



Department  
for Environment  
Food & Rural Affairs



Llywodraeth Cymru  
Welsh Government

# Management measures for widely spread Invasive Alien Species (IAS) in England and Wales

July 2019



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## Contents

Introduction .....	1
EU Invasive Alien Species Regulation (1143/2014).....	1
Widely spread species of Union concern in England and Wales .....	2
Plants .....	3
Animals .....	3
The Invasive Alien Species (Enforcement and Permitting) Order 2019 .....	3
Management measures .....	4
Management aims.....	4
Further requirements relating to management measures.....	4
Management actions .....	5
Types of management measure.....	6
General management measures.....	7
Licensable management measures.....	7
Guide to appendices .....	8
Appendix A – Management measure aims .....	8
Plants .....	8
Animals .....	8
Appendix B – Proposals regarding general management measures .....	10
General management measures applicable to all widely spread species .....	10
Additional general management measures for plant species .....	11
Additional general management measures for animal species .....	12
Appendix C - Proposals regarding licensable management measures.....	13
Licensable management measures for plant species.....	14
Licensable management measures for animal species.....	14

Appendix D – Proposed licensable management measures relating to Signal crayfish ( <i>Pacifastacus leniusculus</i> ) .....	16
Introduction .....	16
How Signal crayfish are currently managed in England and Wales .....	18
Changes to the current management system for Signal crayfish which will come in to force under the Enforcement Order .....	20
Management measure Proposals .....	21
Proposed new management system.....	22
Proposals relating to trapping authorisations and licensable management measures.....	23
Proposals relating to containment zones.....	23
Proposals relating to exclusion zones .....	25
Further proposals for containment and exclusion zones .....	26
Proposals relating to licence conditions .....	27
Proposals relating to the use of live specimens .....	27
Diagram of proposals for trapping authorisations .....	34
Diagram of proposals for management measure licences .....	35
Appendix E – Consultation questions .....	36
Q1. Would you like your response to be confidential?.....	36
Q2. What is your name?.....	36
Q3. What is your email address? .....	36
Q4. Who do you represent? .....	36
Q5. What geographic region do your responses relate to? .....	37
Q6. What are your views on the proposed aims for the management measures set out in Appendix A? .....	38
Q7. What are your views on the general management measures set out in Appendix B? .....	38
Q8. Are there any additional actions you think should be used as general management measures for particular widely spread species?.....	39

Q9. Are there any actions that you think should not be used as part of a general management measure for a particular widely spread species?.....	39
Q10. What are your views on the proposed licensable management measures set out in Appendices C & D? .....	40
Q11. Are there any additional actions you think should be allowed as a licensable management measure for a particular widely spread species?.....	40
Q12. Are there any actions that you think should not be allowed to be used as part of a licensable management measure for a particular widely spread species?.....	41
Appendix F – Advice on responses .....	41
Confidentiality and data protection .....	42

# Introduction

1. Invasive alien species challenge the survival of some of our rarest species, and damage some of our most sensitive ecosystems. The impacts of invasive alien species on our domestic and global biodiversity are severe and growing. They also have an impact across a range of industries and networks, from farming to the building industry and national waterways.
2. Defra and the Welsh Government are committed to taking a strong stance against invasive alien species. The UK government's 25 Year Environment Plan has a goal to enhance the biosecurity of the country, including tackling invasive alien species. The Nature Recovery Plan for Wales is aimed at addressing the underlying causes of biodiversity loss, including by increasing the resilience of our natural environment. We are taking action against the threat that these species pose in a variety of ways: through the direct intervention of local action groups, targeted eradication, better education about and awareness raising of their impacts, and the research and development of biocontrol agents to help stop their spread.
3. The purpose of this consultation is to obtain your views on the management measures being considered by Defra and the Welsh Government for species of Union concern which are widely spread in England and Wales pursuant to Article 19 of Regulation (EU) No. 1143/2014 on the prevention and management of the introduction and spread of invasive alien species. Your responses will help us develop our thinking in this area so that we can put in place processes that will allow for effective action to be taken to manage species of Union concern that are widely spread in England and Wales.

## EU Invasive Alien Species Regulation (1143/2014)

4. Regulation (EU) No. 1143/2014 on the prevention and management of the introduction and spread of invasive alien species ("the Principal Regulation") came into force on 1 January 2015. It imposes strict restrictions on a list of species known as 'species of Union concern'. These are species whose potential adverse impacts across the European Union are such that concerted action across Europe is required. The restrictions mean that (subject to certain defences, or exemptions through permits or licences) species of Union concern cannot be imported into the EU, kept, bred, transported, placed on the market, used or exchanged, allowed to reproduce, grown or cultivated, or released into the environment. There are currently 49 species on the Union list: 26 animals and 23 plants. Within this document we will use "species of Union concern" to refer to all 49 species collectively.

5. Each of these species of Union concern has been rigorously and scientifically risk-assessed. This was done to determine the negative impact these species have, along with the likelihood of establishment within the territory of the EU. The listing of species has been conducted at an EU level to protect all Member States from the risk that these species pose, and to maintain a unified approach to preventing their spread and establishment across the territory of the Union. Defra and the Welsh Government are committed to combatting the threat that these species pose domestically, and also to maintaining strong biosecurity standards to prevent their spread to other Member States.
6. The [risk assessments](#)<sup>1</sup> for currently listed species of Union concern can be accessed online.
7. The Principal Regulation aligns with an internationally agreed hierarchical approach to combatting invasive alien species:
  - **prevention:** includes robust measures aimed at preventing species of Union concern from entering the EU, either intentionally or unintentionally
  - **early detection and rapid eradication:** requirements for surveillance systems to detect the presence of species of Union concern as early as possible and for rapid eradication measures to be taken to prevent them from establishing
  - **management:** some species of Union concern are already well-established in some countries, and concerted management action is needed so that they do not spread any further and to minimise the harm they cause
8. The [Principal Regulation](#)<sup>2</sup> can be accessed online.

## Widely spread species of Union concern in England and Wales

9. There are 14 species of Union concern that have been identified as being widely spread in England and Wales. These are the species to which effective management measures must be applied. We will refer to these 14 species collectively as “widely spread species” or “species” singularly, throughout this document. They are:

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<sup>1</sup><https://circabc.europa.eu/w/browse/7cd5920d-25bb-43c7-84bb-49de217c1563>

<sup>2</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1417443504720&uri=CELEX:32014R1143>

## Plants

10. Nuttall's waterweed (*Elodea nuttallii*), Chilean rhubarb (*Gunnera tinctoria*), Giant hogweed (*Heracleum mantegazzianum*), Floating pennywort (*Hydrocotyle ranunculoides*), Himalayan balsam (*Impatiens glandulifera*), Curly waterweed (*Lagarosiphon major*), American skunk cabbage (*Lysichiton americanus*), Parrot's feather (*Myriophyllum aquaticum*).

## Animals

11. Egyptian goose (*Alopochen aegyptiacus*), Chinese mitten crab (*Eriocheir sinensis*), Muntjac deer (*Muntiacus reevesi*), Signal crayfish (*Pacifastacus leniusculus*), Grey squirrel (*Sciurus carolinensis*), and all subspecies of (*Trachemys scripta*) otherwise known as "slider terrapins".

## The Invasive Alien Species (Enforcement and Permitting) Order 2019

12. The Invasive Alien Species (Enforcement and Permitting) Order 2019<sup>3</sup> ("the Enforcement Order") is currently due to come into force on 1 October 2019. We are intending to delay the coming in to force date until 1 December 2019 to allow more time for consideration of the responses to this consultation. The Enforcement Order implements requirements contained in the Principal Regulation, including setting out the penalties for breach of the restrictions in the Principal Regulation, defences and other enforcement-related provisions.
13. The offences contained in article 3 of the Enforcement Order<sup>4</sup> do not apply to anything done under, and in accordance with:
- a permit (Part 8 of the Enforcement Order); or
  - a licence (Part 9 of the Enforcement Order)
14. The permitting system is not being dealt with as part of this consultation. Permits apply to activities undertaken by establishments where the specimens concerned are kept in contained holdings. They primarily allow for research and *ex-situ* conservation (for example keeping in a zoo), although in exceptional circumstances other activities may be permitted.

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<sup>3</sup> <http://www.legislation.gov.uk/ukSI/2019/527/contents/made>

<sup>4</sup> It is a criminal offence intentionally to import into the EU, keep, breed, transport (except to facilities in the context of eradication), place on the market, use or exchange, permit to reproduce, grow or cultivate, or release into the environment, any live specimen of a species of Union concern.



15. The Enforcement Order puts in place licensing provisions. Amongst other purposes, licences may be granted for the implementation of a management measure pursuant to Article 19 of the Principal Regulation ('management measures'), provided that certain conditions are met. Natural England is the licensing authority for the Enforcement Order in England<sup>5</sup> and the Natural Resources Body for Wales is the licensing authority in Wales.

## Management measures

### Management aims

16. For widely spread species, the Principal Regulation requires effective management measures to be put in place, so that their impact on biodiversity, the related ecosystem services and, where applicable, human health or the economy are minimised. Management measures consist of lethal or non-lethal physical, chemical or biological actions aimed at the eradication, population control or containment of a population of widely spread species.

17. Management measures must be aimed at one or more of the following three purposes, which are defined in the Principal Regulation:

- **eradication** - the complete and permanent removal of a population of invasive alien species by lethal or non-lethal means
- **population control** - any lethal or non-lethal action applied to a population of invasive alien species, while also minimising the impact on non-targeted species and their habitats, with the aim of keeping the number of individuals as low as possible, so that, although eradication of the species may not be possible, its invasive capacity and adverse impact on biodiversity, the related ecosystem services, human health or the economy, are minimised
- **containment** - any action aimed at creating barriers to minimise the risk of a population of an invasive alien species dispersing and spreading beyond the invaded area

### Further requirements relating to management measures

18. The Principal Regulation states in Article 19(1) that "management measures shall be proportionate to the impact on the environment and appropriate to the specific circumstances of the Member States, be based on an analysis of costs and benefits

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<sup>5</sup> Natural England is also the UK licensing authority for licences relating to import and export of species of Union concern and licences relating to the offshore marine area.

and also include, as far as is feasible, the restoration measures referred to in Article 20<sup>6</sup>. They shall be prioritised based on the risk evaluation and their cost effectiveness.”.

19. The Principal Regulation also states in Article 19(3) that “When applying management measures and selecting methods to be used, Member States shall have due regard to human health and the environment, especially non-targeted species and their habitats, and shall ensure that, when animals are targeted, they are spared any avoidable pain, distress or suffering, without compromising the effectiveness of the management measures.”.
20. These requirements have been used to guide the development of the management measures proposed in this document.

## Management actions

21. In England and Wales we are already undertaking various actions aimed at the management of widely spread species. For example, we are using and developing biocontrol agents for certain plant species aimed at halting their spread. We also support local action groups to take direct action against invasive plants. We intend to continue using these and similar actions as part of the effective management of widely spread species.
22. Most of the current and proposed management actions detailed in this document will not require a management measure licence in order to be carried out, as they do not involve activities that are restricted under the Principal Regulation.
23. In some cases, activities that would normally be restricted under the Regulation (and so normally prohibited under the Enforcement Order) may be allowed so as to facilitate effective management measures taking place. There are eight activities which are

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<sup>6</sup> Article 20(1) states that “Member States shall carry out appropriate restoration measures to assist the recovery of an ecosystem that has been degraded, damaged, or destroyed by invasive alien species of Union concern unless a cost-benefit analysis demonstrates, on the basis of the available data and with reasonable certainty, that the costs of those measures will be high and disproportionate to the benefits of restoration.”.

Article 20(2) states that “The restoration measures referred to in paragraph 1 shall include at least the following:

- (a) measures to increase the ability of an ecosystem exposed to disturbance caused by the presence of invasive alien species of Union concern to resist, absorb, accommodate to and recover from the effects of disturbance;
- (b) measures to support the prevention of reinvasion following an eradication campaign.

restricted and these are set out in Article 7 of the Principal Regulation. This Article states that live<sup>7</sup> specimens of Species of Union concern must not be intentionally:

- i. brought into the territory of the Union, including transit under customs supervision;
- ii. kept, including in a contained holding;
- iii. bred, including in a contained holding;
- iv. transported to, from or within the Union, except for the transportation of species to facilities in the context of eradication;
- v. placed on the market;
- vi. used or exchanged;
- vii. permitted to reproduce, grown or cultivated, including in a contained holding; or
- viii. released into the environment.

24. A management measure licence can potentially be granted by the licensing authority (Natural England in England or the Natural Resources Body for Wales in Wales) to allow one or more of these actions to take place, as long as the activity licensed is being carried out to fulfil one, or a combination, of the management aims detailed above.

25. Please note that the transport of specimens to facilities<sup>8</sup> in the context of eradication is not restricted by the Principal Regulation.

## Types of management measure

26. For the purposes of this consultation, we have separated our proposed management measures into two groups:

27. Those where no licence under the Enforcement Order would be required<sup>9</sup> – we shall refer to these as ‘general management measures’.

28. Those which may only be lawfully undertaken under and in accordance with a licence issued under the Enforcement Order - we shall refer to these as ‘licensable management measures’.

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<sup>7</sup> This includes any part, gamete, seed, egg, or propagules of a species of Union concern that might grow, hatch or reproduce. As well as any hybrids, varieties or breeds that might survive and subsequently reproduce.

<sup>8</sup> “Facilities” is not defined in the Principal Regulation, however we understand the term to refer to establishments or operations where species of Union concern can be humanely dispatched as part of an eradication actions.

<sup>9</sup> Depending on the activity and the species concerned, a licence may still be required under other legislation such as the Wildlife and Countryside Act 1981.

## General management measures

29. These are actions that are not restricted by the Principal Regulation, and therefore do not require a licence under the Enforcement Order to be carried out lawfully. Possible examples of general management measures include:

- the promotion and encouragement of action by local action groups to collaborate, map, prioritise, raise awareness, and tackle widely spread species
- the provision of advice and guidance on species control. For example, the advice provided by the Great Britain Non-native Species Secretariat
- the lethal control of widely spread species as part of eradication efforts
- the use of direct action to remove widely spread species from the environment. For example, the targeted removal of Himalayan balsam (*Impatiens glandulifera*) to help prevent further spread within a catchment
- the use of Species Control Agreements and Orders<sup>10</sup>. For example, where access to land is required as part of an environmental authority-sanctioned eradication programme

## Licensable management measures

30. These include actions that would be unlawful if undertaken without being authorised by a licence granted under article 36(2)(b) or 36(2)(c) of the Enforcement Order. Possible examples of licensable management measures include:

- the keeping and then further release of sterilized males of a species, with the aim of controlling a population. For example, the release of live sterilised male signal crayfish into a waterbody to reduce the population over time
- the removal from the environment, transport, and keeping of specimens as part of control efforts. For example, the removal of a population of *Trachemys scripta* (terrapins also known as “sliders”) from the environment, and their keeping in captivity as part of a population control activity
- the temporary keeping of specimens at a location before being culled

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<sup>10</sup> <http://www.legislation.gov.uk/ukpga/2015/7/part/4>

- the growing of a widely spread species in the environment as part of scientific study aimed towards the eradication of that species

## Guide to appendices

Appendix A – Management measure aims

Appendix B – Proposals regarding general management measures

Appendix C - Proposals regarding licensable management measures

Appendix D –Proposed licensable management measures relating to Signal crayfish (*Pacifastacus leniusculus*)

Appendix E –Consultation questions

Appendix F – Advice on responses

## Appendix A – Management measure aims

1. The aims proposed here are focused on reducing the impact that the 14 widely spread species of Union concern have on native biodiversity and ecosystem services in England and Wales, as well as their wider socio-economic impacts. Our aims set out what our management measures for these species are working towards.

### Plants

2. Table 1. Management measure aims for widely spread plant species.

<b>Species: Nuttall's waterweed (<i>Elodea nuttallii</i>), Chilean rhubarb (<i>Gunnera tinctoria</i>), Giant hogweed (<i>Heracleum mantegazzianum</i>), Floating pennywort (<i>Hydrocotyle ranunculoides</i>), Himalayan balsam (<i>Impatiens glandulifera</i>), Curly waterweed (<i>Lagarosiphon major</i>), American skunk cabbage (<i>Lysichiton americanus</i>), Parrot's feather (<i>Myriophyllum aquaticum</i>).</b>	
Aims	To reduce further spread of these species, with localised eradication being carried out in high priority areas where possible, e.g. Sites of Special Scientific Interest (SSSIs), where rare native flora are at threat, and areas at risk of flooding and erosion.

### Animals

3. Table 2. Management measure aims for widely spread animal species.

<b>Species: Egyptian goose (<i>Alopochen aegyptiacus</i>)</b>
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Aims	<p>To control the current wild population of this species, to reduce its further spread and to eradicate in the wild where possible.</p> <p>To reduce the number of individuals in captivity over time.</p>
<b>Species: Chinese mitten crab (<i>Eriocheir sinensis</i>)</b>	
Aims	<p>To reduce further spread of the species and mitigate its impacts.</p> <p>To eradicate in areas where feasible and benefits are sustainable.</p>
<b>Species: Muntjac deer (<i>Muntiacus reevesi</i>)</b>	
Aims	<p>To control the current wild population of this species, to reduce its further spread and to eradicate in the wild where possible.</p> <p>To reduce the number of individuals in captivity over time.</p>
<b>Species: Signal crayfish (<i>Pacifastacus leniusculus</i>)</b>	
Aims	<p>To reduce further spread of the species and mitigate its impacts.</p> <p>To eradicate in areas where feasible and benefits are sustainable.</p>
<b>Species: Grey squirrel (<i>Sciurus carolinensis</i>)</b>	
Aims	<p>To control the current wild population of this species, to reduce its further spread and to eradicate in the wild where possible.</p> <p>To prevent establishment on islands where the species cannot colonise naturally.</p> <p>To prevent establishment in areas that are the preserve of red squirrel populations.</p> <p>To reduce the number of individuals in captivity over time.</p>
<b>Species: All subspecies<sup>11</sup> of <i>Trachemys scripta</i> (also known as “slider terrapins”)</b>	

<sup>11</sup> This includes all subspecies of *Trachemys scripta* e.g. yellow-bellied slider, red-eared slider, Cumberland slider, and common slider.

Aims	<p>To control the current wild populations of this species, to prevent its further spread and to eradicate in the wild where possible.</p> <p>To reduce the number of individuals in captivity over time.</p>
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## Appendix B – Proposals regarding general management measures

1. As described above (main consultation document paragraph 29) these are measures that can be carried out **without** the need for a licence under the Invasive Alien Species (Enforcement and Permitting) Order 2019 (“the Enforcement Order”). General management measures are, when focused towards management aims, an integral part of how widely spread species of Union concern are being and will continue to be effectively managed in England and Wales.
2. General management measures include activities such as direct governmental eradication action, public education and engagement, research into widely spread species, the testing of biocontrol agents, and the work carried out by local action groups to eradicate and control widely spread species.
3. Please note that the transport of specimens to facilities<sup>8</sup> in the context of eradication is not restricted under the Principal Regulation, and therefore could constitute general management action.
4. It is also important to note that measures described in this Appendix must be undertaken in compliance with other relevant legislation where applicable.

## General management measures applicable to all widely spread species

5. Table 3. General management measure for all widely spread species.

Proposed action constituting general management measures (under Article 19 of the Principal Regulation)	<p>We propose that the following activities could be used as part of the management of widely spread species of Union concern in England and Wales:</p> <ul style="list-style-type: none"> <li>• the continued support of research into viable early detection, control and eradication methods for these species</li> <li>• the further determination of how new introductions of these species are occurring</li> </ul>
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applicable to all species	<ul style="list-style-type: none"> <li>• the continued implementation of relevant strategies, such as pathway action plans<sup>12</sup></li> <li>• the continued raising of public awareness regarding the negative impacts of these species in the wild e.g. by promoting <a href="#">Invasive non-native species ID sheets</a></li> <li>• the raising of awareness of the consequences of breaching the restrictions of the Principal Regulation</li> <li>• the maintenance of coordinated action against widely spread species through country groups</li> <li>• the encouragement of a reduction in the number of widely spread animal species present in captivity, and the number of widely spread plant species in private collections, over time</li> <li>• the promotion of direct volunteer management through local action groups comprising partnerships of interested parties, such as local authorities and wildlife trusts. Their collaboration can be used to map populations, prioritise local eradication efforts, raise awareness, and tackle widely spread species at a local level</li> <li>• the encouragement of the reporting of new populations of these species in the wild before they can establish</li> <li>• the continued raising of public and stakeholder awareness about the 14 widely spread species of Union concern</li> <li>• the provision of advice and guidance, for example on control methods</li> <li>• where appropriate, the use of community protection notices made under the Anti-social Behaviour, Crime and Policing Act 2014 by local authorities and the Police to tackle the impact of widely spread species of Union concern</li> </ul>
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## Additional general management measures for plant species

6. Table 4. Additional general management measure for widely spread plant species.

**Species: Nuttall's waterweed (*Elodea nuttallii*), Chilean rhubarb (*Gunnera tinctoria*), Giant hogweed (*Heracleum mantegazzianum*), Floating pennywort (*Hydrocotyle ranunculoides*), Himalayan balsam (*Impatiens glandulifera*), Curly waterweed**

<sup>12</sup> The first of these Pathway Action Plans, the Zoos Pathway Action Plan, can be found here along with associated documents: <http://www.nonnativespecies.org/index.cfm?sectionid=135>



**(*Lagarosiphon major*), American skunk cabbage (*Lysichiton americanus*), Parrot's feather (*Myriophyllum aquaticum*).**

<p>Proposed action constituting general management measures (under Article 19 of the Principal Regulation)</p>	<p>We propose that the following activities could be used as part of the management of widely spread plant species of Union concern in England and Wales:</p> <ul style="list-style-type: none"> <li>• the use of eradication methods where appropriate, particularly in cases where these species have been discovered in new catchments</li> <li>• the use and continued funding of biocontrol research. This includes ongoing government-led testing of biocontrol agents such as <i>Listronotus elongates</i> weevil as a control agent for floating pennywort, and the use of the rust fungus <i>Puccinia komarovii</i> var. <i>glanduliferae</i> to control Himalayan balsam</li> <li>• the use of direct action to manage these plants in the wild. This includes the work of local action groups, non-governmental organisations, and local authorities in eradicating or controlling these species in the wild (including manual and chemical methods)</li> <li>• the further encouragement of private horticulturalists, retailers, landowners and public gardens to promote the use of native species, and to safely remove and dispose of widely spread plant species so as to reduce their numbers over time</li> <li>• the ongoing education of private horticulturalists, retailers, land owners, and public gardens on the need to act responsibly and not allow or encourage the spread of these species into the environment</li> <li>• the continued promotion of the '<a href="#">Check, Clean and Dry</a>' campaign and '<a href="#">Be Plant Wise</a>' to alert water users, gardeners and retailers to the threat widely spread species pose</li> <li>• the provision of guidance on, and the encouragement of, strict biosecurity when working in proximity to these species to avoid further spread</li> <li>• the provision of training to customs officials, regulators, and National Wildlife Crime Unit (NWCU) to ensure widely spread species can be identified by enforcement bodies</li> </ul>
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## Additional general management measures for animal species

7. Table 5. Additional general management measure for widely spread animal species.

<b>Species: Egyptian goose (<i>Alopochen aegyptiacus</i>), Chinese mitten crab (<i>Eriocheir sinensis</i>), Muntjac deer (<i>Muntiacus reevesi</i>), Signal crayfish (<i>Pacifastacus leniusculus</i>) (please see Appendix D), Grey squirrel (<i>Sciurus carolinensis</i>), all subspecies of (<i>Trachemys scripta</i>)</b>	
Proposed action constituting general management measures (under Article 19 of the Principal Regulation)	<p>We propose that the following activities could be used as part of the management of widely spread animal species of Union concern in England and Wales:</p> <ul style="list-style-type: none"> <li>• the use of approved, humanely conducted, lethal control measures including targeted culls, trapping and shooting</li> <li>• the ongoing encouragement of private collections and landowners to reduce or remove individuals over time</li> <li>• the encouragement of private collections and landowners to take steps to prevent accidental escapes, and to have recapture plans in place</li> <li>• the implementation of relevant strategies, for example: the <a href="#">Action Plan for Wild Deer Management in Wales</a> and the <a href="#">Zoo Pathway Action Plan</a></li> <li>• the continuation of research into viable control methods, for example fertility trials funded by Defra aimed at population control</li> <li>• the encouragement of stakeholders involved in control efforts to establish and maintain coordinated management partnerships at the landscape-scale</li> <li>• the continued raising of public and stakeholder awareness of the impact that these species can have on native biodiversity and the economy if they escape or are released into the environment</li> </ul>

## Appendix C - Proposals regarding licensable management measures

1. As described above (main consultation document paragraph 30), these are actions that require a licence under the Invasive Alien Species (Enforcement and Permitting) Order 2019 (“the Enforcement Order”) before they can be carried out. The list of actions that are restricted by the Principal Regulation (and so prohibited under the Enforcement Order) has been set out under the heading “management actions” above.
2. For our proposals about licensable management measures for Signal crayfish see Appendix D. This information has been placed in a separate appendix so that

consultees can more easily consider our management measure proposals for Signal crayfish.

3. Measures described in this Appendix must be undertaken in compliance with other relevant legislation where applicable.

## Licensable management measures for plant species

4. Table 6. Licensable management measure for widely spread plant species.

Proposed action constituting licensable management measures (under Article 19 of the Principal Regulation)	<p>We propose that licensable management measures for widely spread plant species of Union concern could consist of the following:</p> <p>The undertaking of actions normally restricted under the Principal Regulation to implement methods of eradication, population control, and containment. This could include the keeping, transport, and temporary commercial use of plant specimens as part of work aimed at eradication, population control or containment.</p> <p>The undertaking of actions normally restricted under the Principal Regulation to allow for research, outside of a contained holding, into the eradication, population control, or containment of widely spread plant species. Licensable actions could include the keeping, growing and cultivation of these species as part of research aimed at eradication, population control or containment.</p>
Examples	<ul style="list-style-type: none"> <li>granting a licence authorising the growing of plants in the environment as part of a monitored and controlled study aimed at determining the best methods for eradicating that species</li> </ul>

## Licensable management measures for animal species

5. Table 7. Licensable management measure for widely spread animal species.

<p><b>Species: Egyptian goose (<i>Alopochen aegyptiacus</i>), Chinese mitten crab (<i>Eriocheir sinensis</i>), Muntjac deer (<i>Muntiacus reevesi</i>), Signal crayfish (<i>Pacifastacus leniusculus</i>), Grey squirrel (<i>Sciurus carolinensis</i>), all subspecies of (<i>Trachemys scripta</i>)</b></p> <p><b>(For Signal crayfish see Appendix D)</b></p>
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<p>Proposed action constituting licensable management measures (under Article 19 of the Principal Regulation)</p>	<p>We propose that licensable management measures for widely spread animal species of Union concern could consist of the following:</p> <p>The undertaking of actions normally restricted under the Principal Regulation to implement methods of eradication, population control, and containment. This could include the keeping, transport, and temporary commercial use of animal specimens as part of work aimed at eradication, population control or containment.</p> <p>The undertaking of actions normally restricted under the Principal Regulation to allow for research, outside of a contained holding, into the eradication, population control, or containment of widely spread animal species. Licensable actions could include the keeping and breeding of animal specimens as part of research aimed at eradication, population control or containment.</p>
<p>Examples</p>	<ul style="list-style-type: none"> <li>• the transport of animals as part of activity aimed at population control or containment<sup>13</sup></li> <li>• the keeping of animals taken into captivity to prevent their release back into the environment</li> <li>• the release of individuals back into the environment as part of work aimed at population control, i.e. capture-release studies to help determine the size of a population to aid in applying control measures suitable to the population size, or the release of sterilised males back into the environment as part of work aimed at population control</li> <li>• the temporary keeping of live animals collected as part of population control efforts, at a licensed facility prior to being made fit for consumption, provided appropriate controls are in place to avoid any further spread of the species concerned</li> <li>• on a temporary basis, the sale of live animals collected as part of population control efforts, for example for human consumption, provided</li> </ul>

<sup>13</sup> The transport of specimens to facilities in the context of eradication is not restricted under the Principal Regulation and does not require a management measure licence.

appropriate controls are in place to avoid any further spread of the species concerned

- the removal of populations from the wild, and their subsequent keeping under licence at a facility as part of non-lethal eradication efforts, where the total removal of a small population from the environment could be assured

## Appendix D – Proposed licensable management measures relating to Signal crayfish (*Pacifastacus leniusculus*)

### Introduction

1. This Appendix sets out:

- i. The changes in legislation pursuant to the Invasive Alien Species (Enforcement and Permitting) Order 2019 (the “Enforcement Order”) as they relate to Signal crayfish in England and Wales; and
- ii. Our proposals for management measures for Signal crayfish in England and Wales as required by Article 19 of the Principal Regulation (management of invasive alien species that are widely spread).

2. Signal crayfish can live in a range of freshwater habitats including streams, canals, rivers, lakes and ponds, and are able to survive in brackish water. They are able to disperse up and downstream, cross most natural and artificial barriers and travel over land to reach nearby waterbodies. The transfer or release of individuals (a criminal offence since 1992) has further aided dispersal<sup>14</sup>.

3. Signal crayfish have a substantial negative impact in waterbodies where they have been introduced<sup>15</sup>:

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<sup>14</sup> <http://www.nonnativespecies.org/factsheet/factsheet.cfm?speciesId=2498>.

<sup>15</sup> D.M. Holdich, J. James, C. Jackson & S. Peay (2014) The North American signal crayfish, with particular reference to its success as an invasive species in Great Britain, *Ethology Ecology & Evolution*, 26:2-3, 232-262.

- i. Signal crayfish have a profound effect on the environment; they change ecosystems<sup>16</sup>, and eliminate a wide range of species including many of nature conservation importance. Without action to prevent their spread, Signal crayfish have an adverse effect on waterbodies and species of conservation importance as they move/are moved into new areas;
- ii. They are aggressive predators and feed on native aquatic invertebrates, amphibians, including tadpoles, fish eggs and juvenile fish<sup>17</sup>, in addition to detritus and aquatic vegetation. Signal crayfish also have an indirect impact on native species by out-competing them for resources key to their survival, such as food and shelter<sup>18</sup>. In sites where Signal crayfish are found they have altered food webs and reduced the diversity of aquatic invertebrates. They have been seen to reduce native populations of salmon and trout, and are also thought to have contributed to the decline of amphibians in England.
- iii. They seriously impact populations of the native white-clawed crayfish (*Austropotamobius pallipes*). Signal crayfish grow faster, are able to produce more young, are more aggressive and are tolerant of a wider range of conditions than the white-clawed crayfish, and therefore out-compete the native species. Signal crayfish also carry a fungal disease known as 'crayfish plague'<sup>19</sup>. This fungus is fatal to native crayfish and can remain alive in damp conditions for up to two weeks. The introduction or spread of infected Signal crayfish into waterbodies containing native crayfish can lead to the total decimation of the native population. It is this plague, the spread of which has been exacerbated by people moving Signal crayfish into new waterbodies, which has been a major driver in the ongoing extinction of the white-clawed crayfish in England.
- iv. Signal crayfish, through their burrowing into banks, also contribute to problems with flooding, livestock safety, and the stability of structures built on the bankside<sup>8</sup>. It is imperative that all steps are taken to prevent the further exacerbation of flood risk in both England and Wales.
- v. Signal crayfish cost the British economy an estimated £2.7 million a year<sup>20</sup>. This figure includes the costs of management activities, impacts on angling and

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<sup>16</sup> L. Harvey, Gemma & Moorhouse, Tom & Clifford, Nicholas & J. Henshaw, Alexander & Johnson, Matthew & DW, MacDonald & Reid, Ian & Rice, Stephen. (2011). Evaluating the role of invasive aquatic species as drivers of sediment-related river management problems: the case of the Signal Crayfish (*Pacifastacus leniusculus*). *Progress in Physical Geography*. 35. 517.

<sup>17</sup> Guan, R., & Wiles, P. (1997). Ecological Impact of Introduced Crayfish on Benthic Fishes in a British Lowland River. *Conservation Biology*, 11(3), 641-647.

<sup>18</sup> Stenroth, P. and Nyström, P. (2003), Exotic crayfish in a brown water stream: effects on juvenile trout, invertebrates and algae. *Freshwater Biology*, 48: 466-475.

<sup>19</sup> Bohman, P., Nordwall, F., & Edsman, L. (2006). The effect of the large-scale introduction of signal crayfish on the spread of crayfish plague in Sweden. *Bulletin Français de la Pêche et de la Pisciculture*, (380-381), 1291-1302.

<sup>20</sup> CABI (2010) *The Economic Cost of Invasive Non-Native Species on Great Britain*.

fisheries, riverbank restoration, and also research into the species. This figure, from 2010, is likely to be an underestimation of costs; current costs are expected to be higher.

Given the breadth and seriousness of the adverse impacts of Signal crayfish, we must ensure that actions that might accelerate the spread of Signal crayfish into new areas in England and Wales are prevented wherever possible.

4. The restrictions in the Principal Regulation are intended to help to protect native species, ecosystems and waterways from this highly damaging species. The Enforcement Order strengthens our ability to manage activity concerning this species within England and Wales.
5. Signal crayfish are widely spread in England, especially in the south of England, and are locally abundant in some parts of Wales. The species is not as widely spread in Scotland where a small number of well-established populations have been recorded. It is not present in Northern Ireland. As a result, management within England and Wales needs to ensure that steps are taken to prevent the species from spreading within the UK as well as to other Member States.

## How Signal crayfish are currently managed in England and Wales

### The Wildlife and Countryside Act 1981

6. It is an offence under section 14 of the Wildlife and Countryside Act 1981 (“the WCA”) to release or allow non-native crayfish to escape into the wild except under, and in accordance with, the terms of a licence issued by the appropriate authority. The appropriate authority in England is Natural England (NE) and in Wales, the Natural Resources Body for Wales (NRW).
7. Any person wishing to release Signal crayfish into the wild must apply for and receive a licence under the WCA so as to be able to do so lawfully.
8. Given the significant damage caused to the environment by this species, there is a general presumption against the issue of WCA licences authorising the release of Signal crayfish into any open waters. However, licences have been issued in the past to allow for the re-release of captured animals where it is deemed essential for research purposes.

## **The Prohibition of Keeping of Live Fish (Crayfish) Order 1996**

9. It is an offence under section 2(1) of the Prohibition of Keeping of Live Fish (Crayfish) Order 1996 (the “Crayfish Order”) to keep any live non-native crayfish in England and Wales except under licence. There is an exception for Signal crayfish, which may be kept in specific, exempted, areas without a licence.
10. Those wishing to keep Signal crayfish must first check whether their site falls within one of the exempted areas. These exempted areas, often called ‘go areas’, are defined by postcode as set out in the Schedule to the Crayfish Order. Those wishing to keep Signal crayfish outside of an exempted area, often called ‘no-go areas’, may only do so under licence. Such licences are usually only granted for research or educational purposes, and animals must be kept indoors within fully bio-secure premises.
11. The objective of this legislation was to control the keeping of non-native species of crayfish in areas where native (white-clawed) crayfish were present in good numbers.

## **Keeping of non-native crayfish for direct human consumption**

12. Persons keeping Signal crayfish for supply for human consumption, such as fish markets, hotels and restaurants, are covered by a general licence issued under the Import of Live Fish (England and Wales) Act 1980. This licence authorises owners, occupiers and managers of fish markets, hotels and restaurants, and other persons concerned with the supply of non-native crayfish for human consumption, to keep live Signal crayfish (subject to specified conditions, including that the crayfish must be held in secure containers at all times). The licence extends to the whole of England and Wales and is not restricted to go or no-go areas.

## **Signal crayfish farming**

13. The farming of Signal crayfish must be authorised by the Fish Health Inspectorate at Cefas<sup>21</sup>. Farming must be conducted in line with the requirements of the Crayfish Order and the WCA, and farms are required to operate in such a way as to avoid the release or escape of non-native crayfish into the wild. In no-go areas in England and Wales farming may only take place in a secure, indoor farm facility.

## **Trapping Signal crayfish**

14. Signal Crayfish may only be trapped, or caught by any other means, under an authorisation issued under section 27A of the Salmon and Freshwater Fisheries Act

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<sup>21</sup> Centre for Environment, Fisheries and Aquaculture Science.



1975. Such authorisations are issued by the Environment Agency (EA) in England or NRW in Wales. Both EA and NRW currently use the Schedule to the Crayfish Order to guide their decision-making when looking at applications for trapping authorisations.

15. Trapping for commercial use or personal consumption is usually only authorised in exempted areas (go areas), as defined in the Schedule to the Crayfish Order. Outside of exempted areas (no-go areas), trapping is only authorised for scientific, conservation or fisheries management purposes. Those wishing to trap Signal crayfish must also seek permission from the landowner and any relevant angling clubs.
16. If a trapping authorisation is granted, there are various conditions attached in order to protect fisheries and the wider environment from the impacts of inappropriate activity, the spread of non-native species, and disease transmission.

## Changes to the current management system for Signal crayfish which will come in to force under the Enforcement Order

17. From the date the Enforcement Order comes in to force, it will be unlawful to intentionally carry out any of the eight activities set out in Article 7 of the Principal Regulation<sup>22</sup> with live Signal crayfish unless a defence applies, or the activity is covered by a permit or licence issued under the Enforcement Order.
18. The Enforcement Order amends a number of pieces of existing legislation, which means that from the date it comes in to force the rules in England and Wales concerning Signal crayfish will change as follows:
  - i. The Crayfish Order will no longer apply to the 5 crayfish species included on the list of species of Union concern, including Signal crayfish. Instead, these species will be regulated under the Enforcement Order, and a licence or permit will be required under that Order to keep those crayfish species, irrespective of where they are located in England and Wales (unless a defence applies). This amendment has a number of further consequences:
    - a. the Schedule to the Crayfish Order, which sets out the parts of England and Wales in which no licence is required to keep Signal crayfish (the go areas), will be removed;
    - b. the general licence authorising food suppliers to keep non-native crayfish for human consumption will no longer exist.

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<sup>22</sup> It is a criminal offence to intentionally import into the EU, keep, breed, transport (except to facilities in the context of eradication), place on the market, use or exchange, permit to reproduce, grow or cultivate, or release into the environment, any live specimen of a species of Union concern.

- ii. Schedule 9 to the WCA will no longer include any species of Union concern, so will no longer list Signal crayfish. Instead, release of Signal crayfish into the wild will, be an offence under the Enforcement Order unless covered by a permit issued, or licence granted, under that Order.
19. It will still be necessary to obtain an authorisation under the Salmon and Freshwater Fisheries Act 1975 from EA or NRW in order to trap Signal crayfish. For the time being, EA and NRW will continue to use the postcode system originally established by the Crayfish Order when determining whether a trapping licence should be issued. It may, however, prove necessary to review the areas in which, and basis on which, trapping can be authorised in the future.

## Management measure Proposals

### The extent of these measures

20. The restrictions in the Principal Regulation only apply to **live specimens** of Signal crayfish (*Pacifastacus leniusculus*). Therefore these proposed management measures also only relate to activities concerning **live specimens** of this species.
21. Our proposals do not apply to the four other crayfish species included on the list of species of Union concern (Spiny-cheek crayfish (*Orconectes limosus*), Virile crayfish (*Orconectes virilise*), Red swamp crayfish (*Procambarus clarkia*) and Marbled crayfish (*Procambarus fallax* f. *virginalis*). These four species are not currently considered to be widely spread in England and Wales. As a result, they do not fall under the requirements of Article 19 of the Principal Regulation and do not require management measures be put in place.
22. These proposals only relate to live Signal crayfish in England and Wales, and do not cover activities taking place in Scotland or Northern Ireland.

### Management Measures

23. We recognise that there is currently significant Signal crayfish trapping activity, mostly with subsequent human consumption, in England. We also acknowledge that the current system (as detailed above) has not led to the satisfactory containment of, or decrease in, the Signal crayfish population. A widespread industry involving the use of live Signal crayfish, primarily in southern England, has become established. Our objective is only to allow certain activities to continue, on a regulated basis, where we can be confident that those activities will contribute to the eradication, population control or containment of Signal crayfish, and where sufficient biosecurity measures are in place. This approach will try to ensure that necessary safeguards are in place to protect native species, ecosystems, and waterways from the threat posed by Signal crayfish.

24. In Appendix C (see paragraph 5) we set out our proposals for licensable management measures for all widely spread animal species, including Signal crayfish. We set these proposals out again in the following table.

25. Table 8. Licensable management measure for widely spread animal species.

Proposed action constituting licensable management measures (under Article 19 of the Principal Regulation)	<p>We propose that licensable management measures for widely spread animal species of Union concern could consist of the following:</p> <p>The undertaking of actions normally restricted under the Principal Regulation to implement methods of eradication, population control, and containment. This could include the keeping, transport, and temporary commercial use of animal specimens as part of work aimed at eradication, population control or containment.</p> <p>The undertaking of actions normally restricted under the Principal Regulation to allow for research, outside of a contained holding, into the eradication, population control, or containment of widely spread animal species. Licensable actions could include the keeping and breeding of animal specimens as part of research aimed at eradication, population control or containment.</p>
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26. For Signal crayfish however, we believe it is necessary to make further, more detailed, proposals for effective management in England and Wales.

## Proposed new management system

27. People wishing to trap Signal crayfish will still be required to apply for a trapping authorisation from EA in England or NRW in Wales. Both EA and NRW will continue to use the areas previously set out in the Schedule to the Crayfish Order (the go areas) to guide their decision-making when looking at applications for trapping authorisations<sup>23</sup>.

28. Activities involving live crayfish away from the site of capture will only be allowed under, and in accordance with the terms of, a management measure licence granted under the Enforcement Order. The licensing authorities for the Enforcement Order are

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<sup>23</sup> Until such time that a further review of these areas is carried out - as part of which these areas may be changed in response to any further evidence-based recommendations on how to best protect native ecosystems, preserve biodiversity, maintain our waterways, and prevent the spread of this species in the environment.

NE in England and NRW in Wales.

29. Areas where the keeping of Signal crayfish was previously allowed under the Crayfish Order (previously 'go areas') will now be referred to as '**containment zones**'. All other areas (previously 'no-go areas') will now be referred to as '**exclusion zones**'.
30. We propose that the aim of Signal crayfish management in containment zones should be to control and contain the population where possible (i.e.: the population should be reduced or at least not be allowed to spread or increase). Additionally, efforts should continue to be made to eradicate populations of Signal crayfish within these zones e.g.: within ponds or other closed waterbodies where such actions could have permanent and sustainable results. The aim of Signal crayfish management within 'exclusion zones' should be to prevent the spread of Signal crayfish into these areas so as to protect native crayfish populations, biodiversity, riverbank integrity, and local socio-economic assets. We therefore propose that different management activities will be allowed to take place within 'containment zones' and 'exclusion zones'.
31. We propose that a review of the zones should be carried out in due course as part of ensuring the effective management of Signal crayfish in England and Wales. We believe it is essential to determine the extent of the current populations of this species, so they can be better managed, and their impacts reduced. This may mean that the areas currently within exclusion zones or containment zones may change following this review.

## Proposals relating to trapping authorisations and licensable management measures

32. The proposals set out below are summarised in flow diagrams at the end of this appendix.

## Proposals relating to containment zones

### Trapping authorisations

33. We propose that EA and NRW would continue to consider whether to issue trapping authorisations within 'containment zones' on a case by case basis. Authorisation would be, as now, subject to location, with determination by the authorising body on a site-by-site basis, and would not be guaranteed.
34. Persons operating under a trapping authorisation would, in order to avoid an offence under the Enforcement Order, need to:

- i. remove all sizes of Signal crayfish caught (none are to be returned except under and in accordance with a management measure licence);
- ii. not take live specimens of Signal crayfish away from the site of capture (except under and in accordance with a management measure licence<sup>24</sup>).

They would also be advised to ensure that appropriate biosecurity controls are in place.

## Management measure licences

35. We propose that persons who wish to take live specimens away from the site of capture must also apply for a management measure licence under the Enforcement Order. A management measure licence could be granted to allow intentional keeping, transport<sup>25</sup>, and commercial use.
36. We propose that such a licence could allow Signal crayfish to be kept and transported for **personal consumption** as well as **commercial activities** such as sale. For more information on our proposals for the use of live specimens see paragraphs 50-73.
37. Each licence application would be assessed by NE or NRW, on a case by case basis, taking into account the management activity proposed, the aim of the management activity, the likelihood of permanent and sustainable results, and the location where trapping and subsequent activity away from the site of capture is proposed to take place. Those wishing to obtain a management measure licence would need to be able to demonstrate to the licensing authority that their actions would contribute to the eradication, population control or containment of Signal crayfish. This would require them to show that their actions would have the desired impact on the target population – trapping a high enough level and/or for a long enough period of time to have the stated suppressive or eradication impact on the target Signal crayfish population. This could mean that a minimum trap per area requirement may need to be met, and/or that trapping continues in the same area for a sustained period of time, potentially a full trapping season. It may also require an applicant to show they have the necessary resources to trap at the proposed level and for the proposed length of time. We propose that scientific activity and research into Signal crayfish can directly contribute towards our ability to manage this species, and may constitute a management measure. In situations where a licence is being sought to carry out activity with live specimens for scientific or research purposes, the applicant would need to show that their actions will contribute to the eradication, population control or containment of Signal crayfish, but would not need to show that their actions would have a direct suppressive or eradication impact on a target population.

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<sup>24</sup> Unless the specimens were being transported to a facility in the context of eradication, an action that would not require a licence as it is not restricted under the Principal Regulation.

<sup>25</sup> This could include transport to premises for personal consumption.

## Proposals relating to exclusion zones

### Trapping authorisations

38. We propose that EA and NRW would continue, as now, to consider whether to grant trapping authorisations within 'exclusion zones' where it can be proven that there is a specific necessity for trapping in that zone.

39. Persons seeking a trapping authorisation would need:

- i. to have discussed their intended course of action with the relevant regulatory bodies;
- ii. To demonstrate that their proposed actions are necessary for scientific, conservation or fisheries management purposes. Unless the trapping is for scientific purposes, it would also need to be demonstrated that the intensity of trapping over a sustained time period is sufficient to ensure that the trapping will have a suppressive/eradicated effect on the target population.

40. As in the containment zone, persons operating under a trapping authorisation would, in order to avoid an offence under the Enforcement Order, need to:

- i. remove all sizes of Signal crayfish caught (none are to be returned);
- ii. not take live specimens of Signal crayfish away from the site of capture except under and in accordance with a management measure licence<sup>26</sup>.

They would also be advised to ensure that appropriate biosecurity controls are in place.

### Management measure licences

41. We propose that persons who wish to take live specimens away from the site of capture must also apply for a management measure licence under the Enforcement Order. As in the containment zones, the licence could allow intentional keeping, transport and commercial use of live specimens.

42. However, we propose that it would **not** be possible to obtain a management measure licence to transport and keep crayfish for **personal consumption** within exclusion zones. We think that preventing the transport and keeping of live Signal crayfish for personal consumption will help ensure that exclusion zones are protected from the risks posed by Signal crayfish. Any release of Signal crayfish, including accidental release, could lead to irreversible damage within exclusion zones, either through the spread of crayfish plague or population establishment. We understand that many of those using live specimens will put in place all possible safeguards to prevent escape. However, we believe that the risk created by live Signal crayfish being kept and

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<sup>26</sup> Unless the specimens were being transported to a facility for the purposes of eradication, which is an action that would not require a licence to take place as it is not restricted under the Principal Regulation.

transported for personal consumption in areas which are currently widely free of this species cannot be justified. It will still be possible to take home dead crayfish killed at the site of capture.

43. We propose that, in exclusion zones, it would only be possible to obtain a management measure licence authorising the transport, keeping and/or commercial use of live specimens where the live specimens will be transported to a containment zone and any subsequent keeping and commercial use of those crayfish only occurs within a containment zone. We also propose that it would be possible to obtain a management measure licence to carry out scientific actions with live Signal crayfish in exclusion zones, including their keeping, and transport (both to and from locations within exclusion zones).
44. For more information on our proposals for the use of live specimens see paragraphs 50-73.
45. Each licence application would be assessed by NE or NRW, on a case by case basis, taking into account the management activity proposed, the aim of the management activity, the likelihood of permanent and sustainable results, and the location where trapping and subsequent activity away from the site of capture is proposed to take place. Those wishing to obtain a management measure licence would need to be able to demonstrate to the licensing authority that their actions will contribute to the eradication, population control or containment of Signal crayfish. This would require them to show that their actions will have the desired impact on the target population – trapping a high enough level and/or for a long enough period of time to have the stated impact on the target Signal crayfish population. This could mean that a minimum trap per area requirement may need to be met, and/or that trapping continues in the same area for a sustained period of time, potentially a full trapping season. It may also require an applicant to show the necessary resources to trap at the proposed level and for the proposed length of time. We propose that scientific activity and research into Signal crayfish can directly contribute towards our ability to manage this species, and may constitute a management measure. In situations where a licence is being sought to carry out activity with live specimens for scientific or research purposes, the applicant would need to show that their actions will contribute to the eradication, population control or containment of Signal crayfish, but would not need to show that their actions would have a direct suppressive or eradication impact on a target population.

## Further proposals for containment and exclusion zones

46. We propose that persons who may not be able to meet the requirements of a management measure as an individual could establish a management group with other individuals. Collective effort, as part of an organised plan, could result in a level of trapping intensity that is considered to have an appreciable effect on a target



population, and a management measure licence could be applied for on a collective basis. In a containment zone, such licences could cover the transport of live specimens away from the place of capture for prompt personal consumption. They could, potentially, also license the commercial use of live Signal crayfish pursuant to the proposals below (see paragraphs 50-73). We propose that this level of community engagement would be a valuable tool within containment zones, as it would focus local trapping efforts towards wider management goals.

47. We would advise that persons seeking to obtain a management measure licence should engage with relevant regulators (EA, NRW and NE), as well as Local River Trusts at the earliest opportunity. This will help to ensure that any management action can be planned in a way that will prevent or minimise any impact on the local environment. It would also help applicants to determine whether their application, either for authorisation or management measure licence, is likely to be granted or whether further consideration is required.

## Proposals relating to licence conditions

48. We propose that management measure licences would contain the following conditions:

Licensees must:

- i. only carry out licensed activities in the zone indicated on the licence;
- ii. not transport live crayfish into exclusion zones, unless specifically authorised by the licence for scientific or research purposes (transport **from** exclusion zones may be allowed);
- iii. carry a copy of the licence when transporting live Signal crayfish;
- iv. keep/kill all specimens caught, and not return any caught specimens, unless specifically authorised by the licence for scientific or research purposes;
- v. transport, and (where relevant) dispose of, all caught crayfish in a bio-secure manner;
- vi. keep records of the number of crayfish trapped; and
- vii. record any subsequent commercial transactions, including who the animals were sold to, and how many were sold.

49. Persons in breach of their licence conditions would not be able to rely on the licence, which may result in an offence under the Enforcement Order being committed. It may also adversely affect their ability to obtain a management measure licence in the future.

## Proposals relating to the use of live specimens

### Personal consumption

50. As set out above (see paragraphs 35-38), we propose that persons carrying out management activities in a **containment zone** could be allowed, under a management



measure licence, to keep and transport live Signal crayfish for prompt personal consumption. Live animals could only be kept or transported within containment zones.

51. Persons carrying out management activities within an **exclusion zone** would not be allowed to keep or transport live Signal crayfish for the purpose of personal consumption. Our intention is to significantly reduce the movement of live Signal crayfish in exclusion zones, as this is thought to have been a major contributing factor in their spread and successful establishment in new areas.

## Commercial use of live Signal crayfish

52. We recognise that where significant numbers of crayfish are being caught as part of management measures, personal consumption is not a viable option. Whilst it will be possible for such crayfish to be humanely dispatched, we propose that there will be cases where commercial use of these stocks should be allowed.
53. In **containment zones** we propose that licensing authorities could, in appropriate cases, grant management measure licences which allow commercial activities, namely sale and connected keeping, transport and use. Such commercial activity would be subject to a strict set of conditions.
54. In **exclusion zones**, we propose that licensing authorities could, in appropriate cases, grant management measure licences which allow live specimens to be transported to containment zones under strict bio-secure containment for further commercial use. Commercial use will not be allowed within exclusion zones.
55. Article 19(2) of the Principal Regulation states that “commercial use of already established invasive alien species may be temporarily allowed as part of the management measures aimed at their eradication, population control or containment, under strict justification and provided that all appropriate controls are in place to avoid any further spread.”.
56. Under our proposals, those seeking a management measure licence which includes commercial use would have to show the licensing authority that their proposed activity would contribute to the eradication, population control, or containment of Signal crayfish.
57. Under the Principal Regulation, commercial use is only allowed on a temporary basis. We believe that commercial use should only be allowed until such time as management measure activities have taken effect in the location in question.
58. Management measure licences permitting commercial use would be granted for a limited duration. This would be at the licensing authority’s discretion and could

potentially be for a single trapping season followed by a review, or could be aligned with the planned duration of management measure being enacted.

## **Traders**

59. We propose that those wishing to sell live crayfish would only be licensed to sell to traders, such as wholesale fishmongers, restaurants and hotels, where the ultimate use of the live specimens is human consumption.

60. We propose that traders would:

- i. need to be located within a containment zone;
- ii. need to have been granted a management measure licence permitting commercial use including related keeping and transportation of live stocks;
- iii. only be permitted to carry out licensed activities within a containment zone;
- iv. not be permitted to transport live crayfish into any exclusion zone;
- v. only be permitted to sell live crayfish to people who are located within a containment zone who hold a management measure licence permitting commercial use;
- vi. not be permitted to offer live crayfish for sale to any other location than a containment zone;
- vii. need to carry a copy of their licence when transporting live Signal crayfish;
- viii. need to have a copy of their licence available for inspection;
- ix. need to transport, keep and dispose of (as relevant) all live crayfish in a bio-secure manner;
- x. need to record any commercial transactions, including who any live stocks were bought from/sold to, how many were bought/sold, and confirmation that the vendor /purchaser held a management measure licence permitting commercial use.

61. This would mean that any commercial activity would be able to be traced back to management measure activity; either directly i.e. Signal crayfish taken as part of a management measure being sold to a trader, or indirectly i.e. a trader selling those crayfish on to a restaurant for prompt human consumption. All steps in the commercial chain would therefore be underpinned by initial management activity aimed at the eradication, population control or containment of a Signal crayfish population.

62. We believe that this proposed system would allow live specimens to be traced back to the original trapper and management measure activity. This would help to ensure that all Signal crayfish on sale in England and Wales were caught as part of effective management measures. We believe that this level of accountability would discourage illegal activity and those looking to profit from Signal crayfish populations without also looking to provide some benefit to the environment through their actions.

## **Trading and exclusion zones**

63. We do not propose to change the current EA / NRW policy regarding trapping authorisations for Signal crayfish in exclusion zones (currently referred to as “no-go areas”) – see paragraphs 27-31. The policy not to authorise trapping for commercial

use or human consumption in exclusion zones would be maintained.

64. Currently, even though commercial trapping is not authorised by EA / NRW in no-go areas (exclusion zones), a general licence issued under the Import of Live Fish (England and Wales) Act 1980 authorises owners, occupiers and managers of fish markets, hotels and restaurants, and others concerned with the supply of non-native crayfish for human consumption to keep live crayfish. Thus it is currently possible for traders to purchase and sell live Signal crayfish in the no-go areas (exclusion zones).
65. We consider that this practice should cease. Whilst Article 19 of the Principal Regulation allows temporary commercial use as part of management measures for widely spread species (see paragraphs 50-73), this is “provided that all appropriate controls are in place to avoid any further spread”. Therefore we are required by the Principal Regulation to ensure our proposals allowing for commercial use contain the necessary controls to ensure we do not cause further spread of Signal crayfish into areas where they are currently not present.
66. The continued movement of Signal crayfish as part of trade is thought to be one of the major contributing factors to the continued spread of the species. We consider that allowing the continued use of Signal crayfish within exclusion zones would run contrary to the intention of the Principal Regulation and Article 19 in particular, and also to the goals of the UK government’s 25 Year Environment Plan and the Nature Recovery Plan for Wales (set out in paragraph 2 of the consultation document). As detailed in the introduction to this appendix, Signal crayfish present an ongoing and significant risk to our ecosystems, waterways and bankside assets. This is particularly the case in the exclusion zones. The release of Signal crayfish in the exclusion zones, either intentionally or by accident, gives rise to a serious risk of significant and irreversible damage. In the light of that risk, we consider that the continued keeping and sale of this species in exclusion zones cannot be justified.
67. The keeping, transportation and sale of live Signal crayfish into and within exclusion zones would increase the associated risk of specimens escaping or being released. This would greatly increase the likelihood of Signal crayfish becoming established in these zones which would have a range of negative effects.
- i. Native crayfish species would be at risk of being driven to extinction due to competition for resources, and the spread of crayfish plague. Crayfish plague is fatal to the endangered native white-clawed crayfish (*Austropotamobius pallipes*). Even the disposal of dead Signal crayfish into uninfected waterbodies can pose a risk to native populations, as the plague is waterborne and can survive for up to two weeks in damp conditions.
  - ii. Riverbank integrity would be at risk of being impacted due to the species’ extensive burrowing activity. This creates associated flood risk due to destabilisation and erosion, and an increased silt load in waterbodies. This

activity can also displace threatened species such as the Water vole (*Arvicola amphibious*).

- iii. Fisheries in exclusion zones would be put at risk of the predation of fish eggs by Signal crayfish. This predation can have a significant economic impact on fisheries.

68. We propose that traders, such as wholesale fishmongers, restaurants and hotels, located in exclusion zones would not be granted licences allowing commercial use of live Signal crayfish under the Enforcement Order. We do not want to encourage a market for Signal crayfish within exclusion zones, as we consider that this would further increase the risk of individuals bringing unregulated stocks of Signal crayfish into these zones. There have been instances of Signal crayfish populations becoming established in areas that they could not have moved into naturally, i.e. spread has occurred due to human activity; either intentional release or accidental escape. We want to ensure that the risk of new populations establishing in exclusion zones is greatly reduced. Put simply, we believe that the fewer live Signal crayfish being transported and kept in exclusion zones, the smaller the opportunities for release or escape will be.

69. This approach, together with our proposals detailed above, would limit commercial use and related keeping and transport (unless from an exclusion zone to a containment zone, or to disposal facilities<sup>27</sup>), to containments zones only. This would reduce the risks posed by the accidental or intentional release of Signal crayfish, which we believe has been a major contributing factor in their spread and successful establishment in waterbodies previously free of Signal crayfish. There have been recorded instances of populations of Signal crayfish appearing in areas where it is highly unlikely that they could have moved to without human assistance, such as remote tributaries to waters that contain native crayfish populations. These Signal crayfish populations are likely to eventually result in the eradication of the native crayfish populations further downstream. In some instances it is suspected that they have been introduced as seed populations, to start new populations for trapping, with no regard to the associated risks. The establishment of Signal crayfish populations in circumstances where natural spread is thought to be very unlikely has also been seen in Scotland. The species was first found in Scotland in 1995, and within 10 years it had spread to 9 river catchments, totalling 58 km of river<sup>28</sup>. The origin and subsequent spread in these instances is suspected to have come about through illegal establishment of

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<sup>27</sup> The Principal Regulation does not restrict the transport of live specimens to facilities in the context of eradication.

<sup>28</sup> Gladman Z., Adams C., Bean C., Sinclair C. & Yeomans W. 2009. Signal crayfish in Scotland, pp. 43–48. In: Brickland J. et al., Eds. Crayfish conservation in the British Isles. Proceedings of a conference held on 25th March 2009 in Leeds, UK. *Leeds; British Waterways*.

populations<sup>29</sup>.

70. When developing the proposals for Signal crayfish we considered two alternative options regarding commercial use. These were not thought to be the most effective approach for differing reasons. We do however invite you in your response to discuss these options further. They were:

**i) Allowing the commercial use, under a management measure licence, of live Signal crayfish in both containment and exclusion zones.**

We consider the commercial use of live specimens of Signal crayfish in exclusion zones presents too great a risk from accidental/deliberate release or the improper disposal of dead specimens in areas where Signal crayfish are not already widely spread. Even an isolated release of an individual into a waterbody risks crayfish plague being spread to populations of native species. If Signal crayfish are inadvertently or intentionally released into waterbodies in exclusion zones, and populations were to establish as a result, then this would lead to impacts on biodiversity, water ways and riverbanks, and socioeconomic assets, which could have prevented by limiting the keeping and transport of live Signal crayfish in these zones. We feel our proposed approach properly focuses on taking a preventative approach to the management of the species. This is especially the case for Wales, where there are only two containment zones and where increased transport and keeping of live Signal crayfish could potentially expose a large number of uninfected catchments to introduction risk.

**ii) Not allowing any commercial activity with live signal crayfish in any part of England and Wales (neither in exclusion nor containment zones).**

This would be the most risk adverse option. However, we believe this approach would severely limit the number of people willing to undertake activity to control Signal crayfish and would therefore hamper our efforts to reduce further spread of the species and mitigate its impacts.

This approach would also have an impact on businesses who are currently using live signal crayfish commercially within England and Wales. There is purported to be little to no market for dead Signal crayfish. Unless this were to change, prohibiting any commercial use of live animals would adversely impact a range of businesses (trappers, wholesalers and restaurants). It is felt that the regulated use of Signal crayfish within containment zones only (as per our proposals), strikes a proportionate balance between the need for further protection, the need for enhanced efforts to trap

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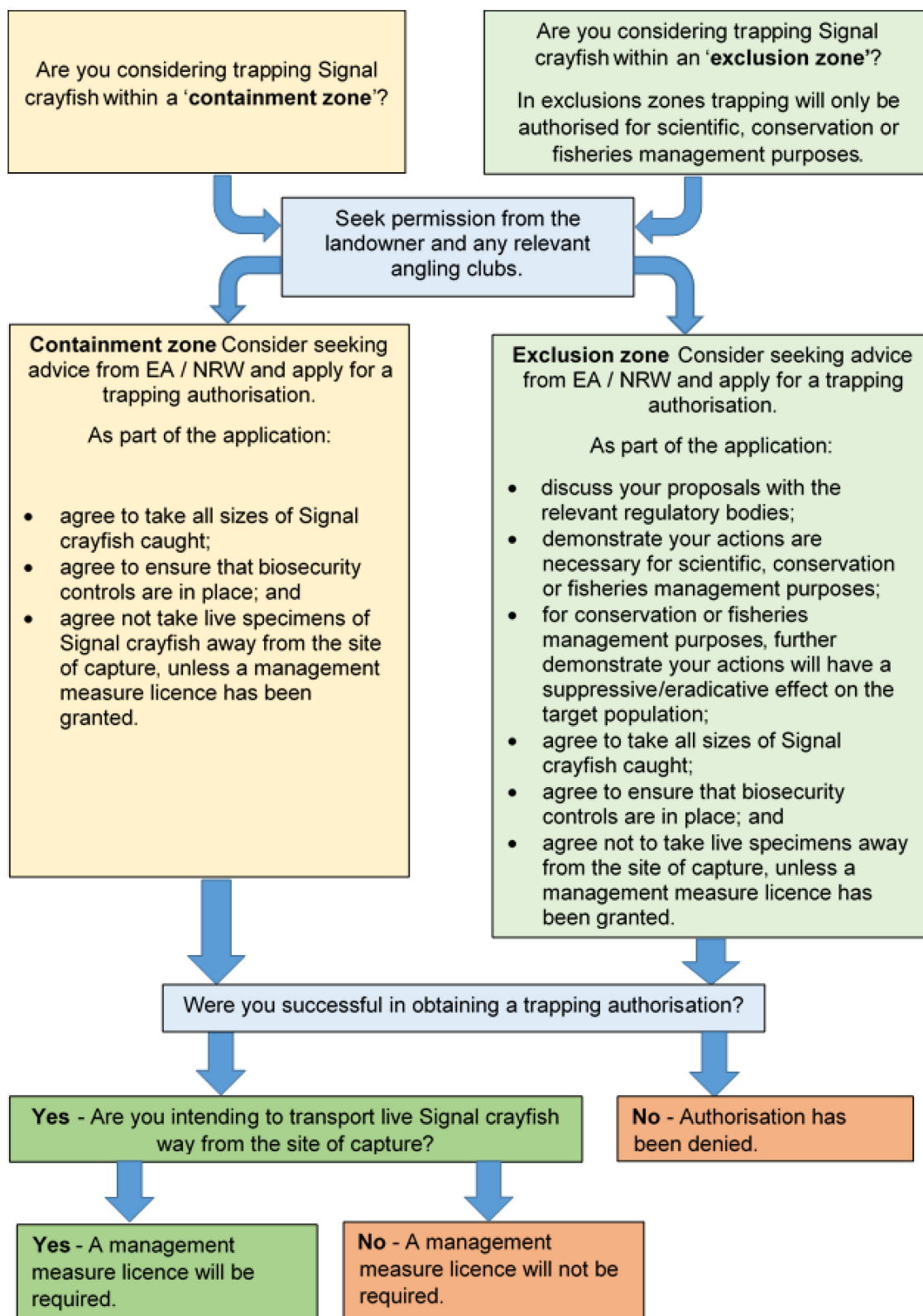
<sup>29</sup> D.M. Holdich, J. James, C. Jackson & S. Peay (2014) The North American signal crayfish, with particular reference to its success as an invasive species in Great Britain, *Ethology Ecology & Evolution*, 26:2-3, 232-262.

and remove Signal crayfish from our watercourses, and the need for there to be a practical use for any Signal crayfish that have been trapped as part of a management measures. We want to provide the greatest protection where it is most needed without disproportionately affecting business interests or inadvertently discouraging management activities taking place where Signal crayfish are present.

71. We would be especially interested in your views on our proposals for the commercial use of Signal crayfish, as detailed in paragraphs 50 to 68 above, including our proposals to apply more restrictions in the exclusion zones and the justification for this approach.

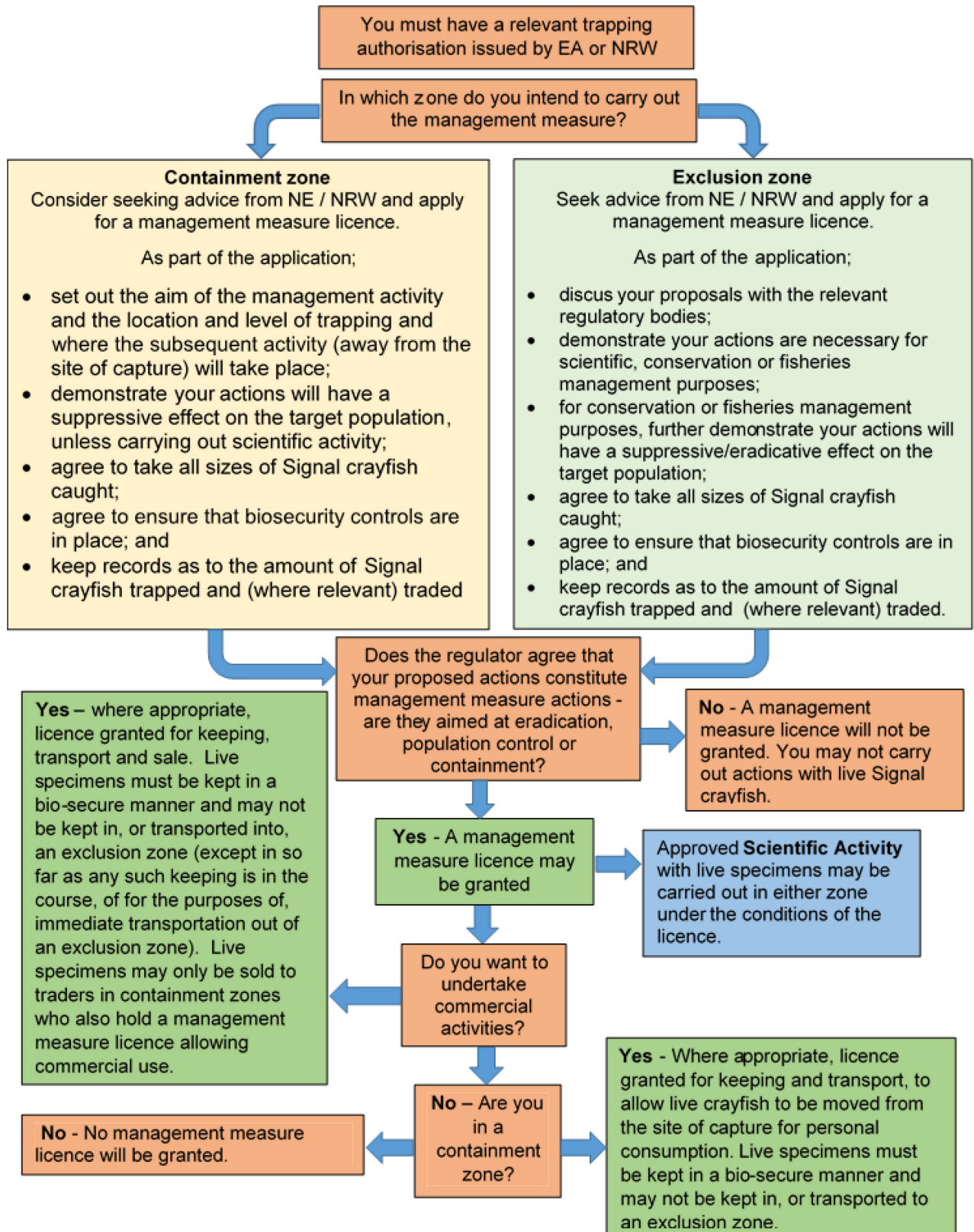
## Diagram of proposals for trapping authorisations

72. Image 1. Flow diagram summarising proposals for trapping authorisations.



## Diagram of proposals for management measure licences

73. Image 2. Flow diagram summarising proposals for management measure licences.





## Appendix E – Consultation questions

1. This consultation is seeking views on effective management measures for widely spread species of Union concern. Therefore responses proposing actions that do not contribute towards the eradication, population control, or containment of these 14 widely spread species will fall outside the scope of this consultation.
2. Alongside the consultation questions we have provided a number of prompts and examples. They have been included to help clarify the information and evidence that would be most helpful to receive in response to this consultation.
3. Respondents may wish to submit comments on wider matters regarding the control of species of Union concern. Please however refer to guidance given in Appendix F, as this will help you ensure your response falls within the scope of the consultation.
4. Box 1. Note to respondents.

Please note, responses that either:

- i. Propose that we make exceptions for particular species from the requirement to have in place effective management measures for widely spread species of Union concern, or
- ii. Propose that we make exceptions for particular species from the restrictions of the Principal Regulation,

Would not be consistent with our obligations under the Principal Regulation.  
Suggestions of this nature would therefore fall outside the scope of this consultation.

**Q1. Would you like your response to be confidential?**

**Q2. What is your name?**

**Q3. What is your email address?**

**Q4. Who do you represent?**

You can tick more than one box.

☐ Academia

☐ Animal rescue

- ☐ Aquatic interests
- ☐ Business
- ☐ Charity
- ☐ Conservation body
- ☐ Farmer
- ☐ Forester/woodland owner/manager
- ☐ Government agency
- ☐ Individual
- ☐ Land owner
- ☐ Local action group
- ☐ Local Authority
- ☐ Non-Government Organisation
- ☐ Riparian Owner
- ☐ Trade association
- ☐ University/research institute
- ☐ Utility supplier
- ☐ Veterinarian
- ☐ Zoo
- ☐ Other (please specify)

## Q5. What geographic region do your responses relate to?

- ☐ England
- ☐ Wales
- ☐ Both
- ☐ Neither / elsewhere (text box – please specify)

## **Q6. What are your views on the proposed aims for the management measures set out in Appendix A?**

5. Please indicate if your answer relates to a specific widely spread species, a number of specific species, or is a general response relation to management aims more widely.
6. It is helpful if you include reasoning or additional evidence as to why you hold your opinion. If you do not agree with the proposed aims, please could you explain why and provide evidence as to why you feel alternative aims should be adopted. Please remember, aims need to be focused on achieving eradication, population control or containment of widely spread species.
7. For example you could say: "I do not agree with aim X for species Y, I feel that instead we should aim for Z in relation to this species. I provide the following reasoning to support my argument ..."

## **Q7. What are your views on the general management measures set out in Appendix B?**

8. Please indicate if your answer relates to a specific widely spread species, a number of specific species, or is a response relating to general management measures more widely.
9. It is helpful if you include reasoning as to why you hold your opinion. If you do not agree with the proposed general management measures, please could you explain why and provide evidence as to why you feel alternative general management measures should be adopted. Please remember, management measures need to be focused towards achieving eradication, population control or containment of widely spread species. Please be as detailed as possible in your response, including reasoning and evidence.
10. As well as proposing general management measures in Appendix B, we have included examples of actions which we propose should be undertaken.
11. For example you could say: "I do not agree with measure X for species Y, I feel that instead we should apply measure Z in relation to this species. I provide the following reasoning/evidence to support my argument ..."

## **Q8. Are there any additional actions you think should be used as general management measures for particular widely spread species?**

12. Please indicate if your answer relates to a specific species, a number of specific species, or is a response relating to general management measures more widely.
13. This consultation paper (Appendix B) sets out our proposals for effective general management measures. You may be aware of other potential measures, which we haven't proposed here, that you consider should be allowed. Please be as detailed as possible in your response, including reasoning and evidence.
14. It is helpful if you specify how any suggested actions are justifiably aimed at one or more of the three management purposes of eradication, population control and containment (see section entitled "Management measures" on page 4 of main consultation document for clarification).
15. An example could be "I would like to see management measure X included for this species. Measure X would contribute to the management of the species because..."

## **Q9. Are there any actions that you think should not be used as part of a general management measure for a particular widely spread species?**

16. Please indicate if your answer relates to a specific species, a number of specific species, or is a response relating to general management measures more widely.
17. This consultation paper (Appendix B) sets out our proposals for effective general management measures. You may be aware of other potential measures, which we haven't proposed here, that you consider should not be allowed. This might include measures which you think may be proposed by other respondents to this consultation. We would like to know if you feel that certain actions should not be considered to contribute legitimately towards management of widely spread species in general, or of any particular widely spread species.
18. Please clarify why you feel the measure should not be used. For example if you do not believe it would work towards one or more of the three management purposes (please see section entitled "management measures" on for clarification page 4 of main consultation document). Please be as detailed as possible in your response, including reasoning and evidence.

19. An example could be: “I would not like to see management measure X included for this species. I feel that it would not contribute to the management of the species for the following reasons...”

## **Q10. What are your views on the proposed licensable management measures set out in Appendices C & D?**

20. Please indicate if your answer relates to a specific species, a number of specific species, or is a response relating to licensable management measures more widely.
21. It is helpful if you include reasoning as to why you hold your opinion. If you do not agree with the proposed licensable management measures, please explain why and provide evidence as to why you feel alternative licensable management measures should be adopted. Please remember, management measures need to be focused towards achieving eradication, population control or containment of widely spread species.
22. As well as proposing licensable management measures, we have included examples of actions which we propose could be undertaken. Please be as detailed as possible in your response, including reasoning and evidence.
23. For example you could say: “I do not agree with measure X for species Y, I feel that instead we should apply measure Z in relation to this species. I provide the following reasoning/evidence to support my argument ...”

## **Q11. Are there any additional actions you think should be allowed as a licensable management measure for a particular widely spread species?**

24. Please indicate if your answer relates to a specific species, a number of specific species, or is a response relating to licensable management measures more widely.
25. This consultation paper (Appendices C and D) sets out our proposals for effective licensable management measures. You may be aware of other potential measures, which we haven't proposed here, that you consider should be allowed. Please be as detailed as possible in your response, including reasoning and evidence.
26. It is helpful if you specify how any suggested actions are justifiably aimed at one or more of the three management purposes of eradication, population control and containment (see section entitled “Management measures” on page 4 of main consultation document for clarification).

27. An example could be “I would like to see management measure X included for this species. Measure X would contribute to the management of the species because...”

## **Q12. Are there any actions that you think should not be allowed to be used as part of a licensable management measure for a particular widely spread species?**

28. Please indicate if your answer relates to a specific species, a number of specific species, or is a response relating to licensable management measures more widely.

29. This consultation paper (Appendices C and D) sets out our proposals for effective management measures. You may be aware of other potential measures, which we haven't proposed here, that you consider should not be allowed. This might include measures which you think may be proposed by other respondents to this consultation. We would like to know if you feel that certain actions should not be considered to legitimately contribute towards management of widely spread species, or particular widely spread species.

30. Please clarify why you feel the measure should not be used, for example if you do not believe it would work towards one or more of the three management purposes (please see section entitled “management measures” on page 4 of main consultation document for clarification). Please be as detailed as possible in your response, including reasoning and evidence.

31. An example could be: “I would not like to see management measure X included for this species. I feel that it would not contribute to the management of the species for the following reasons...”

## **Appendix F – Advice on responses**

1. We have included guidance on the submission of evidence to government consultations. This guidance is taken from an external study conducted by the Medicines & Healthcare products Regulatory Agency, entitled “Better consultations, better evidence”.
2. This study details how to construct an impactful response, and we have included this guidance to help aid respondents to this consultation.
3. Based on the guidance given as part of this study, we request your response:
  - i) Focuses on the questions that are asked. Comments on other issues fall outside of the remit of the team conducting the consultation.
  - ii) States whether you support or oppose the proposal.

- iii) Demonstrates the impact of the proposal on the respondent as an individual, professional, company or organisation.
- iv) Provides the reasoning behind the opinion given, offering further examples. Good responses provide evidence to support their view, whether from their own data or analysis done by others. Good evidence includes the provision of sources, methodology, calculations and raw data where appropriate. Without this civil servants cannot validate and use the data provided.
- v) Provides ideas for how the proposal could be improved, or how negative impacts could be mitigated. If respondents oppose the policy, provide alternative suggestions that would help government achieve its objective.
- vi) Clearly identifies who the response is from, and in what capacity they are responding.
- vii) Is concise and clear, with the important information at the top.

## Confidentiality and data protection

This consultation document and consultation process have been planned to adhere to the Consultation Principles issued by the Cabinet Office.

Representative groups are asked to give a summary of the people and organisations they represent and where relevant who else they have consulted in reaching their conclusions when they respond.

Information provided in response to this consultation, including personal data, may be published or disclosed in accordance with the access to information regimes these are primarily the Environmental Information Regulations 2004 (EIRs), the Freedom of Information Act 2000 (FOIA) and the Data Protection Act 2018 (DPA). We have obligations, mainly under the EIRs, FOIA and DPA, to disclose information to particular recipients or to the public in certain circumstances. All responses will be shared for analysis and agreement on next steps between Defra and the Welsh Government.

If you want the information that you provide to be treated as confidential, please be aware that, as a public authority, the Department is bound by the Freedom of Information Act and may therefore be obliged to disclose all or some of the information you provide. In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

This consultation is being conducted in line with the Cabinet Office “Consultation Principles” and be found at: <https://www.gov.uk/government/publications/consultation-principles-guidance>.

If you have any comments or complaints about the consultation process, please address them to:

Consultation Coordinator  
Area 1C, 1st Floor  
Nobel House  
17 Smith Square,  
London, SW1P 3JR.

Or email: [consultation.coordinator@defra.gov.uk](mailto:consultation.coordinator@defra.gov.uk)