

Further observations of willows on the Sefton Coast

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The Sefton Coast is a nationally important area for willows *Salix*, a recent inventory of vascular plants for the coast listing 23 taxa, 13 of which are hybrids (Smith 1999a). Increasing interest, particularly in the rarer hybrids, has led to attempts to map their locations on GIS, while a draft Species Action Plan has been written for the three nationally rare taxa *Salix x angusensis*, *S. x doniana* and *S. x friesiana* (Smith 2000).

This report summarises observations on the location and status of Sefton Coast willows made mainly during 1999 with an update for 2000. Further work will be needed in subsequent years to provide a fuller picture.

Nomenclature follows Stace (1991).

***Salix alba* White Willow**

Fairly frequent, sometimes occurring as quite large trees in old-established woodland, former field boundaries or scrub patches. Two small bushes of *S. alba* var. *caerulea* Cricket-bat Willow were identified at Seaforth Nature Reserve.

***Salix x angusensis* (*Salix viminalis* x *S. cinerea* x *S. repens*)**

First described by K.H. Rechinger in 1950 from material collected at Barry Links, Angus, in September 1947, this very rare, endemic hybrid was not known to occur elsewhere in Britain until 1993 when N.A. Robinson and M. Gee found an unknown willow in slack 65, Ainsdale Sand Dunes National Nature Reserve. Identification was confirmed by R.D. Meikle from a second sample taken by N.A. Robinson on 10th August 1998. A field visit on 29th July 1999 revealed that there are two separate clumps of *angusensis* in the slack. Two bushes of this hybrid were found at St. Anne's sand-dunes, Lancashire (VC60) in 1999 (E.F. Greenwood pers. comm.).

Identification of this taxon is clearly difficult, as it is very similar to *S. x friesiana*. However, Meikle & Robinson (2000) and Meikle *in litt.* show that the leaf of *angusensis* is broader, has a more rounded base, is less tapering, may have less prominent veins and is greener above, lacking the hoary appearance of *friesiana*. A B.Sc. dissertation project in 2000 by P. Michell (Edge Hill College) has sought to quantify these differences.

Studies in September/October 1999 showed that *angusensis* was not confined to Ainsdale NNR on the Sefton Coast and was, in fact, widespread in the dunes, having clearly been overlooked in the past. Partial surveys detected both old and young plants at Cabin Hill NNR (5 bushes), Range Lane (Ravenmeols) dunes, Formby, (7 bushes), northern Birkdale Sandhills LNR (6 bushes) and Queen's Jubilee Nature Trail, Southport (6 bushes), several of these being confirmed by R.D. Meikle. One patch at the latter site is about 30m in diameter and 2.5m tall!

The Cabin Hill plants are all situated in the grazed area but only one bush seemed to

have been damaged by sheep. However, this taxon is susceptible to browsing and bark-stripping by Rabbits where populations are high, as at Birkdale Sandhills (north) where many bushes have been badly damaged.

The Ainsdale NNR bushes have been fenced off to protect them from sheep grazing, while all locations will be registered on the GIS.

Observations during 2000 have confirmed the widespread distribution of this taxon in the dune system, though there are large areas where it does not occur. The largest populations were found at Cabin Hill NNR (18 bushes), Range Lane (25), northern Birkdale Sandhills (61) and Queen's Jubilee Nature Trail (41) (Table 1), with smaller numbers in slacks throughout other parts of the Birkdale Sandhills. A complete age range was noted from very young individuals to bushes estimated to be 20 or more years old. It was also clear that there is a great deal of variability between individuals. While a majority of plants was found in slacks, it is apparent that this taxon can grow perfectly well on fixed dunes remote from the water-table.

***Salix caprea* Goat Willow**

Widespread and fairly common along the coast, but a note of caution is needed as many bushes of apparent Goat Willow may well be the hybrid with Grey Willow, *Salix x reichardtii*.

***Salix x capreola* (*S. caprea* x *S. aurita*)**

Not seen by me, this hybrid is a surprising record for the area, as one of the parents, *S. aurita* Eared Willow, is not known to occur here. The Sefton Coast record is for the Ainsdale NNR, described by Payne (1982) as "cultivated land, rare (planted)". A search for this in its single mapped location in October 2000 failed to rediscover the plant and it could well be extinct here.

***Salix cinerea* Grey Willow**

Abundant everywhere and also quite variable in leaf size and shape, some plants have remarkably long leaves, though within the limits of dimensions given by Meikle (1984).

***Salix daphnoides* European Violet-willow**

This beautiful species has been planted quite widely on the coast. For example, I have seen several specimens along the track east of Wicks Lane Lake and adjacent to Lifeboat Road, Formby Point. Others are recorded in the GIS by M. Rathbone east of the Lifeboat Road carpark. There is also a tree with particularly large, red buds at the west end of the track between Oxford Road and the coastal road at Birkdale.

***Salix x doniana* (*S. purpurea* x *S. repens*)**

This national rarity was first found in 1888 by F.B. White on the banks of the River Tummel, near Pitlochry in Perthshire, though it was originally described in Scotland, without a specific location, by J.E. Smith in 1829 (Meikle 1984).

The hybrid was first discovered at Formby on the Sefton Coast by Miss P.A. Jones in 1947 as a single male plant with nearby parents (Savidge *et al.* 1963). Since then, it has been found sporadically, for example at slack 65 Ainsdale NNR, slacks 8 and 10 Birkdale LNR, at Lifeboat Road, Queen's Jubilee Nature Trail, Ravenmeols dunes and Cabin Hill NNR. It was also recorded by Miss V. Gordon for the Hall Road and Hightown tetrads (SD20V and SD20W) during the BSBI Atlas Survey. The large bush at Ravenmeols has recently almost been destroyed by Rabbits, only two damaged branches surviving in 2000..

The plant certainly seems to be very scarce on this coast and every bush merits recording on the GIS and protecting. The only known British localities are Mid Perth and South Lancashire (Stace 1991).

***Salix x forbyana* (*S. cinerea* x *S. purpurea* x *S. viminalis*) Fine Osier**

A common taxon on the dunes, this hybrid often occurs in areas suggestive of a planted origin. For example, there are extensive stands adjacent to the coastal road north of Ainsdale Shore Road and just south of Selworthy Road, Birkdale. However, the plant also appears well away from human habitation, as for example on the semi-fixed dunes at Ravenmeols.

***S. fragilis* Crack Willow**

Fairly frequent along the coast but not one of the commonest willows here. Most specimens appear to be var. *fragilis*. but I have also identified var. *decipiens* White Welsh Willow and var. *russelliana* Bedford Willow, the latter next to the coast road at Crossens.

***Salix x friesiana* (*S. repens* x *S. viminalis*)**

A nationally rare hybrid, this taxon was first collected from river gravels by E.S. Marshall in east Sutherland in 1829 (Meikle 1984). It was found at Formby in 1943 by J.D. Massey and W.G. Travis (Savidge *et al.* 1963) and has subsequently proved to be widespread and common throughout the Sefton sand-dunes, including outliers such as Queen's Jubilee Nature trail and the northern section of the Birkdale frontal dunes, where there are large populations.

The plant occurs in both wet and dry slacks and on fixed dunes and appears to have a highly variable morphology. Frequently, it grows just a little taller than associated Creeping Willow *Salix repens* but it may occur just as often as large bushes up to 3m tall in, or on the edge of, scrub patches. As already mentioned, due to variability in leaf characters, this plant is difficult to distinguish from *S. x angusensis*.

Observations in 2000 showed that this taxon is significantly less common than *S. x angusensis* in the dune system. Thus, careful counts revealed 7 bushes at Cabin Hill NNR, 19 at Range Lane, 18 at Birkdale Sandhills (north) and 21 at Queen's Jubilee

Nature Trail (Table 1). It seems that *S. x friesiana* is more strictly associated with slacks than *S. x angusensis*.

S. x friesiana seems to be susceptible to damage by Rabbits, a large patch at Ravenmeols having been completely destroyed in recent years (personal observations).

The only other known localities in England are Lytham-St. Anne's Local Nature Reserve, Lancashire, (VC 60) where this hybrid was found in 1999 (E.F. Greenwood pers. comm.) and Sandscale Haws, Cumbria, while it also occurs at Barry Links, Angus, Scotland, the original locality for *S. x angusensis*.

Salix x friesiana x purpurea

A single large bush of this hybrid which is new to Britain was discovered by D.H. Wrench in August 2000 at the northern end of the Birkdale frontal dunes, while a second was found by M. Wilcox at Range Lane, Formby in September 2000. Both were determined by R.D. Meikle. Another bush, possibly of this taxon, was located in September 2000 by P.H. Smith 20m from the *S. x doniana* bush at Lifeboat Road, Formby.

Salix x angusensis x purpurea

A small bush, apparently referable to this taxon, was found at the northern end of the Birkdale frontal dunes in August 2000 by D.H. Wrench, while another was located by M. Wilcox at Range Lane, Formby in the following month. The specimens have been provisionally identified by R.D. Meikle. This hybrid may be new to science!

***Salix x mollissima* nothovar. *undulata* (*S. triandra* x *S. viminalis*) Sharp-stipuled Willow**

Several planted bushes, considered to be this taxon, were found at Victoria Park, Southport, on 24th September 1999. It was not listed by Smith (1999a) as occurring on the Sefton Coast.

***Salix pentandra* Bay Willow**

This willow is scarce on the Sefton Coast. Apart from a long-established bush in slack 174, Ainsdale Sandhills LNR, I have seen it only in slack 10 and slack 14, Birkdale Sandhills LNR. The Ainsdale plant was cut down during scrub clearing operations in the early 1990s but has regrown well.

The species was also recorded as "very local" in Ainsdale NNR (Payne 1982).

***Salix x pontederiana* (*S. purpurea* x *S. cinerea*)**

Meikle (1984) states "this must be reckoned a rare hybrid". I have not seen it here and the only record I have traced is for Ainsdale NNR where Payne (1982) described it as "local (planted)" in dunes, slacks and cultivated land. Savidge *et al.* (1963) did not mention the plant.

***Salix purpurea* Purple Willow**

Occurs fairly commonly along the entire coast. May often have been planted as, for example, at Falklands Way, Ainsdale, and along the edge of Range Lane, Formby.

***Salix x reichardtii* (*S. caprea* x *S. cinerea*)**

Probably common but, because of its similarity to *S. caprea*, the true status of this hybrid is obscure. During 1999, I saw particularly convincing examples at Kenilworth Road dunes and Falklands Way, Ainsdale, Wicks Lane Lake, Formby and Crosby Marine Park. Payne (1982) did not record it at Ainsdale NNR, but then this hybrid was not recognised as occurring in South Lancashire during the time of Savidge *et al.* (1963).

***Salix repens* Creeping Willow**

Abundant throughout the dunes in wet and dry slacks, often extending onto fixed dune ridges. This is an extremely variable species here and both var. *repens* and var. *argentea* are recorded (Savidge *et al.* 1963).

The plant seems reasonably resistant to heavy Rabbit grazing but is susceptible to a fungus disease which causes sub-circular patches to die back. Mowing slacks in Ainsdale NNR and elsewhere has reduced its dominance.

***Salix x rubens* (*S. alba* x *S. fragilis*) Hybrid Crack-willow**

This most attractive willow has been planted in several areas on the coast. In its *basfordiana* form, with bright orange twigs splashed with red, I have recorded it east of Lifeboat Road carpark, at Wicks Lane Lake and near St. Joseph's Hospital, Formby, and at Crosby Marine Park. There are also occasional bushes of the type form which, surprisingly, turned up in 2000 as seedlings on the strand line at Birkdale green beach.

Payne (1982) reported its presence in woodland at Ainsdale NNR as "rare (planted)". The hybrid was also recorded for Formby by Savidge *et al.* (1963).

***Salix x rubra* (*S. purpurea* x *S. viminalis*) Green-leaved Willow**

Savidge *et al.* (1963) recorded this hybrid at intervals on the sand-dunes between Formby and Ainsdale and also, more specifically, two bushes with parental species at the edge of sand-dunes, Birkdale dunes and in a willow thicket at Victoria Park, Southport. In Ainsdale NNR, Payne (1982) gave it as "rare (planted)".

On 24th September 1999, I visited Victoria Park and was pleased to find several bushes of *S. x rubens*, though all appeared to have been planted.

***Salix x sepulcralis* (*S. alba* x *S. babylonica*) Weeping Willow**

This is the commonest of the cultivated "Weeping Willows" and widely planted (Meikle

1984). The only record I have seen is for tetrad SD32K (Marshside) in the recent BSBI Atlas Survey.

***Salix x sericans* (*S. caprea* x *S. viminalis*) Broad-leaved Osier**

This taxon is difficult to separate from *S. x smithiana* and I need to study the two further to be confident of their identity. However, there seems little doubt that *sericans* is common on the Sefton Coast and certainly much more frequent than *smithiana*. There are two particularly large-leaved bushes in the scrub on Falklands Way, while others occur on the northern section of Birkdale frontal dunes (det. R.D. Meikle), at Lifeboat Road, Formby, Queen's Jubilee Nature Trail and Victoria Park, Southport and at Seaforth Nature Reserve. This hybrid was also known to Savidge *et al.* (1963) who noted its presence at Hightown and in the Victoria Park willow thicket. Surprisingly, Payne (1982) does not mention it.

***Salix x smithiana* (*S. cinerea* x *S. viminalis*) Silky-leaved Osier**

As mentioned above, this hybrid is very similar to *S. x sericans*, care being needed to separate the two. Some of the smaller forms closely resemble *S. x friesiana*. The present taxon seems to occur sparingly along almost the full length of the coast. *S. x smithiana* was also recorded at Hightown, Formby and Freshfield by Savidge *et al.* (1963). Payne (1982) considered it rare in Ainsdale NNR.

***Salix x subsericia* (*S. cinerea* x *S. repens*)**

In Meikle's (1984) experience, this is a very uncommon hybrid and many of the records are questionable. Before the present study, the only record for the Sefton Coast was a patch associated with *S. x angusensis* in slack 65, Ainsdale NNR, described by N.A. Robinson (*in litt.*) and determined by R.D. Meikle. However, a review in 1999 has established that this was a misunderstanding, the plant in question being a form of *S. repens* (N. A. Robinson *in litt.*).

Feeling that this taxon should occur on the dunes, I made a search for it in likely localities during late summer 1999 and found convincing specimens at the north end of Hightown dunes (1 bush), Cabin Hill NNR (6 bushes), Lifeboat Road, Formby (1 bush) and Queen's Jubilee Nature Trail, Southport (2 bushes). Material from several of these has been determined as *subsericia* by R.D. Meikle. All but one of the plants were found in dense Creeping Willow. During 2000, I found another bush at the northern end of the Birkdale frontal dunes and three more at Queen's Jubilee Nature Trail (Table 1).

This is a notable taxon and merits careful conservation.

***Salix triandra* Almond Willow**

This species is described by Savidge *et al.* (1963) as rare in the Vice County, with a record at Formby in 1943. I have not seen it on the dunes but M. Rathbone (pers. comm.) is aware of at least one bush which was planted.

***Salix viminalis* Osier**

A common species along most of the Sefton Coast, though Payne (1982) describes it as "rare (planted)" at Ainsdale NNR. Certainly, so many of the bushes appear to have been planted that its true status here is uncertain. As remarked by Meikle (1984), this is one of the least variable of our willows.

Concluding remarks

Clearly, much remains to be discovered about the status of willows on the Sefton Coast. The nationally rare taxa merit further study and are the subject of a Species Action Plan for the North Merseyside Biodiversity Action Plan (Smith 2000). More hybrids may well remain to be identified. The recent confirmation of *S. x subsericia* is particularly pleasing in that context. Other taxa that should be sought here include *S. x meyeriana* and *S. x calodendron*.

The importance of the dune system for this group deserves greater recognition, particularly in view of much-needed policies to control scrub invasion. There is a risk that mass clearance of scrub, coupled with the introduction of livestock grazing and the recent increase in Rabbit populations, could lead to the demise of some rare willows. Site management plans need to be adapted to avoid this.

References

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Table 1. The numbers of rare hybrid willow bushes counted at four major haunts on the Sefton Coast in August/September/October 2000.

	Cabin Hill NNR	Range Lane, Formby	North Birkdale Sandhills	Queen's Jubilee Nature Trail	Total
<i>S. x angusensis</i>	18	25	61	41	145
<i>S. x doniana</i>	1		1	2	
<i>S. x friesiana</i>	7	19	18	21	65
<i>S. x friesiana x purpurea</i>		1	1	2	
<i>S. x angusensis x purpurea</i>		1	1	2	
<i>S. x subsericia</i>	6	1	5	12	