



Royal Entomological Society response to EFRA Committee call for evidence on biosecurity measures for animal and plant imports to the UK.

January 2025

The Royal Entomological Society (RES), founded in 1833, is a global scientific learned society and UK charity with a vision to enrich the world with insect science. The Society has a membership of over 2800 Fellows and Members, many of whom are researchers within universities and research institutes. The Society publishes 7 academic journals, including *Insect Conservation and Diversity* and *Agricultural and Forest Entomology*. We have 23 Special Interest Groups including those specialising in climate change, conservation, pollination and sustainable agriculture. We co-own (with Gloucestershire Wildlife Trust) Daneway Banks Nature Reserve and are one of the leading organisations involved in the reintroduction of the Large Blue butterfly. We support insect science to benefit people and nature.

We have committed to be an independent voice to decision makers for the advancement and application of insect science. The Society welcomes the opportunity to respond to the EFRA Committee call for evidence in relation to biosecurity measures for animal and plant imports to the UK. **The Royal Entomological Society would welcome any further consultation, liaising with our considerable number of expert insect scientists from a range of disciplines.**

- 1. The adequacy of personal import controls on animals, plants and their products and the enforcement of controls.**

The RES is not submitting evidence to this point.

- 2. The adequacy of SPS controls on commercial imports, their enforcement, and the impact on businesses.**

The RES is not submitting evidence to this point.

- 3. The performance of Defra and its agencies (such as the APHA) in delivering the Border Target Operating Model and communicating and engaging with stakeholders.**

The RES is not submitting evidence to this point.

4. How any concerns detailed in your submission may be remedied (in advance, or in the absence, of an SPS agreement with the EU).

In the last forty years the number of introductions of new species in Europe has grown significantly, driven by growth of international trade^{1,2}. Insect pests are expected to become a growing issue due to factors such as land use change and climate change^{2,3}. These changes are likely to expand geographic distributions, improve overwinter survival, and increase invasions by migratory pests³. It is therefore crucial for the UK to understand both spatial and temporal trends, origins and drivers of spread of emerging insects and other species to put in place effective risk assessment tools and improve prevention of biological invasions⁴.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) thematic assessment report on invasive alien species was published in 2023². The key messages from this report were:

1. Invasive alien species are a threat to nature, nature's contribution to people, and good quality of life.
2. Globally, invasive alien species and their impacts are increasing rapidly and are predicted to continue rising in the future.
3. Invasive alien species and their negative impacts can be prevented and mitigated through effective management.
4. Ambitious progress to manage biological invasions can be achieved with integrated governance.

The IPBES report³ goes further to suggest that invasive alien species have been a contributing factor, solely or alongside other drivers, for 60% of global extinctions, increase economic impact fourfold every decade and have a negative on good quality of life in 85% of cases. The report also states that prevention of the introduction of invasive alien species is the most cost-effective management option and that import controls and border biosecurity were graded 'medium' across the globe with improvements possible. The Royal Entomological Society strongly advocates for investment into research that can produce tools and technologies to identify, monitor and manage invasive non-native insect species. Enhanced monitoring and management of these species can mitigate the threat of invasion and population expansion, thus potentially reducing negative impacts⁵.

Another study undertaken by Turner *et al.*⁶ found that between 2010 and 2018 there were 12,753 interceptions of insect species at UK ports of entry. Of these, only 34% were identified to species level. The study suggests that integrating this data with other countries across the globe would be valuable in identifying rare but potentially damaging species and the invasion risk from insect species with high likelihood of introduction.

There is a need for further long-term investment and research in understanding insect trends that would support biosecurity at UK borders. The Grand Challenges in Entomology: Priorities for action in the coming decades⁷ published by the RES in early 2023 identified 61 key priority challenges with some specifically focused on invasive insects and gaps in current scientific research. These include:

- **Spatially integrated pest control:** integrate control strategies at both local and global scales, with involvement of all stakeholders.

- **Invasive pests:** improve the management of non-native and invasive species and their associated diseases.
- **Predicting and controlling pest outbreaks:** determine drivers of pest outbreaks in agricultural, plantation and urban landscapes, and establish how they can be predicted and controlled sustainably.
- **Disease vectors and climate change:** evaluate how climate change will impact vector-borne diseases transmitted by insects, and how to mitigate these impacts.
- **Data access:** increase the accessibility of existing entomological data, including published and unpublished work, and raw data.
- **Insects and climate change:** apply knowledge from entomology to inform mitigation of, and adaptation to, climate change.
- **Novel monitoring techniques:** develop new and effective biodiversity monitoring techniques for poorly recorded insect groups, so changes in abundance and status can be measured reliably.

Each of the priority challenges identified by leading entomologists and RES members from around the globe require research prioritisation and increased funding to gain better understanding of invasive non-native insect species. By addressing these challenges, the UK can strengthen its biosecurity framework and reduce the risk of invasive non-native insect species.

¹ Hulme, P.E. (2009), Trade, transport and trouble: managing invasive species pathways in an era of globalization. *Journal of Applied Ecology*, 46: 10-18. <https://doi.org/10.1111/j.1365-2664.2008.01600.x>

² IPBES (2023). Summary for Policymakers of the Thematic Assessment Report on Invasive Alien Species and their Control of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Roy, H. E., Pauchard, A., Stoett, P., Renard Truong, T., Bacher, S., Galil, B. S., Hulme, P. E., Ikeda, T., Sankaran, K. V., McGeoch, M. A., Meyerson, L. A., Nuñez, M. A., Ordonez, A., Rahlao, S. J., Schwindt, E., Seebens, H., Sheppard, A. W., and Vandvik, V. (eds.). IPBES secretariat, Bonn, Germany. <https://doi.org/10.5281/zenodo.7430692>

³ Skendžić, S.; Zovko, M.; Živković, I.P.; Lešić, V.; Lemić, D. The Impact of Climate Change on Agricultural Insect Pests. *Insects* 2021, 12, 440. <https://doi.org/10.3390/insects12050440>

⁴ H. Seebens, T.M. Blackburn, E.E. Dyer, *et al.*, (2018), Global rise in emerging alien species results from increased accessibility of new source pools. *Proc. Natl. Acad. Sci. U.S.A.* 115 (10) E2264-E2273, <https://doi.org/10.1073/pnas.1719429115>

⁵ Wang, Y., Wei, Z.-H., Gao, P., Li, Y.-T., Lv, Y.-T. and Yang, X.-Q. (2025), Reconstruction and Prediction of Invasive *Cydia pomonella* Population Dynamics: A Laboratory Study. *J Appl Entomol.* <https://doi.org/10.1111/jen.13368>

⁶ Turner, R. M., E. G. Brockerhoff, C. Bertelsmeier, R. E. Blake, B. Caton, A. James, A. MacLeod, H. F. Nahrung, S. M. Pawson, M. J. Plank, D. S. Pureswaran, H. Seebens, T. Yamanaka, and A. M. Liebhold. 2021. Worldwide border interceptions provide a window into human-mediated global insect movement. *Ecological Applications* 31(7):e02412. 10.1002/eap.2412

⁷ Luke, S.H., Roy, H.E., Thomas, C.D., Tilley, L.A.N., Ward, S., Watt, A. et al. (2023) Grand challenges in entomology: Priorities for action in the coming decades. *Insect Conservation and Diversity*, 16(2), 173–189. Available from: <https://doi.org/10.1111/icad.12637>