Defra Consultation on Environmental Targets

AEF response

27th of June 2022; contact Deborah Lovatt: deborah@aef.org.uk

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Target proposals for biodiversity on land

> 6. Do you agree or disagree that the proposed combination of biodiversity targets will be a good measure of changes in the health of our 'biodiversity'?

Don't know

> 7. [If disagree] What additional indicators do you think may be necessary?
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> Please explain what additional indicators do you think may be necessary?: The combined targets are to:
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> - increase species abundance by at least 10% by 2042, compared to 2030 levels;
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> - improve the England-level GB Red List Index for species extinction risk by 2042, compared to 2022 levels;
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> - create or restore in excess of 500,000 hectares of a range of wildlife-rich habitats outside protected sites by 2042, compared to 2022 levels.

AEF broadly supports these targets as combined indicators of changes in the health of biodiversity. However, we have concerns about whether any of the targets can be met for the reasons given below.

2030 and long-term species abundance targets

> 8 Do you agree or disagree with the level of ambition of a 10% increase proposed for the long-term species abundance target?

Disagree

9 [If disagree] What reasons can you provide for why the government should consider a different level of ambition?

Please provide reasons for why the government should consider a different level of ambition?:

The consultation document states that "in the past 20 years, the average change in the England priority species index has been a decline of approximately 2% per year". AEF is highly concerned that the target of a 10% increase on 2030 levels is not ambitious enough given that the UK is one of the most nature-depleted countries in the world – in the bottom 10% globally for biodiversity. As species abundance is likely to continue to decline in the years leading to 2030 (when it is envisaged that the decline will be halted) the government risks leaving biodiversity in a worse state in 2042 than now. The appropriate baseline year should be 2022.

Your consultation document states that the government aims to reduce pressures on the ecosystem. Yet the government is simultaneously supportive of significant growth within the transport sector, including major road building schemes and expansion at several airports in England, including at all of the major commercial airports in the South East. The policy underpinnings for growth within the aviation sector are laid out in the Airports National Policy Statement, which set out the policy for major expansion at Heathrow (and the South East), and the Making Best Use of Existing Runways document, both dating from 2018. On the 26th May 2022, the Government reiterated its support for the policy positions of these documents – and thus for growth in UK aviation capacity – in its publication "Flightpath to the future: a strategic framework for the aviation sector". It is far from clear how the Government's policy position on an expanded aviation sector will be consistent with its legal requirement to improve England's ecosystem.

Airports put pressure on ecosystems in several ways. Expansion can destroy or degrade wildlife habitats. To avoid airstrikes, large birds are deterred from nesting in the vicinity of airports by removing nesting sites and firing noise and flare guns, which can impact other wildlife populations. In addition, Natural England issues licences permitting airports to control a range of bird species – by shooting, or by removing or destroying nests and eggs – within a 13 kilometre radius of perimeter fences if a safety issue is perceived. Species that can be controlled in this way include some that are threatened. In May 2017, a single licence authorised the shooting of up to 1,700 curlews.

Noise, light and air pollution associated with airports also put wildlife under pressure. Studies have shown that even low levels of human noise disturbance can severely impact the ability of some species to communicate and to breed. By interfering with natural day-night light rhythms, light pollution affects the reproduction, feeding, and migration cycles of several animal groups, while artificial lighting confuses migratory birds, depleting their energy sources and threatening their survival rates. By extending

hunting hours of day-time predators, light pollution can result in the over-predation of nocturnal species. Precursors of PM2 – ammonia, nitrogen oxides and sulphur dioxide – can, as your detailed evidence report on proposed air quality targets states, also negatively impact natural habitats, with emissions from transport, including commercial jets and road traffic, being the main sources of air pollutants.

While some airports create wildlife areas in an effort to off-set the impacts of air and ground operations, the effectiveness of these projects in halting the decline in species abundance and priority species locally or more widely is not clear.

The biodiversity impacts of aviation are usually addressed in the context of airport planning applications and environmental assessments. The Environment Act (2021) made biodiversity net gain (on site, offsite or via purchasing biodiversity credits) a condition of planning permissions and development consents in England. Developers must be able to show that proposals will achieve a 10% net increase in biodiversity against a baseline (using a net gain toolkit). Net gain effectively trades current losses in habitat area for promises of uncertain gains in habitat quality in the future (newly created habitats can take 30 years to mature) and questions have been raised, in particular, about how net gain will be monitored and regulated. In the UK, statutory funding for nature conservation since 2008 has fallen by 20-40% and local authorities are poorly resourced, including in necessary ecological skills.

Meanwhile, some airport expansion plans risk harm to highly sensitive wildlife sites. For example, the Oglet Shore on the River Mersey is a RAMSAR site and a designated Site of Special Scientific Interest, but it is also adjacent to Liverpool John Lennon Airport which is planning to expand. Local people fear that the airport's ambitions for growth will cause considerable harm to Oglet Shore's ecosystem, and there is little confidence that the planning system will afford the site the necessary protections.

To summarise, we are not confident that the proposed targets will be effective. Higher levels of ambition for biodiversity are perhaps being held back by the government's continued commitment to a policy of development-led growth. Given the proliferation of planning and infrastructure projects currently and the pressures that these will place on ecosystems, the government appears to be taking one step forward while taking two steps back in terms of protecting and enhancing species abundance.

Target proposals for air quality

> 45 Do you agree or disagree with the level of ambition proposed for a PM2.5 concentration target?

Disagree

46 [If disagree] What reasons can you provide for why the government should consider a different level of ambition?

Please provide reasons why the government should consider a different level of ambition:

The Annual Mean Concentration Target (AMCT) to reduce PM2.5 to 10 micrograms per cubic metre of air by 2040 is based on the World Health Organisation's 2006 air quality recommendations. The WHO updated its guidance on air quality in September 2021 owing to its conclusion that polluted air amounts to a public health crisis. The current WHO recommendation is to reduce PM2.5 concentrations to 5 micrograms per cubic metre of air as soon as possible.

A map recently produced by the Central Office of Public Interest (Copi) shows that nearly every household in the UK (97%) is affected by poor air quality. The WHO states: "Exceedance of the air quality guideline (AQG) levels is associated with important risks to public health." Even low concentrations of PM2.5 have significant negative health impacts, and it is unacceptable for the Government to risk public health impacts of polluted air by adopting WHO guidance that is fifteen years out of date. Defra shows that, in 2018, the highest concentrations of PM2.5 were in the South East, ranging from 9 to 11 micrograms per cubic metre of air. While we acknowledge that very small reductions in PM2.5 concentrations achieve important health benefits, the target as proposed is too little – and too late.

In addition, we do not understand the need for interim targets in England, as proposed. The WHO's recommended interim targets are focused on areas where concentration of PM2.5 is 35 micrograms per cubic metre of air, which is very high. The interim targets are intended to accommodate areas of high PM2.5 levels that will need greater flexibility to reach the target than in areas where concentration is relatively low, such as in England. The proposed interim targets unnecessarily prolong the implementation of the AMCT (to 2040).

The Government must show that it is serious about tackling polluted air in England and take a bolder approach, revising the AMCT to 5 micrograms per cubic metre of air 3 by 2030.

Studies carried out at Schiphol and Los Angeles Airports have shown that there are very high concentrations of particulate matter around airports, and that polluted air associated with jet engine combustion can drift several miles. Given this, AEF is concerned to see that the consultation's air quality evidence report omits reference to aircraft-generated particulate matter.

The Government favours monitoring "hotspots"of PM2.5 concentration, rather than near-source locations. Since the Government commits to adding PM2.5 monitors to the Automatic Urban and Rural Network, we feel strongly that additional monitors must be placed in residential areas located near to airports and under concentrated

flightpaths taking account of the prevailing wind direction. There is currently a lack of data about airport air pollution levels with the last national report being undertaken twenty years ago in support of the 2002 Aviation White Paper. The evidence needs to be updated, especially as several airports in England have applied or have been granted planning permission and development consent to expand their operations.

Although we do not believe that airport expansion can be justified in a climate emergency, it would be particularly sensible to monitor the impacts on air quality as aircraft movements and road traffic increase at those airports that have been granted permission. More immediately, it would be sensible to monitor air pollution around airports as traffic levels increase post-pandemic. While Defra modelling indicates that the air quality trend overall in England is improving, modelling around Heathrow Airport shows that air quality around it will worsen if it is allowed to construct and operate a third runway. If near-source locations such as airports are not monitored, it is difficult to understand how the Government plans to meet its AMCT, especially as a pathway is yet to be sketched out.

AEF is concerned that the Government's decision not to monitor near-source locations is connected to its failure to include a PM2.5 emissions ceiling in its air quality targets. This failure is disappointing and puzzling; the Government is committed to reducing emissions under the Gothenburg Protocol to the UNECE Convention on Long Range Transboundary Air Pollution and the 2018 National Emissions Ceiling Regulations, requiring the UK to reduce emissions for PM2.5 by 46% in 2030 from the 2005 level. The reason given for not including National Emissions Ceiling Regulations (NECR) commitments in drawing up air quality targets is that – in the four years since the NECR were implemented – "policies on how they will be reached are yet to be agreed". Relying on this failure to deliver on the NECR is not acceptable, and it is difficult to avoid the conclusion that the lack of an emissions ceiling in the proposed air quality targets is linked to the Government's support for air passenger growth, which an emissions cap could problematise.

However, the Environment Act commits the Government to adhering to five key environmental principles, which include "the principle of preventative action to avert environmental damage", "the principle that environmental damage should as a priority be rectified near-source" and "the polluter pays principle".

Given the contribution of the aviation sector to concentrations of particulate matter, the Government must commit to near-source monitoring where communities are located in the prevailing wind of airport runways, flightpaths and associated road traffic. In addition, the air quality targets must include a PM2.5 emissions ceiling, in line with existing legal requirements under the NECR.

AEF is also concerned that the AMCT is focused on PM2.5 generally, without specific consideration of ultrafine particles (UFPs). Your evidence report states: "Whilst it is likely that some components of PM2.5 may be more harmful than others, evidence is

not sufficiently developed to be able to focus on specific components for the purposes of target setting. Therefore, current evidence supports a focus on PM2.5 total mass." This approach is not justified.

The WHO states that, in addition to further research on UFP, "due to health concerns related to these pollutants, ... approaches for mitigation are warranted.". The WHO also states that, in urban areas, transportation – including aviation – is usually the main source of UFP. Dr Gary Fuller's recent paper on the findings of his research at Gatwick Airport draws attention to Particle Number Concentrations (PNC) associated, not just with road traffic but also with the airport's runway: "Mean PNC (7500–12,000 p cm−3) were similar to those measured close to a highly trafficked road in central London. Peak PNC (94,000 p cm−3) were highest at the site closer to the runway. The airport source factor contributed 17% to the PNC at both sites and the concentrations were greatest when the respective sites were downwind of the runway. However, the main source of PNC was associated with traffic emissions.".

Not fully understanding the health impacts of UFP is not a sufficient reason to avoid taking specific action to mitigate it. The risk of serious or irreversible damage posed by UFP is plausible and real, and measures taken to mitigate or reduce can be cost-effective in terms of the health benefits gained. The precautionary principle is clearly set out in the Environment Act, and the Government must abide by this.

> 47 Do you agree or disagree with the level of ambition proposed for a population exposure reduction target?

Disagree

> 48 [If disagree] What reasons can you provide for why the government should consider a different level of ambition?
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> Please provide reasons why the government should consider a different level of ambition.:

Our responses to the Population Exposure Reduction Target (PERT) question are similar to our response to the question on the AMCT's level of ambition. We are concerned that a 35% reduction in population exposure by 2040 is too little and too late, as with the AMCT.

With regard to both the AMCT and PERT, you state: "The proposed targets best reflect the evidence and provide an appropriate balance between health benefits and restrictions on society. Going further or faster with respect to the target levels or dates would require much greater restrictions on society and increased costs, for an increasingly smaller benefit." However, you are also very clear that even very small reductions in PM2.5 would have significant health benefits. It has been found that polluted air affects 97% of homes, according to the Central Office of Public Interest. If Defra agrees that polluted air is an emergency nationally, the additional costs are

surely worth the benefit. It is in any case unclear how this assessment of increased costs versus benefits has been made in the absence of proposals for mitigation policies.

As with our point regarding PM2.5 concentrations, AEF is concerned that the urban and rural background monitors that will be used for the PERT will not capture PM2.5 emitted by aircraft and road traffic at airports, and that your focus on PM2.5 is too general and should include UFP.

The UK Government has an unfortunate record of failing to meet legally binding air quality targets. The EU's Ambient Air Quality Directive (translated into UK law as the Air Quality Standards Regulations 2010) set maximum concentration levels for key pollutants, to be achieved by 2010. Persistent breaches of the limits prompted environmental law campaigners ClientEarth, in 2013, to launch a series of successful legal actions against the UK Government, with the result that Defra was forced by the courts to increase the scale of ambition in its plans for policy action. To restore confidence, the Government must demonstrate that the AMCT as well as the PERT, will be met without external pressure. With regard to possible future breaches of the legal targets, we are also concerned that the Office for Environmental Protection does not appear to have the necessary independence from the Government to enforce the legal requirements.

The modelling of both the AMCT and the PERT does not take into consideration the impacts, in terms of PM2.5 including UFP emissions, of new major infrastructure projects, such as expansion at airports and major new road-building. At the same time, there are several live airport planning applications in addition to hundreds of new development projects that that are seeking approval. The Government must clarify how airport (and other) planning decisions will help deliver its legally binding air quality commitments in the context of the Government's policy support for airport expansion (in the Airports National Policy Statement and Making Best Use).