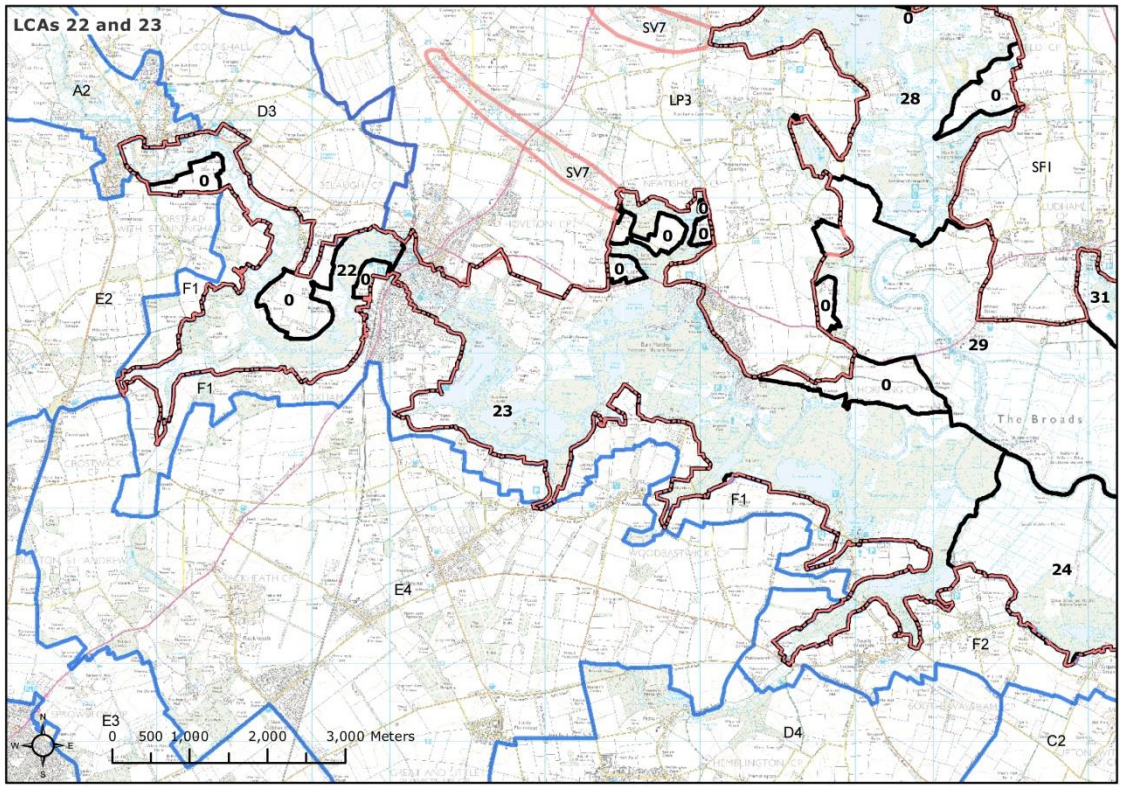
LCA 22: Bure Valley – Upstream Wroxham to Horstead: Area 23: Bure Valley – Wroxham to Fleet Dyke, South Walsham

Location and landscape character context



Landscape Sensitivity Assessment for Wind Turbines

Criteria	Lower sensitivity	⟷	Higher sensitivity
1.Scenic and special qualities			
	Special qualities of the Broads represented within these areas include the sense of tranquillity and wildness evident in much of the Bure Valley and these would be sensitive to noise and movement introduced by turbines. The 'local character of beautiful churches and quiet villages' is particularly represented in the settlements in these areas, e.g. vernacular settlements such as Wroxham, Hoveton, Horstead, Belaugh,Horning and Coltishall. This local character would be highly sensitive in view of the small scale, traditional riverside settlement pattern.		
2.Enclosure and scale			
	Both areas are defined by well enclosed valleys (10m crests) and wooded landscapes of intimate scale. Valley sides are often masked by the density of carr woodland in the valley floor which provides physical and visual containment. Outside the Executive Area, the landform rises to 15m in parts, thus enhancing the sense of enclosure. This landscape would be sensitive to turbines, as such topographic features are visually important and often define landscape scale. However both areas exhibit variations in scale and there are areas of more open fen at Ranworth on the Hoveton Marshes and the open riverside green and grazing marshes at Coltishall. In addition, the presence of the church at Ranworth and the seasonal use of sailing boats in both areas provide human scale indicators increasing sensitivity to wind turbines. Overall, due to the area's considerable sense of enclosure and containment it has a high sensitivity to wind turbines.		
3.Landscape and land cover pattern			
	The character areas display a varied pattern of fen, carr woodland, broads and sinuous reed fringed river. As such, this diversity of landscape elements and texture would be sensitive to wind turbines. This is reinforced by the presence of human scale indicators such as small scale riverside vernacular settlement in both areas, which is particularly diverse in area 23. This diversity of waterside settlement adds to the variety of pattern and texture, from large Edwardian villas at Wroxham, minor country houses and parkland at Woodbastwick, and original Boulton and Paul timber and reed chalets to later and modern development, particularly the waterside chalets at Crabbetts Marsh. Development of wind turbines within such a complex landscape may also increase the potential to impede on the coherence of the area and thus it has a high sensitivity.		
4.Skylines			
	Skylines defined by wooded ridges are largely undeveloped in both character areas, with the exception of localised areas of vernacular settlement and boatyards at Hoveton and Wroxham. Ranworth church tower is a particularly prominent feature on the skyline in the immediate area and is visible from within both character areas and from the surrounding countryside. The wooded skyline which forms a backdrop to reed fringed rivers, areas of open water, marsh and fen is distinctive to both areas, and together with the mainly undeveloped nature of the horizon, would be sensitive to wind turbine development. This is due to the potential for turbines and other related infrastructure such as pylons to detract from such skyline features and as such skylines are considered to have a high sensitivity to wind turbines. This is however reduced by development associated with Hoveton and Wroxham and the overall sensitivity is therefore judged to be moderate-high.		
5.Perception and experience of the landscape			
	A strong sense of tranquillity and remoteness exists within both character areas once away from the settlements of Hoveton and Wroxham. Outside of these settlements it is essentially a tranquil rural character with little human disturbance, indicating a higher sensitivity to wind turbines. Both areas		

	have a lightly settled character and an often remote, largely inaccessible quality (other than by boat and from within settlements). The larger areas of modern settlement at Hoveton and Wroxham and associated boatyards dilute this sense of tranquillity. Overall the areas have a moderate-high sensitivity to wind turbine development in perceptual terms.
6.Historic landscape character	Both areas display characteristics of historic significance. The principal HLC types within both areas are regenerated carr woodland interspersed with freshwater fen and small broads. Areas of 17th century grazing marsh (at Coltishall) and the vernacular of the area's settlement (particularly Horning Conservation Area) are sensitive to wind turbine development. This higher sensitivity is due to the potential to affect the coherence of such historic features and the way they are perceived. Overall the areas have a high sensitivity to wind turbine development in historic terms.
7.Visual sensitivities and intervisibility with areas outside the Broads	The areas are defined by landscapes of intimate spatial scale and of contained visual character, although there is intervisibility with adjacent areas in Broadland District (D3: Coltishall Tributary Farmland, E2: Marsham and Hainford Wooded Estatelands and E4: Rackheath, Salhouse Wooded Estatelands and F1: Wroxham to Ranworth Marshes Fringe) and North Norfolk's LP3: Worstead, Coltishall, Hoveton and Smallburgh Area. These open areas of fen and undulating farmland provide views into adjacent character areas and this would increase sensitivity to turbines in visual terms. The character areas themselves however have a predominantly enclosed character with a degree of containment and so have an overall moderate–high sensitivity to wind turbine development.
Discussion on landscape sensitivity	Character areas 22 and 23 have a high sensitivity to wind turbine development in general. This is due to the representation of special qualities in the areas which would be sensitive to development, such as the sense of tranquillity and wildness. Also, the landscape pattern and scale, historic character and integrity, the sense of remoteness and the presence of human scale indicators associated with traditional riverside vernacular are sensitive to wind turbine development. This judgement also applies to large infrastructure for off shore wind farm schemes, such as pylons.

Sensitivity to different turbine heights

Land within the character areas		Land outside the Executive Area	
Small (15-20m)	**M-H**	Small (15-20m)	**M-H**
Medium (20-50m)	**H**	Medium (20-50m)	**M-H**
Large (50-70m)	**H**	Large (50-70m)	**H**
Very large (70m+)	**H**	Very large (70m+)	**H**

Commentary:

The majority of the larger turbine typologies would interfere with the intimate scale and the undeveloped skylines of these character areas. Subject to careful siting in relation to the above characteristics, small scale wind turbines (15-20m) would have less effect on sensitive characteristics (i.e. skylines, landscape scale and pattern). Sensitivity to small scale turbines is however only marginally lower than those of a larger scale. Turbines beyond this height range would introduce elements out of scale with the landscape, hence the higher sensitivity rating.

Landscapes outside the Executive Area

Relevant character areas and sensitivities are:

Broadland District -

D3: Coltishall Tributary Farmland: Wide expansive views and uninterrupted skyline although views into the Broads are filtered due to tree cover.

E2: Marsham and Hainford Wooded Estatelands: Close to the edges small-scale woodlands and copses reflects its proximity to the Broads.

E4: Rackheath, Salhouse Wooded Estatelands: Characteristic northerly views over descending wooded slopes to the Broads, and associated wooded horizon.

F1: Wroxham to Ranworth Marshes Fringe: Forms a fringe to the lower-lying flat landscapes of the Broads and has a strong association with the area.

North Norfolk -

LP3: Worstead, Coltishall, Hoveton and Smallburgh: Closely adjoining and infiltrated by the Broads and contributing to their setting.

The adjacent character areas have intervisibility with the Broads and display a strong association with the area. It is noted however, that there is a high degree of foiling created by carr woodland on rising valley slopes on both sides of the Bure. Turbines at the smallest end of the range (15-20 metres to tip height) would have less effect on landscape character and perceptual aspects within the Broads, due to closer relationship to existing landscape scale elements. Fieldwork confirmed that turbines of a larger scale, located in such close proximity to the Broads would appear dominant, resulting in a high landscape sensitivity.

Commentary on different cluster sizes

Single turbine
Small clusters (<5 turbines)
Medium (6-10)
Large (11-25)

Land within the character areas		**Land outside the Executive Area**	
Single turbine	**M-H**	Single turbine	**M-H**
<5 turbines	**H**	<5 turbines	**M-H**
6-10 turbines	**H**	6-10 turbines	**H**
11-25 turbines	**H**	11-25 turbines	**H**

Very large (>26)	>26 turbines	**H**	>26 turbines	**H**
	Commentary: Large clusters of turbines would have considerably greater likelihood of introducing visual clutter in relation to the undeveloped skylines which define the majority of this grouping of character areas. Accordingly these clusters have been assigned the highest landscape sensitivity rating. This landscape has a slightly lower sensitivity to single turbines in these terms. However this would depend on a careful, well considered visual relationship to other skyline elements including historic taller structures such as Ranworth church tower, in addition to siting in relation to the historic settlements. ***Landscapes outside the Executive Area*** Relevant character areas and sensitivities are: Broadland District - D3: Coltishall Tributary Farmland: Wide expansive views and uninterrupted skyline although views into the Broads are filtered due to tree cover. E2: Marsham and Hainford Wooded Estatelands: Close to the edges small-scale woodlands and copses reflects its proximity to the Broads. E4: Rackheath, Salhouse Wooded Estatelands: Characteristic northerly views over descending wooded slopes to the Broads, and associated wooded horizon. F1: Wroxham to Ranworth Marshes Fringe: Forms a fringe to the lower-lying flat landscapes of the Broads and has a strong association with the area. North Norfolk - LP3: Worstead, Coltishall, Hoveton and Smallburgh: Closely adjoining and infiltrated by the Broads and contributing to their setting. Fieldwork confirmed that due to the degree of intervisibility, the landscape sensitivity is similar for the valley sides which lie adjacent to the Executive Area boundary. These landscapes would have a slightly lower sensitivity to single turbines or small groups of less than five turbines, although this is dependent upon the relationship with existing skyline elements which define skylines e.g. avoid according undue prominence in relation to these, particularly when viewed from within the Executive Area. Multiple turbine clusters have the potential to be dominant in relation to skyline character and intervisibility, resulting in a higher landscape sensitivity.			