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Mr Paul Wheelhouse MSP
Minister for Environment and Climate Change
Scottish Government
St Andrews House
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14 March 2013

Dear Mr Wheelhouse,

At the LINK's meeting with you on 13 March 2013, I said we would write and set out our position on chemical and biological control of emerging infectious diseases, pathogens and pests. Thanks to you establishing the Scottish Tree Health Advisory Group (STHAG), this important issue is being discussed with stakeholders and we are finding this process very helpful. Scottish Environment LINK has three representatives on the advisory group and our land owning members are dealing with disease prevention and management first hand. As I said to you in our meeting, we welcome your personal interest in the subject and we were pleased to hear that you share our concerns in relation to protecting biodiversity when considering fungicide use.

Currently Forestry Commission Scotland has two proposed fungicidal trials on 20 hectare pine plantations scheduled for later this year. We understand the approach they are taking and we have had discussions at the STHAG about how these trials are conducted. We do however have some environmental concerns about the use of fungicides in woods and forests, and general approaches to developing control measures for forest pathogens, pests and diseases. We note the Scottish Government's long-term policy commitment to sustainable multiple benefit forestry.

Fungicide use is not common in woodland settings and the potential impact on important biodiversity species and habitats, and the structure and function of natural ecosystems needs to be carefully assessed, and then consideration of these hazards being central to the formulation of government's policy, research, practice guidance and regulatory approach.

The following information sets out our position and puts in writing a number of the points we have during STHAG meetings.

The potential for chemical and biological control of Emerging Infectious Diseases, Pathogens and Pests of trees and woodland

Emerging infectious diseases, pathogens and pests of forests are a global concern. They pose a threat to tree health and have potential impacts for:

- biodiversity conservation value for trees and woodland and their associated wildlife species
- economy of forests management and timber production
- landscape and landscape character

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- ecosystem services, including carbon storage
- human health and safety, including direct and indirect impacts, such as the need to consider impacts on recreational access

In some cases these impacts can be managed through silvicultural interventions – managing the forest microclimate, pruning, removal of infected trees, clear-fells and sanitation felling, or change of tree species and avoidance of monocultures. Where these options are not available or are of limited effectiveness, or where the conservation or economic value is regarded as high, other methods of control may also be considered, in particular the use of chemical or biological controls.

Attitudes and approaches to control have changed over recent decades. In the early 1960s chemical control was commonly used. However by the 1970s environmental concerns about the widespread use of chemicals were being raised. More recently biological and silvicultural approaches have been favoured, as part of integrated pest management alongside programmes to breed pest and disease resistance trees, and improvements in early detection¹.

We note the government’s long-term commitments in the Scottish Forestry Strategy and through the UK Forestry Standard requirements to improving the species and structural diversity of all of Scotland’s woodland, as well as protecting and enhancing biodiversity, conserving the landscape and historic environment, and developing opportunities for access.

We also note that Scotland’s priority native woodland habitats are in need of restoration management and ongoing work to regain and protect their biodiversity value. This has been supported by the Scottish Government’s policies, grants, National Forest Estate management, research and practice guidance, including on improving structural diversity in native woodlands, and enhancing the type and volume of ‘deadwood’ habitats. We would welcome continued consideration of this issue when considering forest plant health policy and control measures.

Emerging infectious diseases, pathogens and pests of trees and woodland in the UK

Recent years have seen an increase in the number of emerging infectious diseases, pathogens and pests of trees and woodland in the UK.

We have concerns about the biosecurity threat to Scotland’s wildlife, landscape and historic environment, posed by the horticultural and forestry plant trade. This includes insufficient traceability of plants from seed collection to final planting (for example under the Forest Reproductive Materials Regulations), as well as the need to put biosecurity into requirements for tree specification for land management grants. We would welcome Scottish Government developing further initiatives on this topic.

While chemical and biological controls, and prophylactic chemical usage, are familiar within UK agriculture and horticulture, their use is only occasional in arboriculture and is rare in UK forestry.

The mandatory UK Forestry Standard of the devolved administrations and the UK Government, regards the use of artificial pesticides and fertilisers as “a last resort in practising sustainable forestry”. Pesticides and fertilisers are ... only deployed in a reactive way to protect trees when a problem has been identified or is highly likely. Their use on special sites such as ancient woodland is particularly discouragedⁱⁱⁱ. This standard identifies particular care needed on forest areas with water protection function...”Inappropriate use of chemicals or other harmful substances...influencing water quality in a harmful way should be avoided”.

The international Forest Stewardship Council (FSC) prohibits the use of highly hazardous chemicals and promotes the development and adoption of environmentally friendly non-chemical methods in a targeted manner. It also requires an ongoing commitment to reduce all chemical usage in certified forests, which includes not adopting a prophylactic approach.

The UK Woodland Assurance Standard (UKWAS) is the FSC compliant standard for the UK, so UKWAS certified owners have to meet these requirements – this includes the National Forest Estate. We note that the Scottish Government made a commitment at the 2002 World Summit on Sustainable Development to increase the level of voluntary forest certification to UKWAS in Scotland. This includes promoting a targeted and on-going reduction in chemical usage in forests.

We have concerns about possible impacts on non-target organisms, including priority wildlife species, such as fungi and lichens in this case, and with other chemicals there could be impacts on non-target priority species such as insects, moths, bryophytes and flowering plants, and associated species that rely on them.

Trees and woodland in the UK can be categorised as

- Amenity trees and groups of trees largely in urban situations – may be both native species and ornamental species
- ‘Natural’ (predominantly native) woodland – including ancient woodland and mixed species secondary woodland with associated flora and fauna; priority native woodland habitats under the Scottish Biodiversity Strategy. Many are important for the priority and non-priority wildlife species they support.
- Trees outside woods – hedgerow trees, in-field trees and parkland trees. Important both for biodiversity and their landscape value
- Non-native commercial plantations – mostly conifer in single species or limited species mixes. Although they may be seen as lower in conservation value, many conifer forests support important flora and fauna and have substantial areas of non-woodland habitat

Consideration of control for pests and diseases needs to reflect the nature and situation of the trees or woodland to be controlled – that which is appropriate for natural woodland may be very different for single species commercial woodland or individual amenity trees.

There are a number of issues to consider in the application of chemical controls

- **Native or non-native?** LINK does not generally support the use of herbicides, pesticides, or fungicides in ancient semi natural woods, except for control of specific non native invasive plants
- **Forest standards** - does control conform to UK Forestry Standard and voluntary UKWAS forest certification (including any FSC chemical derogations) affecting the use of chemicals or other agents?
- **Efficacy** – does the chemical or other agent control the disease, pest or pathogen? Can the pest or disease be controlled through a single application, or are repeated operations needed?
- **Mode of action of the chemical** – is it a contact or systemic chemical or agent? Is the treatment a one-off or does it need to be repeated and if so, how often?
- **Toxicity** – does the chemical or agent pose a risk to human health? Is this risk immediate and direct or a longer term risk?
- **Ecotoxicity** – does the chemical or agent affect other species and elements of the ecosystem? Do other species face extinction risk through the use of chemical controls?
- **Mode of application** – is it a foliar spray, soil drenching, injection and so on? How does this impact on its efficacy and toxicity?
- **Practicality** – can it be applied? Given the trees inside and outside woods, in urban and rural situations, how practical is it that it could be affectively used to treat all trees at risk?
- **Cost** – is it cost-effective and good value for public money?

The application of chemical pesticides or other agents to woodland and trees in the wider landscape faces significant practical and ecological problems. Woodland is a natural ecosystem composing many thousands of species and poses significant practical problems of accessibility and application. Application should avoid non-target species, possible contamination of food crops, and danger to people and domestic livestock. Chemical application of all kinds have to avoid possible contamination to water courses, causing difficulties within any woodland which has streams, ponds or open water, and to application to riparian trees.

We believe that:

1. In relation to native diseases, pests, pathogens etc, we should accept that we share our forests, woodlands and trees with other native species, and their abundance, ecology, behaviour and hosts will inevitably alter over time, even without climate change. This is a fact we must try and take into account when planning the long-term management of our woodland resource/heritage.
2. Any approach to control of pests, pathogens and diseases needs to be evidence-based. Where evidence is incomplete or inconclusive then a precautionary approach should be taken based on safeguarding features which could be significantly or irreversibly damaged. This should include other parts of the forest ecosystem or other ecosystem services. 'Risk-based approaches' to chemical control policy in forests, research and practice guidance, permitting use must include assessing risk and identifying hazard to biodiversity, historic environment, landscape and social values. LINK believes in a strong presumption against the use of pesticides, herbicides etc in ancient semi-natural woodlands and ancient woodland restoration sites.
3. All methods of control should be evaluated, including non-chemical and non-intervention. Where ever possible those based on integrated pest management which adopt silvicultural and low impact solutions should be favoured. Research and practice guidance should focus on development of these types of solutions.
4. As a last resort, and only where the degree of collateral damage to the forest ecosystem has been fully evaluated and is considered acceptable, should chemical control be part of the routine management of pests and diseases in forests
5. Consequential impacts of pest, pathogen and disease management should be considered, including impacts on behaviour of forest owners such as changing management decisions, silvicultural practices, and tree species choices

I hope this information is helpful and we look forward to discussing it with you in March.

Yours sincerely



Angus Yarwood, Woodland Trust Scotland
Scottish Environment LINK Woodland Task Force Convenor

Scottish Environment LINK member organisations that have signed up to this letter:

- Archaeology Scotland
- Buglife Scotland
- Butterfly Conservation Scotland
- National Trust for Scotland
- Plantlife Scotland
- Ramblers Scotland
- RSPB Scotland
- Scottish Wildlife Trust
- Woodland Trust Scotland

ⁱ FAO (2009) *Global review of forest pests and diseases*. FAO Forestry paper 156. Available at: <ftp://ftp.fao.org/docrep/fao/011/i0640e/i0640e.pdf>, [downloaded 25/02/2013]

ⁱⁱ UK Forestry Standard compliance includes its associated Forest Guidelines on biodiversity, historic environment, landscape, water, soil, climate change and people. See www.forestry.gov.uk/ukfs; main standard document: Forestry Commission & Forest Service Northern Ireland (2011). *The UK Forestry Standard*. Forestry Commission, Edinburgh. i–iv + 1–108 pp. Available at: <http://www.forestry.gov.uk/theukforestrystandard>. [downloaded 25/02/2013]