



Brexit: Plant and Animal Biosecurity inquiry

A response from the British Ecological Society to the Lord's EU Energy and Environment Sub-Committee

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What are the implications of the UK's withdrawal from the EU for the UK's biosecurity in terms of animal and plant health, invasive species and food safety?

Implementation of biosecurity regulations:

1. Following the UK's withdrawal from the EU there is the potential to reduce biosecurity threats to the UK through implementing better targeted, resourced, and stricter biosecurity rules and regulations. This could be carried out through stricter border checks, tighter permit requirements, and restrictions or bans on certain high-risk imports to the UK. UK exports should also be subjected to strict checks and restrictions to prevent the UK acting as a source of invasive alien species (i.e. the proportion of non-native species for which there is evidence of spread/damaging impact), pests and diseases.
2. In the longer term post-Brexit, there will be the opportunity to have a more consistent approach to biosecurity in the UK in terms of controls across introductory pathways and taxonomic groups. Better implementation and improvement of biosecurity rules and regulations will require the resources as well as enough trained experts to identify invasive alien species (IAS), pests and diseases which are, or could potentially be, a biosecurity threat.
3. Post-Brexit, there may no longer be a legislative incentive for the UK and the EU to work together within a number of biosecurity frameworks. This may increase the biosecurity risks for the UK through, for example, a loss of access to relevant data and communication channels. When invasions by alien species occur in the EU, there is often a time lag between outbreaks on the continent and the invader reaching and being detected in the UK.¹ Invasions

by alien species in the EU can, therefore, be used as early warnings for the UK, allowing biosecurity resources and responses to be prioritised to high-risk species, pathways of introduction, and points of entry. Continuing access to databases and early warning systems to help us prepare, detect, and prevent IAS, pests and diseases arriving is reliant on cooperation and regular communication with the relevant government(s) and scientific bodies in the EU.

4. Future trade agreements with countries outside of the EU will require significant scrutiny as they open up the potential to be exposed to a whole new range of IAS, pests and diseases many of which the UK may not be adequately prepared to recognise or deal with. Similarly, the new trade deals could cause the UK to be an exporter of IAS, pests and diseases. A high priority for UK biosecurity should, therefore, be the requirement for all future trade and transport links (and therefore introduction pathways) between the UK, and other parts of the globe to have joint alert systems, involving government departments and scientific bodies, together with access to the latest research and data on IAS, pests and diseases.² Such biosecurity measures need to be a part of new trade agreements, providing the UK with the best practice options to prepare, detect, and prevent new biosecurity threats. It is also important to properly monitor, manage, and aim to eradicate those which have already entered, and spread around, the UK.
5. Horticultural trade is the primary way that invasive alien plant species spread worldwide.³ A focus on expanding the UK horticulture industry so that it relies less on imports should be a priority for reducing the UK's biosecurity vulnerability. The ornamental nursery trade is largely made up of alien species, a small proportion of which have the potential to become invasive. IAS of multiple taxa (plants, invertebrates, fungi, other microorganisms) and diseases can also be carried with ornamental plants as seeds, spores, growing fungi, eggs, larvae or adults, in the soil, on seeds, or on the plants themselves. Particularly with native UK species, the horticultural industry should be looking to develop the UK's nurseries to grow species and not import them. The example of importing the disease *Hymenoscyphus fraxineus*, which attacks both common ash (*Fraxinus excelsior*) and narrow-leaved ash (*Fraxinus angustifolia*) trees, highlights the need for building up the UK's horticultural industry using native plants. In October 2012, it was confirmed at a nursery in Buckinghamshire that UK ash trees, raised in a nursery in the Netherlands, were then imported back into the UK carrying this disease. It had been known since 1992 that ash trees in continental Europe were affected by ash dieback,⁴ and this information should have been used as a warning sign against importing products which could carry this debilitating fungal disease.^{5,6}
6. Native Ash species ecology and function is unique and cannot be completely replaced by any other native species. Ash trees allow for high light penetration through their canopies and have a nutrient-rich litter with a fast decomposition rate.⁷ These characteristics result in an ash-specific assemblage of species estimated at 955⁸ to 1,058.⁹ Over 71 of these species are believed to be at risk of extinction or significant population declines based on predictions of the spread of ash dieback, and 170 are predicted to experience declines in abundance.¹⁰ No

other tree or mixture of tree species can off-set the loss to woodland flora and fauna caused by *Hymenoscyphus fraxineus*.

7. Marine IAS are particularly difficult to deal with, so trade deals involving marine transport need to consider ways to prevent IAS arriving in UK waters. The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM), which the UK has implemented¹¹, has been put forward as one solution to the spread of marine IAS. A better understanding is needed of the trade-off between the effect of the current use of oxidizing chemicals (i.e. the treatment of ballast water) on water quality and marine biodiversity versus how well this prevents biosecurity threats is required.¹² There may be alternative, less damaging approaches to treating ballast water, such as using on-board installation systems which do not use oxidizing chemicals, whilst also addressing the threat of IAS.

Maintaining rigorous scientific standards:

8. A further potential threat to the UK's biosecurity is the uncertain future for scientists who work in this field of research. Will UK scientists in the future be able to work as effectively in partnership with EU scientists and scientists in other states? Universities and a number of research organisations in the UK have noted a decline in the number of applications from EU nationals.¹³ Will there be barriers placed on researchers and academics between the UK and the EU? How will invasive species research in the UK be affected by Brexit? An example of successful UK-EU collaboration is the COST programme,¹ an EU-funded initiative to enable researchers to set up networks for cooperation in science and technology.^{14,15}
9. The Industrial Strategy Challenge Fund (part of the Government's £4.7 billion increase in research and development over the next four years)¹⁶ could be used to replace some of the funding lost from the EU for science.¹⁷ However, we have two areas of concern: The first is that this won't address the need for collaboration, data access and movement of scientists. The second is that much of the funding has already been committed to research around construction, robots and space technology, to name a few. How much funding will be committed to biosecurity in the UK post-Brexit? For example, in England in 2016/2017, the Government spent around £922,000 (less than 0.5% of APHA's budget)¹⁸ on IAS biosecurity measures and only £62,000 of that was spent on research¹⁹, yet in 2010 the estimated the cost to the British economy of invasive non-native species was at least £1.7 billion.²⁰ A more accurate estimate of the current costs of IAS, pests and diseases to the UK's economy is required.²¹
10. The UK has the opportunity to replicate the EU's Committee on IAS, which was formed under EU Regulation (EU) No 1143/2014 on the prevention and management of the introduction and spread of invasive alien species (EU IAS Regulation) to deliver IAS management along

¹ One of the initiatives was the European Information System for Alien Species (ALIEN Challenge). The ALIEN Challenge involved researchers from 31 countries in exploring IAS data gaps, reviewing IAS pathways of introduction and reviewing current impact assessment methods. They have been working to ensure that quality data is delivered to the EASIN network, which otherwise would not have updated information and data.

with the IAS scientific forum and a working group for IAS. However, there is a lack of strategy for monitoring and implementation of standards post-Brexit. We are concerned with the UK's ability to deliver an effective IAS strategy given the diminished budget of Defra by over a half over the past decade.²²

11. The UK should look to build a world-class research facility to ensure it has the data and the expertise to tackle the threat of invasive species posed by climate change and new introduction pathways but it would need to commit the necessary resources to do so. This would help underpin the excellent work carried out by the Non-Native Species Secretariat.

Will the transfer of law via the EU (Withdrawal) Bill be sufficient to ensure that current legislative protections remain in place?

12. The extent to which the UK wishes to reflect the EU biosecurity model will probably depend upon the agreements reached between the EU and UK on trade, transport and movement.
13. Focusing specifically on one aspect of the biosecurity framework provided by EU legislation, the EU IAS Regulation, this Regulation should be converted as faithfully and fully into UK law as possible. The EU IAS Regulation provides some preventative, reactive and management measures for tackling IAS. The management measures include the responsibility of restoring damaged or destroyed ecosystems by Member States, based on the polluter pays principle. Hence, the polluter pays principle is a vital component of IAS management to transfer into UK law. However, on 15 November 2017 the House of Commons voted down New Clause 67 which aimed to ensure that the environmental principles under Article 191 of EU law were transferred to UK law.²³ These principles included the precautionary principle and the polluter pays principle. The Government is expected to provide more clarity on this issue when it consults on environmental principles and how they should be used in UK policy formulation.
14. An additional example of the need to convert the EU IAS Regulation as faithfully as possible into UK law is the future equivalent to the current EU scientific forum and Committee on IAS (see answer to question above). It is imperative that the addition of any IAS added to future list(s) within the UK is underpinned by rigorous, transparent, evidence-informed risk assessments that have passed through an equivalent to the EU scientific forum and Committee on IAS. As is currently the case, the future list(s) will need to be updated regularly as new threats are identified. It is unclear how the UK would replicate the functions and expertise of this committee, although the Government has stated it will apply for seeking "associate membership" of some other key EU advisory mechanisms, such as the European Chemicals Agency.

To what extent is a shared approach to biosecurity between the UK and the EU necessary and / or appropriate post-Brexit? a. Should the UK retain the precautionary principle in its implementation of biosecurity legislation after leaving the EU?

15. Species arrive to a new country in part as a result of trade and transport links. If the trade and transport links between the UK and EU are maintained into the future post-Brexit, a closely aligned approach will be vital for communication of new emerging threats for either side of the relationship.
16. The UK should retain the precautionary principle, and in relation to the EU IAS Regulation, future UK list(s) of IAS should mirror the EU IAS list of concern in the immediate year's post-Brexit. Future list(s) of concern in the UK should be constantly monitored and updated to reflect risks as determined by trade and potential pathways of IAS introductions, as well as research findings. Maintaining the precautionary principle²⁴ as part of the UK's biosecurity legislation post-Brexit will allow the UK to better mitigate against biosecurity threats.
17. The UK's Rapid Response plan to the threat of Asian hornet (*Vespa velutina nigrithorax*) is a good example of the effectiveness of preventative measures. Asian hornet was introduced to France in 2004 and subsequently spread to much of Western Europe. This hornet poses a risk to honeybee populations as it can kill over fifty honeybees in a single day. FERA conducted a risk assessment in 2011, finalised the Asian Hornet Response Plan in 2012, and updated it in 2017 to the Pest Specific Contingency Plan – Asian Hornet.²⁵ The plan identifies the potential ways in which the hornet could enter the UK (which were largely through the trade of goods), led to experts being sent to France to learn how to identify the hornets and destroy their nests, and provided citizens and beekeepers alike with the tools for identification and reporting. This level of preparedness has meant that while Asian Hornet has been sighted in the UK, there has been a very quick response each time it has been reported and it has not yet established in the UK.
18. As Article 15 of the EU IAS Regulation states: "Prevention is generally more environmentally desirable and cost-effective than reaction after the fact, and should be prioritised."²⁶ For prevention to be successful, EU Member States have had to ensure they are sharing data which is regularly reviewed and kept up-to-date. In order for the UK to act as effectively as it has towards the Asian Hornet threat, it will need clear communication channels and data sharing with the EU and other trade partners.

To what extent is the UK reliant on the EU for the surveillance and timely notification of biosecurity threats? a. Are there alternative (i.e. non-EU, or international) mechanisms that the UK will be able to participate in post-Brexit?

19. As previously mentioned, there is often a time lag between biosecurity threats occurring on mainland Europe, and in the UK. Thus, detection and notification of biosecurity threats to the UK partly depend on detection and dissemination of information from the continent. There are multiple databases in Europe and beyond which catalogue IAS, and record new arrivals (e.g. the DAISIE and NOBANIS databases in Europe). Communication of information on new arrivals, their establishment and spread works well within the scientific network in Europe. Should the UK increase trade and transport links with non-EU countries post-Brexit, it will be important to have shared data and surveillance systems with those countries. This will enable evidence-informed risk assessments and rapid response plans to be developed.

20. The Horizon-scanning approach²⁷ for IAS would be useful to formally adopt post-Brexit. It aims to identify species that pose an invasion risk (specifically species with negative biodiversity impacts) to the region of focus over the next 10 years. This approach would allow the UK to target IAS surveillance and responses towards not only the species that pose the greatest risk, but also towards the introduction pathways through which high-risk species are most likely to arrive. The approach relies on information drawn from multiple sources including information on the species from Europe-wide databases hence, demonstrating the importance of shared UK and EU databases post-Brexit.
21. The UK could look to New Zealand for ideas on how to improve its biosecurity. New Zealand's Biosecurity 2025²⁸ is the Government's ambitious plan for biosecurity. It has five strategic directions, all with targets to be achieved by 2025. The first is a collective effort to empower citizens to be involved in tackling biosecurity. Targets include 100,000 citizens regularly taking action in their community and 90% of relevant businesses managing the pest and disease risks associated with their business, particularly where "international risk pathways"²⁹ are concerned such as craft, mail, cargo, passengers and express freight. The second strategic direction is harnessing science and technology through \$80 million of public and private investment in science for biosecurity. The third strategic direction is smart, free-flowing information where a publicly-accessible network would be created to enable electronic access to organism data held by central government agencies, regional councils and Crown research institutes by 2025. The fourth strategic direction is effective leadership and governance and the fifth is tomorrow's skills and assets – where 150,000 people with the necessary skills could be drawn on to provide support during biosecurity incursions. New Zealand is investing in and empowering its citizens to play a critical role in managing and preventing biosecurity threats. The UK should continue to look into and invest in ways it can raise awareness among its citizens as well as ways in which it could provide them with the tools and information necessary to be actively involved in biosecurity management. For example, re-investing in already-established Local Action Groups³⁰ could prove an effective avenue for increasing local engagement and management of biosecurity threats.
22. New Zealand's Biosecurity Act 1993 requires councils to have a regional plan in place should an IAS, pest or disease enter New Zealand. As a result, New Zealand has given significant funding for this to regional councils.³¹ However, there is poor coordination between councils and as a result, some environmentally similar areas which may experience similar IAS management challenges, have addressed their situations differently. Despite some coordination issues, councils in New Zealand have been given the resources to plan and implement biosecurity management solutions and engage with landowners and community/catchment groups to disseminate and/or receive information which has allowed for quick responses to IAS threats.
23. In England, Defra funded 29 Local Action Groups (LAGs) to tackle aquatic and riparian Invasive Non-Native Species (INNS). The groups have been set up by volunteers, charities and other partners that have identified problems in their local area. LAGs have been successful in eradicating or severely reducing INNS by around 60% across parts of catchments or specific

sites.³² LAGs have put together strategic plans for addressing IAS problems in their area. They have also played a vital role in engaging landowners and local people to get involved in biosecurity information sharing. However, the uneven size and distribution, and now lack of funding of the LAGs poses a risk to the future control and management of IAS. LAGs need to be expanded to ensure an even spread, they need guaranteed long term funding as well as regional coordination to be successful. Investing in paid regional coordinators of the LAGs would help ensure the invested resources are used efficiently and with greatest impact in tackling IAS.

What are the main mechanisms for biosecurity information sharing between the UK and the rest of the EU? Can these be maintained post-Brexit?

24. The mechanisms for biosecurity information sharing between the UK and EU post-Brexit will depend on the outcome of Brexit negotiations. See answer 21 for details on IAS information sharing between the UK and EU.

What biosecurity risk assessment, inspection and management is currently carried out by the EU that will need to be repatriated post-Brexit, and are there any resource challenges associated with this?

25. Biosecurity risk assessments will need to be conducted by the UK post-Brexit. There will need to be significant resources available for the research, expertise and skills required to manage the UK's biosecurity without as much involvement from the EU.

How should biosecurity be managed on the island of Ireland post-Brexit?

26. There must be a close collaboration with the island of Ireland and GB. IAS, pests, and diseases cannot be easily stopped by even the strict border controls. Co-funding of monitoring, research and management strategies can then be implemented across the border to mutual benefit.

Are there steps the UK can take post-Brexit to strengthen its biosecurity, in ways currently prohibited by EU membership?

27. See points 24 to 26 about what the UK can learn from a country like New Zealand to strengthen its biosecurity.
28. Post-Brexit, the UK has the opportunity to build on the EU legislation and adapt to the UK needs so that a robust biosecurity system is delivered. For example, the future equivalent to the EU IAS list (formally known as the List of Invasive Alien Species of Union Concern) can be adapted to represent the key problematic and potentially problematic IAS for the UK, making border checks and rapid response measures targeted for the UK efficient and effective.
29. Currently some widespread IAS around the UK are not covered by the EU IAS list yet they are causing substantial damage. The scope of future list(s) in the UK could be extended to include

tackling IAS which are already well established in the UK. By adding them to a list requiring combined and collaborative action across the UK it should be possible to prevent or at least limit their further spread.

30. There are many different pieces of legislation in the UK which address issues around plant health, animal health and IAS. Moving forward it would be beneficial to investigate the pros and cons of having a Biosecurity Act or similar piece of legislation which brings all the different pieces of legislation together to provide coherence and prevent any duplication of work.

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