

Educational Opportunities in the Norfolk Coast AONB

**Dark skies, nocturnal wildlife,
and light pollution**



The Norfolk Coast Area of Outstanding Natural Beauty

The Norfolk Coast Area of Outstanding Natural Beauty covers intertidal, coastal and agricultural land with a total area of over 450 square kilometres and is highlighted in green on the map below. Stretching from the silt expanses of the Wash in the west through the coastal marshes, soft cliffs and hinterland of north Norfolk, to the dune system at Winterton in the east, it is an area of remarkable beauty, diversity and scientific importance. Although 'Area of Outstanding Natural Beauty' is essentially a landscape designation, natural beauty includes wildlife and historic and cultural heritage as well as scenery, and all of these are closely linked.

The Norfolk Coast Partnership aims to ensure that the natural beauty and special character of the Norfolk Coast are conserved and enhanced through the work of the Partnership; a group of stakeholders, including the community, who manage a range of issues affecting the natural beauty of the area.

Find out more about this special area and the work of the Norfolk Coast Partnership at <http://www.norfolkcoastaonb.org.uk/>



Opportunities for schools

Through our partner organisations and Norfolk Coast AONB Education Officers Group we are working to fulfil the aims of the 2019 Landscapes Review (Glover report): to connect all people with our national landscapes and make a night under the stars in a national landscape for every child a reality.

We can offer;

- Lesson plan & activity ideas to support teacher led classroom and school grounds topics
- Lesson plan & activity ideas for wildlife habitat creation within school grounds
- Recording tools and wildlife identification support
- Adapted resources to support ongoing home learning as required
- Visits to nature reserves, coastline, farms and other protected landscapes in the area
- Small group activity ideas for school wildlife clubs, school councils or Eco school committees
- Career discussion opportunities for secondary schools

Cost: There may be costs involved with off site visits or outreach work undertaken by partner organisation education officers. We will endeavour to investigate, and share news of, any funding opportunities that may support visits wherever possible.

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Resources for dark skies, nocturnal wildlife, and light pollution



The Norfolk Coast Dark Skies Festival is returning for its 3rd year this autumn. With an emphasis on wildlife and the dark, a range of face-to-face and online events will include wildlife walks at night, stargazing, soundwalk, talks, podcasts, and activities. The 2-week long festival, which is hosted by the Norfolk Coast Partnership runs from 25th September to 10th October and will celebrate the stunning dark skies and landscapes of the area as well as raise awareness about issues of increasing light pollution. The full festival programme, and booking details are at: [norfolk-coast-dark-skies-festival-2021](https://www.norfolk-coast-dark-skies-festival-2021)

If you are interested in dark skies themed visits or outreach opportunities for your class, please see the links below or contact catherine.leigh@norfolk.gov.uk

We would love schools to become involved, either as part of our festival or at a time which suits your curriculum plan.

Here are a few of the reasons that our dark skies are so important:

- ★ The Norfolk Coast and Broads is one of the darkest places in the UK. Its dark landscapes contribute to the rural character and feelings of tranquillity and wilderness – key qualities of their protected landscape status.
- ★ Darkness is essential for wildlife – a diverse range of animals and plants make use of it for feeding, hiding from predators, navigation, migration, breeding, pollination, or simply to rest.
- ★ Dark is necessary for our health and well-being – it resets our biological clock and reduces stress.
- ★ The dark is not something to be wary of but allows you to focus on your other senses and make new discoveries.
- ★ Light pollution is an increasing problem in the U.K but it can easily be reversed. Everyone can do their bit to reduce light pollution.



Group Activity: Creating a Dark Skies School

We'd like schools to take action on light pollution to preserve the dark skies within the AONB and across Norfolk. This could be a project for your School Council or Eco Group, or a whole class activity.

You may like to enlist the support of your school caretaker, who should be able to tell you which lighting is on a timer, and which may be on all night.

Be sure to share the useful leaflet <http://www.norfolkcoastaonb.org.uk/mediaps/pdfuploads/pd004001.pdf> with your Senior Leadership Team too.

Light pollution not only prevents us from seeing the starry night it also means we don't sleep very well, and it affects wildlife too.

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Carry out a Light Pollution Survey of your School

Your school may be causing unnecessary light pollution and there are probably some simple, inexpensive ways that you can prevent this. Carry out a survey to identify any lighting issues and work together to make your school Dark Skies Friendly.

1. Show the children the interactive map: <http://nightblight.cpre.org.uk/maps/> and find the location of your school. How much light pollution is there in your local area? Are there are areas where it is worse or better? Why might that be?
2. Think about who or what might use your school or grounds late in the evening. Maybe groups use your hall or classrooms for meeting, or sports clubs use your field? Consider nocturnal wildlife that might visit too. Can pupils think why some animals might prefer to visit when there are no people around?
3. Have some photos prepared showing a few areas of your school in the evening, or at night. These can be of both brightly lit and darker areas.
4. You might like to divide into groups to survey different criteria, or areas, depending on number of pupils taking part and/or the size of your school.
5. Use the Survey Sheet (on pg 6) to record light sources and their brightness. This may be outdoor lighting e.g. external lighting or flood lights, light that shines through a window, street lighting outside school, or lit signage. You may need to turn on some indoor and outdoor lights just for the duration of the survey.
6. Come back together to compare and discuss survey results and ideas for reducing light pollution. You could display your findings on a school site plan – colouring light and darker areas (see sketch below – chalk on black paper works well), or as a graph showing the number of lighting types around school.

Can the pupils decide on some action to reduce light pollution?

Some suggestions are below;

- ✓ Take time to consider whether lighting is even needed – in many cases no lighting may be required at all
- ✓ Take time to consider where and why something might need to be lit – e.g. to avoid tripping over, to prevent crime? Discuss whether that whole area needs to be lit or can it be done more sensitively, reducing the areas lit to those that absolutely need it?
- ✓ Use only the amount of light that is needed, not always the brightest bulbs. Warm white light low-energy LED lamps are just as effective.
- ✓ Ensure all outdoor lights are fully shielded by a cover and directed downwards. Outdoor lights which cannot be tilted below 45 degrees cause bright light to shine into the sky. Perhaps think of it as losing heat from a radiator – when fitting a radiator in your house, you wouldn't have half on the outside of the wall and half inside as you would lose a lot of heat outside. In the same way, lights which emit light into the sky instead of downwards waste their energy and cause light pollution
- ✓ Consider whether an area needs to be lit from dusk till dawn. Instal movement sensor lights or time switches to reduce light pollution, save money, and reduce carbon emissions.
- ✓ Use reflectors or solar lights where you can. These are very effective, cheaper to buy run.
- ✓ Use blinds and curtains which minimise light pollution from interior lighting. Buildings with large, windows and skylights are often responsible for light spilling into the countryside which affects the rural character and can disorientate wildlife.
- ✓ Tell your friends, neighbours & communities about light pollution. Make some posters and signs to place next to light switches, reminding everyone to turn off lights which are not needed.

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Further ideas and follow up;

- ★ Apply for our Norfolk Coast Dark Skies Friendly accreditation scheme – contact kate.dougan@norfolk.gov.uk for details
- ★ Consider a winter residential and a night under the stars (see <https://vimeo.com/234107865> for reasons why this is such a great idea!). Both Norfolk Kingswood sites offer a Night Walk activity <https://www.kingswood.co.uk/plan-your-trip/our-activities/night-walk/>
- ★ Borrow or hire a night vision camera to see wildlife visiting your school grounds while no one is there.


Further lesson and activity ideas


Key Stage(s)	Partner organisation	Resource title and activity overview	Link
Primary	Forestry England	Twilight activities sheet – downloadable fact & puzzle sheet focussing on nocturnal wildlife	https://www.forestryengland.uk/resource/twilight-activities
Primary	RSPB	Amazing moths – activities for attracting moths and good links to identification guides. Recipe for a moth lure mixture to set up at the end of the day and then see what you've attracted next morning.	https://www.rspb.org.uk/fun-and-learning/families/family-wild-challenge/activities/amazing-moths/
Primary	Norfolk Broads	Night Magic activities. Because human vision is adapted for daytime conditions, when the light fades strange things happen – you just won't believe your eyes!	Night Magic podcast: https://drive.google.com/file/d/1JeJ7uT9wT1269XQDTIxNW5U_JDYY0OCA/view Night Magic Activities: http://www.norfolkcoastaonb.org.uk/mediaps/pdfuploads/pd005079.pdf
KS1	Campaign to Protect Rural England (CPRE)	Lesson plan about stars, constellations, and light pollution in its simplest terms using paint resist techniques	https://nightblight.cpre.org.uk/images/resources/Seeing_Stars_lesson_plan_KS1.pdf
KS1	National Trust	A short video quiz looking at nocturnal animals	https://www.youtube.com/watch?v=xjhNR82ovRI
KS2	CPRE	Lesson plan about designing a street lighting system that will reduce light pollution	https://nightblight.cpre.org.uk/images/resources/Seeing_Stars_lesson_plan_KS2.pdf
All	Norfolk Broads	Listen to owls with Nick Sanderson from the Broads Authority and wildlife enthusiast John Tyler.	Owl podcast: http://www.norfolkcoastaonb.org.uk/mediaps/pdfuploads/pd005061.pdf Owl Fact Sheet: http://www.norfolkcoastaonb.org.uk/mediaps/pdfuploads/pd005061.pdf
All	STEM	A variety of activities including fruit solar system, space images and further useful links (free log in required)	https://www.stem.org.uk/resources/community/collection/11042/night-sky

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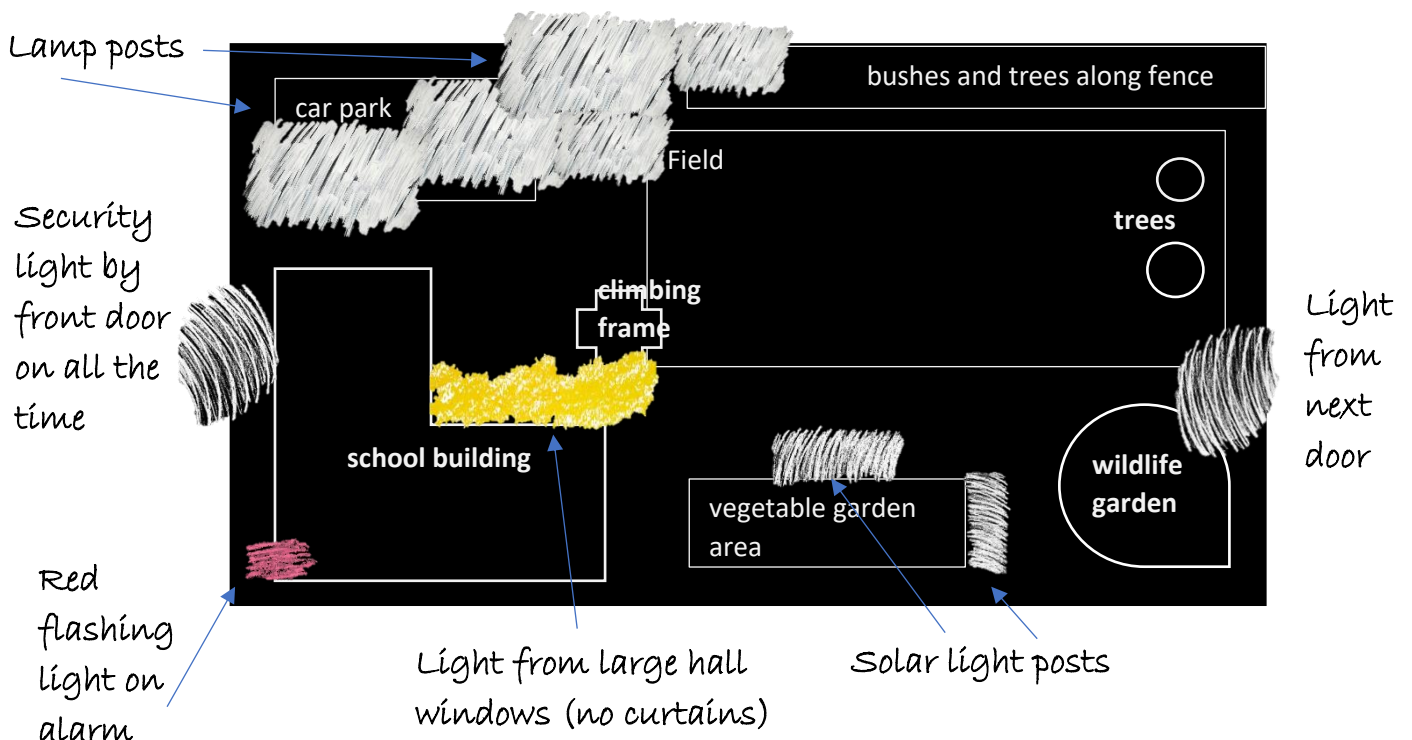
All	Bat Conservation Trust	Downloadable factsheets and teachers notes about bats	https://www.bats.org.uk/resources/education-outreach-resources/resources-for-teachers-youth-leaders/explore-the-world-of-bat-conservation-through-the-national-curriculum
All	Wildlife Trusts	Make an animal footprint trap – a simple way to identify what’s been visiting your school grounds at night	https://www.wildlifewatch.org.uk/sites/default/files/2020-09/Footprint%20trap.jpg
Secondary	RSPB	Instructions (including useful video) and information on building a hedgehog shelter	https://www.rspb.org.uk/get-involved/activities/nature-on-your-doorstep/garden-activities/giveahogahome/

Visits and outreach work

Key Stage(s)	Partner organisation	Venue and activity overview	Link
All	King's Lynn and District Astronomy Society	outreach talks and practical experiences in the West Norfolk area.	http://www.westnorfolkastro.co.uk/
All	Norwich Astronomical Society	Outreach sessions – contact for availability	https://www.norwichastro.org.uk/contact
All	Hawk and Owl Trust – Sculthorpe Reserve 	Visit and outreach opportunities, including owl themed activities – contact the reserve for further information	https://hawkandowltrust.org/education

 Quality Badge awarded by the Council for Learning Outside the Classroom indicating that the quality of education provision and risk management procedures have been nationally recognised.

Our School lighting map



If you would like to become involved or receive further information on any of the educational aspects of our work please email catherine.leigh@norfolk.gov.uk

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School Dark Skies Survey Sheet

Area name and light source	Colour of light white yellow red	How bright is the light? bright / dim	Ideas for reducing light pollution in this area



NORFOLK COAST
DARK SKIES
FRIENDLY

Survey completed by;