



**Town and Country Planning Act 1990 section 77,
Town and Country Planning (Inquiries Procedure) (England) Rules
2000**

**Public Inquiry into planning applications by London Ashford
Airport Ltd for the construction of a runway extension and erection
of a terminal building at London Ashford Airport Limited, Lydd,
Romney Marsh, TN29 9QL**

Summary Proof of Evidence of David Heaver

7 January 2011

Introduction

1. I am David Heaver, Senior Invertebrate Specialist for Natural England and a professional entomologist. I am one of the organisation's two resident experts on invertebrates and, in this capacity, provide technical advice and support to members of Natural England's staff throughout the whole of England in relation to matters concerning the ecology and conservation of invertebrates. I have undertaken this role within Natural England for the past 3 years.

The importance of Dungeness SSSI for invertebrates

2. The unique complex of habitats present at Dungeness, Romney Marsh and Rye Bay Site of Special Scientific Interest (the 'SSSI') support an extremely diverse, nationally important invertebrate community. The information gathered to support the SSSI designation notes that at least 271 nationally scarce, 75 Red Data Book and 17 provisional Red Data Book species have been recorded from the SSSI since 1980 across this site. A number of these are also section 41 Biodiversity Action Plan species in need of direct conservation action to aid their recovery.
3. There are two particular habitats on Dungeness that are both of critical importance for the national conservation of invertebrates and which are likely to be affected by the current development proposals of the applicant. These habitats can be referred to in non-technical language as: lowland ditch systems and vegetated shingle.

Lowland ditch systems

4. All ditches are man-made landscape features for either conveying water off sites and/or for acting as livestock barriers. They vary greatly in design, age, character, underlying geology, longevity, connectivity, water quality and in the management practices and regimes to which they are subject. Subsequently ditches vary quite considerably in their general ecological status in terms of the species they are able to support.
5. Most of the ditches on the application site ('application ditches') are present in 1843-1893 maps. This demonstrates that most of the application ditches, like those of the wider marsh, are very well established with most of those in the proposed runway expansion area being at least 120 to 150 years old.

6. Using the most up to date species status accounts on records from the seven application ditches that will be impacted by the applicant's proposals shows they hold at least one Red Data Book 2 species, five Near Threatened, six Nationally Scarce, one Least Concern invertebrates. Not included in the invertebrate survey data, but known to be present in at least 2 of the ditches at the same time, is the legally protected medicinal leech.
7. The application ditches are part of the SSSI wetland invertebrate assemblage interest feature. The SSSI citation mentions, by way of example, great silver diving beetle, the dragonflies and the soldierflies, all of which have good representation within the application ditches.
8. I have applied a methodology for assessment of ditch invertebrate assemblage quality, provided in a report on behalf of Buglife, the main invertebrate conservation charity in the UK, to the invertebrates that were identified in the application ditches by the applicant. The key measure in this methodology is the Species Conservation Status Score ('SCS Score').
9. The majority of the individual application ditches scored extremely well for their invertebrate quality compared with the national average SCS Score of 1.4 for the 434 ditches of high quality for invertebrates assessed in the Buglife report. It is clear that Ditches 2 and 5 hold some of the highest quality scores (1.56 and 1.55, respectively). Given that the UK average score is derived from the some of the best wetland sites in Britain, the clustering of a number of the application ditch samples around this average shows them to be of special quality and confirms their importance within the SSSI setting.
10. However, these scores are constrained by the limitations of the applicant's survey effort, and must be viewed as being conservative. For example, the applicant's survey did not find the legally protected medicinal leech, but the presence of this species has been independently confirmed in ditches 5 and 7, and this significantly raises the SCS Score. Moreover, when one only considers the application ditches that will be directly affected by the applicant's proposals, this, in combination with the presence of medicinal leech in ditches 5 and 7, raises the median SCS Score for all of those ditches to 1.4, equivalent to the national average SCS Score for some of the highest quality ditches in the country. A number of other reasons why the limitations of the applicant's survey effort lead to a

likely further undervaluation of the ditches' SCS Score are given in paragraph 27 of my proof of evidence.

11. Since the ditches have both invertebrate species which are the subject of the SSSI notification, as well as high SCS Scores under a national grading scheme, the likely and real impacts on the ditch faunas from the development proposals can be better assessed in terms of a national nature conservation context.

Impacts on the ditch invertebrate fauna

12. The proposals directly affect the application ditches, through the complete loss of very substantial lengths of those ditches, which provide high quality habitat for the nationally significant invertebrate assemblages for which the SSSI has been notified and populations of the legally protected medicinal leech (which are also the subject of the SSSI notification). In addition to the direct loss of the application ditches that will be caused by the proposal, the proposed construction may involve extended drainage of the whole ditch lengths (at least to the nearest water control structure), and as a result the lengths identified as being directly impacted may significantly underestimate the actual length of ditch impacted.
13. Furthermore, although my conclusion on the scale of the impacts does not rely on the point, there are also potential impacts arising from the new water control structures engaging with the remaining old ditch lengths, as well as water quality issues arising from the junction of the old and the new ditches. I consider that the impacts on the invertebrate interest of the existing, old ditch lengths which remain after the development may be masked, and may, in fact, result in greater harm than at first seems apparent.

The applicant's proposed replacement ditches

14. The assemblage of species present in these ditches shows some relatedness to similar old ditch faunas, and cannot simply be replaced through either moving ditch material into an ecologically unsuitable early successional ditch habitat or by natural colonisation over the short term. Indeed, the large development footprint removes the opportunity for colonisation since much of the source will be similarly impacted and lost or damaged.
15. The fact that there currently exist many rare and scarce ditch invertebrates does strongly point to the fact that the application ditches provide mid to long term successional habitat conditions, having retained their interest over many years, and cannot be simply re-

created with a predictable end point in sight. If the future management of the replacement ditch network is driven primarily by airport surface drainage considerations, and the ditches themselves are averaging 0.75 m wide by 2m deep and are not of the sort of profiles one would construct for new conservation ditches, then the colonisation of the remaining fauna and the establishment of anything other than earlier successional fauna seems destined to take many years. Accordingly, the applicant's current proposal to mitigate the impacted ditches with 1300 metres of new ditches will not avoid damage to the SSSI.

Vegetated shingle

16. Dungeness, Romney Marsh and Rye Bay SSSI includes two of the largest shingle structures in the British Isles, including shingle heathland near the airport, which has early successional habitat characteristics.
17. Research has demonstrated that early successional stages habitats are extremely important for invertebrates. The information gathered to support the SSSI designation notes at least 271 nationally scarce, 75 Red Data Book and 17 provisional Red Data Book species have been recorded from the SSSI since 1980 across this large site, with a number of these being S41 Biodiversity Action Plan species in need to direct conservation action to aid their recovery. Many of these are tied to the early successional habitats found in the vicinity of the airport.
18. An increase in the nutrient status of the substrate by enhanced aerial deposition of nitrogen can both alter plant community structure by allowing more widespread plant species to establish, and also by increasing vegetative lushness, potentially leading both to more cover, and new plant species establishing.
19. Due to increase in the airport's contribution to air emissions, and in particular nitrogen deposition as a result of the airport proposal, there is a mechanism for potential impacts on the invertebrates of vegetated shingle, which, if unmitigated, has the potential to cause harm to the SSSI invertebrate assemblage.

Conclusion

20. The applicant's proposals will result in the direct loss of SSSI ditch habitat and potential other impacts on the special aquatic ditch fauna such that there is unavoidable and substantial adverse harm to the interest features of the SSSI. In addition, there is the

potential for impacts to the invertebrates of vegetated shingle, which, if unmitigated, also have the potential to cause harm.