

# SHOREHAM POWER STATION: BIODIVERSITY INFORMATION

## Key facts:

- Opened in 2000
- 420MW capacity CCGT station located at Shoreham Harbour, West Sussex
- Steps have been taken to create a habitat for native plant species
- The station seeks to maintain and improve conditions for wildlife through a site biodiversity action plan



## Site Description

Constructed on brownfield land, the site of a former coal-fired plant, Shoreham opened in summer 2000.

The station is situated on a shingle spit of land created by longshore drift between the English Channel and the

River Adur. The spit has become heavily industrialised and Shoreham's neighbours include cement manufacturing companies, a water treatment works and shipping cargo storage.

While the station has only limited landholdings – mostly buildings and hard-standing – shingle banks have been created to promote the biodiversity of plant communities.

Nearby Shoreham Beach was designated as a Site of Nature Conservation Importance (SNCI) in May 1992 for its rare shingle habitat and specialised plant populations and in July 2006, the 11-hectare Shoreham Beach site was declared a local nature reserve. An action plan has been published to promote its sustainable management.

*Shoreham and, insets, Bird's Foot Trefoil (left) and Bristly Oxtongue – two species found at the station*



## Priority habitats and species

Vegetated shingle habitat is rare globally and largely confined in the UK to coastal areas of Kent, Essex and Sussex, with the West Sussex coastal fringe particularly important to its conservation. As a result, it is featured on Annex 1 of the EC Habitats Directive as a habitat of international conservation importance and is also listed as a priority habitat for conservation in the UK Biodiversity Action Plan (UK BAP).

The construction of Shoreham Power Station was identified as an opportunity to extend this habitat.

As part of Shoreham Power Station's planning conditions, purpose-built shingle banks were created within the site boundary to provide a habitat for specialist plant communities. The habitat found at nearby Shoreham Beach was also extended, with shingle banks formed on foundations of rubble.

Initially, mixed seeds of a local provenance were sown in autumn and spring to provide a natural spread of species and since their creation in 2000, the banks have been colonised by several rare and local species of plant, with some selfseeding from the nearby beach.

With special adaptations to survive in such a tough, salty environment, species including Red Valerian, Sea Kale, Sea Holly, Yellow-horned Poppy, English Stonecrop and Nottingham Catchfly quickly established ground cover by the end of the first year, and are now thriving within the secure compound.

Other monitoring work has recorded sightings of the Song Thrush – a UK BAP listed bird – which it is hoped may breed.



*English Stone Crop*

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## Our Biodiversity Action Plan

Shoreham's staff aim to preserve the plant and wildlife communities on the station's grounds and have operated a biodiversity action plan (BAP) since 2001, shortly after the plant's opening.

The BAP seeks to entrench existing good practice and sets out a timescale for further work to conserve biodiversity.

In particular, it features proactive measures to maintain the vegetated shingle habitat on the site, survey what grows and encourage the rarer plants to thrive. The station is grateful for the assistance of Adur Council's Nature Coast Project Officer Dee Christensen her initial monitoring and reports.

A full biodiversity survey was undertaken during 2012 to list the plant and bird communities that have emerged on the purpose-built shingle banks and the new nesting boxes placed at the Devil's Dyke gas station.

The previous surveys stated that 'Internationally, vegetated shingle is a very rare habitat and one that's under considerable threat from the many pressures on our coastline, both development and recreation. 'That's why havens such as that at Shoreham are important – they act as a reservoir for vegetated shingle plants. 'I would love to see the plants found at Shoreham spreading out into the wider environment.'

In fact, the habitat creation scheme has proven so successful that the Nature Coast Project has gathered seeds from Shoreham's rarest plants to establish a seedbank to assist in the recolonisation of shingle elsewhere in the country.

The station has also established a photographic database of the plants found on site to help identify priority species for targeted protection measures. No herbicide is used to control vegetation at Shoreham and annual weeding is carried out by hand to remove weeds and other undesirable species.

The station's five-year BAP was reviewed and updated in 2013. A new initiative has been the installation of nestboxes for small birds at the Transco compound at Devil's Dyke on the Sussex Downs. This will encourage the populations of farmland, woodland and hedgerow birds at the gas pressure reducing station.

### Sea Kale:

While Kale is familiar as a traditional English vegetable, wild Sea Kale is protected by law.

It is listed in the Sussex Biodiversity Action Plan for coastal vegetated shingle as a scarce national species but one which flourishes locally.

Easily identified by its large, grey, purple-tinged leaves, Sea Kale was an early colonist of the shingle habitat the station.



## Fish Conservation Methods:

Special efforts are ongoing to ensure Shoreham is 'fish friendly'.

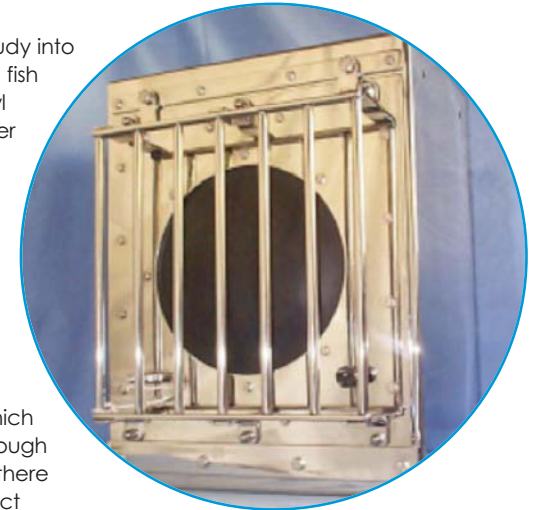
During construction, the station's cooling water system was designed to minimise fish entrapment using a combination of a state-of-the-art acoustic fish deterrent system and a fish return arrangement. Fish entering the cooling water (CW) band screens from the English Channel are intercepted by operators, retained for a period of 24 hours and then checked for good health before being returned to the sea. These measures have resulted in Shoreham having one of the lowest rates in Europe for fish entrapment mortality per unit of generation for a directly-cooled power plant.

Shoreham has also commissioned a study into the effect of the acoustic deterrent on fish in Shoreham Harbour and funded trawl surveys to check if the heated seawater discharge from the outfall is attracting Sea Bass.

The station has always had to dose low levels of sodium hypochlorite to its cooling water which is extracted from the harbour.

The introduction of the chemical is to minimise the marine growth within the stations cooling system which maintains efficiency. Although these levels are very low there is an environmental impact which is continuously monitored and the dosing has recently

been automated to prevent exceeding the permitted limit. Chemical dosing has also recently been modified to a pulsed regime – summer dosing is 5 minutes on, 5 minutes off while winter dosing is 5 minutes on, 15 minutes off. This has been proven to be a far more effective method of controlling internal marine growth and because it effectively more than halves the amount of Sodium Hypochlorite used, gives significant environmental benefits.



*A sound projector used to deter fish*