

**PROPOSED MASS BURN INCINERATOR  
AT GRENDON UNDERWOOD, BUCKINGHAMSHIRE**

**SUMMARY EVIDENCE OF DR RAYMOND PAUL GEMMELL  
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**1.0 INTRODUCTION TO MY EVIDENCE**

**1.1 Qualifications and Experience**

- 1.1.1 I am Dr Raymond Paul Gemmell, Director of ERAP Ltd, an ecological consultancy. My qualifications are B.Sc.(Hons), Ph.D, C.BIOL, MSB and MLI (Land Science). I am the author of numerous ecological publications including a book, chapters in books, and scientific research papers in UK and international journals and research symposia.
- 1.1.2 I have given expert evidence on ecology and conservation at approximately 150 inquiries in the UK and abroad, often as a witness for developers but frequently for nature conservation and environmental organisations such as County and Borough Councils, Countryside Council for Wales, and Government organisations in the UK and Isle-of-Man. My experience has given me insight into issues discussed at inquiries by developers and objectors.

**1.2 Nature and Scope of my Evidence**

- 1.2.1 My evidence concerns the ecological and nature conservation importance of the site and Grendon Underwood area in which the mass burn incinerator is proposed. I have also assessed the likely effects of construction and operation of the incinerator on wildlife, habitats and nature conservation. My evidence is based on desk-top ecological surveys and ecological surveys in 2010 of the Site area, and results of initial bat surveys by Bernwood Environmental Conservation Services.
- 1.2.2 Because no ecological impact assessment of the site and its surroundings has been conducted, and for seasonal reasons, the results of the surveys are preliminary and seriously under-estimate the ecological importance of the Site area and likely adverse and high magnitude effects of the proposed incinerator on biodiversity and nature conservation.

**2.0 SUMMARY OF MY EVIDENCE**

**2.1 Ecological Evaluation of the Site Area.**

- 2.1.1 There are two SSSIs (Sites of Special Scientific Interest) within 500 metres of the Site. SSSIs are of national nature conservation importance. **Sheephouse Wood SSSI** covers 56.9 hectares and is ancient Pedunculate Oak woodland with a wide range of woodland types, some of which are relatively uncommon in the region. The SSSI has a typical range of breeding birds, 40 breeding species having been recorded, notably Woodcock and the three native woodpeckers, and typical woodland birds. The SSSI is of particular interest for its invertebrate fauna with notable and local species present. The butterfly assemblage is important with breeding Purple Hairstreak and Black Hairstreak. The latter is nationally restricted and largely confined to relics of ancient forest on the clay belt which runs through Oxfordshire and Buckinghamshire to the East Midlands. **Finemere Wood SSSI** is also ancient Pedunculate Oak woodland covering 45.7 hectares. It contains species-rich

communities of woodland herbs which is a feature of this woodland type. It is also important for breeding woodland birds. The butterfly assemblage is notable with White Admiral, Purple Hairstreak, Holly Blue, Wood White and the nationally restricted Black Hairstreak.

- 2.1.2 Three types of Priority Habitat, important because they are declining and/or threatened, are within two kilometres of the Site. They are ancient and semi-natural woodlands, ancient replanted woodlands, and lowland mixed deciduous woodland.
- 2.1.3 There are three Local Wildlife Sites (LWSs) within one kilometre of the Site. **Decoypond Wood LWS** is seven hectares of wet Ash woodland with Hazel coppice and is Priority Habitat. **Calvert Railway Station LWS** is three hectares of species-rich wet grassland on clay and excellent habitat for birds and invertebrates, particularly dragonflies. There is Common Lizard, rare in Buckinghamshire. **Shrubs Wood LWS** of 8.3 hectares is an important type, particularly its ground flora dominated by Native Bluebell and Dog's Mercury.
- 2.1.4 North Buckinghamshire Bat Group has 225 bat records of bats for 2002 to 2010. There are 47 bat boxes. For 2009 the Bat Group holds 11 tree roost records. There are data-base bat records for Grendon Underwood area of Common Pipistrelle, Soprano Pipistrelle, a *Myotis* species, Noctule, Brown Long-eared Bat, Natterer's Bat, Whiskered/Brandt's Bat, Serotine Bat, Daubenton's Bat, Leisler's Bat, a *Nyctalis* bat species, and Bechstein's Bat. These records are impressive and exceptional, and include approximately 13 or more species.
- 2.1.5 The actual numbers of Common Pipistrelle, Soprano Pipistrelle and Brown Long-eared bats will be much larger than the numbers detected. Natterer's and Daubenton's bats, which are uncommon or of local occurrence, will also have been under-recorded. Whiskered Bat will also have been under-recorded, and is uncommon in Buckinghamshire.
- 2.1.6 The other bat species: Brandt's Bat, Bechstein's Bat, Leisler's Bat and Serotine Bat are all rare species and will have been under-recorded to a significant extent although numbers will be very low relative to those of common and widespread species. The *Myotis* bat species may be Daubenton's Bat, Bechstein's Bat, Brandt's Bat, Whiskered Bat or Natterer's Bat.
- 2.1.7 There are large populations of Natterer's Bat with 168 records, and Brown Long-eared Bat with 127 records in Finemere Woods SSSI. In 2006 Bechstein's Bat, Natterer's Bat, Whiskered Bat and Brown Long-eared Bat were confirmed in the Area. Previous surveys of Grendon and Doddershall woods confirmed earlier records of Noctule and Daubenton's bat.
- 2.1.8 The desktop survey alone shows the proposed development site is in a highly important area for biodiversity and protected species, the importance of which is under-estimated.
- 2.1.9 Further, the Site area is of major importance for its assemblage of bat species which, together with their roosting habitats, are protected by international (European) and UK legislation and planning policies. Bats, like Great Crested Newts, are European protected Species. Further, several of the bat species are uncommon or rare nationally.
- 2.1.10 Woodland and other habitats close to the proposed incinerator site are highly favourable bat habitats for feeding, commuting and roosting. The high level of importance of the Site area is confirmed by the attention given to it by the Buckinghamshire Bat Group.
- 2.1.11 The 2010 survey has confirmed that bats use the site for feeding and commuting between woodlands which are suitable roosting habitats and feeding habitats over fields, hedgerows, water-courses and the disused railway line corridor. Bats roosting in the surrounding area as

well as in the site area enter the proposed development area by commuting corridors, notably the disused railway, hedgerows and wooded corridors, for feeding.

- 2.1.12 The disused railway connects the site with the wider landscape. This enables bats roosting outside the site, in SSSIs, woodland trees, buildings and hibernation habitats to use the site for feeding.
- 2.1.13 The Bernwood Report states that the wider landscape surrounding the proposed development including ancient and secondary woodland, semi-natural through to improved grassland, hedgerows, scrub and arable supports a diversity of bat species including rare, declining and vulnerable species.
- 2.1.14 It is also stated that the location of the development is in close proximity to and between woodlands known to support important species of bat. These woodlands are highly likely to be linked, providing foraging areas that will potentially support maternity (breeding) colonies.
- 2.1.15 The central part of the entire disused railway is mosaic habitat of alkaline ballast and acidic clinker. These conditions are favourable for natural colonisation by a rich diversity of plant life of lime-loving species and species of acidic soils. A mosaic of species-rich wild flower communities has established naturally along the disused railway which is of significant ecological and nature conservation interest and merits conservation as a Local Wildlife Site for its plant and invertebrate life as well as its function for bat feeding and commuting.
- 2.1.16 The virtually unbroken lines of young trees and shrubs along both sides of the disused railway are linear, species-rich woody vegetation similar to that of species-rich and ancient hedgerow Priority Habitat. Ancient woodland herbs grow beneath the scrub and trees. Over 140 native flowering plant species have colonised the disused railway section but this is almost certainly significantly less than the number of species actually present. The disused railway is "Open Mosaic Habitats on Previously Developed Land" Priority Habitat.
- 2.1.17 27 butterfly species occur in the Site, mainly along the disused railway and each in good to large breeding numbers. Black Hairstreak, fritillary species and Purple Emperor are uncommon. Purple Emperor is at the northern limit of its British distribution. Three are Priority Species.
- 2.1.18 The survey information for the incinerator Site area shows that it has very significant nature conservation value for an assemblage of bat species including rare and vulnerable species. It is highly likely that further surveys, justified by the preliminary results and which will be required in any event for an Environmental Statement, will reveal that the site area is of major importance for bats and deserving of statutory designation such as SSSI (of national importance) or possibly SAC (Special Area of Conservation) of European importance.
- 2.1.19 Natural England "*Guidelines for Selection of Biological SSSIs*" (1989), is being updated in 2011 to inform more recent legislation on bat protection because bats are "European Protected Species" and strict protection and licensing applies to all developments that are "reasonably likely" to affect bats and its bat habitats adversely as in this case.
- 2.1.20 Even under current legislation and Natural England guidance, any traditional breeding roost of Bechstein's Bat, a species using the site, should be considered for SSSI designation. Further, all hibernacula containing two, three or four bat species (any species), with 150, 100 and 50 or more bats respectively, should be considered for SSSI designation.

- 2.1.21 It is highly likely that the standards for SSSI and SAC selection for bats will be revised when the new "Guidelines" are published because of the increased importance attached to bat conservation. Further, full pre-development surveys, legislation and mitigation licensing apply to all bat species including Common Pipistrelle, not just to rare or uncommon species.
- 2.1.22 The Site Area is of nature conservation importance for a range of other species and habitats including a major assemblage of butterfly species. The species of butterfly detected to date justify SSSI designation based on Natural England's selection criteria. The Site area may also qualify for SSSI selection for Great Crested Newts but the 2010 surveys were commissioned too late in the year to determine the size of the population.

## **2.2 Effects of the Proposed Incinerator on Biodiversity and Nature Conservation**

- 2.2.1 The survey results indicate adverse ecological effects of high magnitude and long or permanent duration are highly likely. Effective mitigation is unlikely to be feasible.
- 2.2.2 The development will have various effects on wildlife including permanent losses of wildlife habitat during construction and disturbance during construction, and for the duration of the operation of the development because of the use of the access road by delivery vehicles.
- 2.2.3 There may also be adverse effects on bats throughout the use of the incinerator if air pollutants such as nitrogen oxide and dioxins enter the food chain via deposition on vegetation and intake by invertebrates because bats feed on flying invertebrates.
- 2.2.4 Construction and use of the access road will destroy the ecological value of the disused railway and its use for bat foraging and commuting, and therefore adversely and severely affect bat activity and bat use of the entire site and surroundings. Even if sections of the disused railway (which was largely abandoned by British Rail since the mid 1960s) are retained, its commuting and foraging value for bats and other wildlife will be lost due to fragmentation.
- 2.2.5 Although there are adopted measures to prevent the release of emissions of dioxins, PCBs (polychlorinated biphenyls), heavy metals (lead, copper etc) from incinerator stacks that could affect human health, there has been very limited research in recent years on the effects of such contaminants on bats and their invertebrate prey.
- 2.2.6 I draw attention to accidental releases of dioxin and the recent case of the closure of 4,709 farms across Germany because of dioxin contamination fears. As much as 3,000 tonnes of feed thought to be affected was distributed in eight German states.
- 2.2.7 I refer to a research paper by J.O. Reinold et al in Aquatic Ecology (1999): "Transfer of microcontaminants from sediment to chironomids, and the risk for the Pond Bat *Myotis dasycneme* (Chiroptera) preying on them. It is stated (page 374 of Aquatic Ecology **33**: 1999): "In general, information on bat toxicity is scarce and even effects from low concentrations of contaminants cannot be completely excluded. Future research should therefore be concentrated on the effect of contaminants on bats, both in the laboratory and under field conditions." I also quote from the concluding sentence of the paper: "Therefore, it seems that PCB 77 was metabolised by Pond bats, which may contribute to toxic effects."

## **2.3 Consideration of Legislation, Planning Policies and UK Government Directives**

- 2.3.1 There has been no Environmental Statement for the development and no bat roost and bat activity surveys. Because all bats are European Protect Species (EPS), bat surveys and a

mitigation method statement are needed before the application can be registered. This is required to ensure that European Protected Species and their habitats are fully considered and protected to ensure compliance with *The Habitats Directive*.

- 2.3.2 Government directives to planning authorities have been necessary to avoid the situation where planning permission is granted where there are effects on bats or Great Crested Newts which cannot be mitigated satisfactorily and development cannot commence because Natural England cannot issue an EPS Mitigation Licence.
- 2.3.3 *Planning Policy Statement 9: Biodiversity and Geological Conservation* (PPS9) contains Key Principles which require the protection of European Protected Species, designated nature conservation sites, Local Wildlife Sites, and no net loss of biodiversity. PPS9 Key Principles require that planning decisions should be based on up-to-date biodiversity information. Further, Key Principles of PPS9 require the maintenance of existing biodiversity and incorporation of beneficial biodiversity in the design of development, to ensure that there is a net increase in biodiversity.
- 2.3.4 If planning permission is granted in this case, existing biodiversity cannot be maintained, and a net loss of biodiversity cannot be avoided. A net increase in biodiversity cannot be achieved. There would be no realistic prospect of compliance with PPS9. Further, PPS9 Key Principles state that if significant harm to biodiversity cannot be prevented, adequately mitigated against or compensated for, then planning permission should be refused.
- 2.3.5 A major consideration is compliance with *The Habitats Directive*. If Great Crested Newts and their habitats, and/or bats and their habitats are adversely affected and an EPS Mitigation Licence is required from Natural England, it will be necessary to demonstrate that there is no alternative site for the proposed development, and that all possible alternative sites have been investigated. In this case there is no alternative development which, if permitted at the Site, will have reduced, if any, adverse effects on ecology and the environment. Further, effects, if any, could be satisfactorily mitigated.

### **3.0 SUMMARY OF CONCLUSIONS**

- 3.1 The Site area is of substantive and significant importance for its assemblage of Bat species and other protected species and other wildlife interests including unusually high biodiversity for breeding and other birds, butterflies including uncommon and rare species notably Common Lizard which is rare in Buckinghamshire, possibly other reptiles, and important plants of ancient woodlands. The Site Area is worthy of designation in whole or at least in part as a Local Wildlife Site. Further surveys, particularly of bats and invertebrates, are likely to justify a statutory designation as SSSI and possibly SAC.
- 3.2 The recent surveys have shown that the Site Area is a unique system of habitats and of national and likely international importance for its assemblages of bats, butterflies and other protected species. If I were advising a developer, I would have to alert my client that because of ecological importance and likely adverse effects of development on biodiversity, the ecological and nature conservation issues would be likely to be show-stoppers