OTTERS, ORCHIDS AND OIL

The site of the biggest oil refinery in the Northwest is now a haven for wildlife.

Words Erikka Askeland

Photographs RSPCA, Shell UK

Otters live and swim in the River Gowy, which used to form part of the border between Wales and England. It is also the river that runs though a 1,350 acre oil and chemicals complex belonging to Shell UK at Stanlow in Cheshire, then under the Manchester Ship Canal and ultimately empties into the River Mersey. According to Chris Mahon, the director of the Cheshire Wildlife Trust, the otters often take a look at Stanlow then head straight back to Wales.

But otters once again may make the area home thanks to the development of the Gowy Meadows wildlife reserve. The lowland grazing marsh spans nearly 410 acres, bounded by the River Gowy north of Chester, with the A5117 to the north and the M56 to the south.

In 2002, the land's owners, Shell, leased it on a peppercorn rent to the Cheshire Wildlife Trust to create the reserve. Over-grazed and mismanaged for years, the site's importance as a home to rare flora and fauna is only now being realised. Plans are to inundate the land in the winter with waters from the Gowy, creating a wet grassland habitat for wading birds, otters, water voles, harvest mice, barn owls and dragonflies.

"We've got water voles on the site already," says Mahon. For readers of Wind in the Willows, the character Ratty was a water vole.

"We are trying to make sure that the colony is protected. We don't want them flooded out. We are hoping to create opportunities for otters to stay there and breed, which would be wonderful to have a thriving population of otters in the county again. The main use is going to be by over-wintering birds as a sort of overflow site of the Mersey and its internationally important bird populations. We are already seeing good increases in populations of snipe - a nice, stripey little bird with a long beak - lapwing and so on. These are becoming - not rare - but certainly pressurised by development. It is going to be quite a haven."

Established in 1962 as a campaigning environmental watchdog, the Cheshire Wildlife Trust has since become more of a project management organisation. "We found over the years that our campaigning activities have not fallen by the wayside, but we found working in partnership to be much more productive. For example, here we wouldn't be able to do what we are doing without the Environment Agency's engineers for the sluices and so on. We wouldn't be able to finance it without Defra and the countryside stewardship grant, which pays for the management, nor without Shell being the landowner who generously leased us the land. So it is a very happy partnership really, everybody is a winner, and wildlife is too."

Everything is set for flooding to occur this winter. The pasture will be formally 'opened' on June 9th. The Trust will be organising site visits, talks and guided walks in the afternoon and its annual general meeting in the evening, inviting guests from all partners to share the day and formally kick it off.

"Five to ten years down the line, from a natural history point of view, we will have a pretty established regime by then. The vegetation we want to encourage will be pretty well established. We'll have access and interpretation for visitors and hopefully a visitors' centre."

The Gowy Meadows project works on two levels. Not only does it allow the land to return to its natural use as a wet grassland, but it also serves to protect the adjacent Stanlow site from the dangers of flooding. According to the Environment Agency, reports of flooding in England and Wales are now on average nearly twice as frequent as they were 100 years ago. Due to climate change, experts predict that the risk of flooding generally is likely to see a very significant increase over the next century.

Stanlow is the second largest oil refinery in the UK, refining up to a million tons of crude a month. Floods that affected the refinery complex in the 1990s - and the consequent environmental impact - made it clear something needed to be done to protect the installation, which was a major supplier of vital products into the UK economy. In 1998, the Environment Agency commissioned a full report on how to improve the flood defences of land adjacent to the River Gowy, which outlined a number of improvements within the refinery complex as well as improving the value of the existing washlands of the Gowy Meadows for nature conservation.

This major piece of work has demonstrated how the Environment Agency, Cheshire Wildlife Trust and Shell UK have worked together in a public-private-charity partnership. [continued over]

60-second expert

- In 2002, Shell UK leased 410 acres of land at its Stanlow site in Cheshire on a minimal rent to the Cheshire Wildlife Trust to create the Gowy Meadows wildlife reserve.
- Stanlow's importance as a home to rare flora and fauna is only now being realised. Plans are to inundate the reserve in the winter with waters from the River Gowy, creating a wet grassland habitat for wading birds, otters, water voles, harvest mice, barn owls and dragonflies.
- The success of the project relies on a partnership approach involving Cheshire Wildlife Trust, the Environment Agency, Defra and Shell.
- Stanlow is the second largest oil refinery in the UK, refining up to a million tons of crude a month.
- The wake up call for the refinery came in 1989 when a burst pipe spewed 157 tonnes of crude oil onto the Mersey foreshore, leading to an unprecedented fine.
- Following the spill, Shell implemented a series of ongoing changes. According to its most recent environmental report, emissions and discharges at Stanlow are now at record lows.
- As well as Gowy Meadows, the refinery site itself is a haven for wildlife. There are badgers, orchids, falcons, moorhens, grey partridges, herons and one of the only two breeding pairs of ravens on the Wirral.

Partnership plays an important role in Shell's work to reduce the impact that the business of oil refining has on the local environment. But at Stanlow, Shell also employs a policy of continual improvement that has seen emissions of air and water pollutants reduced considerably over the past 10 years.

The wake up call came on a warm summer's day in 1989, when a corroded 17-year-old pipeline suddenly burst. It was carrying thick, Venezuelan crude oil from a terminal at Birkenhead to the refinery at Stanlow, 157 tonnes of which spewed onto the Mersey foreshore. The company was fined an unprecedented £1 million by the then National Rivers Authority (later reorganised to become the Environment Agency) and spent millions on the clean up.

"As a result of the spill we did some specific things, not least of which was to install a sophisticated loss monitoring system on the pipeline between the Tranmere terminal and Stanlow," says Shell Stanlow's environment team leader, Mike Brown.

"Certainly since the Mersey oil spill, Stanlow as a site became very involved in what the public thought of us. Obviously we didn't want things like that to happen again."

Investment and a change of attitude are the keys to the plant's successful reduction of harmful pollutants. According to its most recent environmental report of 2001-2, emissions and discharges are now at record low levels.

In 1994, the plant made a £30 million investment into reducing biological oxygen demand (BOD). While oil floats, and can therefore be extracted from atop water-filled interceptor pits, some chemicals used at Stanlow dissolve. BOD is a measure of soluble organic material pumped out as effluents. These components are dissolved in water and will be broken down through the action of naturally occurring bacteria, but this process requires oxygen. Large amounts of BOD in water tends to leach oxygen from waterways that otherwise support fish and other wildlife. Shell treats BOD in effluent using bacterial 'biopolishers'.

"We are very concerned about the quality of the effluents that we put out of this place," explains Brown. "These biopolishers accelerate the process of breaking down these soluble compounds. That takes out the demand on oxygen in the effluent that leaves the site, so it has got a much lower biological oxygen demand. The soluble substances are broken down by our own bacteria and the water going out is a much better quality and far less likely to deplete the oxygen and affect the aquatic ecosystem."

Times have changed since the legislative wilderness of the 1970s, when companies in the UK were allowed almost free reign to pollute the environments in which they operated. Legislation restricts the amount of polluting emissions plants like Stanlow are allowed to produce, but Shell says it does even better than legislation requires.

"We have got ISO 14001, which is the international environmental management standard," says Brown. "Part of the requirement of that is continuous improvement. We have that very phrase in our health and safety policy, so we do strive to do it.

"The [Environment Agency] sets limits on us for air and water discharges but it is fair to say we are well inside those limits, and we are still trying to improve even on that."

Although spills still occur, as happened in 1997 and 2001, Shell has measures in place to recover the spills, which according to Shell make the impact on the environment almost negligible. Tanks at Stanlow and Tranmere are housed in compounds designed to hold the contents if the tank ruptures. Ships unloading petrochemicals on the Manchester Ship Canal are surrounded by a 'bubble barrier' formed with compressed air that limits any spills leaching out into the water.

The sprawling, industrial complex - which has grown and developed from a small bitumen plant established in 1924 - is also a site for wildlife. It comes as a surprise to some that the site, which proliferates with thick scrub, grassland and wetland, provides more of a wildlife haven than a seemingly benign housing estate.

"The Gowy Meadows is next to the refinery, but in actual fact within the confines of the refinery we've got some pretty good nature reserves in their own right," says Brown. "We use a Wirral wildlife ranger, Malcolm Ingham, who comes into the site frequently to keep an eye on the wildlife. There are some fairly rare things here."

Rare things include the second documented pair of breeding ravens on the Wirral, who nested last year on Stanlow's Hillsite. A badger sett has been found in the crude tank farm, and the site hosts delicate orchids, peregrine falcons, moorhens, grey partridges and herons.

"So it is a very happy partnership really, everybody is a winner, and wildlife is too."

Shell is happy to foster a culture among its employees to engage and actively participate with the local environment. "Some of the operatives on the refinery are really interested in this and that helps us to look after it," says Brown. "They have a genuine interest in it, and they'll get on to Malcolm when they see something that he'd be interested in. He's got good contacts with our own people.

"We have 140 different varieties of bird seen on site. Lots of operatives here want this to carry on. They won't do things if they think there is a nesting bird around. They leave it alone."

Ingham, who demonstrates a passion for the animals and plants that thrive on the Wirral, produces a quarterly Stanlow wildlife report that keeps Shell employees informed of the species that live alongside them. "I've said it many times before and I make no apology for saying it again, Stanlow is a haven for wildlife of many different species from badger to raven and from orchid to cowslip and its getting better," wrote Ingham. "But there is no room for complacency; the pressure is always there, whether it is from illicit dumping of rubbish or from the pressures of the industry itself.

"Nature is a wonderful opportunist, even in a large refinery environment like Stanlow; she claims every available piece of unused land and nurtures it until eventually it supports a diverse number of flora and fauna species."

MORE INFORMATION: www.shell.com | Chris Mahon 01270 610 180 | Mike Brown 0151 350 4668