent, Medium extent, High extent**

Level of uncertainty:	Low	Medium	High
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Rating guidance	
Low	A disruption of trophic and mutualistic interactions has been studied but not observed. If no study has been carried out to assess the impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, a disruption of trophic and mutualistic interactions is unlikely. Examples: <i>Akebia quinata</i> is poorly attacked by herbivores in Europe, does not have closely related plant species in Europe, reproduces mainly vegetatively and never produces dominant stands. Therefore, it is very unlikely that it significantly disrupt trophic and mutualistic interactions.
Medium	A disruption of trophic and mutualistic interactions has been observed but the impact is not persistent and limited in area. If no study has been carried out to assess the impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, the impact level is considered to be medium. Examples: In Spain, <i>Opuntia</i> spp. modify the number of links between plants and pollinators but the effect on native pollination network properties is limited.
High	A disruption of trophic and mutualistic interactions has been observed and the impact is likely to be widespread within the ecosystem where the species is present and persistent if no management option is undertaken. If no study has been carried out to assess the impact, according to the information available on the invasion status and bio-ecological characteristics of the plant as well as on the characteristics of the invaded habitats, the impact level is considered to be high. Examples: In Florida, <i>Melaleuca quinquenervia</i> has replaced sawgrass marshes and other vegetation types, dramatically changing the food web of these ecosystems. <i>Rhododendron ponticum</i> 's poor quality litter and densely shaded canopy suppresses decomposition rates and algal production in invaded streams in UK, as well as the availability of resources to consumer assemblages. In North America,

	the high abundance of the European <i>Lythrum salicaria</i> disrupts pollination of local plant species by pollinators, affecting seed production of the native species.
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### Conservation impacts

**6.08.07. To what extent does the plant occur in habitats of high conservation value** (includes all officially protected nature conservation habitats)?

**Low extent, Medium extent, High extent**

<b>Level of uncertainty:</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
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<b>Rating guidance</b>	
Low	The plant occurs exclusively, or nearly exclusively, outside habitats of high conservation value Examples: <i>Oxalis stricta</i> and <i>Setaria verticillata</i> are usually found in disturbed or man-made habitats.
Medium	The plant occurs only occasionally in habitats of high conservation value or, if it occurs regularly, its competitive effects on native species are moderate in such habitats. Examples: <i>Solidago gigantea</i> only occasionally colonizes high conservation value habitats. <i>Amelanchier lamarckii</i> is found in some high conservation value habitats, but without making dense populations, thus most probably having a moderate impact in such habitats.
High	The plant occurs regularly in habitats of high conservation value and it competes, or is likely to compete successfully with native species in such habitats. Examples: <i>Carpobrotus</i> spp. and <i>Rosa rugosa</i> form high populations in dune ecosystems of high conservation value, competing with native species in such habitats. <i>Ludwigia grandifolia</i> often colonizes water bodies of high conservation value and form dense populations, impacting the native fauna and flora.

**6.08.08. To what extent does the plant threaten rare or vulnerable species** (includes all species classified as rare, vulnerable or endangered in official national or regional lists within the PRA area)?

**Low extent, Medium extent, High extent**

<b>Level of uncertainty:</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
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<b>Rating guidance</b>	
Low	The plant has no impact on survival or reproduction of rare or vulnerable native species in the susceptible habitats. Examples: <i>Ambrosia artemisiifolia</i> rarely establishes in natural plant communities and does not represent a threat to rare or vulnerable species
Medium	The plant interferes with native rare or vulnerable species resident in the susceptible habitats and may cause a limited population decline of these rare or vulnerable species, but there is no sign that the decline may lead to local extinction. Examples: In North America, <i>Lythrum salicaria</i> interferes with the rare <i>Sidalcea hendersonii</i> but the native plant persists in invaded areas.
High	The plant directly or indirectly threatens the survival or reproduction of native rare or vulnerable species resident in the susceptible habitats, which may lead to local extinction. Examples: In dunes of the North American Pacific coast the European <i>Ammophila arrenaria</i> eliminates rare species such as <i>Oenothera deltooides</i> ssp. <i>bowellii</i> and <i>Erysimum menziesii</i> ssp. <i>Menziesii</i> . <i>Carpobrotus</i> spp. outcompete 27 taxa with a high patrimonial value in Provence (France).

Final rating:

- Each of the three impact categories will be scored with the highest indicator score within its category
- A final rating is obtained as follows:
  - *Massive*: 3 x High
  - *Major*: 2 x High and 1 x Medium
  - *Moderate*: 1 x High and at least 1 x Medium or 2 x High and 1 x Low
  - *Minor*: 1 x High and 2 Low or 2 or 3 x Medium
  - *Minimal*: Maximum 1 x Medium, all others Low

**Q6.09: How important is the environmental impact likely to be in the PRA area?**

**Minimal, minor, moderate, major, massive**

Verify that, based on Q6.08, an environmental impact is also likely to occur in the PRA area, and, if yes, at a comparable level, using the following questions. For this, answers to the section in the “likelihood of establishment” section should be taken into account:

**6.09.0A Taking into account the responses to the relevant questions (on hosts and habitats, climatic conditions, abiotic factors, management methods) in the establishment section, are the conditions in the PRA area sufficiently similar to those in the area of invasion to expect a similar level of impact?**

**If No:** the situation regarding environmental impact may be different, the assessor should use the subquestions in Q6.08 and reassess those subquestions concerned by the differences identified between the invaded and the PRA areas.

**If Yes:** Go to next question (6.09.0B)

<b>Level of uncertainty:</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
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**6.09.0B Does the same native species or community, or the same threatened ecosystem services, occur in the PRA area and, if not, is it known whether the native species or communities, or ecosystem service in the PRA area are similarly susceptible?**

**If No:** the situation regarding environmental impact is likely to be different between the invaded and the PRA areas, the assessor should use the subquestions in Q6.08 and reassess those subquestions concerned by the differences identified between the invaded and the PRA areas.

**If Yes:** The situation regarding environmental impact is likely to be similar between the invaded and the PRA areas, the score of Q6.08 can be given in Q6.09 as **impact elsewhere will be the most reliable criterion to predict the impact in the PRA area.**

<b>Level of uncertainty:</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
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**6.09.0C If the assessor considered that Q6.08 could not be answered, i.e. the species has not invaded any other area, or if the invasion is too recent and too little is known on its ecology in the invaded areas, and assuming that no additional investigations can be undertaken during the time available for producing the PRA, an environmental impact assessment cannot be properly made using this scheme.** Nevertheless, in any case, the assessor should be able to provide his/her opinion on the potential environmental impact in the PRA area.

*Note:* So far PRAs carried out for plants in Europe have only concerned plants that have already been reported to be highly invasive or to have an impact, i.e. plants for which Q6.08 can definitely be answered. However, in the future, PRAs may be done for species that are just escaping from cultivation and have no invasion and impact history (e.g. *Acer rufinerve* in Belgium). To assess these particular cases, an additional set of questions or even another assessment approach may be needed.