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Sent: 07 January 2013 17:05
To: Heslop, Anna
Cc: Bexs Benmayor; Chris Hewson; jarrett, andy; mccutcheon, brian; smith, catherine
Subject: RE: Medway Core Strategy - report into biodiversity offsetting

Hi Anna

I have, as a courtesy, taken some time to check with both Medway and BTO that they are content for the 'further ornithological advice' to be made available to you. Both are, so I attach it here as a (pair of) pdf files. To help you make sense of the five answers that BTO give in the attachment, I copy also below the 5 questions in my email to them, that was sent following the stakeholder workshop on 9 Nov. I hope this is helpful

Best wishes

Tom

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Hi Chris

Thanks again for coming to Chatham last week and for your characteristically thoughtful and helpful responses in the meeting. As you will know, I intend to improve the offsetting report now so that we can immediately send out a final draft for a further comment by stakeholders; in doing so, I would like to respond to the issues raised on Friday and therefore I urgently seek your advice on the following ornithological questions. I appreciate of course the difficulty of giving definitive answers since we have little empirical evidence for most of these questions, and as usual I seek your expert opinion.

1. Is there any science to inform the question of how long it will be before one 'knows' whether habitat management at receptor sites is 'working'? I suppose this means "is nightingale occupancy the only reliable indicator that the habitat creation/restoration is going to work (or not)?" and thus "when might nightingales start to occupy new sites from?" leading on to.....
2. The issue of temporary lag is key. How long will it be before the new habitat is likely to be available to the nightingales? In the BTO report a number of timescales are given. We were originally considering 'quick fix' woodland mulching and creation by planting, so as to provide a temporary stop-gap, but seem to have reassessed the likelihood of success of these. Could you pull together a summary table that sets out some options and some timescales, perhaps with qualitative opinions such as 'ideal', 'preferred', 'not preferred'? Please also indicate levels of certainty/predictability to the habitat creation/restoration working if possible. I would like readers of the report to understand the range of possibilities and complexities therein.
3. And on the same subject, I heard the view expressed that 'natural regeneration' is likely much better for the birds than 'woodland/scrub planting' - is this correct? what evidence points that way? (it would probably be much cheaper).

4. Now a fundamental question that we have skirted somewhat - do we know whether habitat is a limiting factor for nightingales in Kent? If it is not, then habitat creation schemes are probably not particularly useful for the species. But then again, if it is not, then habitat destruction will not much affect the species (though it clearly will impact site-faithful individuals).

5. I think we heard on Friday a difference of opinion on whether the loss of Lodge Hill and an associated 'unavoidable' temporary loss of nightingale habitat would lead to a permanent loss in the Kent nightingale population. I think NE said it wouldn't and RSPB said it would, and I think you said, in response to RSPB's assertion, that "it is not that simple". Could you expand on that a little - or at least elucidate our knowledge of some of the factors that would lead one to a conclusion one way or another?

I think that's all we can usefully cover in the next few days - would you be able to respond very soon Chris??

As before, Medway understand that all this input requires extra time on our parts and are happy to cover our costs at the rates previously agreed - please in due course record and submit your time and Rob's so that I can bill these costs.

Bexs and I will be working on this report all day Monday so of course feel free to call me with any queries
best wishes

Tom

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1. I think that given the uncertainties around the role of social attraction in particular, Nightingale occupancy is indeed the only reliable indicator of whether the habitat creation will work. Ideally, some estimate of the sustainability of the population, derived probably from consistency of occupancy of territories and pairing success of males, would be useful in assessing whether long term success is likely or whether colonisation was just a 'flash in the pan' or was unlikely to gather momentum. It wouldn't be necessary for the entire target population to be present to have a good idea about this, if the intention was to ultimately have 65 males on site, then fairly rapid progress from initial colonisation to the presence of about 20 males would seem like a good indicator of a high probability of eventual success. If social attraction was tried and habitat had come into apparently suitable condition and there was no sign of colonisation, that might be an indication that it was not going to happen.

How quickly suitable condition was reached happens would depend on the nature of the site and habitat creation methods (see table at bottom of this document). If a site with fairly fertile soil and pre-existing woody habitat features was chosen and methods were employed to successfully speed up habitat development (e.g. rotovation, some planting of willow along ditches if the site was wet enough), we would probably still be looking at 5-10 years before initial colonisation in my opinion.

2. Please see table at end of this document. The precise time that habitat will come into condition for Nightingales will be dependent on the characteristics of the receptor site as well as the methods used to promote habitat development – although note below caveats relating to possible lower prospects for success (certainly beyond the short-term) if natural development was 'short-circuited' through planting.

3. Natural regeneration (combined with subsequent management) is most likely to provide high quality functioning habitat. It would allow the entirety of habitat requirements to develop, including e.g. food resources; it reduces the number of assumptions that need to be made regarding what factors Nightingales may be using as settlements queues; there is some uncertainty over whether the precise optimal habitat structures and fine-scale mosaics could be as satisfactorily produced under habitat creation regimes involving planting. It is quite likely that natural regeneration produces these mosaics at an appropriate scale much more readily.

On the other hand, there's no doubt that Nightingales will occupy planted habitats – e.g. young plantations and places such as Strensham Water Treatment Works. However, such habitats don't usually hold high densities of Nightingales and are probably sub-optimal habitats. It may also be more difficult to keep them 'in condition' as vegetation development is accelerated and the time window in which they would be without intervention may therefore be shorter than in other habitats. A better option for habitat creation with minimum time lag might be to concentrate of sites with existing woody vegetation features such as trees and large hedges etc., possibly supplementing judiciously with planting where appropriate. It may also be possible to speed up the process of scrub development by preparation of the substrate to enhance seed germination (e.g. by rotovation) and the provision of perches for birds to encourage the dispersal of seeds. It may be possible to use a combination of natural regeneration, seeding and planting to establish mosaics but we are not aware of any cases where such attempts have been made to establish young growth vegetation. Willow may give the greatest opportunity for rapid habitat development. The choice of site is important in that it may be possible to rapidly develop mixtures of dense young willow and nettles on damp soils. On damp sites, potential habitat quality might be enhanced by providing flooded ditches and allowing bushes to grow over these forming a tunnel effect; this structure appears to be favoured in the East Anglian fens.

4. Habitat will usually be limiting to some extent unless a) all birds are in optimal territories and/or b) there is a perfect density-dependent factor operating away from the breeding area limiting the number of individuals returning, irrespective of how many left in autumn. Because of Lodge Hill appears to offer high quality habitat (based on the density of birds present) it seems very unlikely to us that the Kent population would not diminish in the event of loss without compensatory habitat being available. At the very least, birds would be forced to settle in areas with lower quality habitat and if that entailed being in an area with fewer other Nightingales, they may also suffer poorer pairing success and consequently the population would suffer even more from lower reproductive output. There is no evidence of extensive unoccupied habitat in Kent; some areas of habitat in Kent have been abandoned recently (e.g. woodland on the Downs) – this could either be due to deterioration of these habitats (e.g. drying out due to chalk geology of these areas) or because the population has contracted into the best areas. In neither case does this suggest that habitat isn't limiting and in the latter case, this appears to emphasise the importance of Lodge Hill.

5. Temporary loss of habitat probably wouldn't lead to a permanent reduction in the breeding population, in our view, provided that a suitable source population persisted in the area and that the compensatory habitat was close to it. One problem, though, is that although it may be holding up better than in other areas, the Kent population of Nightingales is still in decline so it is difficult to predict with certainty whether this condition will be met, given the lag before habitat becomes available. As the Nightingale is a small, short-lived bird it is unlikely that off-setting habitat would lure many of the original birds from Lodge Hill. All existing populations will require constant top-up from recruits anyway – unfortunately, though, it seems likely that Lodge Hill is one source of such recruits for both its own and the populations at other sites. As the species occupies successional habitat it probably has only a moderate degree of fidelity to its natal area and fairly good dispersive ability, both of which would reduce the chances of permanent reduction in the Kent population as it would increase the chances of recruits from other areas being available to occupy the newly-created off-set habitat.

Method of habitat creation	Time taken to begin to come into condition	Habitat quality resulting	Long term management requirement for Nightingale maintenance	Predictability and likelihood of success	Notes (It is assumed that activities such as luring to simulate social attraction would be undertaken with all habitat creation methods so these are not discussed here)
Mulching or re-instating coppicing in broadleaved woodland	c.4 years	Moderate	Cutting every 10 years	High likelihood and predictability	Would be most successful on recent young growth but suitable examples of this habitat should have Nightingales already. Likely to be less successful or take longer on other habitats due to lower density of large stems producing less lush re-growth at first
Re-instating sweet chestnut coppice	c.4 years	Low	Cutting every 10 years	Low success with high predictability	Sweet chestnut coppice is a poor habitat for Nightingales
Planting trees & shrubs	4-8 years? (dependent on amount of planting and size of trees / shrubs used)	Moderate?	Likely to be required sooner than for natural regeneration and more often than for that on poor soils	Moderate likelihood and low-moderate predictability	This method could potentially speed up the growth of habitat into structures suitable for Nightingale but it may not produce the precise structures or habitat mosaics at appropriate scales to create optimal Nightingale conditions
Natural regeneration of scrub on poor soils	15-20+ years	Very high	Little required at first and less frequent than other methods later on	High likelihood and predictability, given optimal site e.g. along river valley	There are many examples of habitats created in this way that have resulted in high densities of Nightingales, particularly when near to water features (reservoirs, gravel pits, rivers etc). Slow rate of vegetation development likely to impede initial colonisation but also allow build-up of Nightingale population without management
Natural regeneration of scrub on fertile soils	c.10-12 years	Moderate-very high	Greater than for poor soils (more frequent)	Moderate-high likelihood and predictability	Faster rate of vegetation development leads to earlier suitability. This could increase even further if habitat with a dense nettle layer was created (eg with fertilizer application), as some habitats with a less dense shrub layer are then occupied by good numbers of Nightingales.
Combination of natural regeneration on fertile soils and planting of trees	6-8 years?	Moderate to very high	Likely to be required soon and often but could be relatively straight forward in linear habitats	Moderate-high likelihood and moderate predictability	It may be possible to rapidly establish a combination of dense nettles and sufficiently dense understorey by planting willow along ditches etc at damp/wet sites to supplement existing habitat & natural regeneration.