Landscape Character Type 11:

Salt Flashes
LANDSCAPE TYPE 11: SALTFLASHES
The landscape of salt

SF1: Sandbach Flashles
SF2: Anderton

Key Characteristics

- Flashes – large water-bodies created by brine pumping and rock salt mining.
- Surviving features associated with the salt industry – brine cisterns, lime beds and derelict land where industrial structures have been cleared.
- Extremely flat, low-lying topography.
- Calcareous habitats and a diversity of associated species.
- Open, expansive views of the surrounding landscape.

General Description:

The salt producing industry has had a dramatic impact locally upon the Cheshire landscape. What began as the small-scale exploitation of naturally occurring brine springs escalated following the industrial revolution. The intensive process of extracting salt via brine pumping and mining led to the creation and eventual collapse of a number of large underground cavities, thus forming the flashes, which are effectively water-filled craters. Another feature associated with salt production are lime beds, the waste products from
the production of soda ash. Factories and infrastructure have long since been cleared away, leaving areas of derelict land.

The presence of salt in Cheshire has therefore produced three unique and valuable wildlife habitats: saltflashes- lakes caused by subsidence, lime beds produced by spoil from the chemical industry and inland salt marsh due to natural brine springs and spillage from the salt industry.

**Physical Influences:**

The solid geology beneath the salt flashes comprises Wilkesley Halite. This is overlain by Devensian till interspersed with glacio-fluvial sand and gravel. Soils are pelo-stagnogleys and typical stagnogleys.

Rock salt deposits in Cheshire are not exposed and always terminate some distance below the ground surface. Salt therefore has been obtained by mining or brine pumping or in the early days from natural brine springs, it is never worked from the surface.

There are limited natural calcareous substrata in Cheshire and therefore the only extensive calcareous habitats that occur are the result of the salt and chemical industries. For example, the lime beds at Ashton’s and Neumann’s Flashes support calcareous grassland and the sites have been colonised by a wide range of species that are typical of calcareous habitats. Inland saline habitats are also extremely rare and are of considerable interest because of the unusual associations of plants and animals normally found near the coast.

The wich saltland areas are also of considerable interest for breeding and migrating birds including teal and wigeon. The shallow water and muddy margins of the subsidence flashes attract wildfowl and waders. The open lime beds are important for invertebrates, especially butterflies. For example, Ashton’s and to a lesser extent Neumann’s Flash near Northwich is one of only four known breeding sites in Cheshire for the Dingy Skipper.

**Cultural Influences:**

Before brine pumping, brine formed by the action of ground water on rock salt deposits found an outlet on the surface as a brine spring. This is likely to have been exploited from an early time but it was the Romans who used lead pans to evaporate brine to form salt crystals. Salt production was an important industry and formed the basis for the three *wich* towns in Cheshire – Middlewich, Nantwich and Northwich.

By the industrial revolution the demand for salt had intensified and with the advent of steam power, and the use of beam pumps, it was possible to raise large quantities of brine to the surface. From the mid-19th century competition for salt production saw brine pumping enter a frenzied phase pumping ‘mine’ or ‘bastard’ brine from the old salt workings. The fresh water that rushed in to replace the pumped brine dissolved the mine support pillars
causing massive and spectacular subsidence. It was these dramatic incidents that created the flashes.

Today controlled brine pumping continues in Holford, which is included in the Industrial character type.

Salt is a major component in the chemical industry and by-products of this included calcareous wastes (calcium carbonate and calcium sulphate), which until recently were pumped as a sludge into lagoons to settle. The artificial boundary walls of these lagoons are also calcareous. It is these lime lagoons both wet and dried out that have produced the calcareous habitats in central Cheshire.

**Issues affecting the Salt Flashes landscape character type**

1. **Visitor pressure at certain locations through improved access**, leading to loss of tranquillity, loss or fragmentation of habitats, erosion of road verges, visual intrusion of car-parks or stationary vehicles and demand for additional facilities.

2. **Inappropriate informal recreation**, such as motorcycling leading to loss of tranquillity, loss or fragmentation of habitats.

3. **Areas reduced in extent** through encroachment of surrounding industrial and residential areas.

4. **Lack of appropriate management** leading to colonisation of rare calcareous grassland by scrub woodland.

5. **Lime beds are a finite resource**: new methods of disposing of lime waste underground means that no new lime beds will be created in the future.
SF1: Sandbach Flashes
Including Salt flashes & nature conservation

This area of former brine-pumping is located to the south of Middlewich and west of Sandbach. There were 44 brine wells and bore holes sunk in the Sandbach area in the 20th century. Work began in this area in the 1920s and continued into the 1970s.

In this character area the water bodies provide small scale local features within the surrounding agricultural landscape. There are a number of peripheral reed beds, introducing an alternative element into the agricultural landscape. Fields are mainly under pasture with gappy hedges, especially where drainage is poor. The field pattern dates back to the medieval period – small and irregular in pattern. There are a number of parking areas provided for members of the angling clubs and groups of stationary vehicles can be intrusive within the landscape.

The area is bound by the landscape of the East Lowland Plain on three sides, with typical ground level outward views curtailed by hedgerows and hedgerow trees. To the east the electrified railway on embankment and the large buildings of the Ettley Heath industrial estate are very prominent. The Trent and Mersey Canal also runs along this boundary but is not visible. Where the ground has subsided to form hollows and depressions the views from within these areas are restricted to the surrounding shoulder of high ground. There is a strong degree of enclosure in the more pronounced hollows. The area is crossed by a number of tortuous narrow lanes linking dispersed farms and residential properties. The River Wheelock traverses the area but for most of its length it is a relatively minor watercourse and is not visually significant.

The Sandbach Flashes that make up much of this area are designated as SSSIs. The Moston Flash area consists of two parallel elongated hollows, which were formed by the removal in solution of underlying salt deposits and resultant collapse of glacial deposits above. These were initially formed naturally but brine extraction has accelerated their development.
Two of the flashes are nature reserves: Watch Lane Flash and The Moat. Due to the differing age, depth and water chemistry the flashes show considerable variation in plant and animal communities. Generally the most recently formed are dominated by emergent stands of great reedmace, while the oldest have extensive beds of common reed. Wet woodland is dominated by alder and willow and the woodland also has an exceptional lichen flora for Cheshire.

The more saline flashes are fed by natural brine springs and contain a range of species that are tolerant of brackish water – for example spiked water milfoil, fennel–leaved pond weed and horned pond weed. Adjacent to the salt flashes are areas of salt marsh vegetation containing sea aster and notable water invertebrates occur including the water boatmen and shrimps.

Several of the flashes are important for breeding birds and also support large numbers of wildfowl and waders as migrants and winter residents. Wigeon, teal, lapwing, snipe and curlew are regularly recorded.
SF2: Anderton
Including disused lime beds & derelict land

This area is characterised by an intriguing combination of contrasting land uses, with active industrial and commercial sites and evidence of earlier industry activity, lying alongside important wildlife habitats including areas of very dense tree growth. The result is a very complex landscape with many hidden elements that are only revealed on close inspection. A number of large water bodies or Flashes remain, and these and a number of elevated lime beds are dominant elements within the landscape. There is wide variation in the scale of the landscape. This ranges from the extreme enclosure provided by dense woodland or high bunds to the much more open character of the Flashes. However the higher bunds can also provide elevated vantage points, offering views that are often channelled along watercourses. Elsewhere large factory units in the middle distance appear to rise out of extensive tracts of woodland. The elevated brow of Carey Park (a former landfill site) provides a public vantage point with extensive panoramic views.

To the south the skyline is dominated by the extensive Brunner Mond Works at Winnington, with factory structures, chimneys and conveyor belts. The works lie immediately outside the character area across the River Weaver but the massive scale ensures their dominance over a wide area. They lie opposite the restored Anderton Boat Lift and associated car-park and visitor centre. To the north the area is defined by the Trent and Mersey Canal and the canal tow path provides views out to the adjacent undulating farmland of the Budworth Character Area.

This character area comprises both rock salt mines and brine pumping shafts. Northwich, of which this area comprises a large part, was a centre for salt extraction with 109 mine shafts and 61 brine shafts at its peak. The first rock-salt mines date to the 17th century – one was located near Marbury lime bed, while another is under Neumann’s lime bed. The last mine to be worked was Adelaide in Marston, which was sunk in 1850 and collapsed to form the Adelaide Flash in the 20th century. Remains of the works can apparently be seen at times of low water level.

A handful of brine cisterns and lime beds survive but much of the former saltworks have been cleared away and landscaped. For example, the site of the extensive British Company’s Salt Works has been cleared, and this now partly lies within the wooded area of Anderton Nature Park. Much of this area was formerly derelict land, although many of the sites, like the Nature Park have been restored for other beneficial uses. The most distinctive features within this area are the flashes of which Ashton’s and Neumann’s are the largest. The flashes provide important wildlife habitats - Ashton’s and Neumann’s Flashes, and Witton and Marston Flashes are all SBIs. Ashton’s and Neumann’s flashes support large numbers of gulls and waders on migration.
Marston Flashes developed over the once substantial former Adelaide and Ottershaw saltworks. Two large water bodies dominate the site surrounded by a mosaic of grassland types, ditches and minor pools, earthworks and industrial archaeological features. Marshy hollows provide species rich grassland and the ponds and marshes support a number of dragonflies.

At the height of production large quantities of waste material were produced. Initially this material was often deposited into the nearest convenient Flash as an early form of landfill. However the large volume of material generated led to the construction of high bunds or earthworks, surrounding extensive raised lagoons specifically laid out to receive liquid waste or sludge. These were at their most extensive around Ashton’s and Neuman’s Flashes. At Furey’s Wood on the bank of the River Weaver the bunds are as high as 10m above the original ground level. Lime beds were originally intended for lime waste disposal and there are a large number in this character area e.g. Witton and Marbury.

Much of the derelict land within this area was reclaimed under a comprehensive land regeneration programme initiated in the 1980’s and utilising government funding. In locations such as Wincham this involved the development of new industrial estates, perpetuating the area’s former industrial character. Elsewhere the emphasis was on the creation of new public spaces. In the 1990’s work began on the establishment of the Northwich Community Woodland, created under the auspices of the Mersey Forest. Decades of inactivity had resulted in many of the former lime beds drying out sufficiently to allow colonisation by dense growths of birch trees. Such areas were incorporated into a management programme which also included the establishment of new woodlands on regraded ground. A pathway system was created to encourage public access throughout, in many places utilising the remaining bunds.

In 2002 an extensive tract of agricultural land in the vicinity of Uplands Farm was acquired by the Forestry Commission with a view to extending the Community Woodland area. All of the extensive landholding open to public use is managed by the Cheshire County Council as Anderton Nature Park.
Anderton lime bed has been colonised by plants that are typical of calcareous habitats – abundant carnation sedge with common centaury and yellow-wort. Birch and willow has colonised extensively and provides nesting and feeding cover for warblers and other birds. Large numbers of snails occur in the vicinity of lime beds because of the high calcium content of the soil. Many of those lime beds that remain are rapidly progressing to woodland and need active management to halt the process of succession and retain open grassland.

Fury Tip is an SBI in the west of the character area situated on the banks of the Weaver. It includes a disused lime bed, two brackish pools and reed beds. The greater part of this tip has been covered with soil and a rank grassland has developed part of which is characteristic of coastal habitats. The lime bed is rich in flora and supports species that are uncommon or rare in Cheshire such as hairy rockcress and blue fleabane.

At the confluence of the River Weaver and Witton Brook the former Witton Landfill site is essentially a man-made hill of waste material, providing the highest point within the character area. When deposition ceased in the 1990’s the entire site was capped with topsoil and new woodland areas were established with a view to public access. This site also encompasses Witton Lime Beds which is designated as a SSSI, they represent a calcareous habitat in a county where there are few natural outcrops of limestone or areas of calcareous soils. The lime beds are being colonised by a wide range of plant species, many of which are rare in Cheshire. Seven species and hybrids of orchids occur and of particular interest is the hybrid of the northern and southern marsh orchids. These are both at the limits of their range and thus the hybrid found here is unusual. Fragrant orchid, early marsh orchid and marsh helleborine also occur.