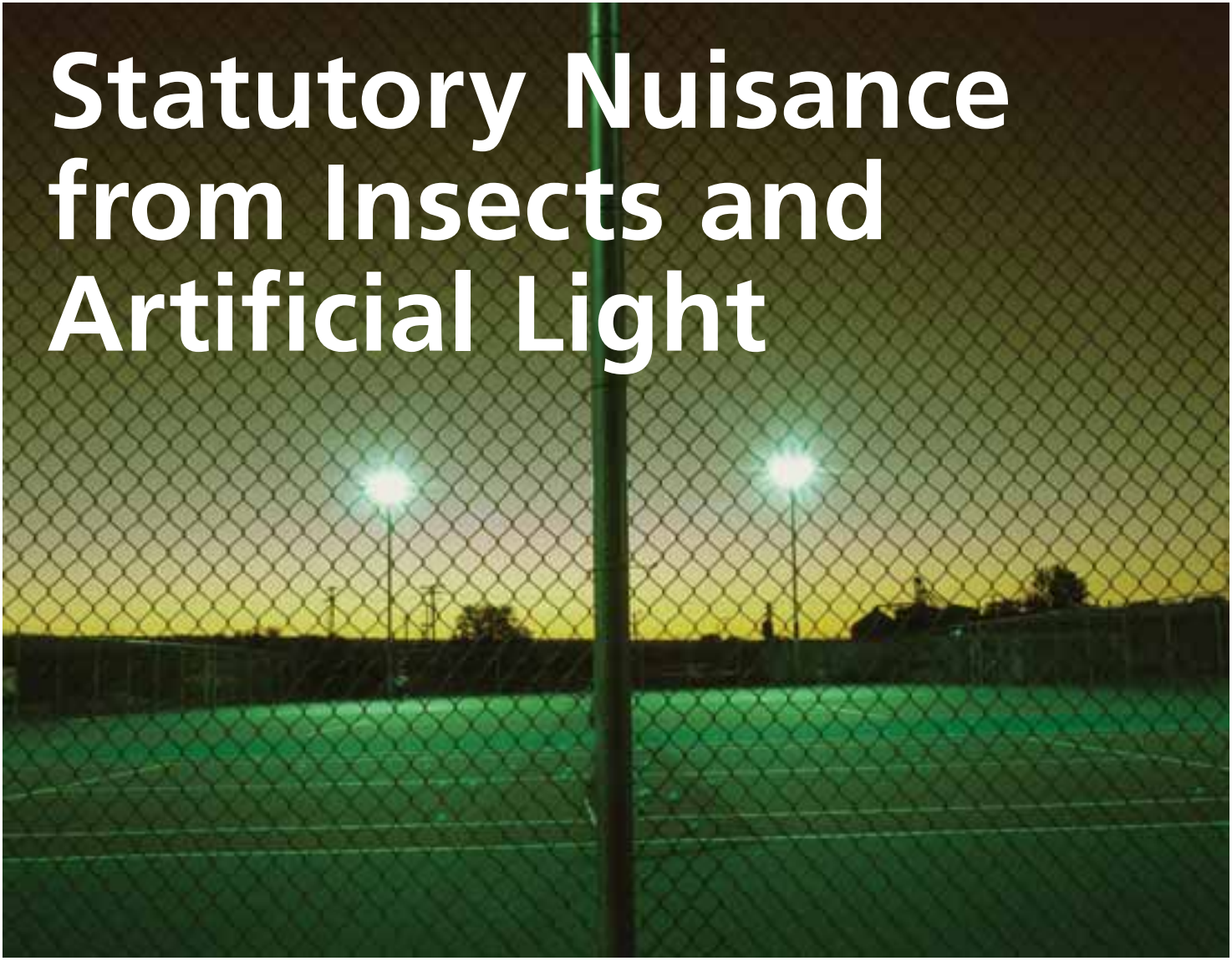
Statutory Nuisance from Insects and Artificial Light



Guidance on Sections 101 to 103 of the Clean Neighbourhoods and Environment Act 2005

defra
Department for Environment
Food and Rural Affairs

This guidance is part of a series on legislation & powers affected by the the Clean Neighbourhoods and Environment Act 2005.

Guidance on the following topics is also available;

- Nuisance and Abandoned Vehicles
- Litter and Refuse
- Defacement Removal Notices
- Waste
- Noise
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Overview

1 This guidance covers sections 101, 102 and 103 of the Clean Neighbourhoods and Environment Act 2005, which amend sections 79, 80 and 82 of the Environmental Protection Act 1990 to extend the statutory nuisance regime to include two new statutory nuisances:

- statutory nuisance from insects; and
- statutory nuisance from artificial light.

2 This guidance is aimed at local authorities, particularly Environmental Health Practitioners who enforce nuisance legislation. It may also be useful to other agencies.

Central Principles

3 These changes extend the duty on local authorities to check their areas periodically for existing and potential statutory nuisances so as now to include such nuisances arising from insects and from artificial lighting. Local authorities must take reasonable steps to investigate complaints of such nuisances. Once satisfied that a statutory nuisance exists or may occur or recur, local authorities must issue an abatement notice (in accordance with section 80(1) and (2) of the 1990 Act) against, in the first instance, the person responsible for the nuisance or, where that person cannot be found or the nuisance has not yet occurred, the owner or occupier of the premises from which it emanates, requiring that the nuisance cease or be abated within a set timescale. (Where a nuisance arises from any defect of a structural character, the abatement notice must be served on the owner of the premises.)

4 It also becomes possible for persons aggrieved by these new statutory nuisances to take private proceedings in respect of them in the magistrates' court by way of section 82 of the 1990 Act.

5 The appeals procedure is as for the other statutory nuisances. An appeal against an abatement notice can be made to the Magistrates' Courts. As grounds for appeal, the claim of 'best practicable means' can be used against an abatement notice, or subsequently as a defence against liability for conviction for breaching or failing to comply with an abatement notice, for nuisances on industrial, trade or business premises. In the case of artificial light nuisance, this defence of 'best practicable means' also applies to all such lighting used for the outdoor illumination of 'relevant' sports (please see the proposed list under the healthy living and sports section). (In the case of smoke nuisance, it applies to any premises, but only where the smoke is emitted from a chimney.)

6 The defence of 'reasonable excuse' for breaching or failing to comply with an abatement notice remains available to all.

7 A statutory nuisance may also be capable of being a nuisance at common law (and, where reliance is on the 'nuisance' limb, *must* also be a nuisance at common law), in which case an operator may be the subject of proceedings in tort by persons aggrieved by a common law nuisance even if the operator can rely on the defence of 'best practicable means' against action for statutory nuisance.

Section 101

8 Section 101 adds to the descriptions of statutory nuisances listed in section 79(1) of the Environmental Protection Act 1990:

'(fa) any insects emanating from relevant industrial, trade or business premises and being prejudicial to health or a nuisance'.

9 This provision does not apply to insects from domestic premises or to insects listed in Schedule 5 to the Wildlife and Countryside Act 1981, unless they are included in that Schedule solely to prevent their trade or sale.

10 This measure is intended to provide local authorities with a remedy to nuisances from insect infestations (whether naturally occurring or caused by human activities) on 'relevant' industrial, trade or business premises. However, it is not meant to be used against most naturally occurring concentrations of insects on open land or in ways that would adversely affect biodiversity. Accordingly, subsection (5) inserts two new subsections (7C) and (7D) into section 79 of the Environmental Protection Act 1990 which exclude from the definition of 'relevant' industrial, trade and business premises:

(a) land used as arable, grazing, meadow or pasture land (but not structures placed on the land),

(b) land used as osier land, reed beds, or woodland,

(c) land used for market gardens, nursery grounds or orchards,

(d) land forming part of an agricultural unit (but not covered by (a) to (c)) and which is of a description specified in regulations,

(e) land included in a Site of Special Scientific Interest,

and land covered by, and the waters of, rivers, watercourses (except sewers and drains), lakes and ponds.

11 Land which falls under (d) above is described by regulations. These regulations prescribe the descriptions of land under s.79(7C)(d) of the Environmental Protection Act 1990 (introduced by s.101(5) of the Clean Neighbourhoods and Environment Act 2005), that form part of an agricultural unit and which are (in addition to the types of land already listed at s.79(7C)(a)-(c)) to be exempt from 'relevant industrial etc. premises' from which the new statutory nuisance from insects (s.79(1)(fa) Environmental Protection Act 1990) is capable of emanating.

Certain types of land are exempted from being capable of statutory nuisance from insects in order to safeguard endangered species, and protect biodiversity.

Section 102

12 Section 102 adds to the descriptions of statutory nuisances listed in section 79(1) of the 1990 Act

'(fb) artificial light emitted from premises so as to be prejudicial to health or a nuisance'.

13 However, this does not include artificial light emitted from the following premises. These are premises used for transport purposes and other premises where high levels of light are required for safety and security reasons, i.e.:

- Airports
- Harbours
- Railway premises
- Tramway premises
- Bus stations and associated facilities
- Public service vehicle operating centres
- Goods vehicle operating centres
- Lighthouses
- Prisons
- Premises occupied for Defence purposes

14 These premises are listed in a new subsection (5B) to section 79 of the Environmental Protection Act 1990 and are defined in subsection (7) and in new subsections (7A) and (7B) of that Act (inserted by subsections 102(4) to (6) of the Clean Neighbourhoods and Environment Act 2005). The exemption for Defence premises is made by section 102(3) of the 2005 Act, amending section 79(2) of the 1990 Act.

Section 103

15 Section 103 extends the defence of 'best practicable means' to these new statutory nuisances where either is emitted from industrial, trade or business premises or, in the case of light, also from relevant outdoor sports facilities which are not industrial etc. premises. Most artificially illuminated sports facilities will be regarded as businesses, and so will benefit thereby from the 'best practicable means' defence. However, there may be some that are not; perhaps local authority grounds or facilities run by amateur clubs.

16 The Statutory Nuisances (Artificial Lighting) (Designation of Relevant Sports) (England) Order 2006 designates the 'relevant sports' the facilities for which will be able to use the defence of 'best practicable means' in appealing against, or as a defence against prosecution for breaching or failing to comply with, an abatement notice for statutory nuisance from artificial light under s.79(1)(fb) Environmental Protection Act 1990.

Guidance on using the new powers

General

Assessing complaints of nuisance

17 Statutory nuisance from insects and statutory nuisance from artificial light from premises follow the same regime as for other statutory nuisances. That is, it is initially for an Environmental Health Practitioner to assess on the evidence available whether or not a statutory nuisance exists, or may occur or recur, on a case-by-case basis. Not least because it will depend on their effects, there are no objective and set levels of insect infestation or artificial light above which a statutory nuisance is or may be caused, and below which it is not.

18 'Nuisance' is not defined in statute, but is rather based on the common law concept of what is to be regarded as an unreasonable interference with someone's use of their own property; alternatively, a statutory nuisance may be something that is 'prejudicial to health' of other people; ultimately, it will be for the courts to decide whether a statutory nuisance exists, should an appeal be made against an abatement notice within the 21 day period from its being issued, or should an individual take a private action through the local magistrates' court under section 82 of the Environmental Protection Act 1990 (or, possibly, as a defence to prosecution for failure to observe an abatement notice). As for all statutory nuisances, when assessing a case of potential statutory nuisance the Environmental Health Practitioner should take account of a range of factors including:

- Duration
- Frequency
- Impact – i.e. material interference with use of property or personal well-being; actually or likely to be adverse to health
- Local environment
- Motive – i.e. unreasonable behaviour or normal user
- Sensitivity of the plaintiff – statutory nuisance relies on the concept of the average person, and is not designed to take account of unusual sensibilities

19 For statutory artificial light nuisance, technical parameters on obtrusive

lighting, formulated by the International Commission on Illumination (CIE) and Institution of Lighting Engineers from research into individual sensitivity to light, may help inform consideration of the level of sensitivity that might be considered that of the 'average person'.

20 Enforcement should be reasonable and proportionate. If, however, the Environmental Health Practitioner is satisfied that a statutory nuisance exists, or may occur or recur, an abatement order must be issued requiring that the nuisance cease or be abated within a set timescale.

Statutory Nuisance and Planning

21 Prevention is better than cure, and it is preferable to address potential statutory nuisances at the planning stage.

22 The Courts have ruled that lighting itself is not 'development'. However, planning permission is required for lighting if it alters the material appearance of a building. It has been possible since 1997 for local authorities to consider lighting as part of the planning process for new buildings, both residential and commercial. Local authorities can decide to regulate lighting under planning permission, and set planning obligations for lighting to prevent light pollution. In these circumstances, new lighting must adhere to the original planning permission of the building. These conditions cannot be applied retrospectively and can only be applied to buildings built after 1997.

23 However, the existence of planning permission does not mean that a statutory nuisance cannot then exist. Circumstances and local environments change. Statutory nuisance can occur whether or not planning permission is in place either expressly or implicitly permitting lighting.

Recording complaints

24 Complaints should be logged and recorded, as for any other complaint of statutory nuisance. It is highly likely that in future the Chartered Institute of Environmental Health and / or Defra will contact local authorities to request statistics so that the scale and nature of insect nuisance and light nuisance can be assessed and monitored in order to provide an evidence base for future policy development.

25 Logging and recording information, including geo-coding, may also assist local authorities to map and monitor statutory nuisances to inform their approach to meeting their duties.

Insects

Likely sources of insect nuisance

26 It is expected that the following sources will generate most complaints of insect nuisance:

- Poultry houses / farms (buildings on agricultural land are not exempt from statutory nuisance from insects, even though the land surrounding them may be)
- Sewage treatment works
- Manure / silage storage areas
- Animal housing
- Stagnant ditches and drains (i.e. containing putrid and anoxic water) (provided they are on relevant industrial etc. premises)
- Landfill sites / refuse tips
- Waste transfer premises
- The commercial parts of mixed commercial / residential blocks of buildings (i.e. excluding the residential premises contained therein)
- Trade or business premises (e.g. contaminated goods, kitchen areas)
- Slaughterhouses
- Used car tyre recycling businesses

27 Local authorities have a duty, however, to take reasonable steps, where practicable, to investigate any complaints of insect nuisance.

28 It is probable that complaints will be received about insects from domestic premises. As indicated above, insects emanating from domestic premises are not covered by this extension of the statutory nuisance regime. Any problems caused by insects from domestic premises may, however, be capable of being dealt with under section 79(1)(a) of the Environmental Protection Act 1990 – 'any premises in such a state as to be prejudicial to health or a nuisance'.

29 This limb might be appropriate if, for example, the state of a domestic dwelling was such that it encouraged an infestation of insects that constituted a nuisance to neighbouring dwellings.

Assessing complaints of insect nuisance

30 Ascertaining the source of insect nuisance can sometimes be a difficult and lengthy process, as premises which have high levels of insect infestation may be mistaken for the source when they might themselves also be sufferers. There may be a temptation for some people to ascribe insect nuisance to businesses by virtue of them being likely sources. A participatory approach to determining the source is likely to help satisfactory outcomes.

31 Proper management and treatment programmes should be able to minimise most insect nuisance cases that arise. Noticing infestations in their early stages is important, to try and keep on top of the insect nuisance.

Insect Nuisance

32 The vast majority of insect species do not cause a nuisance, but are essential components of biodiversity and maintain ecosystems through pollination, soil maintenance and other functions.

33 There are also a number of insect species which can cause nuisance in sufficient quantities, or seasonally. Some may also pose a public health risk, although they may not be regarded as a public health pest in terms of environmental legislation, or a risk in animal husbandry. Such insects include mosquitoes (Culicidae), house flies (*Musca domestica* Linnaeus), lesser house flies (*Fannia canicularis* (Linnaeus)), etc.

34 There is a difference between insects arising from an activity on a business, trade or industrial premises, and natural occurrence of insect populations. It is *not* the intention for this measure to cause environmental damage to the ecosystem or biodiversity.

35 It should *not* be assumed that killing insects is necessarily the most appropriate way to cease or abate a nuisance.

One of the intentions behind the measure to introduce insect statutory nuisance is to capture statutory insect nuisance caused as a result of activity on premises, where control through the existing limb of 'any premises in such a state as to be prejudicial to health or a nuisance' would not be appropriate. Another intention is to control statutory insect nuisance at source, where such control will not cause unacceptable damage to the environment or biodiversity. If activity and conditions attract or provide breeding conditions for insects to such an extent that they constitute a statutory nuisance, then it is the activity and conditions which the Environmental Health Practitioner should address.

36 Environmental consequences – indirect as well as cumulative – of remedial action must be considered, such as the effects of insecticides, if used, on the environment, nature, bodies of water, etc. Insecticides should therefore be chosen with care and regard for the Pesticides Safety Precautions Scheme in their use.

37 An abatement notice once issued may be 'simple' and require abatement within a specified timescale. It may, but does not have to, specify works or other steps necessary to abate the nuisance or restrict its occurrence or recurrence.

Example of insect nuisance – species of house fly (*Musca domestica* Linnaeus). Lesser house fly (*Fannia canicularis* (Linnaeus)), blow flies (*Calliphora* spp and *Lucilia* spp).

38 Houseflies can be classed as public health pests or pests of animal husbandry. They are associated with conditions that exist in rotting, fermenting, or at least moist organic matter, preferably of a high protein content, such as those that could be present at a sewage works (though they are also a natural part of the biological process and may indicate good quality effluent and process if found on a filter works at a sewage treatment works). Houseflies are frequently found in association with man, either indoors or taking advantage of other human activities, as do many other species of insect.

39 Houseflies and other pests which occur in significant numbers to cause a pest problem are almost certainly being attracted to the site because of a breakdown in standards of hygiene. Occasionally, the problem may be localised, i.e. blow flies (*Calliphora* spp and *Lucilia* spp) may be attracted by a dead bird or rodent, or due to external causes, such as a nearby farm or cattle in an adjacent field. Thus the most important aspect of fly control is to trace the cause of the problem and correct it. Only then can preventative measures be undertaken.

40 Houseflies are significant vectors of disease. They can transmit intestinal worms, dysentery, gastro-enteritis, typhoid, cholera and tuberculosis. The larvae are capable of developing intestinally if ingested. They can contaminate foodstuffs, though this would usually occur only where there are poor hygiene standards. As they will feed indiscriminately on faecal matter and human food, their status as a vector is well noted.

41 There are no objective levels at which a statutory nuisance exists or may be caused. In general, in domestic premises, it is likely that the threshold will be very low and control actions might be taken in cases of few house flies. As a guideline, an occupier will normally experience some irritation if there are five or more 'flying' house flies present in any one room at any one time on three successive days. If house flies are monitored with baited traps, sticky ribbons, or spot cards a collection of more than 25 in any 48-hour period may indicate grounds for distress.

42 The complaint threshold density of houseflies at waste management sites may be 150 individuals per flypaper per 30 minutes.

43 However, as stated earlier, there are no objective levels for statutory nuisance. It does not, therefore, necessarily follow that fewer than five house flies in a room in a house, or 150 house flies per flypaper per 30 minutes at waste management sites, do not constitute a statutory nuisance, or that five or 150 necessarily do. Just as noise nuisance is not a matter of decibel levels, insect

nuisance is not a matter of numbers of insects. Impact may also depend on, e.g., size of room, number of people / premises affected etc. House flies do not damage property.

44 Both house flies (*Musca domestica*) and lesser house flies (*Fannia canicularis*) occur throughout the UK. Both houseflies and lesser houseflies are common in homes, barns, stables, and poultry houses in spring, summer and autumn.

45 Lesser house fly larvae typically consume decaying organic matter and excrement, but have been known to develop in the intestinal tract of man and animals. In some areas, lesser house fly larvae are the predominant maggots found in chicken manure.

46 Adults may live as long as two months. Populations flourish during cool seasons, particularly spring, early summer, and late autumn. Peak numbers usually occur by July, after which dry, hot weather and parasitism causes populations to subside until autumn.

47 **Prevention**: Physical prevention is preferred to pesticide usage. It may be preferable to control / reduce harbourage and breeding material than to treat an infestation once it is established. Currently in the UK natural predation of house flies in poultry houses is based on indigenous species, such as the Carcinops beetle (though it may not be sufficient alone). Larvicides are also generally used, although adulticides should be the last line of defence. Elsewhere in Europe and America, poultry farmers are using specially bred parasitic wasps and predator flies as a control method.

48 Premises need to adopt an integrated approach to house fly control which includes building design, effective management and systematic monitoring of house fly populations.

49 For example, integrated fly control programmes for poultry houses tend to be based on (i) selective application of insecticides against the adult; (ii) early introduction of insecticide control measures in early spring before house flies appear, repeated as needed throughout the warm months,

and (iii) leaving manure undisturbed throughout the warm months when house fly breeding may occur, removing it just once in early spring before house flies appear. Engaging the farmer in discussion about management practices that could be adopted may support satisfactory outcomes. There may, for example, be times when manure may be removed in the autumn for land spreading, or twice a year.

50 Ordinarily, house fly control from 1 to 2 km around sensitive sites will prevent ingress into a sensitive area (containing dwellings, for example). In cases where no local breeding area can be identified, adult house flies may be flying long distances (i.e. several miles) from infestation sources of, for example, refuse tips or animal houses. Good sanitation, and elimination of breeding areas, are necessary for good management. Chemical treatment is the last line of defence.

51 Spot cards can be used as a diagnostic tool. These are 3-inch by 5-inch white index cards which are attached to a house-fly resting surface. A minimum of five cards should be placed in a suspect animal facility and left in place for seven days. As a guide, a count of 100 or more faecal or vomit spots per card per week may be taken to indicate a high level of house fly activity and a need for control (although this is not to say that a count of, say, 99 would not indicate a high level of house fly activity and a need for control).

52 Physical prevention methods:

- Food and materials on which the house flies can lay their eggs should be removed, destroyed as a breeding medium, or isolated from the egg-laying adult house fly.
- Wet manure should be removed at least twice weekly if necessary to break the breeding cycle.
- Wet straw should not pile up in or near buildings and, as one of the best fly breeding materials, is not recommended as bedding.

- Spilled feed should not be allowed to accumulate, and should be cleaned up at least twice a week.
- Windows and doors can be proofed with fly screens of approximately 1.5 mm mesh.
- Fly traps may be useful in some house fly control programmes if enough traps are used, placed correctly, and used both indoors and outdoors. House flies are attracted to white surfaces and baits that give off odours. Lesser house flies are shyer of traps.
- Dustbins, wheelie-bins, paladins and skips should have tight-fitting lids and be cleaned regularly. Dry and wet rubbish should be placed in plastic rubbish bags and sealed up. All waste receptacles should be located as far from building entrances as possible.
- For control at waste disposal sites, refuse should be deposited onto the same area as inorganic wastes to reduce the capacity of breeding resources, or covered with soil or other inorganic wastes of around 15 cm consistent thickness.

53 Electronic fly killers which can attract insects to an electrified grid by using an ultra-violet light source are not generally effective against houseflies. House flies are not particularly attracted to them and, although they may kill the occasional one, they cannot cope with large numbers. If they are used, one trap should be placed for every 30 feet of wall inside buildings, but not placed over or within five feet of food preparation areas. Recommended placement areas outdoors include near building entrances, in alleyways, beneath trees, and around animal sleeping areas and manure piles.

54 **Eradication – chemical:** Chemical treatment should be considered as a last resort, as it may only be treating the insects in the vicinity at the time of treatment and not the source, although most pesticides do have a residual effect and may work on particular species throughout their lifecycle. Given the considerable link to water at sewage treatment works for example, management of insects may be more beneficial than treatment, by reducing the need for pesticide usage.

The use of pesticides near water bodies is one of the most risky and heavily controlled areas of pesticide use, and the potential for pesticide use on linear water bodies that drain into rivers and streams must be minimised. Removal of breeding material and habitats can keep insects under control or at bay.

- For adult control, conventional knock-down or residual treatments will kill the majority of adult flies in spite of the development of high resistance levels in a number of housefly populations.
- Residual insecticides applied to the house flies' favoured resting areas will control landing flies in some situations, although they should not generally be applied to breeding areas, as insecticide breakdown can be rapid and resistance may be encouraged.
- In poultry houses, the use of mists, fogs or baits may be necessary for house fly control. Treatment in poultry stations should be carried out by a qualified pest controller. Insecticides to control maggots should not be applied to manure, which should be kept dry and removed only during the winter.
- When flies are a major pest in commercial egg production facilities, they can be controlled by applying adulticides, or larvicides, to suppress adult densities directly or indirectly. Residual wall sprays can be applied where the flies congregate. Resistance can develop more rapidly in house fly populations on farms on a continuous insecticide regime using a single chemical than on farms in which insecticides are alternated. Residual insecticides may be applied to favoured resting areas for house flies. Breeding areas should be avoided as spray targets as, where the insecticide breaks down in an area where eggs are developing, it may encourage increased resistance in the house fly population.
- Outdoors, house fly control can include the use of chemical treatments in the bottom of skips, and treatment of vertical walls adjacent to skips and other breeding sites, with microencapsulated or wettable powder formulation, and the use of fly baits near adult feeding sources. In areas like rubbish tips treatment should always be carried out by a pest control specialist.

- Indoors, house fly control can include automatic misters, fly paper, electrocuting and baited traps that can be used in milking parlours and other areas of low fly numbers.

Example of insect nuisance – fruit flies (Drosophila spp)

55 Fruit flies compromise several species of the genus Drosophila (family Drosophilidae). They are increasingly associated with commercial composting activities and vegetable producers, wholesalers, and packers who store waste and / or reject produce in the open, as they are attracted to ripened or fermenting fruit and vegetables. Dwellings that report high infestations are increasingly found near these commercial undertakings. Fruit flies can be a problem year-round in domestic kitchens. They can contaminate foodstuffs, but usually only where there are poor hygiene standards or exposed, ripe fruit. They do not carry disease or cause structural damage to buildings. The sheer numbers that congregate can create a nuisance. As a guideline, an occupier will normally experience some distress if there are 50 or more 'flying' fruit flies present in any one room at any one time on three successive days.

56 Detecting domestic breeding areas for fruit flies involves finding the source(s) of attraction and breeding, which can require much thought and persistence. Potential breeding sites which are inaccessible (e.g., waste-disposals and drains) can be inspected by taping a clear plastic food storage bag over the opening overnight. If flies are breeding in these areas, the adults will emerge and be caught in the bag.

57 **Prevention:** The best way to prevent problems with fruit flies is to eliminate sources of attraction. Produce which has ripened should be covered rather than discarded in the open. A single rotting potato or onion can breed thousands of fruit flies, as can a waste or recycling bin which is not emptied or cleaned.

58 Where regular spillages of fruit juice or pulp inside buildings attract fruit flies, windows and doors should be equipped with tight-fitting (16 mesh) screens to help prevent adult fruit flies from entering from outdoors.

All spillages and accumulations of fruit and vegetable juice and pulp should still be cleaned up regularly and thoroughly.

59 **Eradication:** Once a structure is infested with fruit flies, all potential breeding areas must be located and eliminated. Unless the breeding sites are removed or cleaned, the problem will continue no matter how often insecticides are applied to control the adults. Once the source is eliminated the flies will try to find new potential breeding substrates, usually out of doors. Only if the source has been eliminated and flies given time to disperse should an aerosol insecticide be used to kill remaining flies.

Example of insect nuisance – cockroaches (*Periplaneta Americana* (Linnaeus), *Blattella germanica* (Linnaeus), *Blatta orientalis* (Linnaeus))

60 Cockroaches pose a public health risk. Cockroaches can also cause allergic reactions in susceptible individuals, e.g., asthmatics, house dust mite allergen sufferers, and individuals exposed to infestations for long periods of time. Perhaps the most important effect that cockroaches have on humans is allergies. Their presence may cause an occupier distress. They can contaminate a range of stored food products.

61 There are three main pest species: the American (*Periplaneta americana*), German (*Blattella germanica*) and Oriental (*Blatta orientalis*) Cockroaches. The German and Oriental species are common in the UK. Cockroaches are highly adaptable and extremely mobile, moving into new buildings via sewer pipes, ducts etc. The Oriental cockroach is the most common and largest of the two. It can climb rough surfaces such as brickwork and will congregate around water sources. The German cockroach is smaller, but is able to climb vertical smooth surfaces. They do not cause structural damage.

62 One way to confirm an infestation is by using a stick trap. These can be purchased from a pest control contractor.

63 **Prevention:** Good standards of hygiene alone cannot prevent a cockroach invasion or combat an existing infestation, but are a necessary component of any control strategy. Since most buildings cannot be instantly cooled or heated to the temperatures required to kill cockroaches (7°C or 46°C), and vacuuming them up may not appeal, the use of insecticidal bait gels, fumigants and sprays are at present the most common method employed to control cockroaches.

64 Prevention involves proofing. Cockroaches are nocturnal and they prefer warm dark spaces. Any cracks in walls, floors and ceilings or inaccessible void between and behind equipment should be eliminated.

65 **Eradication:** It is a legal requirement that any signs of cockroaches in a food business are controlled. Various insecticides can be used to control cockroaches. These are dangerous chemicals and must be applied only by a competent professional pest control operator.

66 The use of insecticidal bait gels and fumigating sprays is the most common method employed to control cockroaches. Increased public concerns regarding the safety of synthetic pesticides and their effect upon human health and the environment, together with the increasing problem of cockroach resistance to insecticides, have resulted in a demand for effective, environmentally positive methods of control.

Example of insect nuisance – moth flies or sewage filter flies (*Psychoda* spp and *Tinearia alternata* (Say)

67 Sewage filter flies (principally *Psychoda albipennis* Zetterstedt, but also some other species of *Psychoda* and *Tinearia alternata* (Say)) belong to the family Psychodidae, commonly known as moth flies. They like moist, organic or septic systems for egg laying, and are common in the vicinity of sewage works. The larvae are often considered beneficial as an essential part of the cycle that breaks down waste into water-soluble compounds. Because they tend to live in protected places, clouds of flies might be the first sign of infestation.

They do not bite or sting, but can be a nuisance, flying in the eyes, mouth and nostrils of people. Because of their points of origin, they can carry disease,although actual transmission is extremely unlikely. They do not pose a contamination risk to food. There are no objective levels at which sewage filter flies do or may cause a statutory nuisance. As a general guideline, they might cause an occupier distress if 50 or more 'flying' sewage filter flies are present in a room on three successive days, though obviously this indication will vary and depend on such factors as room size etc. Sewage filter flies have a relatively slow breeding cycle with about eight generations a-year. Most infestations take place during the summer months as the adults emerge.

68 Control of sewage filter flies requires locating and eliminating larval breeding sites, which may be difficult and require perseverance. One way to check potential individual breeding sites is to cover the entrance with plastic film taped to the floor or fixture. If sewage filter flies are breeding there, they will accumulate beneath the film within a day or two.

69 One way of eliminating sewage filter flies is to clean the breeding place to remove organic matter. For example, a slow-moving drain can be cleaned with a stiff brush or other tool. Drains that cannot be scrubbed can be rinsed with water under high pressure, sterilised with boiling water, or treated with a bacterial agent to biodegrade the organic matter.

70 Household insecticides can be used to control adult sewage filter flies, but the effects will be very temporary unless the source of the larvae is also removed.

71 It is recommended that operators of sewage treatment works should have systems in place for treating beds with a larvicide where there is a risk of, or a measurable, nuisance, and checking for high concentrations of sewage filter flies. The timing and dosing of the filter beds is critical to effectiveness, and must be carefully managed to prevent the release of chemicals into waterways or an effect on the balance of organisms in the eco-system. In some cases it may be best to limit treatment to knock down or surface treatments.

Insects emanating from filter beds are a source of food for various wild bird and bat species, which in turn as act as a natural means of pest control. Treatment at filter beds could be so effective that these species lose a useful source of food supply.

Example of insect nuisance – mosquitoes (Culicidae)

72 There are about 30 species of mosquito (family Culicidae) in the UK, occupying aquatic habits such as coastal salt waters, brackish inland waters, stagnant pools and water-filled hollows (including in trees and logs). There are four stages of life, eggs laid on water which hatch within a few hours; larva and pupa that are free swimming in water and must come to the surface to breath; and the winged adult.

73 The British climate is not currently suited to the transmission of tropical diseases, and low fevers which can be caused by mosquitoes in Southern and Central Europe have not been detected here. Malaria is the only human infection known to have been transmitted in this country by two species of mosquitoes of the genus *Anopheles* but it is *extremely* unlikely.

74 British mosquitoes can have a nuisance value. Their bites can cause severe skin eruption and localised pain, and severe infestations can cause much distress which is a valid reason for mosquito control. There are no objective levels at which a statutory nuisance may or does exist. As a general guideline, an occupier might feel irritation if five or more 'flying' mosquitoes are present in a room for three successive days. They do not damage property or pose a contamination risk to foodstuffs.

75 **Prevention:** Mosquito control should be aimed at both the larval and adult stages of life cycle, although as mosquitoes do not normally rest in buildings, control of adults can be impractical.

76 Larval control can be achieved through eliminating or changing the characteristics of larval sites, which might need to be achieved piecemeal and over a period of years.

77 Man-made containers of water such as old car tyres, empty pots, open sewers and drains containing putrid and anoxic water should, as far as is practicable, be drained and kept empty. Water can be channelled to increase flow. Cesspools, septic tanks and drains should be sealed. Rainwater butts and tanks should have close-fitting lids. Rivers, watercourses (other than those mentioned above), lakes and ponds are excluded from the nuisance definition and should not be drained.

78 Insecticides, repellents, vapourising mats, mosquito coils and fly screens may offer some personal protection from adult mosquitoes.

79 **Eradication:** Light oil or lecithin can be applied to water to reduce the surface tension and prevent larvae from obtaining oxygen. Such agents spread readily over large areas. The technique should not be used where rivers, watercourses (other than open sewers and drains containing putrid and anoxic water), lakes or ponds may be affected. The Environment Agency should be consulted before use, as should the relevant Statutory Nature Conservation Agency if there is a Special Site of Scientific Interest in the local vicinity. The technique will also affect non-target species of insect living in the waterbody, many of which are the natural predators of the mosquito larvae. The removal of the more long-lived predators of the mosquitoes may result in an increased problem as the mosquitoes would be able to respond quickly to take advantage of the predator-free environment. Agents need to be appropriately approved as biocides.

80 Larvae can be attacked by applying formulations to larval sites which produce a crystal which breaks down into stomach poison.

81 Adult mosquitoes can be eliminated using 'knock-down' agents or residual insecticides.

Environmental impact

82 Insects rarely cause a significant health risk, and health risks where they do or may exist, are often associated with human habitation and waste, so significant damage to the environment should not be necessary. Environmental management should be the first option.

83 Any mitigating treatment should take account of factors including impact on health and well being; impact on the target and non-target species; impact on the environment including ground and water source contamination; cost; and efficacy.

Artificial Lighting

Likely sources of artificial light statutory nuisance.

84 In order to understand what may be termed a statutory nuisance in lighting, an understanding of some lighting terminology is required:

Light (or luminous flux) is a type of radiation and forms part of the electromagnetic spectrum visible to the eye. It is measured in *lumens (lm)* (N.B. *not* 'watts', which is only a measure of electrical consumption).

The amount of light falling on a surface is known as *illuminance* and is measured in *lumens per square metre* or *lux*.

While 'illuminance' is easy to calculate and measure and is therefore widely used, the eye does not see illuminance, but rather the light radiated or reflected *off* a surface which is known as *luminance*, or brightness. It is measured in *candelas per square metre (cd/m^2)* and if the surface is glossy, can differ with the angle of view.

The term *candela (cd)* or (Kcd = 1000 cd) is by itself a measure of light *intensity*. Whether this light 'intensity' is seen as glare or not depends on the surrounding 'luminance', as can be noted when comparing a road lighting luminaire or floodlight lit during the day and again at night.

85 Local authorities have a duty to take reasonable steps, where practicable, to investigate any complaints of artificial light nuisance; it is expected that the following sources will generate most complaints:

- Domestic security lights
- Commercial security lights
- Healthy living and sports facilities (see below)
- Domestic decorative lighting
- Exterior lighting of buildings and decorative lighting of landscapes
- Laser shows / sky beams / light art

86 Christmas lights may also be the subject of complaint, and could be covered by statutory light nuisance, although this seems unlikely given their duration.

87 We anticipate that much artificial light nuisance will be caused by excessive levels of illuminance and glare, which is inappropriate to its need and which has been poorly designed, directed, operated and maintained. Simple remedies, such as re-aiming or screening, should be sufficient in many cases and, although light nuisance is not a matter of light levels *per se*, light meters are available and affordable for taking measurements in order to quantify the scale of the possible nuisance.

88 Efficient and high-quality lighting installations that help people to see where they are going and bring security to both themselves and their property can be designed so as to produce minimal impact on the environment. The management and maintenance of such lighting that limits both glare and dark shadows is also essential for people with a visual impairment.

89 We also anticipate a number of complaints on streetlights. However, these are not likely to qualify as artificial light statutory nuisance as they are unlikely to be located on 'premises'. They can, nevertheless, cause adverse affects and are discussed in more detail under 'Streetlights' below.

Statutory nuisance from artificial light and light pollution

90 Artificial light *nuisance* may be, but is not necessarily, the same as light *pollution*. Artificial light *nuisance* is a source of light that in the opinion of a trained public health professional, who makes an assessment on a case by case basis, interferes with someone's use of their property, and / or is or might be prejudicial to someone's health. Light *pollution* could be defined as any form of artificial light which shines outside the area it needs to illuminate, including light that is directed above the horizontal into the night sky creating sky glow (which impedes our views of the stars), or which creates a danger by glare. Although light pollution might affect the aesthetic beauty of the night sky and interfere with astronomy, it is not necessarily also a statutory nuisance. The statutory nuisance regime is not an appropriate tool with which to address light pollution *per se*.

Domestic security lights

91 Those aggrieved by a neighbour's lighting should be encouraged to speak to their neighbour first where possible, perhaps with the aid of a mediation service. Mediation UK (www.mediationuk.org.uk) may be able to advise.

92 Inappropriate lighting can cause glare and dark shadows which may adversely affect drivers, cyclists and other road users, including pedestrians, and people with a visual impairment. Bad lighting can also produce shadows for those with criminal intent to hide in or behind. Many cases of artificial light nuisance can be solved through simple engineering techniques and consideration of function and effect. For example:

- The minimum level of illumination necessary to light a property should be used. Relatively high-powered lights are rarely necessary in domestic situations and, besides wasting energy and money, can cause glare, which can adversely affect road users or other passers-by. Excessive levels of illumination provide dark shadows for people, including those with criminal intent, to hide in or behind. Lighting that is shielded or angled down can actually improve rather than compromise security. There are agreed Standards for lighting levels, some of which are listed at the end of this document.
- Special optics or 'double asymmetric' luminaires – which are designed to ensure full flow of light over the lit area from each floodlight – can be aimed facing downwards while still spreading light over a wide distance (the lamp is usually fitted close to the back edge of the unit, not in the middle). The reflector becomes less visible to onlookers resulting in low glare to the surrounding locality.
- A separate switching detector can be used on some models to sense the movement of intruders on the property. Luminaires and detectors should be aimed to detect and light people on the property, not people or animals walking down the street. If lights detect everything that moves, they will switch on and off repeatedly and could be a source of statutory nuisance.

- Timers adjusted to the minimum can reduce the operation of the light.
- Bulkhead or porch lights are cheaper than security lights, use less energy, and have reduced glare so there are fewer shadows for those with criminal intent to hide in. Movement detectors on these lights are generally mounted lower and so are less susceptible to nuisance switching on and off. However, they tend, because they are lower, to be aimed more horizontally, capture movement over a wider range, and if not located with care can be interfered with.
- Vegetation may help screen the light at certain times of year provided the movement of vegetation itself does not trigger light, and it does not cause a 'high hedges' problem.

93 It is sometimes suggested that a complaint of artificial light nuisance could easily be mitigated by the use of curtains or blinds, even blackout curtains or blinds, by the complainant. It is for the Environmental Health Practitioner to exercise discretion over what is reasonable and what is not. It might be reasonable to expect a complainant to use curtains or blinds of everyday standard if they are bothered by unwanted light in their home. It might not be reasonable to require a complainant to purchase and install blackout hangings which might be expensive, and/or impair that person's enjoyment of his property. Few would wish to have their curtains drawn on a hot summers night. It is not reasonable to leave the solution and cost of abatement to the complainant rather than the perpetrator.

94 Technical parameters on obtrusive lighting, formulated by the International Commission on Illumination (CIE) and Institution of Lighting Engineers (ILE) from research into individual sensitivity to light, may be helpful in considering the level of sensitivity that might be considered that of the 'average person' without unusual sensitivities. These parameters vary depending on whether the installation is in town or country (there are four suggested environmental zones), and there is a suggested curfew time of 23.00 after which lighting levels should

be further restricted. However, there are no objective levels at which artificial light does or does not constitute a statutory nuisance.

95 It is sensible for abatement notices to be 'simple', requiring abatement and non-recurrence within a specified timescale. If the abatement notice is too detailed, it could be that the terms of the abatement notice may be fulfilled whilst the nuisance remains unabated.

96 A list of useful sources of further information and useful practical advice on the positioning of external lighting is listed at the end of this guidance.

Commercial security lights

97 Lighting used on commercial premises will be subject to the same controls as apply to domestic premises, i.e. it will be for the local authority to decide whether the lighting amounts to a statutory nuisance.

98 Commercial premises are more likely than domestic premises to use lighting which makes a material change to the external façade of the building. It may therefore be subject to planning permission. Planning Policy Statement 23 provides guidance for such applications, and can also be used when considering lighting schemes for new buildings. Planning policy falls within the remit of the Office of the Deputy Prime Minister.

100 Premises or apparatus used for the provision of electronic communication services need adequate lighting for operation and security purposes, to ensure the safety of their staff, and to protect the integrity of the telecommunications network. Statutory nuisance law recognises the need for industry to be able to carry out its usual functions without being compromised by inadequate security lighting. That need is protected by the defence of 'best practicable means'.

Exterior lighting of buildings and landscapes

101 Exterior lighting to enhance the appearance of buildings, monuments, trees and other civic features increasingly impacts on the street scene. Such installations can enhance and add interest to the surrounding environment

provided they are properly designed. Such lighting systems should not be used also to provide e.g. street lighting and should generally be switched off overnight, following an agreed curfew time.

Laser shows, sky beams, light art

102 In order to constitute an existing or potential statutory nuisance, laser shows, sky beams and light art would have materially to affect someone's use of his home and / or actually or potentially his health, assuming normal sensibilities. Local authorities already have the means to deal with nuisance lighting and are accountable to those within their areas. Local authorities should do their best to ensure that lighting under their control does not cause problems to the local community. Local authorities should also take into account whether laser shows / beams etc are a sustainable or wasteful use of energy. The Government expects local authorities to take reasonable steps to investigate and, where appropriate, resolve problems as a matter of good practice and consideration for the local environment and the community to which they are accountable.

Streetlights

103 Streetlights are not specifically exempt, but because of their location are unlikely to qualify, as generally speaking they are not found on 'premises'. It is, however, acknowledged that streetlights can have adverse affects on the local community.

104 Local authorities have a duty under section 17 of the Crime and Disorder Act 1998 to exercise their functions with due regard to the likely effect on crime and disorder in their areas, and to do what they reasonably can to prevent crime and disorder. Local authorities already have the means to deal with nuisance street lighting and are accountable to those within their areas. Local authorities should do their best to ensure that streetlights under their control do not cause problems to the local community. The Government expects local authorities to take reasonable steps to investigate and, where appropriate, resolve problems from streetlights as a matter of good practice and consideration for the local environment and the community to which they are accountable.

105 The Government supports good design, installation and maintenance practice to minimise problems where possible.

106 New technologies now allow much finer control of light distribution and reduced light directed towards the sky. Beneficial lighting can be achieved that is fit for purpose, provided roads are appropriately rather than over classified, and which minimises the impact on the environment through using modern light sources in combination with luminaires designed to appropriate, not unnecessarily high, lighting levels. The simply use of front and / or back shields can improve illumination on the road whilst reducing intrusion elsewhere. £300 million in Private Finance Initiative credits were made available to local authorities outside London in 2003/04 to help modernise street lighting. A further £85 million in Private Finance Initiative credits is being made available for local authorities in London for this purpose in addition to the support available through the Revenue Support Grant.

107 Guidance has been published by the Department for Transport and also the Institution of Lighting Engineers to help reduce light pollution and sky glow generally, and to promote good practice for street lighting maintenance. As most street lighting is alight throughout the night, the obtrusive light levels to be adhered to should be those given for all night, i.e. after curfew. In addition, the Government's 'Lighting in the Countryside: Towards good practice' includes street lighting, and is applicable to towns as well as country. The Government will continue to work with the appropriate organisations to promote good practice in design, installation and maintenance to minimise problems where possible.

Licensed premises

108 Guidance issued by the Department for Culture, Media and Sport under section 182 of the Licensing Act 2003 advises that licensing authorities and responsible authorities should consider the impacts of licensed premises on those living in the vicinity, mainly concerning noise nuisance, light pollution, noxious smells and litter. The Guidance advises that lighting outside premises should be installed in a way that balances the need to prevent crime and disorder while having consideration for those living in the vicinity. Many licensed premises use decorative floodlighting to draw attention to their premises. Where possible premises should use carefully installed downlighting rather that uplighting, which can be both glaring and wasteful of light into the sky.

109 Licensed premises and licensing authorities will also want to consider any lighting schemes with regard to potential action under the statutory nuisance regime. As business premises, licensed premises will have the defence of best practicable means.

Lighting in the Countryside

110 The 1998 Transport White Paper *A New Deal for Transport – Better for Everyone* stated that 'where lighting is essential, it should be designed in such a way that nuisance is reduced and the effect on the night sky in the countryside minimised'. Exterior lighting in rural areas can have a particular impact.

111 Lighting in the Countryside: Towards Good Practice is accessible free of charge at www.odpm.gov.uk/planning// litc/index.htm (under Planning Advice and Guidance). This document continues to be a valuable guide for local authorities, highways planners and engineers, and members of the public. It demonstrates what can be done to lessen the adverse effects of external lighting, including street lighting. The advice is applicable in towns as well as the countryside.

The relationship between planning and statutory nuisance

112 It is clearly preferable, and a demonstration of good practice, to prevent a statutory nuisance from occurring in the first place. One approach is to identify it at the planning stage.

113 Well-designed public lighting increases the opportunity for surveillance at night and sends out positive messages about the management of an area, and can help to reduce crime and disorder. Detailed guidance on types of lighting is available at www.securedbydesign.com. Further advice on the planning system and crime prevention can be obtained from the publication '*Safer Places: The planning system and crime prevention*', by the Office of the Deputy Prime Minister (responsible for planning) and the Home Office (crime and disorder).

114 Lighting installation proposals should be submitted to local authorities to assist them in determining planning permissions. Local authorities should carry out professional reviews of developments involving exterior lighting to minimise their impact by day and night. Planning permission for such developments should include requirements to ensure that the installation is maintained in a satisfactory manner; and that all screens, shields, baffles and aiming requirements etc imposed are maintained throughout the life of the installation.

115 The existence of a planning permission does not, however, mean that a statutory nuisance cannot exist. Statutory nuisance can exist whether a particular site has planning permission for the artificial light or not. Circumstances and local environments change, so, for example, artificial light that was not a nuisance before may become one.

Exemptions

116 Whilst the Government recognises that some premises are of strategic importance owing to their nature and importance to the community, and exterior lighting may be necessary to prevent crime, disorder and safety hazard, it is expected that exempted premises will take seriously their social responsibility to use artificial light responsibly and with consideration to

local circumstances. Exempted premises are expected to maintain lighting systems that do not unduly affect the environment and neighbourhood. Lighting systems should be adequate for purpose, and not in excess of that requirement, so that impact is minimal whilst remaining compatible with the use and function of the facilities. Inappropriately designed installations may cause unnecessary distraction for drivers on adjacent highways and compromise safety for road users, pedestrians, and people with a visual impairment. The Government will consider further guidance on good practice use of artificial light if necessary.

117 Local authorities may still need to undertake an initial investigation of complaints made about artificial light from exempted premises in order to establish first whether or not that premises really is the source. Even though enforcement action for artificial light statutory nuisance from exempted premises cannot be taken under section 102, efforts should still be made to negotiate an acceptable solution on an informal basis. The exemptions are to protect the public interest and health and safety, not to condone the irresponsible, inconsiderate or unnecessary use of artificial light.

Best Practicable Means

118 The defence of having used 'best practicable means' to abate a nuisance is available as a ground of appeal against an abatement notice, and as a defence against prosecution for breaching or failing to comply with an abatement notice, for both these new statutory nuisances where they emanate from industrial, trade or business premises, and also, in the case of artificial lighting, from outdoor illuminated sports facilities (see below). It is for the courts to decide whether best practicable means are being used by the premises in question. Section 79(9) of the Environmental Protection Act 1990 requires that best practicable means is interpreted with reference to the following provisions:

(a) 'practicable' means reasonably practicable having regard among other things to local conditions and

circumstances, to the current state of technical knowledge and to the financial implications;

(b) the means to be employed include the design, installation, maintenance and manner and periods of operation of plant and machinery, and the design, construction and maintenance of buildings and structures;

(c) the test is to apply only so far as compatible with any duty imposed by law;

(d) the test is to apply only so far as compatible with safety and safe working conditions, and with the exigencies of any emergency or unforeseeable circumstances'.

Healthy living and sports facilities

119 It is Government policy to increase participation in sport and provide better healthy living and sporting opportunities at every level. In order to help achieve this aim the Government has invested heavily in new and improved sports facilities, including the floodlighting of playing fields and other facilities.

120 Given the limited hours of daylight in Britain in the winter, floodlighting is essential if communities are to make maximum use of many sports grounds, and the Government will continue to promote their use. All new floodlighting schemes are subject to appraisal under the planning system, which aims to balance the interests of those who may object to new sources of bright light against the interest of those who will benefit from the lighting in terms of greater opportunity to participate in sport. Full details of the equipment to be used and estimated lighting levels, not only on the field of play, but also that trespassing onto surrounding properties, should all be submitted to the local authority to assist with planning permissions. Where planning permission is granted, it is usually accompanied by strict technical specifications designed to ensure that nuisance from the lighting is minimised.

121 Against this background, Defra would not normally expect local authorities to have to resort to a statutory nuisance abatement order to address complaints about light from illuminated outdoor sports facilities.

122 Any modern facility which is operating in accordance with approved standards will be able to rely on the statutory defence of 'best practicable means' (BPM). Most such facilities are likely to be regarded as businesses, and so benefit from this defence in any event under sections 80(8) and 82(10) of the Environmental Protection Act 1990, but to ensure that all are covered by this defence, section 80(8)(aza)(ii), (8A), (8B) and (8C) of the Environmental Protection Act 1990 (inserted by section 103(2)(b) and (3) of the Clean Neighbourhoods and Environment Act 2005) specifically extends the BPM defence to all outdoor relevant sports facilities.

123 There may be occasions when badly sited or defective floodlighting causes unnecessary hardship to individuals. In such cases a local authority may consider making use of statutory nuisance legislation. However, before concluding that it is satisfied that a statutory nuisance exists a local authority should make every effort to resolve the problem through discussion with those responsible for the lighting. For example, older floodlighting towers can be affected by wind which can change slightly the direction of the floodlights; such situations can be resolved by altering the fixings and repositioning the lights in their original position. Zero upward light can be achieved by using double asymmetric full horizontal cut-off luminaires. Additional shielding, suitably painted black, can provide further mitigation if required. An abatement notice should only be issued as a measure of last resort.

124 'Relevant sports facility' is defined in the new subsections 80 (8A), (8B) and (8C) of the Environmental Protection Act 1990. It is a facility used when participating in a relevant sport, and includes the playing area and related structures. However, sports facilities that are located in domestic premises, including land attached to such premises, are excluded. 'Relevant sports' will be listed in an Order. The following are designated as relevant sports (see section 16 above on the Statutory Nuisances (Artificial Lighting) (Designation of Relevant Sports) (England) Order 2006):

American Football, Archery, Association Football, Athletics, Australian Rules Football, Badminton, Basketball, Baseball, Biathlon, Bobsleigh, Bowls, Camogie, Cricket, Croquet, Curling, Cycling, Equestrian Sports, Gaelic Football, Golf, Gymnastics, Handball, Hockey, Horse Racing, Hurling, Ice Hockey, Ice Skating, Lacrosse, Lawn Tennis, Luge, Modern Pentathlon, Motor Cycling, Motor Sports, Netball, Polo, Roller Sports, Rounders, Rowing, Rugby League, Rugby Union, Shooting, Skateboarding, Skiing, Softball, Swimming and Diving, Trialthon, Tug of War, Volleyball.

Other relevant legislation/documents

Insects

Wildlife and Countryside Act 1981

Light

Useful Web Sites:

- Institution of Lighting Engineers – www.ile.org.uk
- International Commission on Illumination (CIE) – www.cie.co.at
- Lighting Industry Federation – www.lif.co.uk
- Society of Light and Lighting – www.cibse.org.

UK Guidance

- *BS 5489-1: 2003 Code of Practice for the Design of Road Lighting – Part 1: Lighting of Roads and Public Amenity Areas*
- *BS EN 12193:1999 Light and Lighting – Sports Lighting*
- *International Commission on Illumination – CIE – Standard S 015/E:2005 – Lighting of Outdoor Work Places* (will be the first standard to give the CIE 150 and ILE obtrusive light values in a special section on limiting obtrusive light and will become a British / European Standard in the near future)
- *Domestic Security Lighting, Friend or Foe* – Institution of Lighting Engineers (2001)
- *Environmental Considerations for Exterior Lighting* – Chartered Institution of Building Services Engineers (2003)
- *Guidance Notes for the Reduction of Obtrusive Light* – Institution of Lighting Engineers (2005)
- *Light Pollution* – Supplementary Planning Guidance – South Northamptonshire Council (1998)
- *Lighting in the Countryside – Towards Good Practice* – Department of Environment, Food and Rural Affairs, and Country Commission (1997)

- *Lighten our Darkness* – Royal Fine Arts Commission (1994)
- *Lighting the Environment* – A Guide to Good Urban Lighting – Chartered Institution of Building Services Engineers and Institution of Lighting Engineers (1995)
- *Low Energy Domestic Lighting* – Energy Saving Trust (2002)
- *Night Blight!* – Campaign to Protect Rural England (2003)
- *Road Lighting and the Environment* – Department of Transport (1993)
- *Starry, Starry Night* – British Astronomical Association, and Campaign for the Protection of Rural England (2000)

EU Guidance / Standards

- *BS EN 13201: 2003, Road Lighting, Part 2: Performance Standards* (EU document with a range of classified lighting levels for different roadway, pathway and conflict areas linked to traffic volumes)
- *PrEN 12464-2, Lighting of Work Places – Part 2: Outdoor Work Places* (EU document (out for voting January 2006) which will lay down lighting requirements – levels and uniformities – for various outdoor workplaces)

International Guidance

- *CIE Standard S 015/E:2005 – Lighting of Outdoor Work Places* – see above
- *Pub. No. 126: 1997 Guidelines for Minimising Sky Glow* – International Commission on Illumination
- *Pub. No. 150: 2003 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations* – International Commission on Illumination

Annex 1

Schemes

Scheme	Legislation
Environmental Stewardship Scheme	The Environmental Stewardship (England) Regulations 2005 (S.I. 2005/621)
Entry Level Pilot Scheme	The Entry Level Agri-Environment Scheme (Pilot) (England) Regulations 2003 (S.I. 2003/838)
Countryside Stewardship Scheme	The Countryside Stewardship Regulations 2000 (S.I. 2000/3048)
The Environmentally Sensitive Areas Scheme	The Environmentally Sensitive Areas (Stage I) Designation Order 2000 (S.I.2000/3049)
	The Environmentally Sensitive Areas (Stage II) Designation Order 2000 (S.I.2000/3050)
	The Environmentally Sensitive Areas (Stage III) Designation Order 2000 (S.I.2000/3051)
	The Environmentally Sensitive Areas (Stage IV) Designation Order 2000 (S.I. 2000/3052)
Farm Woodland Premium Scheme	Farm Woodland Scheme 1988 (S.I. 1988/1291)
	Farm Woodland Premium Scheme 1992 (S.I. 1992/905)
	Farm Woodland Premium Scheme 1997 (S.I. 1997/829)

Organic Farming Scheme	Organic Farming (Aid) Scheme 1994 (S.I. 1994/1721)
	Organic Farming Regulations 1999 (S.I.1999/590)
	Organic Farming (ERDP) Regulations 2001 (S.I. 2001/432)
	Organic Farming (ERDP) Regulations 2003 (S.I. 2003/1235)
Nitrate Sensitive Areas Scheme	The Farm Waste Grant (Nitrate Vulnerable Zones) (England and Wales) Scheme 1996 (S.I. 1996/908)
	The Farm Waste Grant (Nitrate Vulnerable Zones) (England and Wales) Scheme 2000 (S.I. 2000/2890)
	The Farm Waste Grant (Nitrate Vulnerable Zones) (England and Wales) Scheme 2000 (S.I. 2000/2911)
	The Farm Waste Grant (Nitrate Vulnerable Zones) (England and Wales) Scheme 2003 (S.I. 2003/562)
Habitat Scheme	Conservation (Natural Habitats, & c) Regulations 1994 (S.I. 1994/2716)
	Habitat (Water Fringe) Regulations 1994 (S.I. 1994/1291)
	Habitat (Salt-Marsh) Regulations 1994 (S.I. 1994/1293

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