ThWART Appendix 7B

“West Wight. Re: Bat Habitat Assessment”

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West Wight. Re: Bat Habitat Assessment West Wight

There are inconsistences in this report. The diagrammatic drawings Figures 1.1 - 1.6 show *foraging zone*, *potential feeding zone* (no explanation as to what the differences are) and *commuting flight zone* (how was this determined). Only one drawing (Figure 1.6) shows *commuting flight zone* and the same with *potential feeding zone* drawing (Figure 1.1). All drawings ought to show all zones. Some of the measurements are questionable, ie common pipistrelle flight zone, from ground level to 2m above. My experience with these bats the zone would be 2m above ground to tree top height. Similarly, with brown long-eared bats, the diagram gives the impression that they feed only within a 1m belt, whereas, in the real world, they forage from ground level to tree top height and commute close to the ground in open areas, close to fences, trees, hedges, power cables or anything else that will give them protection. Very rarely do they fly in open and exposed places except when migrating which is most noticed in autumn and then can be up to 100m. (They migrate across the north sea and sea located turbines present a serious risk.) All of the other bats mentioned on the diagrammatic drawings will have a foraging range from ground level to a few metres above tree top height. I cannot comment on the grey long-eared bat as I have only seen one animal in the UK or Nathusius' pipistrelle which is migratory and occurs on the Isle of Wight (personal records).

It would have been better if bat and turbine collisions were compared to the European studies rather than the American studies, it would be more in-line with bat movements in the UK. In America, some turbines are switched off during the bat and bird migration periods.

What is interesting in this report is the omission of a diagrammatic drawing showing the Noctule bat mentioned on pages 3, 7, 8, 11, 12 and 19. This bat will suffer more from the erection of wind turbines than any of the other species on the Isle of Wight. On page 8 it indicates noctules feed in open habitats such as large gardens, parks and over pastures or wetlands. It should include also, arable fields because these bats feed, at certain times of the year, in insect 'drifts' and these 'drifts' can be between a few metres above ground level to several metres above. Noctules are known to feed from 0.5m to over 300m high and migrate higher, but usually between **3m and 100m**. I have observed noctules returning in the morning dropping like stones out of the sky which I have interpreted as meaning these have travelled a great distance to feed. Noctules commuting routes are along areas that have a food supply. As with all species, they feed on the way to and from their main feeding areas, sometimes hanging up on a tree or building for an hour or two, then returning to their day roost. If they are feeding and rain approaches, then they take the shortest route back ie., straight line between 15 and 40m above ground level. Also, it is known noctules feed very occasionally during the day, I have seen them feeding with swallows and swifts over a sewage works settling ponds.

On page 8 there is an indication that noctules migrate south and west. In late autumn I have seen noctules flying south over the sea along the east coast. There are some records of bats crossing the Channel amongst flocks of birds during the bird migration season, these are likely to include noctules. It would not be un-reasonable for noctules roosting on the mainland to feed on the Isle of Wight or visa-versa. Bats are regularly seen on oil platforms in the north sea indicating a movement of bats across the North Sea. While working at East Cowes last summer, five noctules were seen flying due north over the mouth of the River Medina heading for the mainland. They were flying at approximately 50 - 80m high.

All bats are attracted by rotating objects, a fact known since the Victorian times. If bats are not struck directly by the blades they may be injured or killed by compression created by the vortex behind the blades. It is not known whether turbines affect their feeding areas and if ultrasound created by the turbines have any affect on the bats. If insects such as midges etc., use the leeward side of the turbine tower to swarm behind, will this attract the bats into a new foraging area and what would be the consequences? This and many other questions all need researching before wind turbines are erected.

I have been observing the UK's largest known (208 peak count) noctule bat colony for over twenty five years. This has involved emergence counts, supervising complete re-roofing of the building they use (this site is used by noctules and pipistrelles throughout the year for breeding and hibernating), ringing, radio tracking and recently (2005) radar scanning in conjunction with EN and CSL.

If wind turbines are essential, then the vertical 'pole' turbines should be assessed to determine if these are more suitable for bird/bat survival

In addition, I have enclosed an extract from British Birds, January 2006 and a diagrammatic drawing for Noctules. Most of the bats (80%) referred to in British Birds are noctule bats. There is an article in British Wildlife June 2006 "Are British bats at risk from windfarms".

Maurice Webber
21 July 2006

Letters

Birds and windfarms: what are the real issues?

I refer to Steve Percival's article on this subject (Percival 2005). By the end of 2004, 16,534 wind turbines were installed in Germany, which provides enormous scope for research on the potential impacts to bird populations. Most of this research has been carried out for environmental impact assessments (EIAs), and is relatively short-term (from a few weeks to one or at most two years). A variety of conclusions have been drawn from the many different studies, the results being partly determined by different situations (geography, bird species involved, habitats, time of year, etc.). Furthermore, most observations have been carried out at comparatively small turbines, 50–70 m high, whereas newer turbines are higher than 100 m, and some up to 180 m are now in production. Despite these caveats, I wish to summarise the three main impacts of wind turbines on bird populations in mainland Germany (offshore windfarms have not yet been well studied).

Loss of habitat This affects especially geese (Anserinae) and cranes (Gruidae), large numbers of which (hundreds of thousands) migrate through, stage and overwinter in northern Germany. Windfarms reduce considerably the feeding habitat available in farmland areas, and effectively concentrate birds even more in areas where there are already conflicts between farmers and birds. The area surrounding the turbine from which birds are prevented from feeding varies according to species and individual location, but as a general rule for geese and cranes an area with a radius roughly 8–10 times the height of the turbine is disturbed, where feeding rates are reduced or birds do not feed at all (Kruckenberg & Jaene 1999; BfN 2000; Exo 2001; Borbach-Jaene pers. comm.). One windfarm of 10–20 turbines can thus render up to 5–10 km² of feeding habitat unavailable. Similar impacts were established for Northern Lapwings *Vanellus vanellus* and European Golden Plovers *Pluvialis apricaria* (Brehme 1999; GNOR 2001).

Barrier effect Windfarms force birds such as geese, cranes and waders (Charadriiformes) to fly longer distances between feeding areas and the roost, which has time/energy implications. The migration of other birds, including passerines (larks (Alaudidae), finches (Fringillidae), thrushes (Turdidae), etc.) is affected, for example by disorientation, splitting of flocks, interruption of migration (BfN 2000, GNOR 2001). Most diurnal migrants fly lower than 200 m, thus potentially within reach of turbines (Gatter 2000; Bruderer & Liechti 2004), while extensive research in Switzerland using radar has also revealed that 15–25% of nocturnal migrants fly below 200 m (Bruderer & Liechti 2004).

There are some breeding species where barrier effects within or between territories (e.g. between nest-site and foraging areas) are known or can be expected. One territory of Black Stork *Ciconia nigra* was abandoned after construction of a windfarm nearby (GNOR 2001). Lesser Spotted Eagles *Aquila pomarina* (c. 120 territories in Germany) avoid human structures including roads and settlements in their territories, and it is believed that windfarms are potentially a major threat to this declining species (Langgemach *et al.* 1999; Scheller *et al.* 2001). One of three remaining breeding sites for Great Bustard *Otis tarda* in Germany, which are some 40 km distant from each other but are linked as a form of metapopulation, has recently been isolated from the others by a windfarm (Langgemach *in litt.*).

Casualties The Brandenburg State Bird Conservation Centre collects data on birds and bats (Chiroptera) killed by wind turbines in Germany and published the following numbers (by August 2005, all raptors with more than five individuals mentioned, mostly collision victims): Red Kite *Milvus milvus* 70, Common Buzzard *Buteo buteo* 45, White-tailed Eagle *Haliaeetus albicilla* 15, Common Kestrel *Falco tinnunculus* 12, Black Kite *M. migrans* 6. In addition, 8 White Storks *C. ciconia*, one Black Stork and small numbers of a wide variety of other bird species were killed, and 376 bats were found dead. Habituation within breeding territories may bring the raptors close to the rotating windmills. Low atmospheric pressure on the lee side of the turbine seems to be responsible for at least some bat casualties, while a White Stork (a potentially vulnerable species, because it does not usually avoid artifi-

From British Birds 99 – January 2006 – 45-46

cial structures) was knocked down by turbulence and sustained two broken legs. Given their respective population size, White-tailed Eagle and Red Kite seem to be the worst-affected bird species in Germany. In particular, 35 of the 38 Red Kites for which age was determined were adults, and 30 were killed during the breeding season (March–July). For White-tailed Eagle, six of the 15 were adults, and ten were killed between early March and mid April alone.

It is not known whether wind turbines are just another artificial structure which kills birds, or whether they may have an effect at the population level. However, the selective impact on some raptor species and the effects of reducing feeding habitat for geese, cranes and some waders, as well as their concentration in certain areas, may indicate a more serious impact.

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The Fair Isle sandpiper

In his review of the Fair Isle Sandpiper (*Brit. Birds* 98: 356–364), Martin Garner did not comment on the vocalisation heard by H. G. Alexander and described as 'chirr-rr-rr'. Although apparently heard only once, this is to my mind highly supportive of the bird in question being a Semipalmated Sandpiper *Calidris pusilla*. This is an excellent description of the flight call of Semipalmated and certainly does not resemble a transcription of a Western Sandpiper *C. mauri* call (generally described as 'thin', 'squeaky', etc.). I have heard the calls of both species many times and, to my ears, Semipalmated flight calls always contain '-rr-'s whereas Western's never do. This is borne out by the numerous descriptions of Western calls that can be found in the literature which do not contain the letter 'r'! I routinely identify Western from Semipalmated on call rather than by visual cues as the calls of the two species are so distinctive.

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EDITORIAL COMMENT It seems likely that the distinctions commented on by Terry Walsh are essentially correct, and most of the modern identification literature (including Hayman *et al.*, 1986, *Shorebirds*; Svensson *et al.*, 1999, *The Collins Bird Guide*; Sibley, 2000, *The North American Bird Guide*; and Paulsen, 2005, *Shorebirds of North America*) gives transcriptions of the calls of Semipalmated which include the letter 'r' and of Western which lack the letter 'r'. However, there are some published references to Western Sandpiper vocalisations containing an 'r' sound. For example, *BWP* describes the call of Western Sandpiper thus: 'A high-pitched, shrill "chiet" or "cheet", sometimes repeated; short and penetrating, reminiscent of call of White-rumped Sandpiper *C. fuscicollis*... described also as a trilled "bbeet", given in various contexts including when flushed, but most commonly in flocks throughout non-breeding period... This apparently the variable, loud "cheE-rp cheep" or "chir-eep" of Nichols (Nichols 1920 [*Auk*: 37: 519–40]), who also distinguished a "sirp" or "chir-ir-ip" from flushed birds, resembling calls of Shore Lark *Eremophila alpestris*.' *Eds*

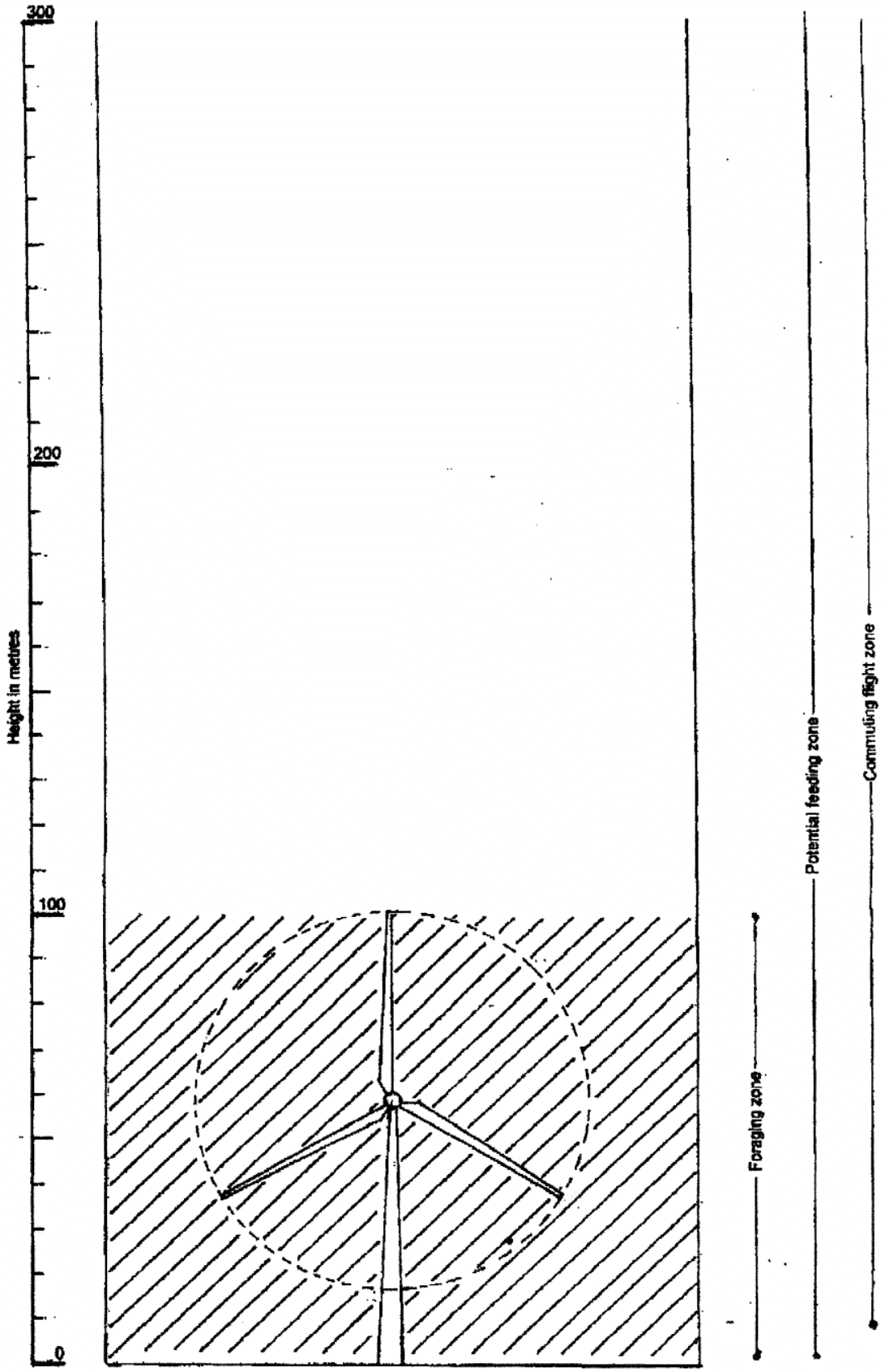

Figure 1.7: Noctule bat typical flight zones