



**National
Trust**

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2 April 2019 (by email only)

Environmental Protection
Town Hall
Duke Street
Barrow-In-Furness
Cumbria
LA14 2LD

FAO Geoff Dowker

Dear Mr Dowker,

**Environmental Permit Ref: PPC/B/35
JJC Hire Ltd, Sandscale Park, Park Road, Barrow-in-Furness, Cumbria, LA14 4QT**

The National Trust's attention has been drawn to the above Part B application for an Environmental Permit and it is requested that our comments are taken into account in its assessment and determination.

The National Trust

The National Trust is a charity and Europe's largest conservation organisation with a current membership in excess of 5.2 million people. With the support of our Parliamentary Act we are legally responsible for the protection of some of the most beautiful, historically important and environmentally sensitive places in England, Wales and Northern Ireland. This is made up of nearly 250,000 hectares of land, including 700 miles of coast and 300 historic buildings.

The Trust comments on matters where it is judged that proposals would affect the special significances of the sites the Trust cares for on behalf of the nation or would have a significant impact on the area surrounding them.

One of our most important coastal sites, both nationally and within the North West, is the 'hidden gem' of Sandscale Haws National Nature Reserve (sometimes known locally as Roanhead).

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Sandscale Haws

Sandscale Haws has been described by Natural England as the 'jewel in the crown' of Barrow's world class natural heritage. It is best known locally for its population of natterjack toads, and is one of the few sites in the country where all six native species of amphibian can be found. Furthermore, the site also has a fantastically rich flora resource, with some 600 native British species. It is not only a National Nature Reserve (NNR), but also part of the Duddon Estuary Ramsar site, Special Protection Area (SPA) and Special Area of Conservation (SAC), and also a Site of Special Scientific Interest (SSSI). However, at the same time, being based upon a constantly shifting dune landscape it is also a very fragile habitat that is especially sensitive to change.

Proposed development

We have some of concerns regarding the current proposed biomass boiler:

Waste Hierarchy

In compliance with Section 34 Environment Act, Duty of Care Regulation there is a commitment to apply the waste hierarchy and to seek opportunities to re-use materials before disposal. The burning of untreated waste wood in a biomass boiler prevents it from providing a resource for the future to make other wood products.

It is stated that the boiler will be continuously fed by waste wood (topped up by virgin wood). This thus it inhibits future re-use of these materials. This is at odds with the Governments 25 Year Environment Plan for the sustainable use of resources

Nitrogen deposition

We are particularly concerned about the risk to the coastal sand dunes priority habitat posed by increased local nitrogen deposition. Background information relating to the local impacts of nitrogen deposition has been included as an appendix to this letter.

Research commissioned by the National Trust in 2016 indicates that there has been a marked reduction in the extent of bare sand and mobile sand dunes at Sandscale Haws, in common with almost all other dune sites in North West England and many other parts of North West Europe. The current Management Plan seeks to restore some of the pioneer habitats that have been lost. It is the Trust's view that any increase in nitrogen deposition locally is likely to have a negative impact on the dune vegetation and will further contribute to the loss of rare and vulnerable pioneer habitats.

In this respect, we note that Section 4.2 of the emissions modelling assessment identifies that the PEC is below the critical level for NO_x, however no data is provided on either the actual levels of current emissions or on the levels present in soils/vegetation. Similarly no account is taken in the modelling of periods when the boiler is not in operation for example, when feedstock is not available or there are mechanical issues. Given the high ecological value and sensitivity of the site, we would like to see actual background NO_x levels taken

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and analysed prior to any permit being issued, rather than simply relying on modelled measurements which may not be accurate.

Dust particulate

Notwithstanding the above, the Trust is also concerned about the release of dust and possible incursions of dust particles into the salt marsh and dune ecosystem. The area is an SPA for wading birds and waterfowl which feed on saltmarsh and mudflats adjacent to the site of the proposed development. The release of dust into this very sensitive habitat could therefore adversely affect the integrity of the dune system and wildlife through smothering and ingestion. For this reason the measures highlighted in Section 3.5.1 are considered inadequate in this instance and should be more preventative.

Given that wind directions are predominantly westerly and south westerly, there is a high likelihood that any airborne pollutants would blow directly over Sandscale Haws and exacerbate any issues associated with dust pollution.

Noise disturbance

There is no reference in the submission to the possible noise disturbance caused by the proposal. Again, given the close proximity to such a sensitive natural environment we would like to see appropriate noise attenuation measures put in place to keep any noise disturbance to an absolute minimum. The impact upon visitors to Sandscale Haws should also be considered in this respect.

In addition to the operational noise generated by the proposal, account should also be taken of any additional vehicle movements to and from the site. For example, deliveries of feedstock or servicing/monitoring of the boiler.

Monitoring

The trust would like to know how ongoing monitoring of emissions at the site will be carried out. In particular the monitoring of dust just once a day seems inadequate as dust production may vary during the course of the day.

I trust that our comments will receive your full attention. Please do not hesitate to contact me if you require further information.

Yours sincerely,

REDACTED

REDACTED MRTPI,
Assistant Planning Adviser

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Appendix 1

Background information – Impacts of Nitrogen deposition on sand dune habitats and potential impacts of increased deposition at Sandscale Haws

REDACTED, National Trust Ranger for Sandscale Haws [05 March 2019]

- Coastal sand dunes are a UK Priority Habitat and the communities that comprise this habitat are listed under Annex I of the EU Habitats Directive.
- Approx. 67% (172ha) of Sandscale Haws is defined as coastal sand dunes priority habitat [Skelcher. G. 2012. A vegetation survey of Sandscale Haws National Trust Property. National Trust unpublished report; Sandscale Haws – Proposed amendment to Priority Habitat data layers based on 2012 NVC habitat mapping (In prep).
- There has been a significant loss of bare and sparsely vegetated sand (and corresponding pioneer habitats) across the Sandscale Haws dune system between 1946 and 2013. Bare and sparsely vegetated sand declined from approx. 34% to 2.5% during this period [Kenneth Pye Associated Ltd. 2016. National Trust Sandscale Haws, Cumbria. Geomorphological Assessment and options for coastal adaptation. KPAL Report No18095]
- The “balance of evidence suggests that climate change (reduction in frequency / duration of sand moving winds, increased rainfall and increased temperature) has been the dominant factor” [Kenneth Pye Associated Ltd. 2016. National Trust Sandscale Haws, Cumbria. Geomorphological Assessment and options for coastal adaptation. KPAL Report No18095]
- Nitrogen deposition “probably encouraged vegetation growth in fixed dunes at Sandscale and other dune systems during the second half of the 20th century” and that the “effect in encouraging vegetation growth is likely to have been greatest on dunes and dune slacks which were already stabilized by vegetation”. It is not thought that it played a significant role in limiting mobility of newly formed dunes near the shore although it is noted that there is no published measurement data on Nitrogen deposition for the site. The report also notes that potential impacts from future local developments could include “airborne deposition of contaminants and/ or nutrients (e.g. ammonia, other nitrogen and sulphur compounds) which could directly affect vegetation on the Reserve”. [Kenneth Pye Associated Ltd. 2016. National Trust Sandscale Haws, Cumbria. Geomorphological Assessment and options for coastal adaptation. KPAL Report No18095]
- The current NNR management plan includes objectives such as turf stripping and vegetation management to aim to restore pioneer habitats in parts of the site. Further work is proposed under the national Dynamic Dunescape project. Any local increase in Nitrogen deposition is likely to compromise the effectiveness of this work.

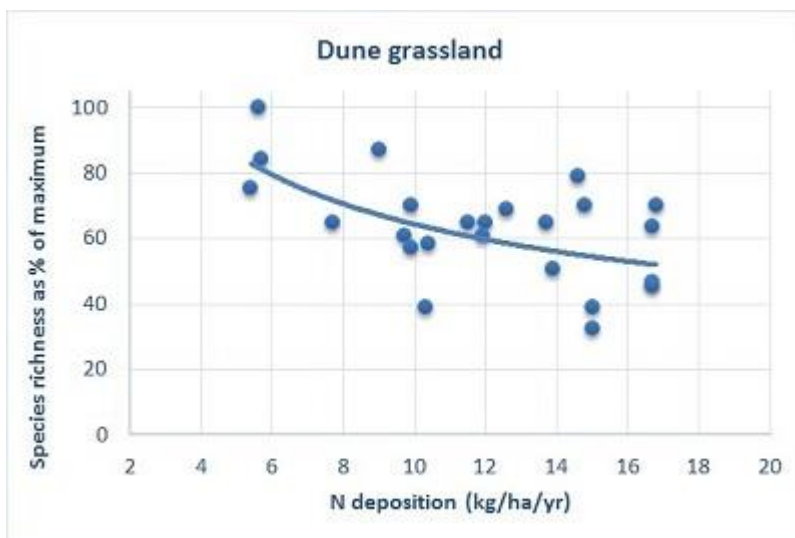
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<https://www.ceh.ac.uk/our-science/projects/sand-dunes>

Survey Evidence

Nitrogen is one factor contributing to over-stabilisation of dunes. Because it stimulates plant growth, fast growing species outshade smaller and slower-growing species, leading to a loss in diversity. A gradient study suggests that higher levels of nitrogen pollution from the atmosphere have resulted in a 50% loss in species across much of the UK, compared to the cleanest sites.

[Link to [Field, et al \(2014\). The role of nitrogen deposition in widespread plant community change across semi-natural habitats. *Ecosystems*, 17 \(5\), 864-877.](#)]



Graph: Number of plant species as a % of diversity at the cleanest sites, data from Field et al. (2014)

http://ec.europa.eu/environment/nature/natura2000/management/habitats/pdf/2130_Fixed_coastal_dunes.pdf

Nitrogen deposition – nutrient enrichment

Nitrogen deposition above historic background levels remains a particular concern for nutrient poor dune systems. Although total levels of pollution are now falling due to improved emission controls there may be a build up of a 'nutrient pool' in both above ground biomass, the soil organic matter and soil-bound ammonium. The result is an increase in vegetation growth, especially the coarse grasses such as *Ammophila arenaria*, *Calamagrostis epigejos* (small wood reed), *Arrhenatherum elatius* (false oat-grass),

Carex arenaria and *Deschampsia flexuosa*, which have become dominant in many dry dune grasslands since the 1970s (Ten Harkel et al. 1998).

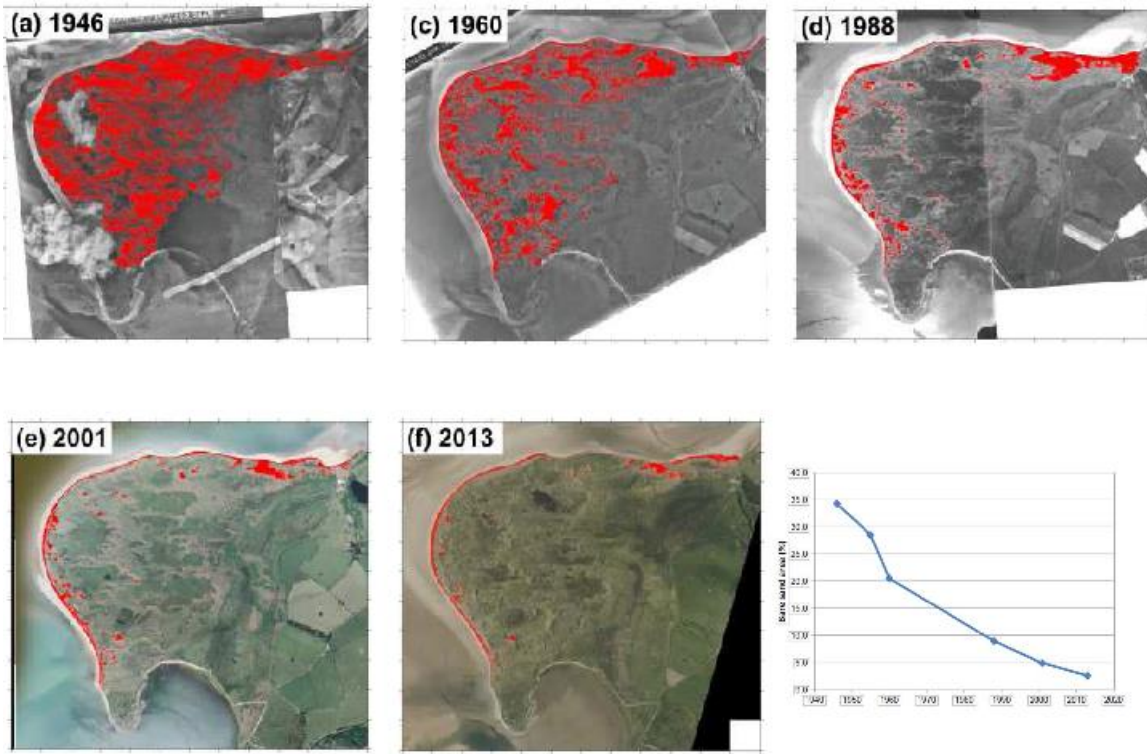
A considerable amount of management activity in dune systems has been triggered as a result of this problem. Grazing by large herbivores can reduce the biomass of grasses and shrubs and can counter the negative effects of atmospheric nitrogen deposition on plant species-richness (Kooijman and Van der Meulen 1996, Ten Harkel and Van der Meulen 1996, Boorman 2004).

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The threshold for the amount of nutrient deposition will vary from dune system to dune system. In the Netherlands studies have indicated that levels increased from c.10 kg N ha⁻¹ yr⁻¹ in 1930s, to c. 25 kg n ha⁻¹ yr⁻¹ in 1980s and were between 25-35 kg N ha⁻¹ yr⁻¹ in the late 1990s. It is generally considered that values of up to 10kg N ha⁻¹yr⁻¹ are safe with a critical load for the United Kingdom lying somewhere between 10 - 20 kg N ha⁻¹ yr⁻¹ (Jones *et al.* 2004) and for decalcified dunes in Denmark 10-15 kg N ha⁻¹ yr⁻¹ (Pihl *et al.* 2001). Higher loads will promote the growth of fast growing plants and can stimulate acidification. The most sensitive areas are lichen-rich dry dunes (northern *2130 and *2140). In Denmark current levels of nitrogen deposition (6-15 kg N ha⁻¹ yr⁻¹) lie close to the critical load for lichens and above historic levels (of between 2 -5 kg N ha⁻¹ yr⁻¹). Nutrient enrichment can also arise from local sources such as adjacent agricultural land, sewage treatment works and springs. Combined atmospheric and groundwater inputs of nitrogen should be assessed when determining nitrogen budgets for individual sites (Jones *et al.* 2005).

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Appendix 2



Areas of bare blown sand (red colour) at Sandscale Haws, from aerial photographs flown in 1946, 1960, 1988, 2001 and 2013 (KPAL, 2016).

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